Rocky Top Environmental Limited Purpose Landfill
Interim Action Work Plan
AO No. DE21624

Prepared for

DTG Recycling

November 2026

Parametrix

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Interim Action Work Plan
AO No. DE21624

Prepared for

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Certification

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a hydrogeologist licensed to practice as such, is affixed below.



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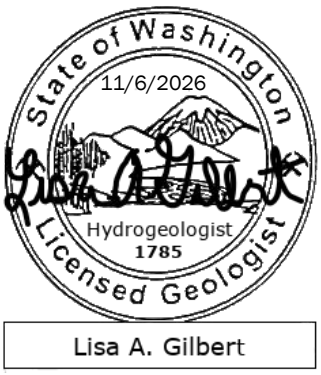

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APPENDICES

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Acronyms and Abbreviations

AO	Agreed Order
APH	air-phase petroleum hydrocarbons
CO	carbon monoxide
CO_2	carbon dioxide
COPCs	contaminants of potential concern
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
CQA	construction quality assurance
CULs	cleanup levels
DTG	DTG Recycling
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
F	Fahrenheit
GCL	geosynthetic clay liner
HELP	Hydrologic Evaluation of Landfill Performance
HWA	HWA Geosciences Inc.
IAWP	Interim Action Work Plan
IZ	interflow zone
LEL	lower explosive limit
LFCI	Landfill Fire Control Inc.
LFG	landfill gas
LPL	Limited Purpose Landfill
MCL	Maximum Contaminant Level
µg/m3	micrograms per cubic meter
MTCA	Model Toxics Control Act
PCS	petroleum-contaminated soil
PFAS	per- and polyfluoroalkyl substances
PFCAs	perfluoroalkyl Carboxylic Acids
PFOA	perfluorooctanoic acid

Acronyms and Abbreviations (continued)

ppm	parts per million
PUF	polyurethane foam
RI	Remedial Investigation
SA	shallow aquifer
SAP	Sampling and Analysis Plan
SEPA	State Environmental Policy Act
Site	cleanup site
SOP	Standard Operating Procedure
SVOCs	semi-volatile organic compounds
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds
WAC	Washington Administrative Code
YHD	Yakima Health District
YRCAA	Yakima Regional Clean Air Agency

1. Introduction

DTG Recycling (DTG) operates the Rocky Top Environmental Limited Purpose Landfill (LPL) located at 41 Rocky Top Road in Yakima, Washington in accordance with Washington Administrative Code (WAC) 173-350-400. Figure 1 shows the vicinity of the LPL. DTG purchased the LPL from Ron Anderson in 2019. In February 2023, DTG signed an Agreed Order (AO) under the Model Toxics Control Act (MTCA; Chapter 173-340 WAC) with the Washington State Department of Ecology (Ecology) related to a potential release from the LPL. This Revised Draft Interim Action Work Plan (IAWP) is intended to partially address the requirements of AO No. DE 21624. Additional actions and remedial investigations may be necessary to fully satisfy the requirements of the AO.

1.1 Background LPL

The Facility was originally permitted as an unlined construction, demolition, and land-clearing debris landfill that began operation in 1997 as Anderson Rock and Demolition Pit under a Chapter 173-304 WAC solid waste permit with the Yakima Health District (YHD). The Facility was reclassified as an LPL in 2007, with the southern expansion area permitted by YHD in 2015.

Phase 1 is the historical fill area and is unlined (Figures 1 and 2). In addition to LPL waste, Phase 1 includes treated petroleum-contaminated soil (PCS) that was used as fill and daily cover following approval of disposal from YHD. Filling of Phase 1 continued through 2022, and then waste was placed in a permitted unlined expansion cell south of Phase 1. It was discovered that the area of the expansion cell had differing geologic conditions from Phase 1. This area became known as the temporary fill area and DTG began plans for a lined expansion cell (Phase 2) further south.

Waste placement in the temporary fill area continued through June 2023 with plans that the waste would be moved to a lined Phase 2 expansion upon completion. In July 2023, YHD denied the permit renewal for the Facility primarily due to the need for an air permit from the Yakima Regional Clean Air Agency (YRCAA), and filling of the temporary fill area ceased.

Phase 2 (Figures 1 and 3) was constructed with a bottom liner and leachate collection system and is located on the southern portion of the Facility. Phase 2 construction was completed in September 2024, and the Facility was re-permitted. Filling of Phase 2 began in December 2024. Excavation of the temporary fill area was substantially completed by August 2025 with waste placed into the lined Phase 2 cell.

1.2 Background MTCA

Ecology listed the northwest slope of the LPL as a MTCA cleanup site (Site) and DTG and Ecology negotiated an AO that was executed in February 2023. The AO was initially related to a suspected subsurface fire in the Phase 1 unlined cell in 2022.

The AO requires DTG to:

- Complete a Limited Remedial Investigation (RI) and interim actions for the Site, if necessary
- Notify Ecology of significant changes in conditions.
- Provide monthly progress reports.
- Submit plans or other deliverables to Ecology for approval.

The Limited RI scope of work included:

- Develop a Limited RI Work Plan
- Complete the Limited RI
- Implement Interim Actions, if required
- Complete State Environmental Policy Act (SEPA) compliance, as needed in conjunction with Interim Actions
- Participate in public meetings.

2. MTCA Remedial Investigation

A Limited RI Work Plan was developed and finalized in April 2025 outlining additional work to be completed through December 2025. The conceptual site model (discussed below) determined two routes of transmission related to the unlined Phase 1 of the landfill.

As a result of the RI work, Ecology requested an IAWP be developed (Ecology 2025a,b) with the intent of development of a closure cover the Phase I unlined cell. The following summarizes details regarding the conceptual site model, contaminants, and investigations completed to date prior to development of the IAWP. A report summarizing the RI work is planned to be completed following this IAWP.

2.1 Conceptual Site Model

The draft conceptual site model established for the Site notes that the landfill is a potential source of contaminants related to the subsurface fire within the landfill and from leachate migrating from the Phase I unlined cell and former temporary fill area.

As shown on Figure 4, two routes of transmission of contaminants have been identified:

- Upward and horizontal migration of emissions causing contaminants in ambient air.
- Downward migration of emissions/leachate causing contaminants in the Shallow Aquifer (SA).

2.2 Chemicals of Potential Concern

The chemicals of potential concern (COPCs) related to the migration pathways include the following:

Ambient Air/Emissions:

- Landfill gas (LFG) components of methane, carbon monoxide (CO), hydrogen sulfide, and carbon dioxide (CO_2)
- Air-phase petroleum hydrocarbons (APH)
- Volatile organic compounds (VOCs) (benzene and naphthalene)

Soil/Waste:

- Total Petroleum Hydrocarbons (TPH)
- VOCs
- Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)

- Metals
- Per- and polyfluoroalkyl substances (PFAS)

Groundwater:

- Nitrate
- Total dissolved solids
- Conductivity
- PFAS

Additional potential COPCs were investigated as part of the Limited RI Work Plan including dioxins and furans, semi-volatile organic compounds (SVOCs), and U.S. Environmental Protection Agency (EPA) priority pollutant metals. These were eliminated as COPCs as they were confirmed to be below cleanup levels (CULs).

2.3 Completed Investigations

Previous investigations of the Site are summarized in the following reports.

- Geotechnical & Hydrogeologic Investigation Report of the Anderson Rock and Demolition Pits Limited Purpose Landfill Expansion (HWA Geosciences Inc. [HWA] 2015).
- Hydrogeologic Investigation Report of the DTG/Anderson Pit LPL (HWA 2022).
- Soil Gas and Ambient Air Sampling Report, Summary of December 9, 2021, and January 21, 2022, Sampling Events (Freestone 2022).
- Landfill Gas Investigation Yakima Limited Purpose Landfill (Parametrix 2022).
- DTG Yakima Limited Purpose Landfill - Gas Probe Construction and Landfill Fire Emission Assessment (Parametrix 2023a).
- DTG Yakima Limited Purpose Landfill – Health and Safety, Fire Control and Monitoring Plan (Landfill Fire Control Inc. [LFCI] 2023a).
- Thermistor Installation Report – DTG Yakima Limited Purpose Landfill (Parametrix 2023b).
- 2023 Annual Groundwater Monitoring Report, DTG Limited Purpose Landfill, Yakima, Washington (Parametrix 2024a).
- 2024 Emission Assessment Results. Yakima Limited Purpose Landfill, Yakima, Washington (Parametrix 2024c).
- DTG Yakima Limited Purpose Landfill Yakima, Washington First Quarter 2024 Groundwater Monitoring Report (Parametrix 2024d).
- DTG LPL Landfill Fire Investigations and Mitigation – Focused Review of Trigger Levels. PowerPoint presentation (LFCI 2024).
- DTG Yakima Limited Purpose Landfill Yakima, Washington Second Quarter 2024 Groundwater Monitoring Report (Parametrix 2024e).
- Monitoring Well Construction Update Technical Memorandum. October 2024.(Parametrix 2024f).
- Rocky Top Limited Purpose Landfill, Third Quarter 2024 Groundwater Monitoring Report (Parametrix 2024g).

- 3Q 2024 MTCA Sampling -– AO#DE21624 Technical Memorandum. December 2024. (Parametrix 2024h).
- Hydraulic Testing Results Rocky Top Environmental Limited Purpose Landfill Technical Memorandum. January 2, 2025 (Parametrix 2025a).
- 4Q 2024 MTCA Sampling - AO # DE21624Technical Memorandum. March 5, 2025. (Parametrix 2025b).
- Updated Hydrogeologic Characterization Report for the Rocky Top Environmental Limited Purpose Landfill. March 2025. (Parametrix 2025c).
- 2024 Annual Groundwater Monitoring Report, DTG Rocky Top Environmental Limited Purpose Landfill Yakima, Washington. March 2025. (Parametrix 2025d).
- Limited Remedial Investigation Work Plan Rocky Top Environmental Limited Purpose Landfill. April 2025. (Parametrix 2025e).
- Rocky Top Environmental Limited Purpose Landfill 2025 First Quarter Groundwater Monitoring Report. Prepared for DTG Recycling. June 2025. (Parametrix 2025f).
- 1Q 2025 MTCA Sampling - AO # DE21624 Technical Memorandum. June 27, 2025. (Parametrix 2025g).
- Rocky Top Environmental Limited Purpose Landfill 2025 Second Quarter Groundwater Monitoring Report. Prepared for DTG Recycling. August 2025. (Parametrix 2025h).
- 2Q 2025 MTCA Sampling - AO # DE21624 Technical Memorandum. August 22, 2025. (Parametrix 2025i).
- Rocky Top Environmental Limited Purpose Landfill 2025 Third Quarter Groundwater Monitoring Report. Prepared for DTG Recycling. December 2025. (Parametrix 2025j).
- 3Q 2025 MTCA Sampling - AO # DE21624 Technical Memorandum. December 2025. (Parametrix 2025k).
- MW-1S and MW-11S Drilling and Construction Technical Memorandum. December 9, 2025. (Parametrix 2025l).
- Thermistor Drilling and Construction Technical Memorandum. January 2026. (Parametrix 2026b).
- 4Q 2025 MTCA Sampling - AO # DE21624 Technical Memorandum. January 2026. (Parametrix 2026c).
- Rocky Top Environmental Limited Purpose Landfill 2025 Annual Groundwater Monitoring Report. Prepared for DTG Recycling. March 2026. (Parametrix 2026d).
- Rocky Top Environmental Limited Purpose Landfill 2026 First Quarter Groundwater Monitoring Report. Prepared for DTG Recycling. June 2026. (Parametrix 2026e).
- Petroleum Contaminated Soil Remediation Area Closure Report, Rocky Top Environmental. June 2026. (Parametrix 2026f).
- DTG Yakima – Agreed Order No. DE 21624 – Monthly Progress Letter – September. (Appendix A , DTG Recycling 2026, LFCI 2026).

2.4 Landfill Fire

CalRecycle (2006, 2026) notes subsurface fire indicators include:

- Elevated gas temperatures above 170 degrees Fahrenheit (F)
- CO above 200 parts per million (ppm)
- Subsidence
- Active fissures/elevated surface temperatures

LFCI (2023a) and Ecology (2024) refined the subsurface fire conditions at the Site and determined that the following apply specific to the DTG LPL.

CO Monitoring:

- Possible Fire Indication – Above 100 ppm
- Possible Fire in Area 200 – 500 ppm
- Potential Smoldering Nearby 500 – 750 ppm
- Fire or Exothermic Reaction Likely 750 – 1,000 ppm
- Fire in Area > 1,000 ppm

Temperature Monitoring:

- Above Normal Thermal Activity specific to the Site 130 F
- Boiling Point of Water 212 F
- Exothermic Activity 220 F
- Exothermic Decay of Wood 300 F
- Active Fire 600 F

In 2020, YHD received odor complaints from the LPL neighbors. Odors were confirmed by YHD and Ecology in October 2021 and tracked to the northwest slope of Phase 1 where visual vapor plumes emanating from fissures within the LPL were observed. These resembled the subsurface fire indicators and characterization was implemented in coordination with YHD.

Ongoing ambient air and gas probe monitoring is being completed by DTG and summarized monthly by LFCI to YHD, Ecology, and YRCAA. Monthly progress reports have also been submitted from DTG to Ecology during the ongoing RI work. The most recent monthly progress report for LFG (LFCI 2026) is attached in Appendix A.

Data collected to date are included in the following:

- Table 1 summarizes the construction depths and observation points for monitoring the subsurface fire.
- Table 2 summarizes analytical data for LFG within the Phase 1 LPL.
- Table 3 summarizes analytical data for ambient air sampling.
- Table 4 summarizes soil and waste characterization sampling.

The fire characterization, air emissions, and waste characterization are summarized below. Figures 1,2, and 3 display sampling locations related to the fire.

2.4.1 Fire Characterization

In December 2021, DTG initiated LFG investigations and confirmed emissions of certain VOCs including benzene exceeding MTCA air CULs on the northwest slope (Freestone 2022). However, concentrations of VOCs in ambient air samples collected along the property boundary were found below MTCA CULs for air.

In July 2022, DTG retained Parametrix to further investigate the source of the emissions. Parametrix installed eight shallow temporary vapor probes (VP1 through VP8) into the top of waste across Phase 1 of the LPL to evaluate LFG conditions (Figure 2). Sampling results identified petroleum hydrocarbons and associated VOCs predominantly at one location, VP-1, on the northwest slope (Table 2). At that location, methane was measured at concentrations up to 4.2 percent by volume, which is below the lower explosive limit (LEL). Methane was not detected at the remaining seven vapor probes.

In March 2023, Parametrix directed the completion of ten gas probes (GP-1 through GP-10) into the LPL for evaluating subsurface conditions of VOCs, LFG, and temperature (Figure 3). A subsurface landfill fire was confirmed based on multiple lines of evidence, including soil and gas temperatures exceeding 400 degrees F, physically burned material recovered in soil cores, elevated concentrations of hydrogen gas and CO, active fissures and vents, and surface settlement (Parametrix 2023a). LFG samples collected showed elevated concentrations of petroleum hydrocarbons and associated VOCs (Parametrix 2023a).

Following confirmation of the landfill fire, DTG retained LFCI to delineate the extent of the fire and develop a fire control strategy. LFCI prepared a fire control and monitoring plan (LFCI 2023a) to assess and delineate the subsurface fire. By June 2023, LFCI assisted DTG in installation of 20 additional gas probes (GP-11 through GP-31) at the locations shown on Figure 3. These probes were completed to an approximate depth of 4.5 feet into the waste.

In September 2023, three thermistors/gas probes (T-1, T-2, and T-3, Figure 3) were installed using sonic drilling techniques as part of the initial phase of the Limited RI (Parametrix 2023b). Two of the thermistors were drilled beyond the base of waste to evaluate the vertical extent of the fire and evaluate soil below the unlined Phase I waste. Each thermistor was constructed as a well nest with a gas probe and blank thermistor pipe to allow for measuring both LFG concentrations and temperature in the same borehole. Thermistor locations are shown on Figure 3. No smoldering or charred materials were encountered during drilling. Monitoring results indicated that T-1 and T-2 exhibited elevated temperatures but relatively low VOC concentrations, whereas T-3 exhibited lower temperatures, elevated VOC concentrations, low oxygen, elevated CO_2, and methane at 4.7 percent by volume. LFCI interpreted these differences to be indicative of a chimney effect within the waste mass.

LFCI subsequently developed a fire suppression plan that consisted of covering the subsurface fire area with additional fill materials of low-permeability soil cap (LFCI 2023b). The fire suppression work plan was negotiated with YHD and Ecology and implemented by DTG. By December 2023, approximately 3 to 10 feet of low-permeability material was placed on the northwest slope of the LPL, and the slope was completely regraded (Figure 6). DTG acquired the neighboring parcel to the north, and the abandoned irrigation canal was partially filled to facilitate regrading of the slope. Gas probes (GP-1 through GP-31) and thermistors (T-1, T-2, and T-3) were extended upwards approximately 10 feet to account for the regrade.

The Landfill Fire Emission Assessment Work Plan was implemented in March 2024, and samples were collected from gas probes/thermistors and of ambient air to evaluate the effectiveness of the low-permeability cap (Parametrix 2024c). Results indicated that concentrations of petroleum hydrocarbons and VOCs in the gas probes were consistent with ranges observed during previous

investigations. Ambient air monitoring results (discussed further in Section 2.4.2) showed no hazards in ambient air. Weekly monitoring of ambient air and LFG and subsurface temperatures within the waste using field instrumentation was continued.

In May 2024, LFCI presented an updated assessment of subsurface fire conditions (LFCI 2024), concluding that two potentially separate active fire areas may be present based on temperature and CO concentration trends. Ecology and YHD indicated that additional data were needed in the southern area near GP-20 and GP-25 to better delineate the extent of the subsurface fire and associated VOC impacts.

As part of the Limited RI Work Plan, four additional thermistor nests (T-4 through T-7, Figure 3) were installed in July and August 2025 and drilled to the base of Phase 1 (Parametrix 2026b). Each nest included a shallow gas probe, a deep gas probe, and a blank thermistor, constructed under a variance from Chapter 173-160 WAC (Parametrix 2026b). Samples were collected from the new thermistors and selected existing probes, and these locations were incorporated into the routine monitoring program.

Results showed that T-4 recorded among the highest subsurface temperatures, while T-5, T-6, and T-7 exhibited the highest CO concentrations (Table 1, Appendix A). TPH and VOC concentrations were consistent with previous investigations (Table 2). These results further support the interpretation of two distinct subsurface fire zones and suggest that a chimney effect is facilitating gas migration toward the southeastern margin of the low-permeability soil cap.

LFG sampling (Table 2) was conducted at the newly installed thermistor-associated probes (T-4S, T-4D, T-5S, T-5D, T-6S, T-6D, T-7S, and T-7D) and at existing probes GP-2, GP-3, GP-20, and T-3. The highest VOC concentrations were observed at GP-20 and thermistors T-5, T-6, and T-7 (shallow and deep). Field measurements indicated CO concentrations greater than 1,000 ppm at GP-20, T-3, T-4S, T-6S, T-6D, and T-7S, consistent with active fire conditions. Oxygen concentrations at GP-2, GP-3, and T-4D were similar to atmospheric levels (17.7 to 20.5 percent), suggesting the presence of vents or preferential air pathways in these areas. Maximum temperatures observed during drilling of the four new thermistors reached up to 244 degrees F at T-4.

2.4.1.1 Summary

Ongoing ambient air and gas probe monitoring is being conducted by DTG, with results summarized by LFCI and submitted monthly to YHD, Ecology, and YRCAA. Monthly progress reports have also been submitted by DTG to Ecology as part of the ongoing RI. The most recent monthly progress report (LFCI 2026) is included in Appendix A. The subsurface fire area has been substantially delineated by the existing network. DTG continues to collaborate with YHD and Ecology to determine the delineation goals of the RI and the RI remains ongoing. Temperatures and LFG concentrations in the fire area continue to decrease following placement of the low-permeability interim closure cover.

Temporal evaluation of LFG data indicates generally decreasing trends in concentrations of APH and VOCs. Table 2 summarizes concentrations of LFG COPCs, including APH and VOCs. Several gas probes and thermistor locations (including GP-2, GP-7, and T-3) exhibit notable decreases in contaminant concentrations over time. These locations are nearest to the original venting discovery and active subsurface fire zone within Phase 1. These trends may also reflect changes in gas migration pathways associated with placement of the low-permeability cap and associated chimney effects. Additional evaluation may be warranted following completion of interim actions to further assess long-term trends and subsurface gas migration behavior.

2.4.2 Air Emissions

Air emissions associated with the subsurface fire have been a concern due to the potential for off-site exposure to contaminants affecting nearby receptors. Prior to identification of the subsurface fire, odor complaints were reported in the vicinity of the landfill. Multiple investigations have since been conducted to evaluate air emissions associated with the fire. A total of 17 ambient air monitoring locations (AMB-1 through AMB-17) have been established to support repeated characterization of air quality conditions at the Site (Figures 2).

As discussed previously, Freestone conducted initial ambient air sampling over the fire area and along the landfill property boundary in 2022 showing high concentrations of VOCs near active vents. Subsequent ambient air monitoring (AMB-1 through AMB-5) confirmed that concentrations of benzene and naphthalene exceeded MTCA air CULs in localized areas above the northwest slope but remained below CULs at other sampling locations, including the landfill property boundary (Parametrix 2022). Exceedances were limited to areas proximate to active venting.

In March 2023, ambient air samples were collected from four locations across the landfill property and analyzed for LFG constituents (methane, CO, hydrogen sulfide, CO_2, APH, and VOCs). Results confirmed the presence of APH at 684 micrograms per cubic meter (µg/m^3), and concentrations of benzene (45 µg/m^3) and naphthalene (4.0 µg/m^3) above MTCA air CULs at the fire-affected location (AMB-13), while background concentrations were observed at locations outside the fire area (AMB-6, AMB-11, and AMB-12). These findings supported development and implementation of the low-permeability soil cap over the fire area.

Following completion of the low-permeability cover, a work plan was developed to evaluate cap performance (Parametrix 2023b). An updated emissions assessment was conducted in March 2024 to evaluate the effectiveness of the cover (Parametrix 2024c). Ambient air samples were collected and analyzed for APH, major landfill gases, VOCs, cPAHs, and dioxins/furans (Table 3). Sampling included the use of 6-liter SUMMA® canisters and Tisch polyurethane foam (PUF) samplers. Post-cap ambient air concentrations at the fire-affected location (AMB-13) were substantially lower than concentrations detected during pre-cap investigations, with VOCs predominantly reported as non-detect (Table 3). No cPAHs or dioxins/furans were detected in ambient air, and these compounds were therefore eliminated as COPCs for the Site (Parametrix 2024c). Results indicate that the low-permeability soil cover is effective in limiting air emissions from the subsurface fire area.

In October 2025, following installation of additional thermistors, supplemental ambient air sampling was conducted to confirm the continued effectiveness of the low-permeability cover. Ambient air samples were collected from five locations (AMB-1, AMB-6, AMB-11, AMB-13, and AMB-16) and analyzed for APH and VOCs (Figures 1 and 2). COPCs for air (APH, benzene, and naphthalene) were found at background concentrations (AMB-1) in all samples and none of the concentrations exceeded MTCA air CULs. The reduction in COPC concentrations in the ambient air sample at AMB-13 compared to previous results shows the success of the low-permeability soil cover over the fire area.

2.4.3 Soil and Waste Characterization

Native soils at the Site consist primarily of silt loams, up to approximately 14 inches thick, derived from undifferentiated Ellensburg Formation deposits and weathered basalt bedrock. In some areas, surface soils consist entirely of weathered basalt fragments. The thickness of unconsolidated soil overlying bedrock varies across the Site and is up to approximately 14 feet. The base of Phase 1 is believed to consist of reworked native soils. As part of the MTCA investigation, soil samples were collected from beneath the waste footprint as well as from within the waste mass and analyzed for parameters identified in the ambient air monitoring.

Initial ambient air monitoring conducted in March 2023 identified APH, benzene, and naphthalene in ambient air above the subsurface fire area (Parametrix 2023a). These compounds were interpreted to originate from the Phase 1 waste mass and are associated with historical PCS operations at the Site.

In March 2023, waste samples from gas probes GP-1 through GP-10 (Figure 3) were analyzed for TPH, benzene, toluene, ethylbenzene, and xylenes. Samples from GP-6 and GP-7 both had concentrations of gasoline-range TPH and benzene above MTCA Soil CULs. The sample from GP-8 also had a concentration of benzene above the CUL and gasoline-range TPH below the MTCA Soil CUL (Table 4).

Initial soil and waste sampling for the Limited RI was conducted in 2023 during installation of the first set of thermistors (Parametrix 2023b). This investigation provided the first confirmation of the total depth of waste present in Phase 1 (Table 1). Analytical results indicated that TPH were present at concentrations exceeding MTCA Method A soil CULs within landfill materials but below CULs in soils below the waste (Parametrix 2023b). Samples collected from locations T-1 and T-2 (Figure 3) exhibited low-level TPH concentrations below Method A soil CULs; however, soil recovery at these locations was limited due to drilling conditions. In contrast, sample recovery was substantially greater at location T-3 (Figure 3), where TPH concentrations exceeded MTCA Method A soil CULs (Table 4).

Additional soil and waste samples were collected during installation of thermistors T-4 through T-7 (Figure 3) in 2025 (Parametrix 2026b). At each location, one sample was collected from within the waste mass and one sample was collected from native soil beneath the waste. Gasoline-range and lube oil–range TPH were detected at concentrations exceeding MTCA soil CULs in shallow waste samples collected at thermistors T-5 and T-7; however, concentrations in deeper samples collected from the same boreholes were below applicable CULs or were not detected.

Benzene was detected at concentrations exceeding MTCA Method A soil CULs in samples T4-20, T5-25, T5-58, and T7-70. Benzene was not detected above reporting limits in deeper samples collected at thermistors T-4 and T-7 (T4-48 and T7-80). Naphthalene was detected at concentrations exceeding MTCA Method A and Method B soil CULs in sample T6-20 but was not detected in the deeper sample collected at T6-55. SVOCs were not detected above reporting limits in soil samples, except for samples T5-58 and T6-55 (Table 4). Samples collected from native deposits beneath the waste were below CULs for APH and VOCs, and metals were detected only at concentrations below CULs (Table 4).

Table 1 includes elevations of the bottom of waste below Phase 1. As shown in the table, the elevation on the northwest slope of Phase 1 ranges from elevation approximately 1883 ft (near T6) down to approximately 1850 ft (near T1 and T2). The waste ranged in thickness up to 60 ft. The bottom of waste matches permitted reclamation plans for the bottom of waste in Appendix A of the RW Beck (2007) permit application. In the planning documents (Anderson 2001), the bottom of waste is slightly lower on the east side of the Phase I at around 1844 ft in elevation.

2.4.4 Ongoing Monitoring

A set of early warning triggers were established in the Limited RI Work Plan to evaluate ongoing monitoring data and assess changes in subsurface fire behavior. Exceedance of any of these triggers at a thermistor or gas probe location will prompt consultation with Ecology and YHD to determine appropriate next steps, which may include additional monitoring, evaluation, or further delineation of the subsurface fire.

Early Warning Triggers for Investigation include the following:

- Increase of 10 to 15 degrees F within 2 weeks.
- Increase in CO to near 100 ppm.

A tier system has been emplaced in accordance with the Limited RI Work Plan (Parametrix 2025e) to evaluate gas probe triggers and contingency actions (Figure 5). Table 1 summarizes construction details of gas probes and thermistors at the Site. Appendix A includes the most recent summary of gas probe and thermistor monitoring (LFCI 2026).

2.4.5 Conceptual Model

LFCI has developed a conceptual model for the deep-seated fire explaining how higher temperatures are being observed in deeper gas probes/thermistors while higher levels of CO are being observed in upper tier gas probes/thermistors due to an ongoing chimney effect (LFCI 2026). The chimney effect explains why the gases produced by the fire that would naturally migrate vertically are being forced upwards and laterally by the low-permeability soil cover and trapped within the landfill.

Two cross sections have been developed through the fire area showing the profile of the landfill from the lower tier to the upper tier (east-west). Figure 3 displays the location of the two cross sections. Figure 4 shows the conceptual site model and the two cross sections. The cross sections show the chimney effect (LFCI conceptual model) at the landfill is also driven and controlled by the thickness of the landfill and the depth to native deposits. Grading plans from Anderson (2001) show native deposits were left in place up to 1900 feet in elevation adjacent to the fire area. The bedrock and overburden here generally serve as a bottom confining layer for migration of gas at the Site. The cross sections show that migration of the fire is limited due to the proximity to bedrock/overburden at equal elevations east and south of the current fire area. The most recent monthly progress letter (LFCI 2026) shows high temperatures remaining at limited areas within the monitoring network while high levels of CO and other gases are migrating vertically upwards towards the probes to the southeast.

2.5 Groundwater

Groundwater monitoring for the LPL is completed quarterly for compliance with WAC 173-350-500 and permit requirements. There are two aquifers that are monitored below the LPL including the SA and Interflow Zone (IZ) located within the Columbia River Basalt bedrock. Figure 2 displays the monitoring locations.

The basalt is dipping northerly at the Facility due to the Cowiche Mountain anticline. The natural dip places the SA as the first groundwater unit below the northern portion of the Facility (Phase 1) and the IZ as the first groundwater unit below the southern portion of the Facility (Phase 2). Groundwater monitoring for MTCA has been focused on characterizing the SA below and downgradient of Phase 1. There are numerous domestic and Group B residential wells downgradient of the facility (Figure 2).

The SA occurs within the bottom flow zone of the Wanapum Basalt, saturated portions of the Vantage Interbed, and saturated portions of the flow top zone of the Grande Ronde basalt. The IZ occurs 150 to 200 feet below the Grande Ronde-Vantage Interbed interface.

Seven monitoring wells have been completed in the SA (Figure 2). MW-2S and MW-3S were completed between 2005 and 2007 and background monitoring events were conducted in 2008 and 2009. MW-4S was completed in July 2022 and background monitoring events were completed through 2024. MW-5S and MW-6S were completed in 2024 and background monitoring was conducted on an expedited basis and completed in 2025 (Parametrix 2026d). MW-1S and MW-11S

were completed in 2025 and background monitoring has occurred on a quarterly basis since then. Parametrix summarized the installation of the new SA monitoring wells and four IZ monitoring wells (Parametrix 2024f) and the two newest SA wells (Parametrix 2025l).

Table 5 summarizes information for the groundwater monitoring wells for the Facility including wells completed in the deeper IZ (MW-7D, MW-8D, MW-9D, and MW-10D). Tables 6 through 11 summarize the groundwater data collected through the 2025 annual report (Parametrix 2026d).

2.5.1 Contaminant Fate and Transport

Contaminant fate and transport calculations were completed in the updated hydrogeologic report (Parametrix 2025c) showing faster horizontal travel times ranging from less than a year to up to 41 years based upon the new aquifer parameters. The largest unknown regarding the fate and transport calculations was the vertical thickness of the Wanapum basalt. Time series plots indicate contaminant migration within the SA began around May 2022 as several leachate indicator parameters increased in compliance monitoring wells including MW-3S (Parametrix 2025d). MW-4S, the closest downgradient monitoring well to the fire area, has shown a trend of increasing concentrations since initial construction. The increases in concentrations observed at MW-3S coincide with placement of waste within the temporary fill area suggesting the recent removal of waste from the temporary fill area will likely have a positive effect on downgradient groundwater conditions.

2.5.2 Monitoring Well Sampling

Groundwater results from MTCA sampling events are summarized in Tables 6 through 11. Six quarterly events have been completed to date as part of the RI.

In 2024, Ecology requested that PFAS and dioxins and furans be added to the list of COPCs within the SA beneath the LPL. These analytes were initially sampled during the third and fourth quarters of 2024. The EPA maximum contaminant levels (MCLs) are currently being used as MTCA CULs for PFAS compounds (Ecology 2024, Ecology 2026). SVOCs and cPAHs were also requested and sampled during the fourth quarter of 2024 (Tables 9 and 10). In addition, Ecology requested that EPA priority pollutant metals be evaluated as part of the RI (Table 11).

PFAS were first detected above MTCA CULs in SA monitoring well MW-3S during the third quarter of 2024 (Parametrix 2024h). Elevated PFAS concentrations were confirmed in MW-3S during the fourth quarter of 2024 (Parametrix 2025b) and have continued to exceed CULs through the fourth quarter of 2025 (Parametrix 2026c, Table 7). The PFAS composition observed in MW-3S is consistent with PFAS signatures identified in leachate from similar LPLs in Washington, characterized primarily by perfluoroalkyl carboxylic acids (PFCAs) with a high proportion of perfluorooctanoic acid (PFOA). This signature does not appear consistent with PFAS historically associated with the Yakima Firing Range (Parametrix 2024h).

During the second quarter of 2025, PFAS concentrations above MTCA CULs were also detected in MW-4S, and exceedances persisted through the present (Parametrix 2026e). Table 7 displays the PFAS data through the 2025 annual report (Parametrix 2026d). Downgradient monitoring wells MW-5S and MW-6S remained below PFAS CULs, indicating that the lateral extent of PFAS impacts near the fire area has been adequately delineated.

As part of the Limited RI Work Plan, two additional downgradient monitoring wells were planned northeast of Phase 1 to further delineate PFAS downgradient of MW-3S. Monitoring wells MW-1S and MW-11S were installed by August 2025 (Parametrix 2025l) and incorporated into the routine monitoring program. PFAS concentrations in both wells were below MTCA CULs during the third and

fourth quarter 2025 sampling events (Parametrix 2025k; 2026c), indicating that the downgradient extent of PFAS has been adequately delineated in this area.

Leachate indicator parameters, including nitrate, specific conductivity, and total dissolved solids were also detected above MCLs in MW-3S and MW-4S. The nitrate plume extends farther downgradient than the PFAS plume and may be associated with ammonia generated by the subsurface fire and waste degradation that subsequently oxidizes to nitrate. Nitrate concentrations above the MCL were also detected in downgradient well MW-6S; however, the plume appears to have been delineated, as concentrations in further downgradient well MW-5S were below the MCL (Table 6, Figure 2). Nitrate concentrations are also below the MCL downgradient of MW-3S in MW-1S and MW-11S (Table 6, Figure 2).

Dioxins and furans were initially detected in MW-4S at concentrations exceeding MTCA Method B CULs during the third quarter 2024 sampling event, which was the first event in which these analytes were evaluated (Table 8). These detections were not confirmed during the subsequent two sampling events. SVOCs and cPAHs were predominantly non-detect and below MTCA CULs during the fourth quarter 2024 and second quarter 2025 sampling events. Similarly, EPA priority pollutant metals were not detected above applicable CULs during the first quarter 2025 and third quarter 2025 sampling events (Table 11).

2.5.3 Domestic Well Sampling

Ecology completed sampling of 12 nearby wells surrounding the LPL in December 2022 for TPH and VOCs. Figure 1 shows the location of the nearest wells. Ecology found no evidence of contaminated drinking water for TPH or VOCs as a result of the LPL (Ecology 2023). Ecology also sampled downgradient wells for PFAS; however, the results have not been formally reported. As noted above, the PFAS plume extent was defined to be within the landfill property boundary and no impact to downgradient production wells is anticipated.

2.5.4 Conceptual Model

The conceptual model for groundwater indicates COPCs are likely related to leachate migration from the landfill rather than from migration of LFG. Figure 4 shows that the depth to groundwater below the fire area is as shallow as 40 feet below ground at nearby MW-4S. Cross sections and hydrogeologic characterization for the landfill (Parametrix 2025d, Parametrix 2026e) show the migration of contaminants is limited within the SA. The physical aquifer and gradient of the SA dip northerly towards neighboring Group B and domestic wells. Reducing or eliminating leachate generation is important to avoid further degradation of the SA beneath the Site. Wells MW-3S, MW-4S, and MW-6S (Figure 2) located downgradient of Phase 1 are currently in assessment monitoring (Parametrix 2026e).

2.6 Proposed Revision to the MTCA Site

Based upon discussion with Ecology, the MTCA Site is proposed to be redefined not just as the fire area within Phase 1, but to include the entire area of the unlined landfill of Phase 1. Groundwater contamination unrelated to the fire in the form of PFAS and other landfill degradation contaminants have been confirmed within the SA downgradient of Phase 1. The MTCA Site should be redefined at a minimum to include the extent of the Phase 1 unlined cell which is the source of the subsurface fire and likely contributing source of the groundwater contaminants. Figure 6 displays the revision to the MTCA Site extent.

3. Interim Action Feasibility

The objectives of the IAWP are to reduce the sources of contaminants related to the subsurface fire within the landfill and from leachate migrating from the Phase I unlined cell.

As noted in Section 2.4.2, the subsurface fire caused a release of air emissions (primarily APH, benzene, and naphthalene) above MTCA Method B cleanup levels for ambient air. Low-permeability soil cover having hydraulic conductivity of 1×10^{-7} cm/sec was used as an interim cover and was successful in stopping emissions. Preventing emissions from exceeding MTCA Method B cleanup levels in ambient air is a primary goal of the interim action. Background ambient air concentrations typically exceed MTCA Method B cleanup levels (Parametrix 2024c). Therefore, the primary goal is for emissions not to exceed:

- 0.32 micrograms per cubic meter ($\mu g/m^3$) of benzene above background
- 0.074 $\mu g/m^3$ of naphthalene above background

Ecology has noted that the AO will continue until the fire has been extinguished. Reducing temperatures to below 180 degrees F and CO levels below 500 ppm (LFCI 2026) is another goal for the IAWP to evaluate if the fire has been extinguished. These targets may be adjusted in the future based on overall data and system performance, taking into consideration multiple factors for an extinguishment determination and confirmation with regulators.

While the fire remains ongoing, fire emissions remain a concern due to the potential for venting contaminants. The selected interim action from this evaluation may not be the only or final interim action for the Site to achieve the fire suppression goal.

As noted in Section 2.5.2, groundwater in the vicinity of Phase 1 is impacted with nitrate and PFAS. These contaminants do not appear to be related to the deep-seated fire; however, these are part of the AO. Another goal for the IAWP is to prevent infiltration into Phase 1 to reduce/eliminate leachate production and reduce impacts of nitrate, PFAS, and other COPCs to groundwater. Prior permitting of Phase 1 closure evaluated leachate control using the EPA's Hydrologic Evaluation of Landfill Performance (HELP) model (Parametrix 2023c). That analysis indicated a closure cover having a hydraulic conductivity in the range of 1.9×10^{-4} cm/sec would be effective to prevent precipitation from infiltrating (Parametrix 2023c). Ecology requested this IAWP citing the need for a low-permeability cap over Phase 1 (Ecology 2025a) believing that it could mitigate the subsurface fire and groundwater contamination at the Site. Alternatives to a low-permeability cap were also explored in accordance with the requirements of WAC 173-340-430.

Monitoring of the fire extent and impact remains ongoing as part of the Limited RI. Groundwater monitoring is ongoing to make sure there are no impacts to neighboring groundwater users.

3.1 Remedial Techniques for Fire Control

Remedial techniques for deep-seated landfill fires have been previously investigated (U.K. Environment Agency 2007, Ohio Protection Agency 2011, SCS Engineers, 1994, 2015) and a variety of remedial techniques have been developed including excavation/trenching, injection/dousing, grouting, and capping.

Table 12, attached, modifies the U.K Environment Agency (2007) approach for deep hot spots (greater than 5 meters below ground):

Capping has already been implemented at the Site in the form of an interim low-permeability (1×10^{-7} cm/sec) soil cover over the fire area. Temperatures have been observed to be slowly decreasing since the interim cover was placed. While the approximate 40-foot depth of the fire is limited to the immediate impact of cover material, the data does suggest there are still atmospheric influences on fire activity. Additional cover could benefit extinguishment.

Excavation and trenching have been previously discussed with regulators but were determined to be practically infeasible due to the steep slopes of Phase 1 and the known depth of the fire. A significant excavation could undermine adjacent fill causing landfill instability.

Dousing has also been previously discussed with regulators. Again, due to the nature of the slope and geotechnical concerns with rapid cooling have indicated this is likely infeasible. Additionally, the unlined condition of Phase 1 could exacerbate the leachate potential and migration within groundwater.

Injecting inert gases or $CO_2$to displace oxygen and eliminate fire could be feasible for rapid cooling; however, this remedial action would need to be paired with additional actions such as capping to prevent oxygen from returning or reigniting the fire. Unlike municipal solid waste landfills, there is minimal methane production from the LPL and gases produced are not sufficient to displace the oxygen entering from land surface. Gas injection results are also unreliable since the gas may diffuse ineffectively once in the landfill without significant impact to the fire location. Currently, gas injection is not considered the best approach or use of resources.

Grouting is a methodology that can be used to reduce pore spaces and prevent oxygen intrusion and fire spreading. During thermistor construction in 2025 (Parametrix 2026b), temperature resistant grout was used to attempt to seal annular spaces. A 5-foot grout seal was attempted at each of the four thermistors. The grout instead migrated out into the waste mass due to encountering large pore space and the grout seals were typically reduced. The volume of grout required to fully seal and prevent oxygen migration appears to be highly infeasible.

Some of the remedial techniques may benefit from further delineation of the fire location. Delineation could better identify precise smolder locations to be addressed. Based on current data, the fire in general is delineated within the existing monitoring network. While there is high CO within the eastern, perimeter thermistors, there is no temperature evidence to indicate that actual fire is in that direction and rather the high CO is consistent with the Section 2.4.5 conceptual model. If ongoing monitoring indicates fire migration, additional delineation may be appropriate.

It is understood that the remedial technique selected for the IAWP may not be the final remedy.

3.2 Remedial Techniques for Leachate and Groundwater Control

Table 13, attached, summarizes remedial techniques for leachate and groundwater control.

Standard practices to reduce stormwater infiltration and leachate production include capping and sealing the waste mass. For landfills without a bottom liner, this reduces liquid entry and the potential vertical percolation that could lead to migration of contaminants to groundwater. WAC 173-350-400 prescribes capping requirements established to prevent or reduce infiltration to acceptable levels which is an existing requirement for the facility.

The Phase 1 area is unlined and represents the risk to groundwater. The mass of Phase 1 makes the complete excavation and removal infeasible, and it was eliminated as a potential remedial strategy. However, this remedial strategy was previously implemented at the Site with removing waste from

the unlined, former temporary fill area with removed material placed into lined Phase 2. Future landfill phases will be lined to reduce the risk to groundwater.

Pump and treat remedial systems are used when high concentrations of contaminants are present in groundwater. This is typically only undertaken for a short period of time due to costs and then proceeds with longer term groundwater monitoring. For relatively low concentrations above MTCA/MCLs such as those present within the SA in the low hydraulic conductivity basalt, this is highly infeasible. Secondly, the existing monitoring well network shows protectiveness of current downgradient water users with the plume contained within the DTG-owned parcels. The pump and treat approach also does not address the source of contamination.

In-situ injections are used at groundwater contamination sites largely to enhance microbial degradation of contaminants and are not typically used to remediate nitrate and PFAS, the primary COPCs at the Site. Injection treatment for nitrogen typically involves converting it into nitrogen gas and would generally not be feasible within the basalt aquifer. PFAS are very resilient and persistent contaminants that are not broken down naturally by bacteria. The use of injections for PFAS would have the goal of encapsulating PFAS and preventing its migrating by using colloidal activated carbon. However, as noted above, the plume is already contained within DTG-owned parcels, and the injections would require a combination of treatments to target the two different primary COPCs. In-situ injections also do not address the source of contamination.

As noted in Section 3.1, grouting within the waste would be largely infeasible due to the high volume of void space present. Slurry walls are typically used in coarse-grained deposits to prevent rapid migration of contaminants. Migration within the SA is extremely slow due to the nature of the basalt units.

3.3 Techniques Selected for Evaluation

Only three of these techniques appear to potentially achieve both goals of trying to reduce fire activity while also preventing leachate migration from contaminants within Phase 1 to groundwater:

- Capping
- Injections
- Grouting

3.3.1 Capping

Capping allows for reduction of oxygen while also minimizing infiltration and reducing leachate generation and migration of contaminants to groundwater. Caps are less effective on deeper subsurface fires (UK Environment Agency 2007). However, an approximately 10-ft thick low-permeability soil cap was placed over the landfill fire area on the northwest slope of Phase 1 in 2023 and it reduced the fire activity within Phase 1 (LFCI 2026). Temperatures have declined significantly. At GP-3 temperatures were reduced from over 600 degrees F to approximately 230 degrees F.

The oldest portion of the landfill is relatively inert and biologically inactive producing little methane generation (LFCI 2026). Oxygen levels have been increasing in many probes since the initial placement of low-permeability soil cover. This appears to be the result of movement of oxygen through areas of Phase 1 that did not receive a low-permeability cap. Capping the entirety of Phase 1 will promote oxygen to decrease, subsequent fire activity to decrease, and prevent leachate generation to achieve the goals of the IAWP.

3.3.2 Injections

Injections of CO_2or nitrogen would allow for cooling of the active fire area. Injections could displace the oxygen and reduce temperatures subsequently snuffing out the fire. The following types of injections have been used for deep-seated fires (UK Environment Agency 2007):

- Injecting liquid CO_2
- Injecting liquid nitrogen
- Injecting compressed nitrogen foam
- Injecting compressed air foam
- Water injection with foam
- Combinations of the above

There are seven thermistors in place, four of which are currently screened just above the bottom of waste. These four thermistors could be used to inject CO_2or liquid nitrogen into the deep-seated fire. Repeated injections may be necessary as industry results have been highly variable for this application and there is not currently a cap over the entirety of Phase 1. Responses following injections may be minimal or temporary. However, these temporary conditions could further reduce emissions and attempt to eliminate active fire zones.

CO_2 is the preferred gas for injection due to its properties (SCS Engineers 2015). For injections to be successful it is important that the injections are uniformly distributed throughout the affected fire area. This means additional injection points beyond the current thermistor network such as near GP-3 may be needed to fully affect the subsurface conditions. Smolders may reignite once injected gas disperses with no long-term positive results.

Injection will not support reduction in leachate generation but could be combined with other remedial approaches (such as capping) to achieve the goals of the IAWP.

3.3.3 Grouting

Grouting is a methodology used to reduce oxygen and contain fire/contaminants to prevent them from migrating. The methodology is used to seal pore spaces within the waste with cement-like grout to exclude the amount of available oxygen and voids within the subsurface (UK Environment Agency 2017). Grouting would require additional drilling and sealing and selection of appropriate materials. The unknown remains the amount of grout required to fill the void spaces within the waste.

Prior grouting attempts during thermistor construction indicate there are likely large void spaces within the waste mass and injection volumes required to fill the void spaces may be quite large. Grouting would likely only be useful when attempting to seal known active fire areas. Grouting would not likely reduce leachate generation unless large volumes were used to seal pore spaces along the entire northern perimeter of the landfill.

Grouting could also be used in combination with other remedial approaches (capping) to achieve the goals of the IAWP. There are no examples of grout being used to create a bottom seal for an unlined landfill since it was first conceptualized by the EPA (EPA 1986).

3.4 Limited Cost Benefit Analysis

Phase 1 of the LPL remains in an interim closure status and needs to be permanently closed at some point in accordance with the solid waste permit. Closure of Phase 1 through installation of a closure cap represents the most cost-effective and practicable remedial action. Although this approach may result in a more gradual reduction of subsurface fire conditions due to the depth of the fire, it provides the most sustainable long-term solution by limiting oxygen intrusion, further reducing emission potential, and reducing leachate potential.

Secondary remedial measures, such as injection of CO_2or liquid nitrogen through the existing thermistor network, may provide localized or short-term reductions in fire activity. However, in the absence of a closure cap, these approaches would likely require repeated injections to have effectiveness and would not address oxygen intrusion or long-term gas migration pathways. The approaches also do not address leachate risk to groundwater except for preventing additional leachate migration by reducing infiltration through the waste.

Data obtained during installation of thermistors T-4 through T-7 indicate that grouting would provide limited cost benefit as a primary fire mitigation strategy due to the large volume of grout that would be required to achieve effective subsurface isolation. Temperature-resistant grout was used during construction of the nested thermistor installations; however, significant grout loss occurred due to the highly porous and heterogeneous nature of the waste mass. This observation suggests the presence of large void spaces within Phase 1, reducing the effectiveness of bulk grouting as a remedial approach. The amount required to address fire suppression and create a curtain wall to prevent leachate migration does not appear feasible.

Targeted grouting confined to discrete areas of active fire may provide localized benefit; however, implementation would require substantial regrading and mobilization of specialized equipment to access high-temperature zones, resulting in increased cost and logistical complexity. When considered in conjunction with limited expected effectiveness, targeted grouting is not considered a preferred remedial alternative at this time. Neither injections nor grouting will provide reduction in leachate generation except in special circumstances such as large volumes of grout sealing the bottom of the waste, which is not likely feasible.

3.5 Interim Action Selection

The most feasible and cost-effective interim action is implementing closure capping of the unlined Phase 1 cell. This will achieve both the goals of reducing oxygen feeding the subsurface fire as well as reducing the potential for leachate generation and is an action that is already planned for the LPL. This selected interim action is in agreement with Ecology's opinion (Ecology 2025a) that a low-permeability cap is needed. The designs for the closure of Phase 1 will need to be revisited to make sure that the closure meets the goals of the interim action/MTCA cleanup as well as the solid waste permit requirements following WAC 173-350-440.

4. Interim Action Design

Upon approval of this IAWP, an alternative closure cover engineering design report will be prepared by a licensed professional engineer to determine the alternative interim action design to meet or exceed the performance criteria and closure requirements under the solid waste permit. The alternative cover design will include collaboration with Ecology and YHD to develop an outcome detailing the determined closure for Phase 1. The final selected interim action under this work plan

will be a combination of several components meeting the requirements of the closure in accordance with the solid waste permit and MTCA cleanup. This may not be the only interim action for the Site.

4.1 Closure Requirements

The closure cover system should inhibit or prevent the infiltration of precipitation, reduce production of LFG and leachate, reduce uncontrolled migration and emission of LFG and fire emissions and potential odors, and reduce or eliminate the availability of oxygen within the subsurface. Control of excessive erosion of the cover and vegetative soils must be accomplished by proper design, construction, selection of materials, and if necessary, effective re-vegetation. The cover system is an important component of the engineered systems that isolate solid waste constituents from the environment.

Phase 1 currently has an interim cover over the majority of the phase except for the northwest slope where approximately 10 feet of low-permeability Vantage material was placed (Figure 6). The Vantage material was tested to have a 1×10^{-7} cm/sec permeability and is readily available at the Facility. The remainder of the Phase has an interim cover of approximately 1.5 feet of hard packed silt and angular basaltic gravel.

4.1.1 Performance Criteria

Consistent with the current permitted LPL operations, closure of Phase 1 of the LPL will conform to the state and local regulations that govern landfill closure activities. The criteria for an LPL specify landfill design and performance standards for closure. Closure also includes preparation of the Site Facility for the post-closure period.

Prior permitting of Phase 1 closure evaluated leachate control using the EPA's HELP model (Parametrix 2023c). That analysis indicated a hydraulic conductivity in the range of 1.9×10^{-4} would be effective for preventing precipitation infiltration. However, the secondary goal of preventing oxygen migration would need lower permeability soils. CalRecycle (2026) recommends a cap consisting of the following at a minimum:

- A clean, low-permeability soil capable of obtaining a permeability of 1×10^{-5} cm/sec with a maximum particle size of 3 inches or less.
- The soil should be classified as SC, ML, CL, or CH according to the Unified Soil Classification System.
- The soil should be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D-1557.
- The cover should extend 100 feet beyond the identified smolder area.
- The cover should be a minimum of 24 inches in depth.
- Soil lifts should not exceed 9 inches before compaction.

The performance standards for LPL closure are detailed in WAC 173-350-400 (4)(f)(i). The regulations require that the closure cover system be designed and constructed to achieve the following:

- Prevents exposure of waste.
- Minimizes infiltration.
- Prevents erosion from wind and water.

- Sustains native vegetation.
- Addresses anticipated settlement, with a goal of achieving no less than 2% to 5% slope after settlement.
- Provides sufficient stability and mechanical strength and addresses potential freeze-thaw and desiccation.
- Provides for the management of run-on and runoff, preventing erosion or otherwise damaging the closure cover.
- Minimizes the need for post-closure maintenance.
- Provides for collection and removal of LFG.
- Meets the requirements of regulations, permits, and policies administered by the jurisdictional air pollution control authority.

The closure cover system for Phase 1 must also meet or exceed the performance standards above and meet the goals of the MTCA Site:

- Minimizes waste to groundwater pathway.
- Reduces or eliminates LFG emissions.
- Reduces or eliminates oxygen availability for the landfill fire.

4.2 Closure and Capping Alternatives

Phase 1 is currently permitted for closure with a 1 x 10^{-4} cm/sec soil cover that has been previously evaluated and approved. An alternative cover system design will be negotiated with YHD and Ecology to meet the goals of the IAWP. Ecology will provide approval of the cover system design under the AO.

Three cover system and capping alternative elements will be evaluated for the cover design of Phase 1:

- Low-permeability soil cover
- Geosynthetic liner and soil cover
- ClosureTurf ® or exposed geomembrane

The cover system design will resolve segregation of the Phase 1 closure from additional future expansion such as Phase 3 (Figure 6). Prior developments have proposed the southern face of Phase 1 be a part of the future Phase 3. Cover system design will include physical separation and delineate approved fill extents until the subsurface fire within Phase 1 has been extinguished. Details of the design will be developed in coordination with YHD and Ecology with formal approval through the AO from Ecology.

The Phase 1 cover will be designed to meet or exceed WAC 173-350-400 solid waste permit requirements and the AO.

Figure 7 presents the currently permitted closure cover systems for Phase 1 and alternative cover system designs. The alternative cover design will be assessed such that it meets the additional MTCA criteria presented in Section 4.1.1.

Phase 1 contains a 2H:1V to 3H:1V varying slope that will need to be evaluated as part of the selected cap. The selected cover system will be a combination of the cover system alternatives and may have a temporary component to facilitate fire extinguishment. The proposed cover system may

not be the only interim action completed as part of the AO until the fire has been extinguished and in concurrence with regulators.

4.2.1 Low-Permeability Soil Cover

A low-permeability soil cover was permitted as the cover system for Phase 1 of the LPL (Parametrix 2024i). This was calculated to have a 99.6% precipitation reduction efficiency (Parametrix 2024i). The low-permeability soil cover is designed to have native grass species with a root depth to provide a minimum 30-inch evaporative zone thickness and includes the following components (Figure 7):

- 6 inches of topsoil or other suitable soil that will sustain vegetative plant growth.
- 24 inches of earthen material with a maximum permeability of 1×10^{-5} centimeters per second.
- Approximately 12 inches of existing intermediate cover that will be graded to allow the final soil cover.

Placement minimum three feet of low-permeability (1×10^{-7} cm/sec) Vantage material over the fire area of Phase 1 in December 2023 (see Figure 6) substantially reduced fire activities and initially reduced oxygen levels (LFCI 2026). However, since only the fire area was covered, oxygen returned or migrated from other areas within the Phase 1 waste mass and the fire remains ongoing although decreasing trends are occurring in temperature and emissions. The cap over the fire area reduced or eliminated petroleum hydrocarbon and VOC emissions and reduced significant odors. The data suggests that cover system over the entire Phase 1 may be effective in further reducing the fire activities. The low-permeability soil cover will be redesigned to make sure it substantially reduces or eliminates oxygen encroachment. CalRecycle (2026) recommends a minimum of 1×10^{-5} cm/sec for closure systems to prevent oxygen migration to subsurface fires. However, CalRecycle also notes for deep-seated fires soil covers may have limited effects. Low-permeability soil covers are the initial cost-effective step to attempt to eliminate oxygen fuel sources and will also be effective in reducing leachate potential. Additional interim actions may be necessary for achieving extinguishment.

Phase 1 cover design will include surface water management features to manage run-off and prevent slope erosion. The design will also maintain access to the monitoring network and Phase 1 perimeter. The access will also allow facility cover maintenance when needed.

4.2.2 Geomembrane Cover

A prescriptive geomembrane cover section in accordance with WAC 173-350-400 would include from top to bottom (Alternative 2, Figure 7):

- 12 inches of earthen material that will sustain vegetative plant growth.
- 12-inches drainage sand layer
- 30-mil geomembrane.
- Approximately 12 inches to 24 inches of existing intermediate cover and prepared bedding layer that will be graded to allow the final soil cover (thickness based upon proximity to the subsurface fire area).

Another design includes planning for future development in accordance with WAC 173-350-400 and would include from top to bottom (Alternative 3, Figure 7):

- 18 inches of side slope layer.
- 60-mil geomembrane.

- Geosynthetic Clay Liner.
- Approximately 18 inches to 24 inches of existing intermediate cover and prepared bedding layer that will be graded to allow the final soil cover (thickness based upon proximity to the subsurface fire area).

A prepared subgrade will be required to be protective of the geomembrane. In the fire area, a minimum 24-inch subgrade soil thickness between the geomembrane and waste will be confirmed to make sure fire potential does not affect the liner (CalRecycle 2026), even though current data shows a much deeper fire.

While the geomembrane has less permeability than a soil cover, the additional cost to add a geomembrane into the cover system may not provide additional fire suppression benefit due to the fire being approximately 40-feet deep. Another challenge to the geomembrane cover is the veneer stability of the cover soil over the geomembrane. Slopes, other than the south slope, will be 2:1 which can result in cover soil slope failure due to the geomembrane interface. The south slope of Phase 1 has benched access.

Based on these challenges and the potential limited benefit of a geomembrane, it is preferable to place a soil cover as an initial interim action. If monitoring demonstrates a soil cover is ineffective, an additional interim action could include installation of an exposed geomembrane cover on top of the soil cover in the fire area. The exposed geomembrane would remain in place until the fire is concluded extinguished. These details and determination of additional interim actions will be prescribed in the final alternative cover design.

4.2.3 Closure Turf

ClosureTurf® is a patented closure system alternative applicable for steeper slopes while also providing the benefits of traditional geomembrane cap systems.

ClosureTurf® components (Figure 7) include the following:

- 1/2 inch of specified aggregate sand infill.
- Geomembrane/geotextile.
- 12 inches of prepared subgrade and approximately 12 inches of reworked intermediate cover.

ClosureTurf® has similar properties as a traditional geomembrane but could be useful on steeper slopes. Stormwater controls and PFAS contributions may need to be evaluated, or materials designated may need to be certified PFAS-free to eliminate potential for additional contamination. Closure turf comes at a cost exceeding that of a traditional geomembrane, making the option less favorable. In addition, solid waste permitting would need to confirm the post-closure care approvals associated with this type of cover system.

4.3 Additional Design Criteria

4.3.1 Veneer Stability

A veneer evaluation will be required to evaluate revised cover alternatives in accordance with the solid waste permit. As discussed above, Phase 1 contains slopes ranging from 3H:1V to 2H:1V. Soil to soil interfaces are not an issue with 2:1 slopes which have been demonstrated by the existing condition of the facility and geotechnical analysis. Soil to geomembrane interfaces could result in soil cover failure.

4.3.2 Landfill Gas Controls

In order to prevent the downward migration of LFG and fire emissions unable to escape due to the closure, the design will need to consider active or passive gas control systems. One-way vents and biocovers/biofilters have been a proven methodology for passive gas mitigation systems for landfills with limited methane for flaring (EPA 2025). This allows microbes to oxidize the LFG and reduce contaminants and odors. LFG controls will be designed to make sure that emissions are compliant with MTCA and other air permits for the facility. Methane within Phase 1 is generally less than 5% by volume. Current LFG appears largely driven by the fire and includes potential APH, benzene, hydrogen sulfide, and CO. Detailed design, control, testing, and analysis plans will be developed as the cover system is developed to be approved by YHD, Ecology, and YRCAA.

A soil cover will largely be allowed to vent passively through the cover system. However, passive vents may also be installed to provide preferential pathways for LFG to exit the landfill at locations that can be monitored and controlled, if necessary. Thermistors will remain in the landfill for monitoring of the fire and may remain for future closure monitoring.

A geomembrane cover will require an LFG passive venting design with interceptor trenches below the geomembrane to allow for monitoring and prevent geomembrane uplift. Thermistors will remain in the landfill for monitoring of the fire and may remain for future closure monitoring.

4.3.3 Revised Stormwater Plans

Depending upon the selected alternative, revised stormwater calculations and design will be necessary for a professional engineer to evaluate and revise the surface water management systems for Phase 1. Changes in the cover system design are likely to alter the stormwater calculations/design and HELP model parameters depending upon liner/soil cover junctions and placement of/capacity of evaporation/retention ponds and discharge options. Stormwater management will be designed in accordance with WAC 173-350-400.

As noted above, delineation at the southern extent of the Phase 1 will include physical barriers, such as a bench, to delineate the Phase 1 cover system extent from future Phase 3 development (Figure 6).

4.3.4 Gas Probes

A work plan will be developed to decommission existing gas probes showing no or limited subsurface fire activity and to focus fire monitoring on longer term monitoring techniques ensuring the success of the interim action. Table 1 displays the construction of each of the thermistors and gas probes at the LPL and their depths within waste. Many of the existing probes are shallow and have shown minimal fire activity.

All seven thermistors are proposed to remain as active monitoring points following execution of the capping. Additionally, gas probes GP-1, GP-2, GP-3, GP-4, GP-5, GP-6, GP-7, GP-8, GP-9, GP-10, GP-12, GP-17, GP-19, GP-20, and GP-25 (Figure 3) are proposed to be extended and continued as part of the routine LFG monitoring program. Designs for cover systems will need to consider current and future gas probe/thermistor monitoring points (i.e., welded boots in areas receiving geomembrane).

Gas probes GP-11, GP-13, GP-14, GP-15, GP-16, GP-18, GP-21, GP-22, GP-23, GP-24, GP-26, and GP-30 (Figure 3) should be decommissioned. All of these are completed approximately 3.5 feet into waste (Table 1) and have remained in the Tier 1 category for over 17 months. These gas probes do

not have constructed bentonite seals and may also be vulnerable to allowing oxygen encroachment prior to construction of the cap.

The final status of gas probes and thermistors will be determined through assessment and consultation with Ecology and YHD. Additional thermistors and gas probes may be installed as part of the Limited RI as negotiated with Ecology and YHD. If existing or future gas probes are in areas of geomembrane, gas probes will be boot welded to the liner to make sure no oxygen can enter at those locations.

5. Interim Action Execution

5.1 Design Approvals

After IAWP approval, DTG, their representatives, Ecology, and YHD will meet to discuss design criteria for the cover system of Phase 1 following preliminary analysis of the design evaluation. The meeting will refine the selected design criteria allowing for finalization of the design and development of technical specifications for the cover system that meets the goals of the interim action and satisfies the requirements of the solid waste permit.

Parties will also meet to discuss compliance monitoring programs and their refinement to satisfy execution of the IAWP.

The design will meet or exceed WAC 173-350-400 requirements for cover system with approval from Ecology; however, certification of actual closure of Phase 1 may be postponed until the subsurface fire is determined extinguished. DTG understands an additional IAWP may be required depending on the result of this Interim Action.

5.1.1 Cover Design Engineering Report

A cover design engineering report will be developed following the meeting with regulators. This report will outline the details of the cover system and additional design criteria necessary to meet the goals of the interim action and WAC 173-340-400(4)(a) requirements. The report will include:

- Basis of design calculations for the cap/ cover system, impoundments, stormwater management, leachate management, and aeration/emission controls.
- Scaled drawings.
- Design specifications.
- Construction Quality Assurance (CQA) Plan.

Following approval of the alternative cover design, the cover system project will be implemented. When the cover system is completed in part or entirely, DTG will submit the design record drawings certified by a professional engineer to YHD and Ecology documenting that the cover system was completed in accordance with the approved alternative cover design engineering report.

5.2 Health and Safety

A health and safety plan has been developed as part of the Limited RI work plan and is attached in Appendix B.

5.3 Inadvertent Discovery

An inadvertent discovery plan has been developed as part of the Limited RI Work Plan and is attached in Appendix C.

6. Compliance Monitoring

Compliance monitoring will consist of continued LFG and temperature monitoring of remaining probes and thermistors, and groundwater monitoring. Current SAPs for MTCA monitoring are being used for the RI (Parametrix 2024b, 2026a). An Interim Action-specific SAP will be developed with completion of the Draft Alternative Closure Design. During the design meeting, compliance monitoring programs will be determined based upon the selected closure cover.

6.1 Ongoing Fire Monitoring

LFCI (2023a) and Ecology (2024) have refined the subsurface fire conditions at the Site and determined specific conditions that apply to the DTG LPL. Ongoing fire monitoring will follow existing standard operating procedures and sampling of ambient air or LFG will follow the sampling and analysis plan (SAP, Parametrix 2024b).Figure 5 presents the flow chart developed to identify gas probe triggers and contingency actions to evaluate whether the new thermistors, existing thermistors, and gas probes require additional investigations and interim actions to protect human health and the environment during changing fire conditions. Table 1 summarizes the current gas probes and thermistors monitoring the fire. Fire delineation and impact evaluations are being conducted concurrently as part of the Limited RI. Fire migration will continue to be evaluated as evidenced by temperatures, CO, and other indicators.

6.1.1 Landfill Gas and Fire Monitoring

A monitoring system will be designed to evaluate any LFG control systems designed. Monitoring will consider additional LFG components including oxygen/nitrogen balance and hydrogen concentrations related to the subsurface fire.

6.2 Groundwater Monitoring

Groundwater monitoring will continue to be conducted quarterly, and samples analyzed for WAC 173-350-500 parameters. Wells within the SA will also be sampled for MTCA contaminants. As discussed in Section 2.5, COPCs have been refined to include WAC 173-350-500 parameters plus PFAS for known impacts below the Facility. The groundwater SAP has been revised to combine these parameters. MTCA monitoring will be completed and reported concurrently with routine groundwater monitoring following the revised SAP (Parametrix 2026a).

Sen's slope and Mann-Kendall trend analyses will be completed quarterly on PFAS, nitrates, and other COPCs using 2-year and longer term 5-year trends. The trend analyses will be used to monitor water quality trends of these two primary contaminants response to interim actions completed at the Site.

7. Interim Action Schedule

The following schedule is proposed for the interim actions:

- 30-day public comment period
- Meeting with regulators to discuss the alternative closure design and monitoring programs (within 30 days of closure of the public comment period)
- Draft cover system design (90 days following meeting)
- Ecology comments on cover system design (60 days following submittal)
- Final cover system design (60 days following receipt of Ecology's comments)
- Ecology approval of cover system design (90 days following submittal)
- Bidding/construction start (2027)
- Construction complete (Fall 2027)

8. Closing

Interim actions identified by this assessment rely predominantly upon closure capping of Phase 1 of the LPL in concurrence with Ecology (2025a, 2025b). Additional remedial measures and interim actions may be necessary to extinguish the subsurface fire. The closure capping of Phase 1 is the first step and is a reasonable result of the Interim Actions to resolve the MTCA conditions at the Site. Additional characterization, delineation, and monitoring may be necessary as part of the AO. Those items are being addressed separately following the Limited RI.

This Interim Action Work Plan presents a feasible and protective approach for addressing current Site conditions related to the active subsurface fire within Phase 1 and addresses concerns related to leachate generation and groundwater conditions from the unlined cell. The closure cap is anticipated to reduce leachate production and oxygen infiltration, thereby mitigating groundwater impacts and subsurface fire activity, and advancing Site closure objectives consistent with WAC 173-350-400. This interim action is intended to provide near-term risk reduction and environmental benefit while allowing continued evaluation of Site conditions and remedial needs under the AO.

Upon approval of this IAWP, DTG will proceed with the conceptual and detailed design for the Phase 1 closure.

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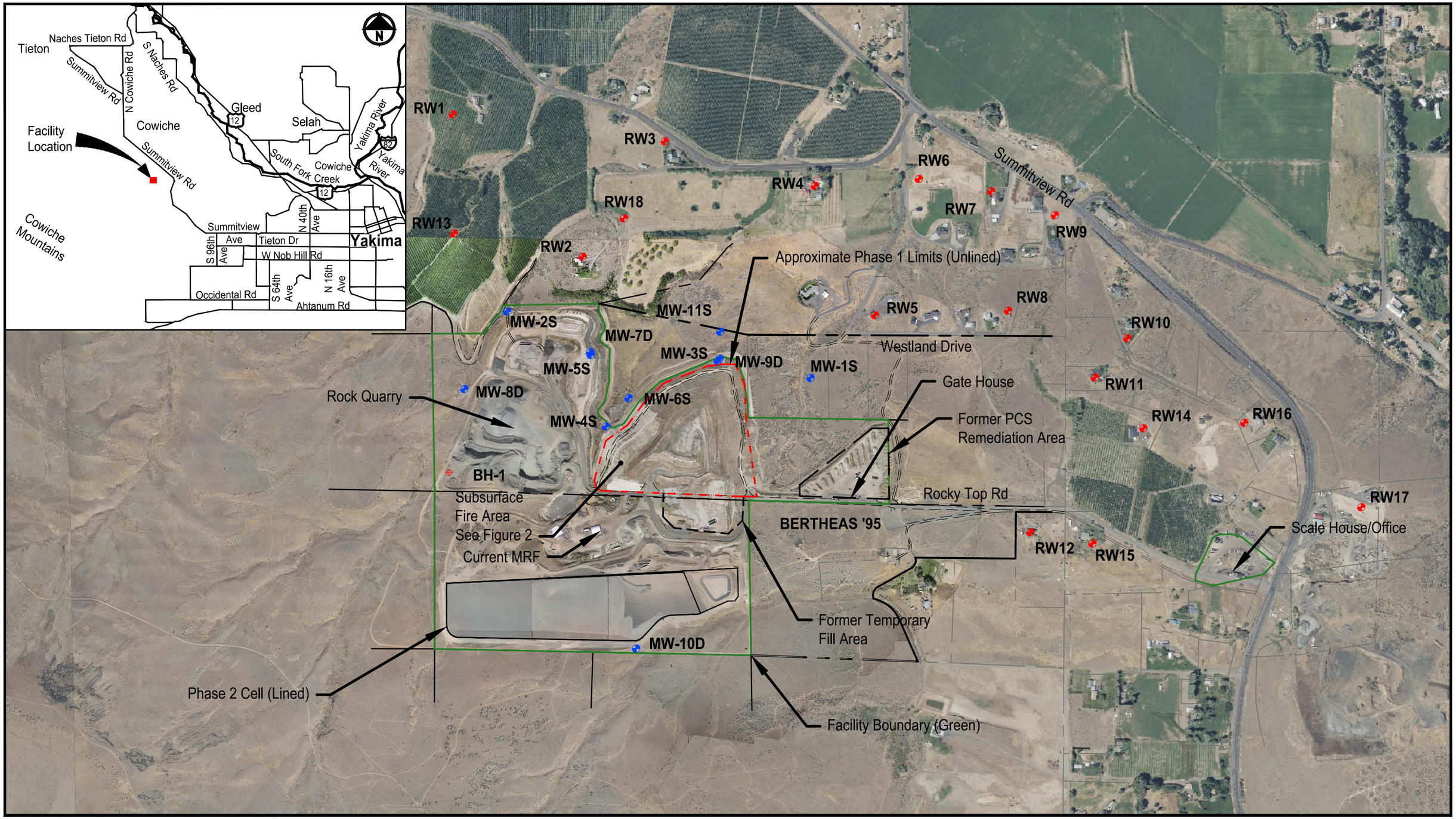
Figures



Parametrix

DATE: September 23, 2026

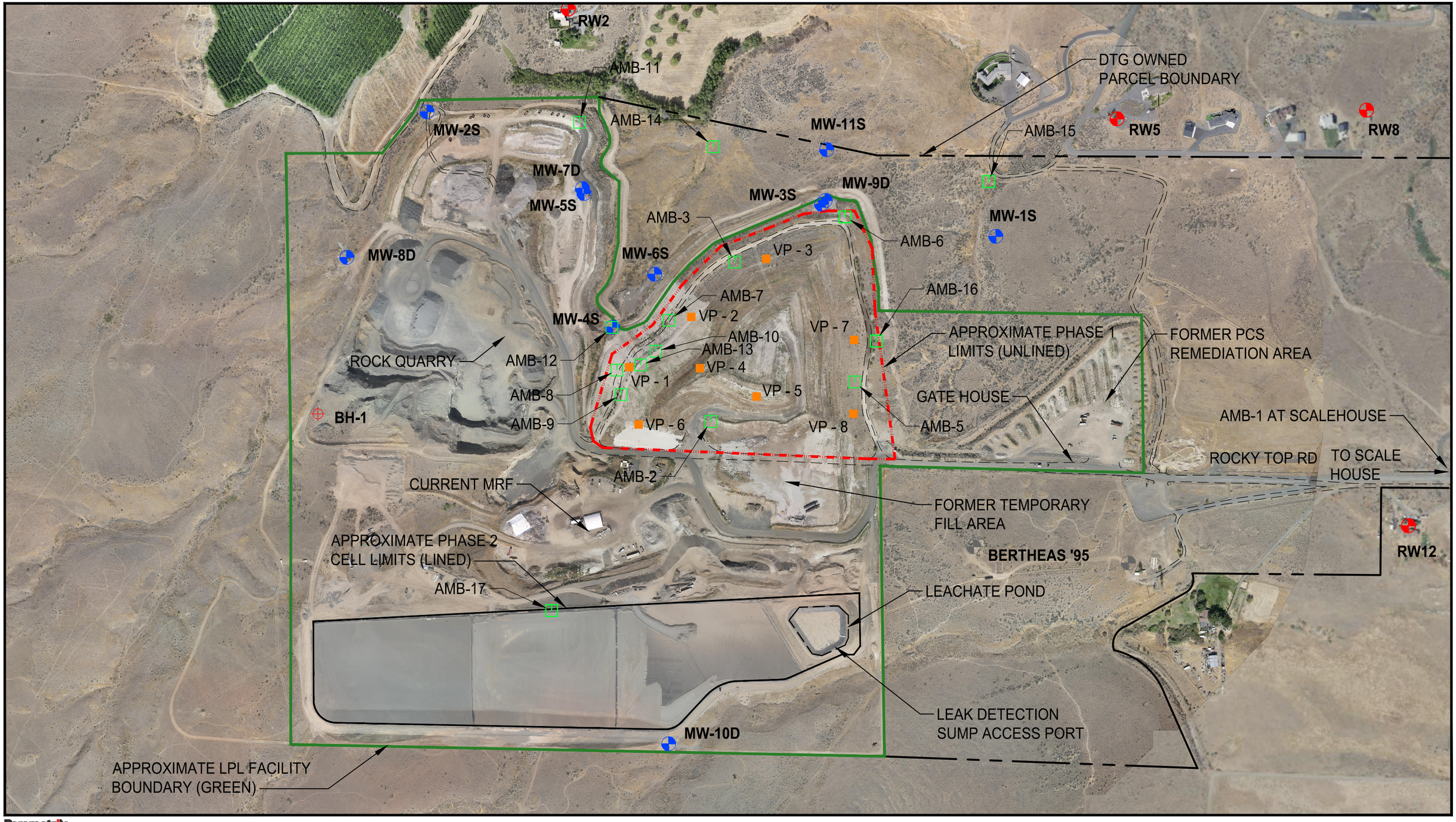
FILE: PS8472013–FIGURE 1 – VICINITY MAP

0 N 750

SCALE: 1"=750'

- Monitoring Well
- Borehole
- Domestic Well
- Decommissioned Well

Figure 1
Facility Vicinity Map
Rocky Top Environmental Limited Purpose Landfill



Parametrix

DATE: September 23, 2026

FILE: PS8472013–FIGURE 1 – VICINITY MAP

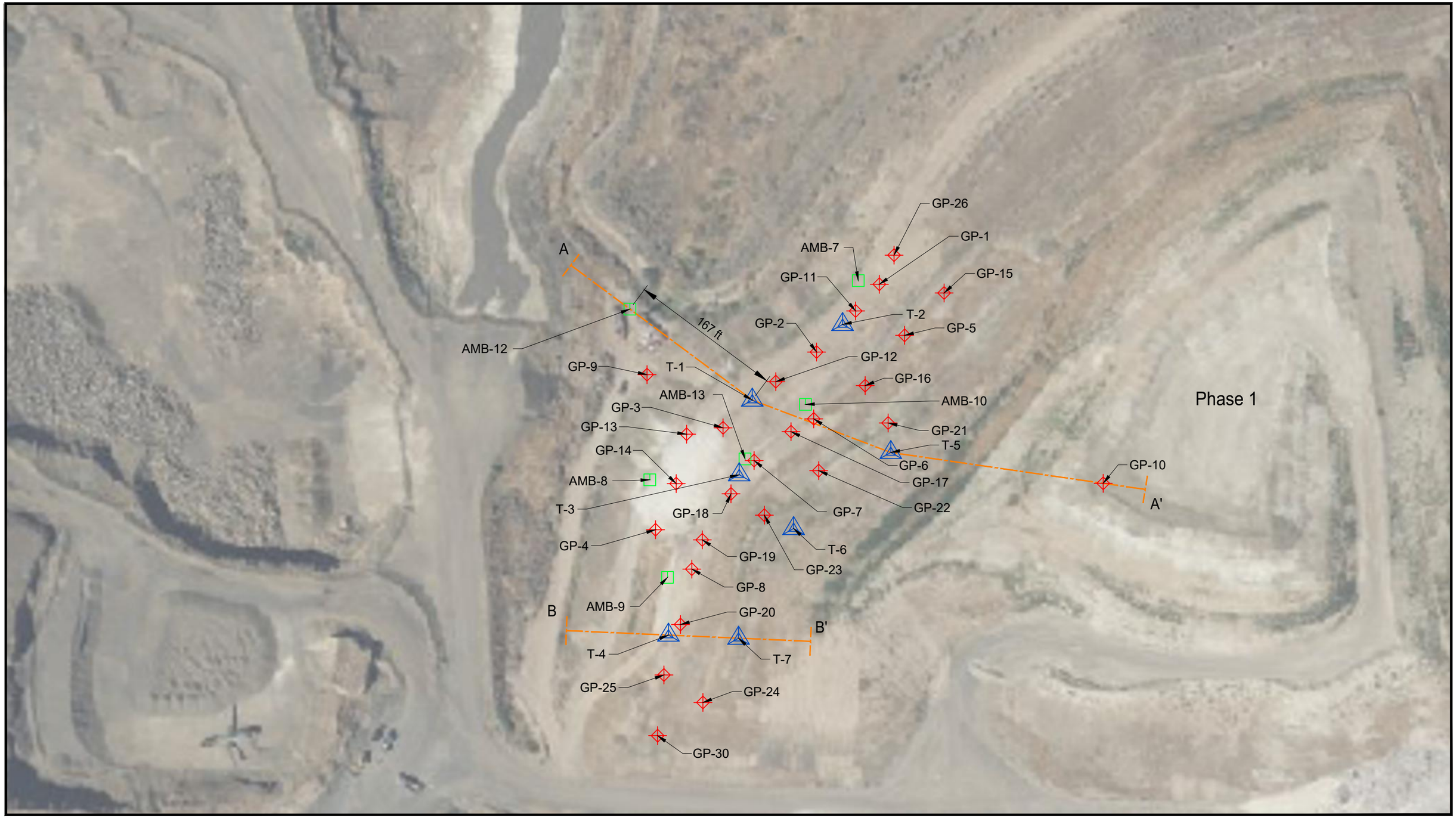
0 400

N

1 INCH = 400 FT.

- Monitoring Well
- Borehole
- Ambient Air
- Decommissioned Well
- Temporary Vapor Probe

Figure 2
Facility Detail Map
Rocky Top Environmental Limited Purpose Landfill



Parametrix DATE: September 23, 2026 FILE: FIRE AREA MAP 8472013

0 N 100

1 INCH = 100 FT.

Thermistor Location

Gas Probe Location

Cross Section

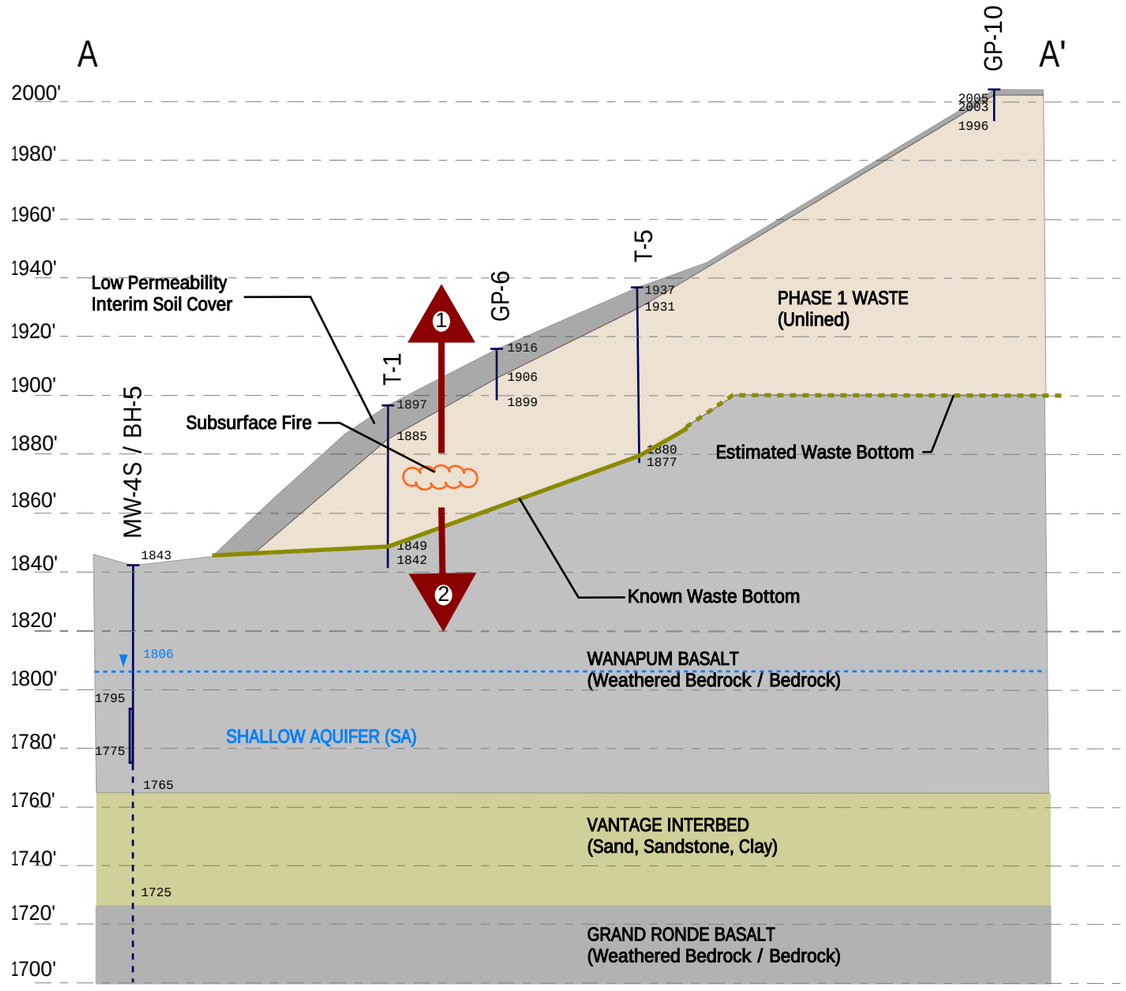
Ambient Air Monitoring Location

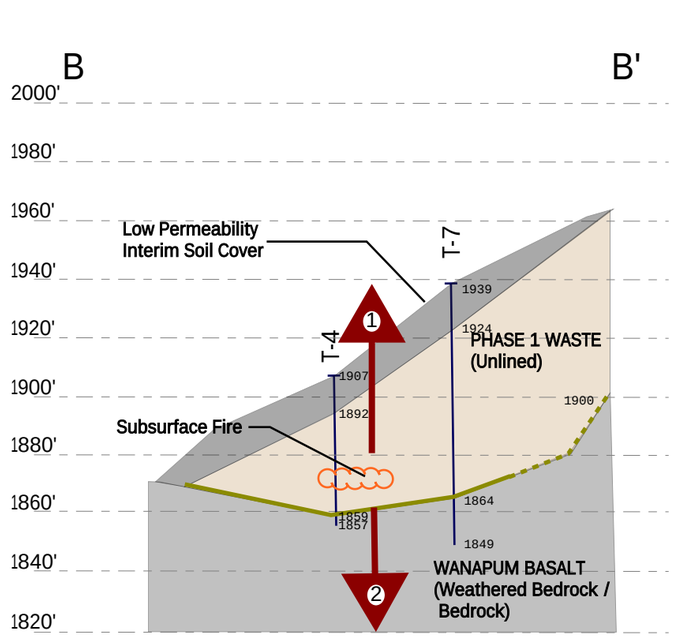
Figure 3
Fire Area Detail Map
Rocky Top Environmental Limited Purpose Landfill

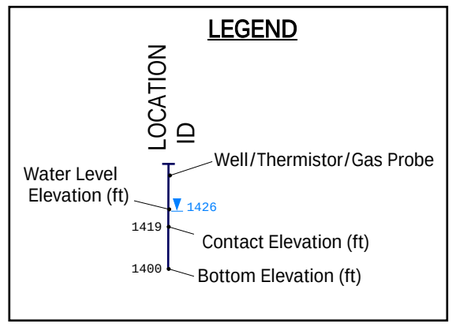
Potential Migration Pathways

1 - Fire Emissions to Ambient Air

2 - Fire Emissions/Contaminants to Groundwater



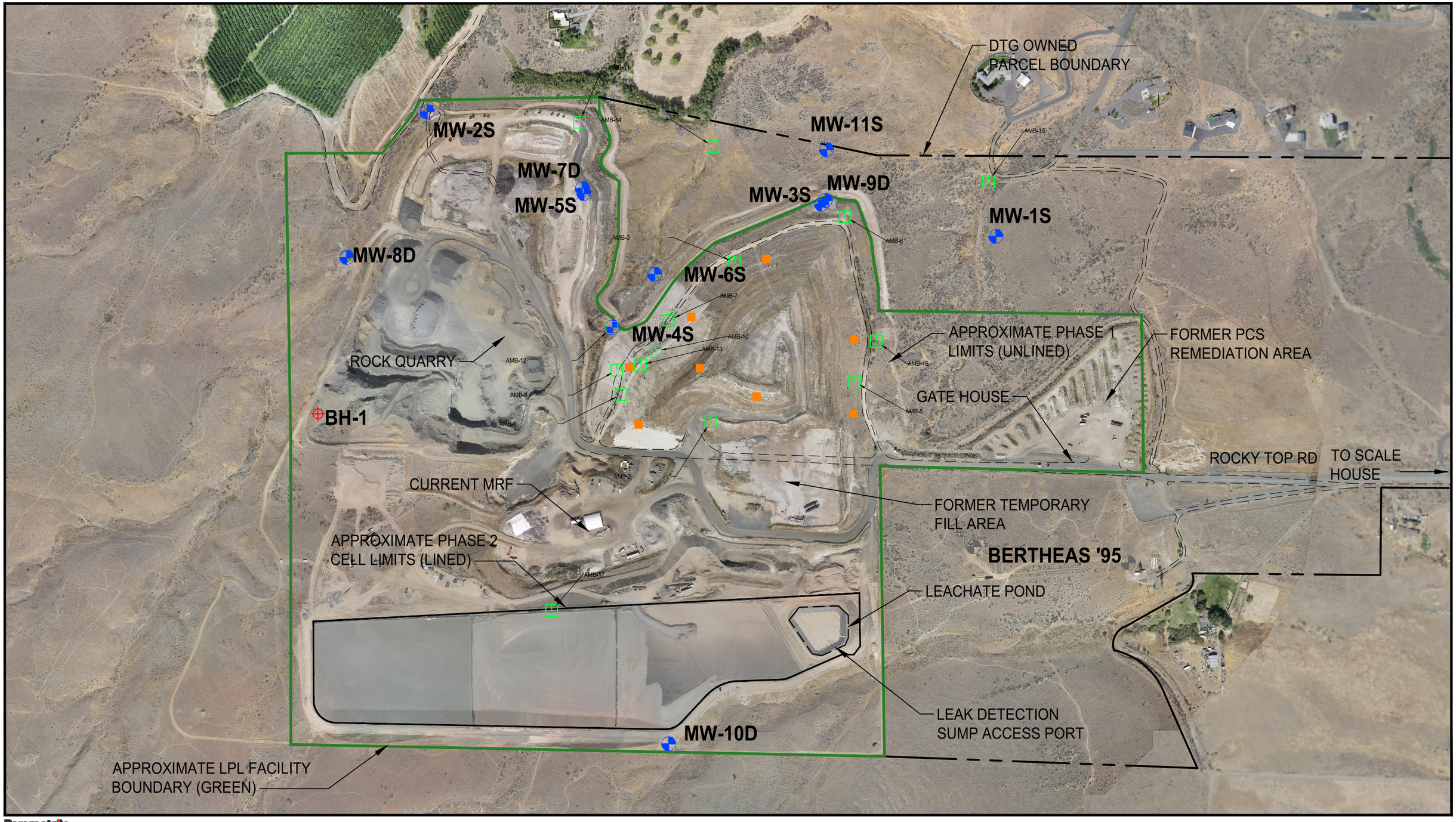




Vertical Exaggeration 2:1

Parametrix

Figure 4
Cross Sections and Conceptual Site Model
Rocky Top Environmental Limited Purpose Landfill



Parametrix

DATE: September 23, 2026

FILE: PS8472013–FIGURE 1 – VICINITY MAP

N

0 400

1 INCH = 400 FT.

Monitoring Well

Borehole

Decommissioned Well

Figure 5
Monitoring Well Location Map
Rocky Top Environmental Limited Purpose Landfill



Parametrix DATE: September 23, 2026 FILE: PS8472013–FIGURE 1 – VICINITY MAP

0 N 400
1 INCH = 400 FT.

Figure 6
Phase 1 Closure Detail Map
Rocky Top Environmental Limited Purpose Landfill

Tables

Table 1. Gas Probe and Thermistor Construction Summary, Rocky Top Environmental Limited Purpose Landfill

Gas Probe	Latitude	Longitude	Diameter (in)	Original Drilled Depth (ft bgs)	Current Probe Length (ft)	Screen Interval (ft bgs)	Waste Bottom (ft bgs)	Waste Bottom Elevation (ft)	Known Waste thickness (ft)	Current Surface Elevation (ft)	Top of Probe Elevation (ft)	Bottom of Probe Elevation (ft)
GP-1	472887.525	1592189.387	2	10	23	20.5 - 23	--	--	--	1895.60	1897.22	1874.22
GP-2	472812.505	1592119.887	2	10	25	22.5 - 25	--	--	--	1895.74	1898.42	1873.42
GP-3	472728.651	1592016.415	2	10	28	22.5 - 25	--	--	--	1897.88	1902.35	1874.35
GP-4	472615.88	1591941.64	2	10	25	22.5 - 25	--	--	--	1893.97	1897.24	1872.24
GP-5	472831.018	1592217.37	2	10	15	12.5 - 15	--	--	--	1916.06	1918.56	1903.56
GP-6	472738.576	1592116.769	2	10	18	15.5 - 18	--	--	--	1916.14	1918.69	1900.69
GP-7	472692.454	1592050.765	2	10	18	15.5 - 18	--	--	--	1916.73	1919.61	1901.61
GP-8	472572.284	1591981.842	2	10	18	15.5 - 18	--	--	--	1912.10	1914.17	1896.17
GP-9	472787.487	1591932.247	2	10	20	17.5 - 20	--	--	0	1851.73	1853.75	1833.75
GP-10	472667.237	1592437.145	2	10	10	7.5 - 10	--	--	--	2004.93	2006.01	1996.01
GP-11	472857.995	1592163.125	0.75	4.5	21	19 - 21	--	--	--	1895.48	1898.37	1877.37
GP-12	472779.738	1592074.783	0.75	4.5	21	19 - 21	--	--	--	1896.72	1900.35	1879.35
GP-13	472721.599	1591976.087	0.75	4.5	11	9 - 11	--	--	--	1888.48	1893.50	1882.50
GP-14	472666.89	1591964.51	0.75	4.5	16	14 - 16	--	--	--	1895.92	1899.78	1883.78
GP-15	472877.868	1592261.067	0.75	4.5	14	12 - 14	--	--	--	1915.46	1917.99	1903.99
GP-16	472775.36	1592173.688	0.75	4.5	14	12 - 14	--	--	--	1918.22	1921.49	1907.49
GP-17	472724.372	1592091.627	0.75	4.5	11	9 - 11	--	--	--	1916.50	1918.32	1907.32
GP-18	472655.587	1592025.179	0.75	4.5	11	9 - 11	--	--	--	1916.30	1919.26	1908.26
GP-19	472604.661	1591993.405	0.75	4.5	9	7 - 9	--	--	--	1912.63	1916.49	1907.49
GP-20	472510.97	1591969.278	0.75	4.5	14	12 - 14	--	--	--	1910.02	1913.09	1899.09
GP-21	472734.029	1592199.118	0.75	4.5	9	7 - 9	--	--	--	1930.50	1932.78	1923.78
GP-22	472681.277	1592122.295	0.75	4.5	9	7 - 9	--	--	--	1932.19	1934.74	1925.74
GP-23	472631.99	1592062.084	0.75	4.5	9	7 - 9	--	--	--	1932.12	1934.35	1925.35
GP-24	472424.713	1591994.103	0.75	4.5	9	7 - 9	--	--	--	1933.82	1936.56	1927.56
GP-25	472455.133	1591950.946	0.75	4.5	9	7 - 9	--	--	--	1914.09	1916.48	1907.48
GP-26	472919.772	1592205.649	0.75	4.5	16	14 - 16	--	--	--	1891.84	1894.93	1878.93
GP-30	472387.938	1591943.989	0.75	4.5	6	4 - 6	--	--	--	1918.40	1919.98	1913.98
T1	472759.376	1592048.756	1.25	45	51	38 - 48	48	1849.24	~37	1897.24	1900.95	1849.24
T1-Therm			2		51	--						1849.24
T2	472843.055	1592148.694	1.25	45	53	40 - 50	50	1848.45	35	1898.45	1895.35	1848.45
T2-Therm			2		53	--						1848.45
T-3	472676.731	1592034.274	1.25	40	53	40 - 50	50	--	>37.5	1916.17	1919.45	1866.17
T3 - Therm			2		53	--						1866.17
T4-S	472499.273	1591955.944	1.25	50	28	15 - 25	48	1859.36	33	1907.36	1910.96	1882.36
T4-D			1.25		44	35 - 41						1866.36
T4 -Therm			2		44	--						1866.36
T5-S	472701.382	1592202.05	1.25	60	33	20 - 30	57	1879.98	52	1936.98	1940.36	1906.98
T5-D			1.25		58	45 - 55						1881.98
T5-Therm			2		58	--						1881.98
T6-S	472617.229	1592094.497	1.25	60	33	20 - 30	55	1882.78	50	1937.78	1941.29	1907.78
T6-D			1.25		58	40 - 50						1887.78
T6-Therm			2		58	--						1887.78
T7-S	472495.854	1592033.53	1.25	90	53	40 - 50	75	1863.86	60	1938.86	1942.44	1888.86
T7-D			1.25		73	60 - 70						1868.86
T7-Therm			2		73	--						1868.86

Notes

-- = Not applicable
~ = Approximate
> = Greater than
bgs = below ground surface
ft = feet
in = inches

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	VP-1 7/13/22	VP-2 7/13/22	VP-3 7/13/22	VP-4 7/18/22	VP-5 7/18/22	VP-6 7/18/22	VP-7 7/18/22	VP-8 7/18/22	GP-2 3/30/23	GP-2 3/29/24	GP-2 10/6/25	GP-3 10/6/25	GP-7 3/30/23	GP-7 3/29/24	GP-20 10/6/25
Air-phase Petroleum Hydrocarbons																
APH EC5-8 aliphatics	µg/m³	2600000	2100	2700	5100	2000	2000	1600	1500	130000	--	1,300	430 U	7900000	--	83,000
APH EC9-10 aromatics	µg/m³	52000 U	250 U	270 U	240 U	250 U	160 U	160 U	170 U	12000 U	--	400 U	140 U	570000 U	--	27,000 U
APH EC9-12 aliphatics	µg/m³	110000	330	850	710	300	640	360	530	12000 U	--	400 U	140 U	680000	--	27,000 U
Volatile Organic Compounds	µg/m³															
1,1,1-Trichloroethane	µg/m³	1100 U	5.5 U	6.0 U	5.2 U	5.5 U	3.6 U	3.4 U	3.7 U	--	8.7 U	8.7 U	3.1 U	--	140 U	600 U
1,1,2,2-Tetrachloroethane	µg/m³	290 U	1.4 U	1.5 U	1.3 U	1.4 U	0.9 U	0.9 U	0.9 U	--	2.2 U	2.2 U	0.78 U	--	34 U	150 U
1,1,2-Trichloroethane	µg/m³	110 U	0.6 U	0.6 U	0.5 U	0.6 U	0.4 U	0.3 U	0.4 U	--	0.87 U	0.87 U	0.31 U	--	14 U	60 U
1,1-Dichloroethane	µg/m³	850 U	4.0 U	4.5 U	3.9 U	4.0 U	2.7 U	2.5 U	2.7 U	--	6.5 U	6.5 U	2.3 U	--	100 U	450 U
1,1-Dichloroethene	µg/m³	830 U	4.0 U	4.4 U	3.8 U	4.0 U	2.6 U	2.5 U	2.7 U	--	6.3 U	24	7.9	--	99 U	440 U
1,2,4-Trichlorobenzene	µg/m³	1600 U	7.4 U	8.2 U	7.1 U	7.4 U	4.9 U	4.7 U	5.0 U	--	12 U	12 U	4.2 U	--	190 U	820 U
1,2,4-Trimethylbenzene	µg/m³	10000 U	49 U	54 U	47 U	49 U	32 U	31 U	33 U	--	79 U	79 U	28 U	--	7,900	5,400 U
1,2-Dibromoethane (EDB)	µg/m³	160 U	0.77 U	0.85 U	0.74 U	0.77 U	0.51 U	0.48 U	0.51 U	--	3.8	1.2 U	0.44 U	--	19 U	85 U
1,2-Dichlorobenzene	µg/m³	1300 U	6.0 U	6.6 U	5.8 U	6.0 U	4.0 U	5.0	4.0 U	460	9.6 U	9.6 U	3.4 U	14000 U	150 U	660 U
1,2-Dichloroethane (EDC)	µg/m³	1400	0.40 U	0.45 U	0.39 U	0.40 U	0.27 U	0.25 U	0.27 U	20 U	58	24	5.3	930 U	47	45 U
1,2-Dichloropropane	µg/m³	490 U	2.3 U	2.5 U	2.2 U	2.3 U	1.5 U	1.5 U	1.5 U	--	3.7 U	6.6	1.3 U	--	58 U	250 U
1,3,5-Trimethylbenzene	µg/m³	10000 U	49 U	54 U	47 U	49 U	32 U	31 U	33 U	--	79 U	79 U	28 U	--	4,200	5,400 U
1,3-Butadiene	µg/m³	93 U	27	6.4	0.4 U	0.4 U	0.3 U	4.6	0.3 U	--	0.71 U	0.71 U	0.25 U	--	11 U	49 U
1,3-Dichlorobenzene	µg/m³	1300 U	19	21	6.3	11	5.1	10	11	440	9.6 U	9.6 U	3.4 U	14000 U	150 U	660 U
1,4-Dichlorobenzene	µg/m³	480 U	15	18	4.9	5.4	6.2	5.1	3.7	180	3.7 U	3.7 U	1.3 U	5300 U	57 U	250 U
1,4-Dioxane	µg/m³	7100	4.1	4.7	3.5 U	3.6 U	2.4 U	2.3 U	2.4 U	180	42 J	5.8 U	2.1 U	25000	12,000 J	400 U
2,2,4-Trimethylpentane	µg/m³	9800 U	47 U	51 U	45 U	47 U	31 U	29 U	31 U	--	75 U	75 U	27 U	--	1,200 U	5,100 U
2-Butanone (MEK)	µg/m³	160000	59 U	65 U	57 U	59 U	39 U	37 U	40 U	2900 U	94 U	94 U	34 U	190000	42,000 J	6,500 U
2-Chlorotoluene	µg/m³	11000 U	52 U	57 U	50 U	52 U	34 U	33 U	35 U	--	83 U	83 U	30 U	--	1,300 U	5,700 U
2-Hexanone	µg/m³	8600 U	41 U	45 U	39 U	41 U	27 U	26 U	27 U	--	66 UJ	66 U	23 U	--	3,100 J	4,500 U
2-Propanol	µg/m³	25000 U	120 U	160	120 U	120 U	80 U	76 U	140	--	140 U	140 U	49 U	--	25,000 J	9,500 U
3-Chloropropene	µg/m³	16000 E	31 E	34 E	30 U	31 U	21 U	20 U	21 U	--	50 U	50 U	18 U	--	780 U	3,400 U
4-Ethyltoluene	µg/m³	10000 U	49 U	54 U	47 U	49 U	32 U	31 U	33 U	--	79 U	79 U	28 U	--	2,900	5,400 U
4-Methyl-2-pentanone	µg/m³	--	--	--	--	--	--	--	--	--	130 U	130 U	47 U	--	2,000 U	9,000 U
Acetone	µg/m³	450000 E	210	440 E	78	70	200	190	340 E	2300 U	480 J	95 U	190	510000	99,000 J	39,000
Acrolein	µg/m³	240 U	8.7 FP	3.8 FP	3.4 FP	3.5 FP	10 FP	10 FP	40 FP	--	2.9 J	1.8 U	0.65 U	--	29 UJ	130 U
Benzene	µg/m³	530000 E	260	340	20	22	150	50	180	58000	2,000 J	1700 J	220	700000	60,000 J	70,000 J
Benzyl chloride	µg/m³	110 U	0.52 U	3.1 U	0.50 U	0.52 U	0.34 U	0.33 U	0.35 U	--	0.83 UJ	0.83 U	0.3 U	--	26 J	57 U
Bromodichloromethane	µg/m³	140 U	0.67 U	0.74 U	2.3	1.9	0.44 U	0.59	0.54	--	3.6	10	1.1	--	17 U	74 U
Bromoform	µg/m³	4300 U	21 U	23 U	20 U	21 U	14 U	13 U	14 U	--	33 U	33 U	12 U	--	520 U	2,300 U
Bromomethane	µg/m³	8200 U	39 U	43 U	37 U	39 U	26 U	24 U	26 U	--	62 U	62 U	22 U	--	970 U	4,300 U
Butane	µg/m³	160000	48 U	52 U	46 U	440 E	120	30 U	32 U	13000	710 J	460	31	270000	9,100 J	15,000
Carbon disulfide	µg/m³	13000 U	62 U	69 U	60 U	62 U	41 U	39 U	42 U	--	100 U	100 U	36 U	--	1,600 U	6,900 U
Carbon tetrachloride	µg/m³	660 U	3.1 U	3.5 U	9.1	3.1 U	2.1 U	2.0 U	2.1 U	--	5.0 U	5 U	1.8 U	--	79 U	350 U
CFC-113	µg/m³	1600 U	7.7 U	8.4 U	7.4 U	7.7 U	5.1 U	4.8 U	5.1 U	--	25 U	25 U	8.7 U	--	380 U	1,700 U
Chlorobenzene	µg/m³	970 U	4.6 U	5.1 U	4.4 U	4.6 U	3.0 U	2.9 U	3.1 U	6300	52	14	2.6 U	11000 U	880	880
Chloroethane	µg/m³	14000 U	26 U	29 U	25 U	26 U	17 U	17 U	18 U	--	42 U	42 U	15 U	--	660 U	2,900 U
Chloroform	µg/m³	100 U	0.54	5.2	170	8.7	25	7.7	11	--	43	100	4.7	--	12 U	54 U

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	VP-1 7/13/22	VP-2 7/13/22	VP-3 7/13/22	VP-4 7/18/22	VP-5 7/18/22	VP-6 7/18/22	VP-7 7/18/22	VP-8 7/18/22	GP-2 3/30/23	GP-2 3/29/24	GP-2 10/6/25	GP-3 10/6/25	GP-7 3/30/23	GP-7 3/29/24	GP-20 10/6/25
Volatile Organic Compounds (cont.)																
Chloromethane	µg/m³	470000 E	62	41 U	36 U	37 U	25 U	23 U	25 U	1800 U	60	130	21 U	340000	6,300	5,600
cis-1,2-Dichloroethene	µg/m³	830 U	4.0 U	4.4 U	3.8 U	4.0 U	2.6 U	2.5 U	2.7 U	--	6.3 U	6.3 U	2.3 U	--	99 U	440 U
cis-1,3-Dichloropropene	µg/m³	1900 U	9.1 U	10 U	8.7 U	9.1 U	6.0 U	5.7 U	6.1 U	--	15 U	15 U	5.2 U	--	230 U	1,000 U
Cyclohexane	µg/m³	14000 U	69 U	76 U	66 U	69 U	45 U	43 U	46 U	--	110 U	110 U	39 U	--	1,700 U	7,600 U
Dibromochloromethane	µg/m³	180 U	0.85 U	0.94 U	0.82 U	1.0	0.56 U	0.54 U	0.57 U	--	4.1	4.4	0.97	--	21 U	94 U
Dichlorodifluoromethane (CFC-12)	µg/m³	2100 U	9.9 U	23	18	150	18	320	7.8	480 U	16 U	23	5.6 U	23000 U	250 U	1,100 U
Ethanol	µg/m³	39000 U	75 U	83 U	72 U	75 U	50 U	47 U	50 U	--	380	300 U	110 U	--	95,000 J	21,000 U
Ethyl acetate	µg/m³	15000 U	72 U	79 U	69 U	72 U	48 U	45 U	48 U	--	120 U	120 U	41 U	--	1,800 U	7,900 U
Ethylbenzene	µg/m³	120000	24	64	4.2 U	4.3 U	4.7	2.8	5.7	210 U	6.9 U	6.9 U	2.5 U	450000	51,000 J	2,200 J
F-114	µg/m³	4400 U	21 U	23 U	20 U	21 U	14 U	13 U	14 U	--	34 U	34 U	12 U	--	520 U	2,300 U
Heptane	µg/m³	67000	41 U	45 U	39 U	41 U	27 U	26 U	27 U	2000 U	66 U	66 U	23 U	120000	5,500	4,500 U
Hexachlorobutadiene	µg/m³	450 U	2.1 U	2.3 U	2.0 U	2.1 U	1.4 U	1.3 U	1.4 U	--	3.4 U	3.4 U	1.2 U	--	53 U	230 U
Hexane	µg/m³	95000	35 U	39 U	34 U	35 U	26	22 U	24 U	3300	140	160	20 U	140000	5,400	5,100
Isopropyl alcohol	µg/m³	18000 U	86 U	95 U	83 U	86 U	57 U	54 U	58 U	--	--	--	--	--	--	--
Isopropylbenzene	µg/m³	51000 U	98 U	110 U	94 U	98 U	65 U	62 U	66 U	--	160 U	160 U	56 U	--	28,000 J	11,000 U
m,p-Xylene	µg/m³	23000	23	31	13	8.7 U	14	8.4	11	430 U	14 U	14 U	5 U	130000	13,000	960 U
Methyl methacrylate	µg/m³	8600 U	41 U	45 U	39 U	41 U	27 U	26 U	27 U	--	66 U	66 U	23 U	--	1,000 U	4,500 U
Methyl t-butyl ether (MTBE)	µg/m³	15000 U	72 U	79 U	69 U	72 U	48 U	45 U	48 U	--	120 U	120 U	41 U	--	1,800 U	7,900 U
Methylene chloride	µg/m³	73000 U	350 U	380 U	330 U	350 U	410 LC	220 U	230 U	--	560 U	560 U	200 U	--	8,700 U	38,000 U
Methyl isobutyl ketone	µg/m³	8600 U	170	84	39 U	41 U	45	35	54	--	--	--	--	--	--	--
Naphthalene	µg/m³	550 U	2.6 U	2.9 U	2.4 U	2.4 U	2.0	1.7 U	1.8 U	23 U	4.2 U	4.2 U	1.5 U	2500	4,800	290 U
Nonane	µg/m³	27000 U	52 U	58 U	50 U	52 U	35 U	33 U	35 U	--	84 U	84 U	30 U	--	6,200	5,800 U
o-Xylene	µg/m³	8200	8.6	18	6.0	4.3 U	6.3	3.6	4.5	210 U	6.9 U	6.9 U	2.5 U	77000	8,300	480 U
Pentane	µg/m³	130000 E	59 E	65 E	2100 E	59 U	39 U	37 U	40 U	12000	420	380	34 U	260000	7,200	11,000
Propene	µg/m³	400000 E	120	16	28	12 U	8 U	22	37	15000	410	250	7.8 U	740000	31,000 J	37,000 J
Propylbenzene	µg/m³	10000 U	49 U	54 U	47 U	49 U	32 U	31 U	33 U	--	79 U	79 U	28 U	--	2,500	5,400 U
Styrene	µg/m³	6800	53	2100 E	8.2 U	8.5 U	8.5	17.0	120	--	14 U	14 U	4.9 U	--	650	940 U
t-Butyl alcohol (TBA)	µg/m³	--	--	--	--	--	--	--	--	--	190 U	190 U	69 U	--	3,000 U	13,000 U
Tetrachloroethene	µg/m³	14000 U	68 U	140	65 U	68 U	45 U	60	45 U	--	110 U	110 U	39 U	--	1,700 U	7,500 U
Tetrahydrofuran	µg/m³	210000	18	6.5 U	5.7 U	5.9 U	3.9 U	3.7 U	4.0 U	290 U	9.4 U	14 U	5 U	89000	20,000 J	3,300
Toluene	µg/m³	220000	190 U	210 U	180 U	190 U	120 U	120 U	130 U	9200 U	160	120 U	43 U	550000	39,000 J	8,300 U
trans-1,2-Dichloroethene	µg/m³	830 U	4.0 U	4.4 U	3.8 U	4.0 U	2.6 U	2.5 U	2.7 U	--	6.3 U	6.3 U	2.3 U	--	99 U	440 U
trans-1,3-Dichloropropene	µg/m³	950 U	4.5 U	5.0 U	4.4 U	4.5 U	3.0 U	2.9 U	3.0 U	--	7.3 U	7.3 U	2.6 U	--	110 U	500 U
Trichloroethene	µg/m³	230 U	1.1 U	3.2	1.0 U	1.2	1.1	1.5	0.72 U	--	8.9	1.7 U	0.61 U	--	62	120 U
Trichlorofluoromethane (CFC-11)	µg/m³	4700 U	22 U	38	220	1200 E	39	40	28	--	36 U	36 U	15	--	560 U	2,500 U
Vinyl acetate	µg/m³	37000 E	70 E	77 E	68 U	70 U	46 U	44 U	47 U	--	110 U	110 U	40 U	--	1,800 U	7,700 U
Vinyl bromide	µg/m³	920 U	4.4 U	4.8 U	4.2 U	4.4 U	2.9 U	2.8 U	2.9 U	--	7.0 U	7 U	2.5 U	--	110 U	480 U
Vinyl chloride	µg/m³	540 U	2.6 U	2.8 U	2.5 U	2.6 U	1.7 U	1.6 U	1.7 U	--	12	2 U	0.73 U	--	64 U	140 U

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	VP-1 7/13/22	VP-2 7/13/22	VP-3 7/13/22	VP-4 7/18/22	VP-5 7/18/22	VP-6 7/18/22	VP-7 7/18/22	VP-8 7/18/22	GP-2 3/30/23	GP-2 3/29/24	GP-2 10/6/25	GP-3 10/6/25	GP-7 3/30/23	GP-7 3/29/24	GP-20 10/6/25
Major Gases																
BTU	BTU/ft^3	16.1	NA	NA	NA	NA	NA	NA	NA	--	--	NA	NA	--	--	NA
Carbon Dioxide	%	23.2	0.6	1.34	3.9	17.3	9.35	13.0	0.793	150000	--	0.0500 U	0.0500 U	209000	--	22.4
Hydrogen	%	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	<1,400 U	--	0.0500 U	0.0500 U	11700	--	0.0500 U
Carbon Monoxide	%	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1670	--	0.0500 U	0.0500 U	<1,430 U	--	0.0500 U
Methane	%	1.59	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	<1,400 U	--	0.0500 U	0.0500 U	12500	--	0.0500 U
Nitrogen	%	73.3	76.5	76.5	76.2	72.2	75.2	75.4	76.0	770000	--	82.3	79.5	741000	--	76.3
Oxygen	%	1.83	22.9	22.2	19.9	10.5	15.4	11.5	23.2	78700	--	17.7	20.5	36500	--	1.32

Notes

APH = Air-phase hydrocarbons analyzed by Method MA-APH
MA-APH = Massachusetts Air-Phase Petroleum Hydrocarbons
VOCs = Volatile organic compounds analyzed by Method TO-15
BTU/ft^3 = British thermal unit per cubic foot
$\mu g/m^3$ = micrograms per cubic meter
-- = Not analyzed
% = Percent by volume
NA = Not applicable
J = Estimated value
U = Not detected above laboratory reporting limit

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	T-1 3/29/24	T-3 3/29/24	T-3 10/6/25	T-4S 10/6/25	T-4D 10/6/25	T-5S 10/6/25	T-5D 10/6/25	T-6S 10/6/25	T-6D 10/6/25	T-7S 10/6/25	T-7D 10/6/25
Air-phase Petroleum Hydrocarbons												
APH EC5-8 aliphatics	µg/m³	--	--	100,000	19,000	21,000	330,000	350,000	1,100,000 U	2,300,000 U	1,100,000 U	280,000
APH EC9-10 aromatics	µg/m³	--	--	25,000 U	6,000 U	5,000 U	52,000 U	100,000	370,000 U	750,000 U	370,000 U	210,000
APH EC9-12 aliphatics	µg/m³	--	--	25,000 U	6,000 U	16,000	210,000	220,000	370,000 U	750,000 U	370,000 U	250,000
Volatile Organic Compounds	µg/m³											
1,1,1-Trichloroethane	µg/m³	2.9 U	16,000 U	550 U	130 U	110 U	1,100 U	1,100 U	8,200 U	16,000 U	8,200 U	270 U
1,1,2,2-Tetrachloroethane	µg/m³	0.74 U	4,000 U	140 U	33 U	27 U	290 U	290 U	2,100 U	4,100 U	2,100 U	69 U
1,1,2-Trichloroethane	µg/m³	0.29 U	1,600 U	55 U	13 U	11 U	110 U	110 U	820 U	1,600 U	820 U	27 U
1,1-Dichloroethane	µg/m³	2.2 U	12,000 U	400 U	97 U	81 U	850 U	850 U	6,100 U	12,000 U	6,100 U	200 U
1,1-Dichloroethene	µg/m³	2.1 U	11,000 U	400 U	95 U	79 U	830 U	830 U	5,900 U	12,000 U	5,900 U	200 U
1,2,4-Trichlorobenzene	µg/m³	4.0 U	22,000 U	740 U	180 U	150 U	1,600 U	1,600 U	11,000 U	22,000 U	11,000 U	370 U
1,2,4-Trimethylbenzene	µg/m³	27 U	140,000 U	4,900 U	1,200 U	980 U	10,000 U	10,000 U	74,000 U	150,000 U	74,000 U	19,000
1,2-Dibromoethane (EDB)	µg/m³	0.41 U	2,200 U	77 U	18 U	15 U	160 U	160 U	1,200 U	2,300 U	1,200 U	38 U
1,2-Dichlorobenzene	µg/m³	3.2 U	17,000 U	600 U	140 U	120 U	1,300 U	1,300 U	9,000 U	18,000 U	9,000 U	300 U
1,2-Dichloroethane (EDC)	µg/m³	0.22 U	1,500	40 U	9.7 U	8.1 U	85 U	85 U	610 U	1,200 U	610 U	20 U
1,2-Dichloropropane	µg/m³	1.2 U	6,700 U	230 U	55 U	46 U	490 U	490 U	3,500 U	6,900 U	3,500 U	210
1,3,5-Trimethylbenzene	µg/m³	27 U	140,000 U	4,900 U	1,200 U	980 U	10,000 U	10,000 U	74,000 U	150,000 U	74,000 U	12,000
1,3-Butadiene	µg/m³	0.24 U	1,300 U	44 U	11 U	8.8 U	93 U	93 U	660 U	1,300 U	660 U	22 U
1,3-Dichlorobenzene	µg/m³	3.2 U	17,000 U	600 U	140 U	120 U	1,300 U	1,300 U	9,000 U	18,000 U	9,000 U	300 U
1,4-Dichlorobenzene	µg/m³	1.2 U	6,600 U	230 U	55 U	46 U	480 U	480 U	3,400 U	6,900 U	3,400 U	130
1,4-Dioxane	µg/m³	1.9 UJ	64,000 J	6,100	86 U	76	3,400	6,000	14,000	14,000	6,400	12,000
2,2,4-Trimethylpentane	µg/m³	39	140,000 U	4,700 U	1,100 U	930 U	9,800 U	9,800 U	70,000 U	140,000 U	70,000 U	2,300 U
2-Butanone (MEK)	µg/m³	780 J	380,000	35,000	1,400 U	14,000 J	66,000	12,000 U	88,000 U	180,000 U	88,000 U	2,900 U
2-Chlorotoluene	µg/m³	28 U	150,000 U	5,200 U	1,200 U	1,000 U	11,000 U	11,000 U	78,000 U	160,000 U	78,000 U	2,600 U
2-Hexanone	µg/m³	60 J	120,000 UJ	4,100 U	980 U	5,300	8,600 U	8,600 U	61,000 U	120,000 U	61,000 U	2,000 U
2-Propanol	µg/m³	85	250,000 U	8,600 U	3,300	1,700 U	160,000 J	18,000 U	130,000 U	260,000 U	130,000 U	4,300 U
3-Chloropropene	µg/m³	17 U	91,000 U	3,100 U	750 U	630 U	6,600 U	6,600 U	47,000 U	94,000 U	47,000 U	1,600 U
4-Ethyltoluene	µg/m³	27 U	140,000 U	4,900 U	1,200 U	980 U	10,000 U	10,000 U	74,000 U	150,000 U	74,000 U	7,800
4-Methyl-2-pentanone	µg/m³	44 U	240,000 U	8,200 U	2,000 U	1,600 U	17,000 U	17,000 U	120,000 U	250,000 U	120,000 U	4,100 U
Acetone	µg/m³	12,000 J	980,000 J	110,000 J	18,000 J	89,000 J	140,000 J	37,000	89,000 U	180,000 U	200,000	7,900
Acrolein	µg/m³	120 J	3,300 UJ	110 U	28 U	230	240 U	240 U	1,700 U	3,400 U	1,700 U	57 U
Benzene	µg/m³	12	420,000	51,000 J	24,000 J	640	67,000	100,000 J	280,000	480,000	240,000	70,000 J
Benzyl chloride	µg/m³	0.28 UJ	1,500 UJ	52 U	12 U	10 U	110 U	110 U	780 U	1,600 U	780 U	26 U
Bromodichloromethane	µg/m³	0.36 U	1,900 U	67 U	16 U	64	140 U	140 U	1,000 U	2,000 U	1,000 U	34 U
Bromoform	µg/m³	11 U	60,000 U	2,100 U	500 U	410 U	4,300 U	4,300 U	31,000 U	62,000 U	31,000 U	1,000 U
Bromomethane	µg/m³	21 U	110,000 U	3,900 U	930 U	780 U	8,200 U	8,200 U	58,000 U	120,000 U	58,000 U	1,900 U
Butane	µg/m³	42	140,000 U	4,800	6,400	950 U	16,000	10,000 U	100,000	140,000 U	71,000 U	36,000 J
Carbon disulfide	µg/m³	34 U	180,000 U	6,200 U	1,500 U	1,200 U	13,000 U	13,000 U	93,000 U	190,000 U	93,000 U	3,100 U
Carbon tetrachloride	µg/m³	1.7 U	9,100 U	310 U	75 U	63 U	660 U	660 U	4,700 U	9,400 U	4,700 U	160 U
CFC-113	µg/m³	8.3 U	44,000 U	1,500 U	370 U	310 U	3,200 U	3,200 U	23,000 U	46,000 U	23,000 U	770 U
Chlorobenzene	µg/m³	2.5 U	13,000 U	460 U	580	92 U	2,600	2,300	6,900 U	14,000 U	6,900 U	1,400
Chloroethane	µg/m³	14 U	77,000 U	2,600 U	630 U	530 U	5,500 U	5,500 U	40,000 U	79,000 U	40,000 U	1,300 U
Chloroform	µg/m³	0.34	1,400 U	49 U	76	430	100 U	100 U	730 U	1,500 U	730 U	24 U

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	T-1 3/29/24	T-3 3/29/24	T-3 10/6/25	T-4S 10/6/25	T-4D 10/6/25	T-5S 10/6/25	T-5D 10/6/25	T-6S 10/6/25	T-6D 10/6/25	T-7S 10/6/25	T-7D 10/6/25
Volatile Organic Compounds (cont.)												
Chloromethane	µg/m³	20 U	110,000 U	5,700	1,300	740 U	7,800 U	7,800 U	56,000 U	110,000 U	56,000 U	1,900 U
cis-1,2-Dichloroethene	µg/m³	2.1 U	11,000 U	400 U	95 U	79 U	830 U	830 U	5,900 U	12,000 U	5,900 U	200 U
cis-1,3-Dichloropropene	µg/m³	4.9 U	26,000 U	910 U	220 U	180 U	1,900 U	1,900 U	14,000 U	27,000 U	14,000 U	450 U
Cyclohexane	µg/m³	37 U	200,000 U	6,900 U	1,700 U	1400 U	14,000 U	14,000 U	100,000 U	210,000 U	100,000 U	3,400 U
Dibromochloromethane	µg/m³	0.46 U	2,500 U	85 U	20 U	26	180 U	180 U	1,300 U	2,600 U	1,300 U	43 U
Dichlorodifluoromethane (CFC-12)	µg/m³	5.3 U	29,000 U	990 U	240 U	200 U	2,100 U	2,100 U	15,000 U	30,000 U	15,000 U	680
Ethanol	µg/m³	45	280,000	24,000	4,500 U	3,800 U	49,000	40,000 U	280,000 U	570,000 U	280,000 U	9,400 U
Ethyl acetate	µg/m³	39 U	210,000 U	7,200 U	1,700 U	1,400 U	15,000 U	15,000 U	110,000 U	220,000 U	110,000 U	3,600 U
Ethylbenzene	µg/m³	7.2	440,000	9,900	1,800	270	150,000 J	180,000 J	86,000	220,000	100,000	99,000 J
F-114	µg/m³	11 U	61,000 U	2,100 U	500 U	420 U	4,400 U	4,400 U	31,000 U	63,000 U	31,000 U	1,000 U
Heptane	µg/m³	72	120,000 U	4,100 U	1,800	820 U	8,600 U	8,600 U	61,000 U	120,000 U	61,000 U	9,500
Hexachlorobutadiene	µg/m³	1.2 U	6,200 U	210 U	51 U	43 U	450 U	450 U	3,200 U	6,400 U	3,200 U	110 U
Hexane	µg/m³	34	100,000 U	3,500 U	2,500	700 U	7,400 U	7,400 U	54,000	110,000 U	53,000 U	13,000
Isopropyl alcohol	µg/m³	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	µg/m³	53 U	300,000	9,800 U	2,400 U	2,000 U	47,000	70,000	150,000 U	290,000 U	150,000 U	65,000 J
m,p-Xylene	µg/m³	20	110,000	2,600	740	320	44,000	43,000	25,000	51,000	27,000	25,000
Methyl methacrylate	µg/m³	22 U	120,000 U	4,100 U	980 U	820 U	8,600 U	8,600 U	61,000 U	120,000 U	61,000 U	2,000 U
Methyl t-butyl ether (MTBE)	µg/m³	39 U	210,000 U	7,200 U	1,700 U	1,400 U	15,000 U	15,000 U	110,000 U	220,000 U	110,000 U	3,600 U
Methylene chloride	µg/m³	190 U	1,000,000 U	35,000 U	8,300 U	6,900 U	73,000 U	73,000 U	520,000 U	1,000,000 U	520,000 U	17,000 U
Methyl isobutyl ketone	µg/m³	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	µg/m³	1.4 U	9,300 J	470	63 U	52 U	550 U	550 U	12,000	7,900 U	6,200	1,500
Nonane	µg/m³	95	150,000 U	5,200 U	1,300 U	1,000 U	23,000	44,000	79,000 U	160,000 U	79,000 U	17,000
o-Xylene	µg/m³	6.1	65,000	1,400	260	120	23,000	23,000	21,000	31,000	15,000	21,000
Pentane	µg/m³	45	170,000 U	5,900 U	5,000	1,200 U	14,000	12,000 U	110,000	180,000 U	89,000 U	36,000 J
Propene	µg/m³	97	200,000	12,000	9,600 J	490	41,000	8,400	350,000	350,000	200,000	89,000 J
Propylbenzene	µg/m³	27 U	140,000 U	4,900 U	1,200 U	980 U	10,000 U	10,000 U	74,000 U	150,000 U	74,000 U	6,300
Styrene	µg/m³	12	25,000 U	850 U	200 U	170 U	1,800 U	1,800 U	13,000 U	26,000 U	13,000 U	420 U
t-Butyl alcohol (TBA)	µg/m³	110	350,000 U	12,000 U	2,900 U	2,400 U	25,000 U	25,000 U	180,000 U	360,000 U	180,000 U	6,100 U
Tetrachloroethene	µg/m³	37 U	200,000 U	6,800 U	1,600 U	1,400 U	14,000 U	14,000 U	100,000 U	200,000 U	100,000 U	3,400 U
Tetrahydrofuran	µg/m³	8	160,000	15,000	210 U	430	37,000	17,000	26,000	27,000 U	44,000	13,000
Toluene	µg/m³	170	280,000	9,000	2,500	1,500 U	130,000 J	80,000	110,000 U	250,000	110,000 U	41,000 J
trans-1,2-Dichloroethene	µg/m³	2.1 U	11,000 U	400 U	95 U	79 U	830 U	830 U	5,900 U	12,000 U	5,900 U	200 U
trans-1,3-Dichloropropene	µg/m³	2.5 U	13,000 U	450 U	110 U	91 U	950 U	950 U	6,800 U	14,000 U	6,800 U	230 U
Trichloroethene	µg/m³	0.58 U	3,100 U	110 U	26 U	21 U	230 U	230 U	1,600 U	3,200 U	1,600 U	54 U
Trichlorofluoromethane (CFC-11)	µg/m³	21	65,000 U	2,200 U	540 U	450 U	4,700 U	4,700 U	34,000 U	67,000 U	34,000 U	1,100 U
Vinyl acetate	µg/m³	40	200,000 U	7,000 U	1,700 U	1,400 U	15,000 U	15,000 U	110,000 U	210,000 U	110,000 U	3,500 U
Vinyl bromide	µg/m³	2.4 U	13,000 U	440 U	100 U	87 U	920 U	920 U	6,600 U	13,000 U	6,600 U	220 U
Vinyl chloride	µg/m³	1.4 U	7,400 U	130 U	31 U	26 U	270 U	270 U	1,900 U	3,800 U	1,900 U	64 U

Table 2. Volatile Organic Compounds and Air-phase Petroleum Hydrocarbons in Landfill Gas, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	T-1 3/29/24	T-3 3/29/24	T-3 10/6/25	T-4S 10/6/25	T-4D 10/6/25	T-5S 10/6/25	T-5D 10/6/25	T-6S 10/6/25	T-6D 10/6/25	T-7S 10/6/25	T-7D 10/6/25
Major Gases												
BTU	BTU/ft^3	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	%	--	--	21.1	19.3	0.0500 U	23.3	20.8	24.2	23.5	24.4	25.6
Hydrogen	%	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.854	0.0500 U	0.0500 U	0.0500 U
Carbon Monoxide	%	--	--	0.449	0.274	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.46	0.433	0.0500 U
Methane	%	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Nitrogen	%	--	--	77.2	78.8	79.9	75.4	77.8	73.7	74.8	73.9	73.2
Oxygen	%	--	--	1.27	1.59	20.1	1.31	1.38	1.25	1.29	1.28	1.27

Notes

APH = Air-phase hydrocarbons analyzed by Method
MA-APH = Massachusetts Air-Phase Petroleum Hydroca
VOCs = Volatile organic compounds analyzed by Metl
BTU/ft^3 = British thermal unit per cubic foot
$\mu g/m^3$ = micrograms per cubic meter

-- = Not analyzed
% = Percent by volume
NA = Not applicable
J = Estimated value
U = Not detected above laboratory reporting limit

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-1 7/13/22	AMB-1 3/26/24	AMB-1 10/6/25	AMB-2 7/18/22	AMB-3 7/18/22	AMB-4 7/18/22	AMB-5 7/18/22	AMB-6 3/30/23	AMB-6 10/6/25	AMB-7 3/26/24	AMB-9 3/26/24	AMB-11 3/30/23	AMB-11 10/6/25
Air-phase Petroleum Hydrocarbons																
APH EC5-8 aliphatics	µg/m³			110 U	97 U	90 U	140 U	90 U	110	140 U	170	90 U	90	110	130	90 U
APH EC9-10 aromatics	µg/m³			37 U	32 U	30 U	47 U	30 U	30 U	47 U	45 U	30 U	25 U	32 U	42 U	30 U
APH EC9-12 aliphatics	µg/m³			37 U	32 U	30 U	47 U	30 U	50	47 U	45 U	30 U	25 U	32 U	42 U	30 U
Volatile Organic Compounds																
1,1,1-Trichloroethane	µg/m³	2,300		0.82 U	0.71 U	0.65 U	1.0 U	0.65 U	0.65 U	1.0 U	--	0.65 U	0.55 U	0.71 U	--	0.65 U
1,1,2,2-Tetrachloroethane	µg/m³		0.043	0.21 U	0.18 U	0.16 U	0.26 U	0.16 U	0.16 U	0.26 U	--	0.16 U	0.14 U	0.18 U	--	0.16 U
1,1,2-Trichloroethane	µg/m³	0.091	0.16	0.082 U	0.071 U	0.065 U	0.10 U	0.065 U	0.065 U	0.10 U	--	0.065 U	0.055 U	0.071 U	--	0.065 U
1,1-Dichloroethane	µg/m³		1.6	0.61 U	0.53 U	0.49 U	0.77 U	0.49 U	0.49 U	0.77 U	--	0.49 U	0.40 U	0.53 U	--	0.49 U
1,1-Dichloroethene	µg/m³	91		0.59 U	0.52 U	0.48 U	0.75 U	0.48 U	0.48 U	0.75 U	--	0.48 U	0.40 U	0.52 U	--	0.48 U
1,2,4-Trichlorobenzene	µg/m³	0.91		1.1 U	0.96 U	0.89 U	1.4 U	0.89 U	0.89 U	1.4 U	--	0.89 U	0.74 U	0.96 U	--	0.89 U
1,2,4-Trimethylbenzene	µg/m³	27		7.4 U	6.4 U	5.9 U	9.3 U	5.9 U	5.9 U	9.3 U	--	5.9 U	4.9 U	6.4 U	--	5.9 U
1,2-Dibromoethane (EDB)	µg/m³	4.1	0.0042	0.12 U	0.10 U	0.092 U	0.15 U	0.092 U	0.092 U	0.15 U	--	0.092 U	0.077 U	0.10 U	--	0.092 U
1,2-Dichlorobenzene	µg/m³	91		0.90 U	0.78 U	0.72 U	1.1 U	0.72 U	0.72 U	1.1 U	1.1 U	0.72 U	0.60 U	0.78 U	1.0 U	0.72 U
1,2-Dichloroethane (EDC)	µg/m³	3.2	0.096	0.061 U	0.095 FP	0.049 U	0.08 U	0.049 U	0.049 U	0.077 U	0.073 U	0.049 U	0.089 FP	0.1 FP	0.069	0.049 U
1,2-Dichloropropane	µg/m³	1.8	0.68	0.35 U	0.30 U	0.28 U	0.44 U	0.28 U	0.28 U	0.44 U	--	0.28 U	0.23 U	0.30 U	--	0.28 U
1,3,5-Trimethylbenzene	µg/m³	27		7.4 U	6.4 U	5.9 U	9.3 U	5.9 U	5.9 U	9.3 U	--	5.9 U	4.9 U	6.4 U	--	5.9 U
1,3-Butadiene	µg/m³	0.91	0.083	0.066 U	0.058 U	0.053 U	0.084 U	0.053 U	0.053 U	0.084 U	--	0.053 U	0.044 U	0.058 U	--	0.053 U
1,3-Dichlorobenzene	µg/m³			0.90 U	0.78 U	0.72 U	1.1 U	0.72 U	0.72 U	1.1 U	1.1 U	0.72 U	0.60 U	0.78 U	1.0 U	0.72 U
1,4-Dichlorobenzene	µg/m³	370	0.23	0.34 U	0.30 U	0.27 U	0.43 U	0.27 U	0.27 U	0.43 U	0.41 U	0.27 U	0.23 U	0.30 U	0.39 U	0.27 U
1,4-Dioxane	µg/m³	14	0.5	0.54 U	0.47 UJ	0.43 U	0.68 U	0.43 U	0.43 U	0.68 U	0.65 U	0.43 U	0.36 UJ	0.47 UJ	0.61 U	0.43 U
2,2,4-Trimethylpentane	µg/m³			7.0 U	6.1 U	5.6 U	8.9 U	5.6 U	5.6 U	8.9 U	--	5.6 U	4.7 U	6.1 U	--	5.6 U
2-Butanone (MEK)	µg/m³	2.30E+03		8.8 U	7.7 U	7.1 U	11.0 U	7.1 U	7.1 U	11 U	11 U	7.1 U	5.9 U	7.7 U	10 U	7.1 U
2-Chlorotoluene	µg/m³			7.8 U	6.7 U	6.2 U	9.8 U	6.2 U	6.2 U	9.8 U	--	6.2 U	5.2 U	6.7 U	--	6.2 U
2-Hexanone	µg/m³	14		6.1 U	5.3 UJ	4.9 U	7.8 U	4.9 U	4.9 U	7.8 U	--	4.9 U	4.1 UJ	5.3 UJ	--	4.9 U
2-Propanol	µg/m³			18 U	11 U	10 U	23 U	15 U	15 U	23 U	--	10 U	8.6 U	11 U	--	10 U
3-Chloropropene	µg/m³			4.7 U	4.1 U	3.8 U	5.9 U	3.8 U	3.8 U	5.9 U	--	3.8 U	3.1 U	4.1 U	--	3.8 U
4-Ethyltoluene	µg/m³			7.4 U	6.4 U	5.9 U	9.3 U	5.9 U	5.9 U	9.3 U	--	5.9 U	4.9 U	6.4 U	--	5.9 U
4-Methyl-2-pentanone	µg/m³	1.40E+03		--	11 U	9.8 U	--	--	--	--	--	9.8 U	8.2 U	11 U	--	9.8 U
Acetone	µg/m³			16	7.2	7.1 U	19	20	14	14	8.6 U	19	7.1	6.5	8.1 U	7.1 U
Acrolein	µg/m³	0.0091		0.20 FP	0.81 FP,J	0.61 FP	0.31 FP	0.14 FP	0.27 FP	0.23 FP	--	0.62 FP	0.36 FP,J	0.49 FP,J	--	0.55 FP
Benzene	µg/m³	14	0.32	0.48 U	0.42 U	1.1 FP	0.61 U	0.38 U	10	0.61 U	0.18	1.1 FP	0.32 U	0.42 U	0.18	1.1 FP
Benzyl chloride	µg/m³	0.46	0.051	0.078 U	0.067 UJ	0.062 U	0.10 U	0.062 U	0.062 U	0.10 U	--	0.062 U	0.052 UJ	0.067 UJ	--	0.062 U
Bromodichloromethane	µg/m³		0.068	0.10 U	0.087 U	0.08 U	0.13 U	0.080 U	0.080 U	0.13 U	--	0.08 U	0.067 U	0.087 U	--	0.08 U
Bromoform	µg/m³		2.3	3.1 U	2.7 U	2.5 U	3.9 U	2.5 U	2.5 U	3.9 U	--	2.5 U	2.1 U	2.7 U	--	2.5 U
Bromomethane	µg/m³	2.3		5.8 U	5.0 U	4.7 U	7.4 U	4.7 U	4.7 U	7.4 U	--	4.7 U	3.9 U	5.0 U	--	4.7 U
Butane	µg/m³			7.1 U	6.2 U	5.7 U	9.0 U	5.7 U	5.7 U	9.0 U	8.6 U	5.7 U	4.8 U	6.2 U	8.1 U	5.7 U
Carbon disulfide	µg/m³	320		9.3 U	8.1 U	7.5 U	12.0 U	7.5 U	7.5 U	12.0 U	--	7.5 U	6.2 U	8.1 U	--	7.5 U
Carbon tetrachloride	µg/m³	46	0.42	0.47 U	0.47 FP	0.49 FP	0.60 U	0.38 U	0.38 U	0.60 U	--	0.46 FP	0.46 FP	0.47 FP	--	0.48 FP
CFC-113	µg/m³	2300		1.1 U	2.0 U	1.8 U	1.5 U	0.9 U	0.9 U	1.5 U	--	1.8 U	1.5 U	2.0 U	--	1.8 U
Chlorobenzene	µg/m³	23		0.69 U	0.60 U	0.55 U	0.87 U	0.55 U	0.55 U	0.87 U	0.83 U	0.55 U	0.46 U	0.60 U	0.8 U	0.55 U
Chloroethane	µg/m³	4600		4.0 U	3.4 U	3.2 U	5.0 U	3.2 U	3.2 U	5.0 U	--	3.2 U	2.6 U	3.4 U	--	3.2 U
Chloroform	µg/m³	0.91	0.11	0.073 U	0.083 FP	0.059 U	0.093 U	0.059 U	0.059 U	0.093 U	--	0.059 U	0.073 FP	0.07 FP	--	0.059 U
Chloromethane	µg/m³	41		5.6 U	4.8 U	4.5 U	7.1 U	4.5 U	4.5 U	7.1 U	6.7 U	4.5 U	3.7 U	4.8 U	6.3 U	4.5 U
cis-1,2-Dichloroethene	µg/m³	18		0.59 U	0.52 U	0.48 U	0.75 U	0.48 U	0.48 U	0.75 U	--	0.48 U	0.40 U	0.52 U	--	0.48 U
cis-1,3-Dichloropropene	µg/m³	9.1	0.63	1.4 U	1.2 U	1.1 U	1.7 U	1.1 U	1.1 U	1.7 U	--	1.1 U	0.91 U	1.2 U	--	1.1 U
Cyclohexane	µg/m³	2700		10.0 U	8.9 U	8.3 U	13.0 U	8.3 U	8.3 U	13.0 U	--	8.3 U	6.9 U	8.9 U	--	8.3 U
Dibromochloromethane	µg/m³			0.13 U	0.11 U	0.1 U	0.16 U	0.10 U	0.10 U	0.16 U	--	0.1 U	0.085 U	0.11 U	--	0.1 U
Dichlorodifluoromethane	µg/m³	46		2.0	2.5 FP	2.6 FP	2.0	1.2	1.3	2.1	1.8 U	2.5 FP	2.4 FP	2.4 FP	1.7	1.9 FP
Ethanol	µg/m³			11 U	9.8 U	23 U	14 U	9.0 U	9.0 U	14.0 U	--	23 U	7.5 U	9.8 U	--	23 U
Ethyl acetate	µg/m³	32		11 U	9.4 U	8.6 U	14 U	8.6 U	8.6 U	14.0 U	--	8.6 U	7.2 U	9.4 U	--	8.6 U
Ethylbenzene	µg/m³	460		0.65 U	0.56 U	0.52 U	0.83 U	0.52 U	5.50	0.83 U	0.78 U	0.52 U	0.43 U	0.56 U	0.74 U	0.52 U

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-1 7/13/22	AMB-1 3/26/24	AMB-1 10/6/25	AMB-2 7/18/22	AMB-3 7/18/22	AMB-4 7/18/22	AMB-5 7/18/22	AMB-6 3/30/23	AMB-6 10/6/25	AMB-7 3/26/24	AMB-9 3/26/24	AMB-11 3/30/23	AMB-11 10/6/25
Volatile Organic Compounds (continued)																
F-114	µg/m³			3.1 U	2.7 U	2.5 U	4.0 U	2.5 U	2.5 U	4.0 U	--	2.5 U	2.1 U	2.7 U	--	2.5 U
Heptane	µg/m³	180		6.1 U	5.3 U	4.9 U	7.8 U	4.9 U	4.9 U	7.8 U	7.4 U	4.9 U	4.1 U	5.3 U	7.0 U	4.9 U
Hexachlorobutadiene	µg/m³		0.11	0.32 U	0.28 U	0.26 U	0.41 U	0.26 U	0.26 U	0.41 U	--	0.26 U	0.21 U	0.28 U	--	0.26 U
Hexane	µg/m³	320		5.3 U	4.6 U	4.2 U	6.7 U	5.8	4.9	6.7 U	6.3 U	4.2 U	3.5 U	4.6 U	6.0 U	4.2 U
Isopropyl alcohol	µg/m³			13 U	--	--	16 U	10 U	10 U	16 U	--	--	--	--	--	--
Isopropylbenzene	µg/m³	180		15 U	13 U	12 U	19 U	12 U	12 U	19 U	--	12 U	9.8 U	13 U	--	12 U
m,p-Xylene	µg/m³	46		1.3 U	1.1 U	1 U	1.7 U	1.0 U	2.2	1.7 U	1.6 U	1 U	0.87 U	1.1 U	1.5 U	1 U
Methyl methacrylate	µg/m³	320		6.1 U	5.3 U	4.9 U	7.8 U	4.9 U	4.9 U	7.8 U	--	4.9 U	4.1 U	5.3 U	--	4.9 U
Methyl t-butyl ether (MTBE)	µg/m³	1,400	9.6	11 U	9.4 U	8.7 U	14 U	8.7 U	8.7 U	14 U	--	8.7 U	7.2 U	9.4 U	--	8.7 U
Methylene chloride	µg/m³	270	66	120 LC	45 U	42 U	140 LC	160 LC	110 LC	160 LC	--	42 U	35 U	45 U	--	42 U
Methyl isobutyl ketone	µg/m³			6.1 U	--	--	7.8 U	4.9 U	4.9 U	7.8 U	--	--	--	--	--	--
Naphthalene	µg/m³	1.4	0.074	0.057 U	0.073 UJ	0.20 FP,J+	0.057 U	0.057 U	0.97	0.057 U	0.084 U	0.33 FP,J+	0.058 UJ	0.073 UJ	0.079 U	0.15 FP,J+
Nonane	µg/m³			7.9 U	6.8 U	6.3 U	10.0 U	6.3 U	6.3 U	10.0 U	--	6.3 U	5.2 U	6.8 U	--	6.3 U
o-Xylene	µg/m³	46		0.65 U	0.56 U	0.52 U	0.83 U	0.52 U	1.3	0.83 U	0.78 U	0.52 U	0.43 U	0.56 U	0.74 U	0.52 U
Pentane	µg/m³	460		8.9 U	7.7 U	7.1 U	11.0 U	7.1 U	7.1 U	11.0 U	11 U	7.1 U	5.9 U	7.7 U	10 U	7.1 U
Propene	µg/m³			1.8 U	1.6 U	1.7 U	2.3 U	1.4 U	9.0	2.3 U	2.2 U	1.8	1.2 U	1.6 U	2.0 U	1.7 U
Propylbenzene	µg/m³	460		7.4 U	6.4 U	5.9 U	9.3 U	5.9 U	5.9 U	9.3 U	--	5.9 U	4.9 U	6.4 U	--	5.9 U
Styrene	µg/m³	460		1.3 U	1.1 U	1 U	1.6 U	1.0 U	1.0 U	1.6 U	--	1 U	0.85 U	1.1 U	--	1 U
t-Butyl alcohol (TBA)	µg/m³			--	16 U	15 U	--	--	--	--	--	15 U	12 U	16 U	--	15 U
Tetrachloroethene	µg/m³	18	9.6	9.6 U	8.8 U	8.1 U	9.6 U	8.1 U	8.1 U	9.6 U	--	8.1 U	6.8 U	8.8 U	--	8.1 U
Tetrahydrofuran	µg/m³	910		0.88 U	0.77 U	1.1 U	1.10 U	0.71 U	0.98	1.1 U	1.1 U	1.1 U	0.59 U	0.77 U	1.0 U	1.1 U
Toluene	µg/m³	2,300		28 U	9.8 U	9 U	36 U	23 U	23 U	36 U	34 U	9 U	7.5 U	9.8 U	32 U	9 U
trans-1,2-Dichloroethene	µg/m³	18		0.59 U	0.52 U	0.48 U	0.75 U	0.48 U	0.48 U	0.75 U	--	0.48 U	0.40 U	0.52 U	--	0.48 U
trans-1,3-Dichloropropene	µg/m³	9.1	0.63	0.68 U	0.59 U	0.54 U	0.86 U	0.54 U	0.54 U	0.86 U	--	0.54 U	0.45 U	0.59 U	--	0.54 U
Trichloroethene	µg/m³	0.91	0.33	0.16 U	0.14 U	0.13 U	0.20 U	0.13 U	0.13	0.20 U	--	0.13 U	0.11 U	0.14 U	--	0.13 U
Trichlorofluoromethane	µg/m³	320		3.4 U	2.9 U	2.7 U	4.3 U	2.7 U	2.7 U	4.3 U	--	2.7 U	2.2 U	2.9 U	--	2.7 U
Vinyl acetate	µg/m³	91		11.0 U	9.2 U	8.5 U	13.0 U	8.5 U	8.5 U	13.0 U	--	8.5 U	7.0 U	9.2 U	--	8.5 U
Vinyl bromide	µg/m³	1.4	0.17	0.66 U	0.57 U	0.52 U	0.83 U	0.52 U	--	0.83 U	--	0.52 U	0.44 U	0.57 U	--	0.52 U
Vinyl chloride	µg/m³	46	0.28	0.28 U	0.26 UJ	0.15 U	0.28 U	0.28 U	0.59 U	0.28 U	--	0.15 U	0.26 U	0.26 UJ	--	0.15 U

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-1 7/13/22	AMB-1 3/26/24	AMB-1 10/6/25	AMB-2 7/18/22	AMB-3 7/18/22	AMB-4 7/18/22	AMB-5 7/18/22	AMB-6 3/30/23	AMB-6 10/6/25	AMB-7 3/26/24	AMB-9 3/26/24	AMB-11 3/30/23	AMB-11 10/6/25
Dioxins & Furans																
2,3,7,8-Tetrachlorodibenzo-p-dioxin	µg/m³	1.80E-05	6.60E-08	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Octachlorodibenzo-p-dioxin	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Octachlorodibenzofuran	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Tetra-Dioxins	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Penta-Dioxins	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Hexa-Dioxins	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Hepta-Dioxins	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Tetra-Furans	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Penta-Furans	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Hexa-Furans	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--
Total Hepta-Furans	µg/m³			--	--	--	--	--	--	--	--	--	--	--	--	--

Notes

APH = Air-phase hydrocarbons analyzed by Method MA-APH
Dioxins & Furans = Analyzed by Method EPA TO-9A
MA-APH = Massachusetts Air-Phase Petroleum Hydrocarbons
VOCS = Volatile organic compounds analyzed by Method TO-15
BOLD = Exceeds cleanup level
-- = Not analyzed
µg/m³ = micrograms per cubic meter
FP = False positive; suspected canister contamination
J = Estimated value
J+ = Estimated value, biased high
LC = The presence is likely do to laboratory contamination
U = Not detected above laboratory reporting limit

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-12 3/30/23	AMB-13 3/30/23	AMB-13 3/26/24	AMB-13 10/6/25	AMB-25 (AMB-13 Dup) 10/6/25	AMB-14 3/26/24	AMB-15 3/26/24	AMB-16 3/26/24	AMB-16 10/6/25	AMB-17 3/26/24
Air-phase Petroleum Hydrocarbons													
APH EC5-8 aliphatics	µg/m³			140 U	450	97 U	90 U	90 U	87	100	91	90 U	110
APH EC9-10 aromatics	µg/m³			47 U	74	32 U	30 U	30 U	25 U	32 U	25 U	30 U	32 U
APH EC9-12 aliphatics	µg/m³			47 U	160	32 U	30 U	30 U	25 U	32 U	28	30 U	32 U
Volatile Organic Compounds													
1,1,1-Trichloroethane	µg/m³	2,300		--	--	0.71 U	0.65 U	0.65 U	0.55 U	0.71 U	0.55 U	0.65 U	0.71 U
1,1,2,2-Tetrachloroethane	µg/m³		0.043	--	--	0.18 U	0.16 U	0.16 U	0.14 U	0.18 U	0.14 U	0.16 U	0.18 U
1,1,2-Trichloroethane	µg/m³	0.091	0.16	--	--	0.071 U	0.065 U	0.065 U	0.055 U	0.071 U	0.055 U	0.065 U	0.071 U
1,1-Dichloroethane	µg/m³		1.6	--	--	0.53 U	0.49 U	0.49 U	0.40 U	0.53 U	0.40 U	0.49 U	0.53 U
1,1-Dichloroethene	µg/m³	91		--	--	0.52 U	0.48 U	0.48 U	0.40 U	0.52 U	0.40 U	0.48 U	0.52 U
1,2,4-Trichlorobenzene	µg/m³	0.91		--	--	0.96 U	0.89 U	0.89 U	0.74 U	0.96 U	0.74 U	0.89 U	0.96 U
1,2,4-Trimethylbenzene	µg/m³	27		--	--	6.4 U	5.9 U	5.9 U	4.9 U	6.4 U	4.9 U	5.9 U	6.4 U
1,2-Dibromoethane (EDB)	µg/m³	4.1	0.0042	--	--	0.10 U	0.092 U	0.092 U	0.077 U	0.10 U	0.077 U	0.092 U	0.10 U
1,2-Dichlorobenzene	µg/m³	91		1.1 U	1.1 U	0.78 U	0.72 U	0.72 U	0.60 U	0.78 U	0.60 U	0.72 U	0.78 U
1,2-Dichloroethane (EDC)	µg/m³	3.2	0.096	0.077 U	0.08	0.089 FP	0.049 U	0.049 U	0.10 FP	0.079 FP	0.081 FP	0.049 U	0.079 FP
1,2-Dichloropropane	µg/m³	1.8	0.68	--	--	0.30 U	0.28 U	0.28 U	0.23 U	0.30 U	0.23 U	0.28 U	0.30 U
1,3,5-Trimethylbenzene	µg/m³	27		--	--	6.4 U	5.9 U	5.9 U	4.9 U	6.4 U	4.9 U	5.9 U	6.4 U
1,3-Butadiene	µg/m³	0.91	0.083	--	--	0.058 U	0.053 U	0.053 U	0.044 U	0.058 U	0.044 U	0.053 U	0.058 U
1,3-Dichlorobenzene	µg/m³			1.1 U	1.1 U	0.78 U	0.72 U	0.72 U	0.60 U	0.78 U	0.60 U	0.72 U	0.78 U
1,4-Dichlorobenzene	µg/m³	370	0.23	0.43 U	0.41 U	0.30 U	0.27 U	0.27 U	0.23 U	0.30 U	0.23 U	0.27 U	0.30 U
1,4-Dioxane	µg/m³	14	0.5	0.68 U	1.1	0.47 UJ	0.43 U	0.43 U	0.36 UJ	0.47 UJ	0.36 UJ	0.43 U	0.47 UJ
2,2,4-Trimethylpentane	µg/m³			--	--	6.1 U	5.6 U	5.6 U	4.7 U	6.1 U	4.7 U	5.6 U	6.1 U
2-Butanone (MEK)	µg/m³	2.30E+03		11 U	11.0 U	7.7 U	7.1 U	7.1 U	5.9 U	7.7 U	5.9 U	7.1 U	7.7 U
2-Chlorotoluene	µg/m³			--	--	6.7 U	6.2 U	6.2 U	5.2 U	6.7 U	5.2 U	6.2 U	6.7 U
2-Hexanone	µg/m³	14		--	--	5.3 UJ	4.9 U	4.9 U	4.1 UJ	5.3 UJ	4.1 UJ	4.9 U	5.3 UJ
2-Propanol	µg/m³			--	--	11 U	10 U	10 U	8.6 U	11 U	8.6 U	10 U	11 U
3-Chloropropene	µg/m³			--	--	4.1 U	3.8 U	3.8 U	3.1 U	4.1 U	3.1 U	3.8 U	4.1 U
4-Ethyltoluene	µg/m³			--	--	6.4 U	5.9 U	5.9 U	4.9 U	6.4 U	4.9 U	5.9 U	6.4 U
4-Methyl-2-pentanone	µg/m³	1.40E+03		--	--	11 U	9.8 U	9.8 U	8.2 U	11 U	8.2 U	9.8 U	11 U
Acetone	µg/m³			9.0 U	8.6	6.2 U	7.1 U	8.6	7.8	6.2 U	21	24	6.2 U
Acrolein	µg/m³	0.0091		--	--	0.34 FP,J	0.48 FP	0.56 FP	0.42 FP,J	0.32 FP,J	0.33 FP,J	0.53 FP	0.34 FP,J
Benzene	µg/m³	14	0.32	0.18	45	0.42 U	1.2 FP	1.3 FP	0.32 U	0.42 U	0.32 U	1.0 FP	0.42 U
Benzyl chloride	µg/m³	0.46	0.051	--	--	0.067 UJ	0.062 U	0.062 U	0.052 UJ	0.067 UJ	0.052 UJ	0.062 U	0.067 UJ
Bromodichloromethane	µg/m³		0.068	--	--	0.087 U	0.08 U	0.08 U	0.067 U	0.087 U	0.067 U	0.08 U	0.087 U
Bromoform	µg/m³		2.3	--	--	2.7 U	2.5 U	2.5 U	2.1 U	2.7 U	2.1 U	2.5 U	2.7 U
Bromomethane	µg/m³	2.3		--	--	5.0 U	4.7 U	4.7 U	3.9 U	5.0 U	3.9 U	4.7 U	5.0 U
Butane	µg/m³			9.0 U	16	6.2 U	5.7 U	5.7 U	4.8 U	6.2 U	4.8 U	5.7 U	6.2 U
Carbon disulfide	µg/m³	320		--	--	8.1 U	7.5 U	7.5 U	6.2 U	8.1 U	6.2 U	7.5 U	8.1 U
Carbon tetrachloride	µg/m³	46	0.42	--	--	0.47 FP	0.45 FP	0.47 FP	0.47 FP	0.46 FP	0.45 FP	0.48 FP	0.47 FP
CFC-113	µg/m³	2300		--	--	2.0 U	1.8 U	1.8 U	1.5 U	2.0 U	1.5 U	1.8 U	2.0 U
Chlorobenzene	µg/m³	23		0.87 U	1.0	0.60 U	0.55 U	0.55 U	0.46 U	0.60 U	0.46 U	0.55 U	0.60 U
Chloroethane	µg/m³	4600		--	--	3.4 U	3.2 U	3.2 U	2.6 U	3.4 U	2.6 U	3.2 U	3.4 U
Chloroform	µg/m³	0.91	0.11	--	--	0.07 FP	0.059 U	0.059 U	0.073 FP	0.07 FP	0.073 FP	0.059 U	0.07 FP
Chloromethane	µg/m³	41		7.1 U	6.7 U	4.8 U	4.5 U	4.5 U	3.7 U	4.8 U	3.7 U	4.5 U	4.8 U
cis-1,2-Dichloroethene	µg/m³	18		--	--	0.52 U	0.48 U	0.48 U	0.40 U	0.52 U	0.40 U	0.48 U	0.52 U
cis-1,3-Dichloropropene	µg/m³	9.1	0.63	--	--	1.2 U	1.1 U	1.1 U	0.91 U	1.2 U	0.91 U	1.1 U	1.2 U
Cyclohexane	µg/m³	2700		--	--	8.9 U	8.3 U	8.3 U	6.9 U	8.9 U	6.9 U	8.3 U	8.9 U
Dibromochloromethane	µg/m³			--	--	0.11 U	0.1 U	0.1 U	0.085 U	0.11 U	0.085 U	0.1 U	0.11 U
Dichlorodifluoromethane	µg/m³	46		1.9	1.9	2.3 FP	2.0 FP	2.2 FP	2.0 FP	2.7 FP	2.2 FP	2.7 FP	2.3 FP
Ethanol	µg/m³			--	--	9.8 U	23 U	23 U	7.5 U	9.8 U	85 J	23 U	9.8 U
Ethyl acetate	µg/m³	32		--	--	9.4 U	8.6 U	8.6 U	7.2 U	9.4 U	7.2 U	8.6 U	9.4 U
Ethylbenzene	µg/m³	460		0.83 U	29	0.56 U	0.52 U	0.52 U	0.43 U	0.56 U	0.43 U	0.52 U	0.56 U

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-12 3/30/23	AMB-13 3/30/23	AMB-13 3/26/24	AMB-13 10/6/25	AMB-25 (AMB-13 Dup) 10/6/25	AMB-14 3/26/24	AMB-15 3/26/24	AMB-16 3/26/24	AMB-16 10/6/25	AMB-17 3/26/24
Volatile Organic Compounds (continued)													
F-114	µg/m³			--	--	2.7 U	2.5 U	2.5 U	2.1 U	2.7 U	2.1 U	2.5 U	2.7 U
Heptane	µg/m³	180		7.8 U	7.6	5.3 U	4.9 U	4.9 U	4.1 U	5.3 U	4.1 U	4.9 U	5.3 U
Hexachlorobutadiene	µg/m³		0.11	--	--	0.28 U	0.26 U	0.26 U	0.21 U	0.28 U	0.21 U	0.26 U	0.28 U
Hexane	µg/m³	320		6.7 U	8.3	4.6 U	4.2 U	4.2 U	3.5 U	4.6 U	3.5 U	4.2 U	4.6 U
Isopropyl alcohol	µg/m³			--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	µg/m³	180		--	--	13 U	12 U	12 U	9.8 U	13 U	9.8 U	12 U	13 U
m,p-Xylene	µg/m³	46		1.7 U	12	1.1 U	1 U	1 U	0.87 U	1.1 U	0.87 U	1 U	1.1 U
Methyl methacrylate	µg/m³	320		--	--	5.3 U	4.9 U	4.9 U	4.1 U	5.3 U	4.1 U	4.9 U	5.3 U
Methyl t-butyl ether (MTBE)	µg/m³	1,400	9.6	--	--	9.4 U	8.7 U	8.7 U	7.2 U	9.4 U	7.2 U	8.7 U	9.4 U
Methylene chloride	µg/m³	270	66	--	--	45 U	42 U	42 U	35 U	45 U	35 U	42 U	45 U
Methyl isobutyl ketone	µg/m³			--	--	--	--	--	--	--	--	--	--
Naphthalene	µg/m³	1.4	0.074	0.089 U	4.0	0.073 UJ	0.065 FP,J+	0.16 FP,J+	0.058 UJ	0.073 UJ	0.058 UJ	0.27 FP,J+	0.073 UJ
Nonane	µg/m³			--	--	6.8 U	6.3 U	6.3 U	5.2 U	6.8 U	5.2 U	6.3 U	6.8 U
o-Xylene	µg/m³	46		0.83 U	8.4	0.56 U	0.52 U	0.52 U	0.43 U	0.56 U	0.43 U	0.52 U	0.56 U
Pentane	µg/m³	460		11 U	11 U	7.7 U	7.1 U	7.1 U	5.9 U	7.7 U	5.9 U	7.1 U	7.7 U
Propene	µg/m³			2.3 U	39	1.6 U	1.7 U	1.7	1.2 U	1.6 U	1.2 U	1.7 U	1.6 U
Propylbenzene	µg/m³	460		--	--	6.4 U	5.9 U	5.9 U	4.9 U	6.4 U	4.9 U	5.9 U	6.4 U
Styrene	µg/m³	460		--	--	1.1 U	1 U	1 U	0.85 U	1.1 U	0.85 U	1 U	1.1 U
t-Butyl alcohol (TBA)	µg/m³			--	--	16 U	15 U	15 U	12 U	16 U	12 U	15 U	16 U
Tetrachloroethene	µg/m³	18	9.6	--	--	8.8 U	8.1 U	8.1 U	6.8 U	8.8 U	6.8 U	8.1 U	8.8 U
Tetrahydrofuran	µg/m³	910		1.1 U	3.2	0.77 U	1.1 U	1.1 U	0.59 U	0.77 U	0.59 U	1.1 U	0.77 U
Toluene	µg/m³	2,300		36 U	34 U	9.8 U	9 U	9 U	7.5 U	9.8 U	7.5 U	9 U	9.8 U
trans-1,2-Dichloroethene	µg/m³	18		--	--	0.52 U	0.48 U	0.48 U	0.40 U	0.52 U	0.40 U	0.48 U	0.52 U
trans-1,3-Dichloropropene	µg/m³	9.1	0.63	--	--	0.59 U	0.54 U	0.54 U	0.45 U	0.59 U	0.45 U	0.54 U	0.59 U
Trichloroethene	µg/m³	0.91	0.33	--	--	0.14 U	0.13 U	0.13 U	0.11 U	0.14 U	0.11 U	0.13 U	0.14 U
Trichlorofluoromethane	µg/m³	320		--	--	2.9 U	2.7 U	2.7 U	2.2 U	2.9 U	2.2 U	2.7 U	2.9 U
Vinyl acetate	µg/m³	91		--	--	9.2 U	8.5 U	8.5 U	7.0 U	9.2 U	7.0 U	8.5 U	9.2 U
Vinyl bromide	µg/m³	1.4	0.17	--	--	0.57 U	0.52 U	0.52 U	0.44 U	0.57 U	0.44 U	0.52 U	0.57 U
Vinyl chloride	µg/m³	46	0.28	--	--	0.26 UJ	0.15 U	0.15 U	0.26 U	0.26 UJ	0.26 U	0.15 U	0.26 UJ

Table 3. Volatile Organic Compounds, Air-phase Petroleum Hydrocarbons, and Dioxins and Furans in Ambient Air, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Air Method B Noncancer	Air Method B Cancer	AMB-12 3/30/23	AMB-13 3/30/23	AMB-13 3/26/24	AMB-13 10/6/25	AMB-25 (AMB-13 Dup) 10/6/25	AMB-14 3/26/24	AMB-15 3/26/24	AMB-16 3/26/24	AMB-16 10/6/25	AMB-17 3/26/24
Dioxins & Furans													
2,3,7,8-Tetrachlorodibenzo-p-dioxin	µg/m³	1.80E-05	6.60E-08	--	--	1.44E-09 U	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	µg/m³			--	--	1.55E-09 U	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	1.59E-09 U	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	1.55E-09 U	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	µg/m³			--	--	1.46E-09 U	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	µg/m³			--	--	1.00E-09 U	--	--	--	--	--	--	--
Octachlorodibenzo-p-dioxin	µg/m³			--	--	2.60E-09 U	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran	µg/m³			--	--	9.15E-10 U	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran	µg/m³			--	--	1.39E-09 U	--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran	µg/m³			--	--	1.42E-09 U	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran	µg/m³			--	--	1.39E-09 U	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran	µg/m³			--	--	1.20E-09 U	--	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran	µg/m³			--	--	1.33E-09 U	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran	µg/m³			--	--	1.81E-09 U	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	µg/m³			--	--	7.04E-10 U	--	--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	µg/m³			--	--	1.24E-09 U	--	--	--	--	--	--	--
Octachlorodibenzofuran	µg/m³			--	--	3.17E-09 U	--	--	--	--	--	--	--
Total Tetra-Dioxins	µg/m³			--	--	1.44E-09 U	--	--	--	--	--	--	--
Total Penta-Dioxins	µg/m³			--	--	1.55E-09 U	--	--	--	--	--	--	--
Total Hexa-Dioxins	µg/m³			--	--	1.53E-09 U	--	--	--	--	--	--	--
Total Hepta-Dioxins	µg/m³			--	--	1.00E-09 U	--	--	--	--	--	--	--
Total Tetra-Furans	µg/m³			--	--	9.15E-10 U	--	--	--	--	--	--	--
Total Penta-Furans	µg/m³			--	--	1.40E-09 U	--	--	--	--	--	--	--
Total Hexa-Furans	µg/m³			--	--	1.40E-09 U	--	--	--	--	--	--	--
Total Hepta-Furans	µg/m³			--	--	9.03E-10 U	--	--	--	--	--	--	--

Notes

APH = Air-phase hydrocarbons analyzed by Method MA-APH
Dioxins & Furans = Analyzed by Method EPA TO-9A
MA-APH = Massachusetts Air-Phase Petroleum Hydrocarbons
VOCS = Volatile organic compounds analyzed by Method TO-15
BOLD = Exceeds cleanup level
-- = Not analyzed
µg/m³ = micrograms per cubic meter
FP = False positive; suspected canister contamination
J = Estimated value
J+ = Estimated value, biased high
LC = The presence is likely do to laboratory contamination
U = Not detected above laboratory reporting limit

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	GP-1-4 3/28/23	GP-2-7 3/28/23	GP-3-1 3/28/23	GP-4-3 3/28/23	GP-6-6 3/28/23	GP-7-4.5 3/28/23	GP-8-1 3/28/23	GP-9-6.5 3/28/23	GP-11-6.5 3/28/23
Total Petroleum Hydrocarbons														
Gasoline Range Organics	mg/kg	1000/30*				5 U	5 U	5 U	5 U	**110**	**69**	11	5 U	5 U
TPH-Dx														
Diesel Range Organics	mg/kg	2000				50 U	50 U	50 U	50 U	300	270	50 U	50 U	50 U
Lube Oil	mg/kg	2000				250 U	250 U	250 U	250 U	**4500**	250	250 U	250 U	250 U
Total TPH-Dx	mg/kg	2000				250 U	250 U	250 U	250 U	**4800**	520	250 U	250 U	250 U
Metals														
Arsenic	mg/kg	20	4.8	0.031	2.9	--	--	--	--	--	--	--	--	--
Barium	mg/kg		16000		1600	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	2	80		0.69	--	--	--	--	--	--	--	--	--
Chromium	mg/kg				2000	--	--	--	--	--	--	--	--	--
Lead	mg/kg	250			3000	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	2			2.1	--	--	--	--	--	--	--	--	--
Selenium	mg/kg		400		5.2	--	--	--	--	--	--	--	--	--
Silver	mg/kg		400		14	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds						--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	mg/kg		2400	38	0.0098	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	mg/kg	2	160000		1.5	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	mg/kg		1600	5	0.0012	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	mg/kg		320	18	0.017	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	mg/kg		16000	180	0.041	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	mg/kg		4000		0.046	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	mg/kg		64		0.2	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	mg/kg		320	0.0063	0.0000024	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	mg/kg		800		1.3	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	mg/kg		16	0.23	0.00091	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	mg/kg	0.005	720	0.5	0.00027	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	mg/kg		480	11	0.023	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	mg/kg		3200	27	0.025	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/kg		800		1.3	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	mg/kg		1600		0.88	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	mg/kg					--	--	--	--	--	--	--	--	--
2-Butanone	mg/kg		48000		20	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--
2-Hexanone	mg/kg		400		0.17	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--
Acetone	mg/kg		72000		29	--	--	--	--	--	--	--	--	--
Benzene	mg/kg	0.03	320	18	0.027	0.03 U	0.03 U	0.03 U	0.03 U	**1.2**	**0.96**	**0.090**	0.03 U	0.03 U
Bromobenzene	mg/kg		640		0.56	--	--	--	--	--	--	--	--	--
Bromoform	mg/kg		1600	130	0.36	--	--	--	--	--	--	--	--	--
Bromomethane	mg/kg		110		0.051	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	mg/kg		320	14	0.041	--	--	--	--	--	--	--	--	--
CFC-11	mg/kg		24000		23	--	--	--	--	--	--	--	--	--
CFC-12	mg/kg		16000		38	--	--	--	--	--	--	--	--	--
Chlorobenzene	mg/kg		1600		0.86	--	--	--	--	--	--	--	--	--
Chloroethane	mg/kg					--	--	--	--	--	--	--	--	--
Chloroform	mg/kg		800	32	0.074	--	--	--	--	--	--	--	--	--
Chloromethane	mg/kg					--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	mg/kg		160		0.079	--	--	--	--	--	--	--	--	--

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	GP-1-4 3/28/23	GP-2-7 3/28/23	GP-3-1 3/28/23	GP-4-3 3/28/23	GP-6-6 3/28/23	GP-7-4.5 3/28/23	GP-8-1 3/28/23	GP-9-6.5 3/28/23	GP-11-6.5 3/28/23
Volatile Organic Compounds (cont.)														
cis-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--
Dibromochloromethane	mg/kg		1600	12	0.024	--	--	--	--	--	--	--	--	--
Dibromomethane	mg/kg		800		0.36	--	--	--	--	--	--	--	--	--
Dichlorobromomethane	mg/kg		1600	16	0.033	--	--	--	--	--	--	--	--	--
Ethylbenzene	mg/kg	6	8000		5.9	0.05 U	0.05 U	0.05 U	0.05 U	4.8	5.2	0.083	0.05 U	0.05 U
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--
Hexane	mg/kg		4800		72	--	--	--	--	--	--	--	--	--
Isopropylbenzene (Cumene)	mg/kg		8000		15	--	--	--	--	--	--	--	--	--
m, p-Xylene	mg/kg		16000		13	0.1 U	0.1 U	0.1 U	0.1 U	1.8	1.8	0.1 U	0.1 U	0.1 U
Methyl isobutyl ketone	mg/kg		6400		2.7	--	--	--	--	--	--	--	--	--
Methyl t-butyl ether	mg/kg	0.1		560	0.1	--	--	--	--	--	--	--	--	--
Methylene chloride	mg/kg	0.02	480	94	0.022	--	--	--	--	--	--	--	--	--
Naphthalene	mg/kg	5	1600		4.5	0.05 U	0.05 U	0.05 U	0.05 U	1.8	17	0.05 U	0.05 U	0.05 U
n-Propylbenzene	mg/kg		8000		16	--	--	--	--	--	--	--	--	--
o-Xylene	mg/kg		16000		14	0.05 U	0.05 U	0.05 U	0.05 U	1.3	1.4	0.05 U	0.05 U	0.05 U
p-Isopropyltoluene	mg/kg		320		0.86	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	mg/kg		8000		25	--	--	--	--	--	--	--	--	--
Styrene	mg/kg		16000		2.2	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	mg/kg		8000		20	--	--	--	--	--	--	--	--	--
Tetrachloroethene	mg/kg	0.05	480	480	0.05	--	--	--	--	--	--	--	--	--
Toluene	mg/kg	7	6400		4.5	0.05 U	0.05 U	0.05 U	0.05 U	2.2	2.0	0.05 U	0.05 U	0.05 U
trans-1,2-Dichloroethene	mg/kg		1600		0.52	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--
Trichloroethene	mg/kg	0.03	40	12	0.025	--	--	--	--	--	--	--	--	--
Vinyl chloride	mg/kg		240	0.67	0.0017	--	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds														
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	mg/kg		5600	20	0.047	0.01 U	0.01 U	0.01 U	0.01 U	1 U	3.1	0.01 U	0.01 U	0.01 U
2,2'-Oxybis(1-chloropropane)	mg/kg		3200	14	0.0035	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	mg/kg		8000		58	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	mg/kg		80	91	0.092	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	mg/kg		240		0.33	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	mg/kg		1600		4.4	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	mg/kg		160		0.13	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	mg/kg		160	3.2	0.0044	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	mg/kg		24	0.67	0.00092	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	mg/kg		6400		34	--	--	--	--	--	--	--	--	--
2-Chlorophenol	mg/kg		400		0.47	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/kg		320		1.7	0.01 U	0.01 U	0.01 U	0.01 U	1 U	4.0	0.012	0.01 U	0.01 U
2-Methylphenol	mg/kg		4000		8.1	--	--	--	--	--	--	--	--	--
2-Nitroaniline	mg/kg		800		1	--	--	--	--	--	--	--	--	--
2-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--
3-Methylphenol + 4-Methylphenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--
3-Nitroaniline	mg/kg					--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	mg/kg		6.4		0.024	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	mg/kg		8000		22	--	--	--	--	--	--	--	--	--
4-Chloroaniline	mg/kg		320	5	0.0027	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/kg					--	--	--	--	--	--	--	--	--
4-Nitroaniline	mg/kg		320	50	0.027	--	--	--	--	--	--	--	--	--
4-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	GP-1-4 3/28/23	GP-2-7 3/28/23	GP-3-1 3/28/23	GP-4-3 3/28/23	GP-6-6 3/28/23	GP-7-4.5 3/28/23	GP-8-1 3/28/23	GP-9-6.5 3/28/23	GP-11-6.5 3/28/23
Semi-Volatile Organic Compounds (cont.)														
Acenaphthene	mg/kg		4800		49	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.92	0.01 U	0.01 U	0.01 U
Acenaphthylene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Anthracene	mg/kg		24000		1100	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benz[a]anthracene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benzo(a)pyrene	mg/kg	0.1	24	0.19	3.9	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benzo(b)fluoranthene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benzo(ghi)perylene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benzo(k)fluoranthene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Benzoic acid	mg/kg		320000		260	--	--	--	--	--	--	--	--	--
Benzyl alcohol	mg/kg					--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	mg/kg		240		0.21	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl) ether	mg/kg			0.91	0.00022	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	mg/kg		1600	71	13	--	--	--	--	--	--	--	--	--
Butylbenzyl phthalate	mg/kg		16000	530	13	--	--	--	--	--	--	--	--	--
Carbazole	mg/kg					--	--	--	--	--	--	--	--	--
Chrysene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Dibenzo(a,h)anthracene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Dibenzofuran	mg/kg		80		1.5	--	--	--	--	--	--	--	--	--
Diethyl phthalate	mg/kg		64000		72	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	mg/kg					--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	mg/kg		8000		57	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	mg/kg		800		450	--	--	--	--	--	--	--	--	--
Fluoranthene	mg/kg		3200		630	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Fluorene	mg/kg		3200		51	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.57	0.01 U	0.01 U	0.01 U
Hexachlorobenzene	mg/kg		64	0.63	0.44	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	mg/kg		480		1.5	--	--	--	--	--	--	--	--	--
Hexachloroethane	mg/kg		56	25	0.0088	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Isophorone	mg/kg		16000	1100	0.49	--	--	--	--	--	--	--	--	--
Naphthalene	mg/kg	5	1600		4.5	0.01 U	0.01 U	0.01 U	0.01 U	1.8	4.6	0.036	0.01 U	0.01 U
Nitrobenzene	mg/kg		160		0.1	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	mg/kg			0.14	0.00012	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	mg/kg			200	1	--	--	--	--	--	--	--	--	--
Pentachlorophenol	mg/kg		400	2.5	0.016	--	--	--	--	--	--	--	--	--
Phenanthrene	mg/kg					0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.27	0.01 U	0.01 U	0.01 U
Phenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--
Pyrene	mg/kg		2400		330	0.01 U	0.01 U	0.01 U	0.01 U	1 U	0.05 U	0.01 U	0.01 U	0.01 U
Pyridine	mg/kg		80		0.043	--	--	--	--	--	--	--	--	--

Notes

Metals = Metals (RCRA 8) analyzed by EPA Method SW6020
SVOCs = Semivolatile organic compounds analyzed using EPA Method 8270E
TPH-Dx = Diesel-range organics, total petroleum hydrocarbons (diesel and motor oil) analyzed using method NWTPH-Dx
TPH-Gx = Gasoline-range organics, total petroleum hydrocarbons analyzed using method NWTPH-Gx
VOCs = Volatile Organic Compounds analyzed by EPA Method 8260D
* = Cleanup level if benzene present
BOLD = Exceeds cleanup level
-- = Not analyzed
mg/kg = milligrams per kilogram
J = Estimated value
U = Not detected above laboratory reporting limit

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T1-5 9/11/23	T1-10 9/11/23	T1-15 9/11/23	T1-20 9/11/23	T1-25 9/11/23	T1-35 9/11/23	T1-40 9/11/23	T1-45 9/12/23	T2-5 9/12/23	T2-15 9/12/23	T2-20 9/12/23	T2-25 9/12/23
Total Petroleum Hydrocarbons																	
Gasoline Range Organics	mg/kg	1000/30*				5 U	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U
TPH-Dx																	
Diesel Range Organics	mg/kg	2000				50 U	--	50 U	--	50 U	50 U	50 U	50 U	50 U	50 U	--	50 U
Lube Oil	mg/kg	2000				250 U	--	250 U	--	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U
Total TPH-Dx	mg/kg	2000				150 U	--	150 U	--	150 U	150 U	150 U	150 U	150 U	150 U	--	150 U
Metals																	
Arsenic	mg/kg	20	4.8	0.031	2.9	--	--	--	--	--	--	1.61	--	--	--	--	--
Barium	mg/kg		16000		1600	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	2	80		0.69	--	--	--	--	--	--	1.0 U	--	--	--	--	--
Chromium	mg/kg				2000	--	--	--	--	--	--	5.0 U	--	--	--	--	--
Lead	mg/kg	250			3000	--	--	--	--	--	--	3.81	--	--	--	--	--
Mercury	mg/kg	2			2.1	--	--	--	--	--	--	2 U	--	--	--	--	--
Selenium	mg/kg		400		5.2	--	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/kg		400		14	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds																	
1,1,1,2-Tetrachloroethane	mg/kg		2400	38	0.0098	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	mg/kg	2	160000		1.5	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	mg/kg		1600	5	0.0012	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	mg/kg		320	18	0.017	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	mg/kg		16000	180	0.041	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	mg/kg		4000		0.046	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	mg/kg		64		0.2	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	mg/kg		320	0.0063	0.0000024	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	mg/kg		800		1.3	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,2-Dibromo-3-chloropropane	mg/kg		16	0.23	0.00091	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	mg/kg	0.005	720	0.5	0.00027	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	mg/kg		480	11	0.023	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	mg/kg		3200	27	0.025	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/kg		800		1.3	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	mg/kg		1600		0.88	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	mg/kg		48000		20	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	mg/kg		400		0.17	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	mg/kg		72000		29	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	mg/kg	0.03	320	18	0.027	0.0043	--	0.016	--	0.013	0.0010 U	0.0010 U	0.0019	0.0010 U	0.0019	--	0.0029
Bromobenzene	mg/kg		640		0.56	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	mg/kg		1600	130	0.36	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	mg/kg		110		0.051	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	mg/kg		320	14	0.041	--	--	--	--	--	--	--	--	--	--	--	--
CFC-11	mg/kg		24000		23	--	--	--	--	--	--	--	--	--	--	--	--
CFC-12	mg/kg		16000		38	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	mg/kg		1600		0.86	0.05 U	--	0.050	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Chloroethane	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	mg/kg		800	32	0.074	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	mg/kg		160		0.079	--	--	--	--	--	--	--	--	--	--	--	--

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T1-5 9/11/23	T1-10 9/11/23	T1-15 9/11/23	T1-20 9/11/23	T1-25 9/11/23	T1-35 9/11/23	T1-40 9/11/23	T1-45 9/12/23	T2-5 9/12/23	T2-15 9/12/23	T2-20 9/12/23	T2-25 9/12/23
Volatile Organic Compounds (cont.)																	
cis-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	mg/kg		1600	12	0.024	--	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane	mg/kg		800		0.36	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorobromomethane	mg/kg		1600	16	0.033	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	mg/kg	6	8000		5.9	0.0065	--	0.0010 U	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	--	0.0010 U
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--	--	--	--
Hexane	mg/kg		4800		72	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene (Cumene)	mg/kg		8000		15	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
m, p-Xylene	mg/kg		16000		13	0.0030	--	0.0034	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	--	0.002 U
Methyl isobutyl ketone	mg/kg		6400		2.7	--	--	--	--	--	--	--	--	--	--	--	--
Methyl t-butyl ether	mg/kg	0.1		560	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	mg/kg	0.02	480	94	0.022	0.2 U	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U
Naphthalene	mg/kg	5	1600		4.5	0.33	--	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U
n-Propylbenzene	mg/kg		8000		16												
o-Xylene	mg/kg		16000		14	0.0015	--	0.0011	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	--	0.0010 U
p-Isopropyltoluene	mg/kg		320		0.86	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
sec-Butylbenzene	mg/kg		8000		25	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
Styrene	mg/kg		16000		2.2	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U
tert-Butylbenzene	mg/kg		8000		20	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	mg/kg	0.05	480	480	0.05	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	mg/kg	7	6400		4.5	0.0021	--	0.0020	--	0.0016	0.0010 U	0.0010 U	0.0015	0.0011	0.0010	--	0.0014
trans-1,2-Dichloroethene	mg/kg		1600		0.52	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	mg/kg	0.03	40	12	0.025	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	mg/kg		240	0.67	0.0017	--	--	--	--	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds																	
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	mg/kg		5600	20	0.047	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-Oxybis(1-chloropropane)	mg/kg		3200	14	0.0035	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	mg/kg		8000		58	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	mg/kg		80	91	0.092	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	mg/kg		240		0.33	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	mg/kg		1600		4.4	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	mg/kg		160		0.13	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	mg/kg		160	3.2	0.0044	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	mg/kg		24	0.67	0.00092	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	mg/kg		6400		34	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	mg/kg		400		0.47	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/kg		320		1.7	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	mg/kg		4000		8.1	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	mg/kg		800		1	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
3-Methylphenol + 4-Methylphenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	mg/kg		6.4		0.024	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	mg/kg		8000		22	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	mg/kg		320	5	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	mg/kg		320	50	0.027	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T1-5 9/11/23	T1-10 9/11/23	T1-15 9/11/23	T1-20 9/11/23	T1-25 9/11/23	T1-35 9/11/23	T1-40 9/11/23	T1-45 9/12/23	T2-5 9/12/23	T2-15 9/12/23	T2-20 9/12/23	T2-25 9/12/23
Semi-Volatile Organic Compounds (cont.)																	
Acenaphthene	mg/kg		4800		49	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	mg/kg		24000		1100	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	mg/kg	0.1	24	0.19	3.9	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Benzoic acid	mg/kg		320000		260	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	mg/kg		240		0.21	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl) ether	mg/kg			0.91	0.00022	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	mg/kg		1600	71	13	--	--	--	--	--	--	--	--	--	--	--	--
Butylbenzyl phthalate	mg/kg		16000	530	13	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	mg/kg		80		1.5	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	mg/kg		64000		72	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	mg/kg		8000		57	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	mg/kg		800		450	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	mg/kg		3200		630	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	mg/kg		3200		51	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	mg/kg		64	0.63	0.44	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	mg/kg		480		1.5	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	mg/kg		56	25	0.0088	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	mg/kg		16000	1100	0.49	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	mg/kg	5	1600		4.5	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	mg/kg		160		0.1	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	mg/kg			0.14	0.00012	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	mg/kg			200	1	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	mg/kg		400	2.5	0.016	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	mg/kg					--	--	--	--	--	--	--	--	--	--	--	--
Phenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	mg/kg		2400		330	--	--	--	--	--	--	--	--	--	--	--	--
Pyridine	mg/kg		80		0.043	--	--	--	--	--	--	--	--	--	--	--	--

Notes

Metals = Metals (RCRA 8) analyzed by EPA Method SW6020
SVOCs = Semivolatile organic compounds analyzed using EPA Method 8270E
TPH-Dx = Diesel-range organics, total petroleum hydrocarbons (diesel and motor oil) analyzed using method NWTPH-Dx
TPH-Gx = Gasoline-range organics, total petroleum hydrocarbons analyzed using method NWTPH-Gx
VOCs = Volatile Organic Compounds analyzed by EPA Method 8260D
* = Cleanup level if benzene present
BOLD = Exceeds cleanup level
-- = Not analyzed
mg/kg = milligrams per kilogram
J = Estimated value
U = Not detected above laboratory reporting limit

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T2-35 9/13/23	T2-40 9/13/23	T2-40 Dup 9/13/23	T3-5 9/13/23	T3-10 9/13/23	T3-15 9/13/23	T3-20 9/14/23	T3-30 9/14/23	T3-35 9/14/23	T3-40 9/14/23	T4-20-0821 8/21/2025
Total Petroleum Hydrocarbons																
Gasoline Range Organics	mg/kg	1000/30*				5 U	5 U	5 U	5 U	**170**	--	**58**	**58**	**74**	**84**	5 U
TPH-Dx																
Diesel Range Organics	mg/kg	2000				50 U	50 U	50 U	50 U	1,300	--	220	1,400	370	910	50 U
Lube Oil	mg/kg	2000				250 U	250 U	250 U	250 U	**3,200**	--	250 U	1,100	1,600	**3,900**	200 U
Total TPH-Dx	mg/kg	2000				150 U	150 U	150 U	150 U	**4,500**	--	345	**2,500**	1,970	**4,810**	250 U
Metals																
Arsenic	mg/kg	20	4.8	0.031	2.9	--	1 U	1 U	--	--	--	--	--	--	--	--
Barium	mg/kg		16000		1600	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	2	80		0.69	--	1.3	1.26	--	--	--	--	--	--	--	--
Chromium	mg/kg				2000	--	6.21	7.35	--	--	--	--	--	--	--	--
Lead	mg/kg	250			3000	--	4.78	3.2	--	--	--	--	--	--	--	--
Mercury	mg/kg	2			2.1	--	2 U	1 U	--	--	--	--	--	--	--	--
Selenium	mg/kg		400		5.2	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/kg		400		14	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	mg/kg		2400	38	0.0098	--	--	--	--	--	--	--	--	--	--	0.05 U
1,1,1-Trichloroethane	mg/kg	2	160000		1.5	--	--	--	--	--	--	--	--	--	--	0.002 U
1,1,2,2-Tetrachloroethane	mg/kg		1600	5	0.0012	--	--	--	--	--	--	--	--	--	--	0.05 U
1,1,2-Trichloroethane	mg/kg		320	18	0.017	--	--	--	--	--	--	--	--	--	--	0.05 U
1,1-Dichloroethane	mg/kg		16000	180	0.041	--	--	--	--	--	--	--	--	--	--	0.002 U
1,1-Dichloroethene	mg/kg		4000		0.046	--	--	--	--	--	--	--	--	--	--	0.002 U
1,1-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	0.05 U
1,2,3-Trichlorobenzene	mg/kg		64		0.2	--	--	--	--	--	--	--	--	--	--	0.25 U
1,2,3-Trichloropropane	mg/kg		320	0.0063	0.0000024	--	--	--	--	--	--	--	--	--	--	0.05 U
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--	--	0.25 U
1,2,4-Trimethylbenzene	mg/kg		800		1.3	0.05 U	0.05 U	0.05 U	0.05 U	**2.3**	--	0.05 U	0.54	0.61	0.33	0.05 U
1,2-Dibromo-3-chloropropane	mg/kg		16	0.23	0.00091	--	--	--	--	--	--	--	--	--	--	0.5 U
1,2-Dibromoethane	mg/kg	0.005	720	0.5	0.00027	--	--	--	--	--	--	--	--	--	--	0.005 U
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--	--	0.05 U
1,2-Dichloroethane	mg/kg		480	11	0.023	--	--	--	--	--	--	--	--	--	--	0.003 U
1,2-Dichloropropane	mg/kg		3200	27	0.025	--	--	--	--	--	--	--	--	--	--	0.05 U
1,3,5-Trimethylbenzene	mg/kg		800		1.3	0.050	0.050	0.050	0.050	1.1	--	0.05 U	0.25	0.24	0.12	0.05 U
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--	--	0.05 U
1,3-Dichloropropane	mg/kg		1600		0.88	--	--	--	--	--	--	--	--	--	--	0.05 U
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--	--	0.05 U
2,2-Dichloropropane	mg/kg					--	--	--	--	--	--	--	--	--	--	0.05 U
2-Butanone	mg/kg		48000		20	--	--	--	--	--	--	--	--	--	--	1 U
2-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--	--	0.05 U
2-Hexanone	mg/kg		400		0.17	--	--	--	--	--	--	--	--	--	--	1 U
4-Chlorotoluene	mg/kg		1600		1.9	--	--	--	--	--	--	--	--	--	--	0.05 U
Acetone	mg/kg		72000		29	--	--	--	--	--	--	--	--	--	--	5 U
Benzene	mg/kg	0.03	320	18	0.027	0.0019	0.0013 J	0.013 J	0.0011	**1.6**	--	0.002	**0.150**	**0.071**	**0.045**	**0.075**
Bromobenzene	mg/kg		640		0.56	--	--	--	--	--	--	--	--	--	--	0.05 U
Bromoform	mg/kg		1600	130	0.36	--	--	--	--	--	--	--	--	--	--	0.05 U
Bromomethane	mg/kg		110		0.051	--	--	--	--	--	--	--	--	--	--	0.5 U
Carbon tetrachloride	mg/kg		320	14	0.041	--	--	--	--	--	--	--	--	--	--	0.05 U
CFC-11	mg/kg		24000		23	--	--	--	--	--	--	--	--	--	--	0.5 U
CFC-12	mg/kg		16000		38	--	--	--	--	--	--	--	--	--	--	0.5 U
Chlorobenzene	mg/kg		1600		0.86	0.05 U	0.05 U	0.05 U	0.05 U	0.13	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane	mg/kg					--	--	--	--	--	--	--	--	--	--	0.1 U
Chloroform	mg/kg		800	32	0.074	--	--	--	--	--	--	--	--	--	--	0.05 U
Chloromethane	mg/kg					--	--	--	--	--	--	--	--	--	--	0.5 U
cis-1,2-Dichloroethene	mg/kg		160		0.079	--	--	--	--	--	--	--	--	--	--	0.002 U

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T2-35 9/13/23	T2-40 9/13/23	T2-40 Dup 9/13/23	T3-5 9/13/23	T3-10 9/13/23	T3-15 9/13/23	T3-20 9/14/23	T3-30 9/14/23	T3-35 9/14/23	T3-40 9/14/23	T4-20-0821 8/21/2025
Volatile Organic Compounds (cont.)																
cis-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	0.05 U
Dibromochloromethane	mg/kg		1600	12	0.024	--	--	--	--	--	--	--	--	--	--	0.05 U
Dibromomethane	mg/kg		800		0.36	--	--	--	--	--	--	--	--	--	--	0.05 U
Dichlorobromomethane	mg/kg		1600	16	0.033	--	--	--	--	--	--	--	--	--	--	0.05 U
Ethylbenzene	mg/kg	6	8000		5.9	0.0010 U	0.0010 U	0.0010 U	0.0033	4.3	--	0.014	0.99	0.70	0.53	0.0068
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--	--	0.25 U
Hexane	mg/kg		4800		72	--	--	--	--	--	--	--	--	--	--	0.25 U
Isopropylbenzene (Cumene)	mg/kg		8000		15	0.05 U	0.05 U	0.05 U	0.05 U	4.10	--	0.05 U	1.00	0.76	0.54	0.05 U
m, p-Xylene	mg/kg		16000		13	0.002 U	0.002 U	0.002 U	0.002 U	1.4	--	0.0057	0.33	0.24	0.17	0.0099
Methyl isobutyl ketone	mg/kg		6400		2.7	--	--	--	--	--	--	--	--	--	--	1 U
Methyl t-butyl ether	mg/kg	0.1		560	0.1	--	--	--	--	--	--	--	--	--	--	0.002 U
Methylene chloride	mg/kg	0.02	480	94	0.022	0.2 U	0.2 U	0.33 J	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U
Naphthalene	mg/kg	5	1600		4.5	0.01 U	0.01 U	0.01 U	0.01 U	**37**	--	0.57	**5.4**	**5.3**	3.4	0.01 U
n-Propylbenzene	mg/kg		8000		16						--	--	--	--	--	0.05 U
o-Xylene	mg/kg		16000		14	0.0010 U	0.0010 U	0.0010 U	0.0011	1.2	--	0.0052	0.28	0.25	0.14	0.0034
p-Isopropyltoluene	mg/kg		320		0.86	0.05 U	0.05 U	0.05 U	0.05 U	0.67	--	0.05 U	0.25	0.29	0.17	0.05 U
sec-Butylbenzene	mg/kg		8000		25	0.05 U	0.05 U	0.05 U	0.05 U	0.23	--	0.05 U	0.061	0.06	0.051	0.05 U
Styrene	mg/kg		16000		2.2	0.05 U	0.05 U	0.05 U	0.05 U	0.23	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene	mg/kg		8000		20	--	--	--	--	--	--	--	--	--	--	0.05 U
Tetrachloroethene	mg/kg	0.05	480	480	0.05	--	--	--	--	--	--	--	--	--	--	0.002 U
Toluene	mg/kg	7	6400		4.5	0.0019	0.0013 J	0.013 J	0.002	1.60	--	0.0042	0.3	0.17	0.13	0.013
trans-1,2-Dichloroethene	mg/kg		1600		0.52	--	--	--	--	--	--	--	--	--	--	0.002 U
trans-1,3-Dichloropropene	mg/kg					--	--	--	--	--	--	--	--	--	--	0.05 U
Trichloroethene	mg/kg	0.03	40	12	0.025	--	--	--	--	--	--	--	--	--	--	0.002 U
Vinyl chloride	mg/kg		240	0.67	0.0017	--	--	--	--	--	--	--	--	--	--	0.002 U
Semi-Volatile Organic Compounds																
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/kg		7200		7	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	mg/kg		5600	20	0.047	--	--	--	--	--	--	--	--	--	--	--
2,2'-Oxybis(1-chloropropane)	mg/kg		3200	14	0.0035	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	mg/kg		8000		58	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	mg/kg		80	91	0.092	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	mg/kg		240		0.33	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	mg/kg		1600		4.4	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	mg/kg		160		0.13	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	mg/kg		160	3.2	0.0044	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	mg/kg		24	0.67	0.00092	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	mg/kg		6400		34	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	mg/kg		400		0.47	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/kg		320		1.7	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	mg/kg		4000		8.1	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	mg/kg		800		1	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--	--	--
3-Methylphenol + 4-Methylphenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	mg/kg					--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	mg/kg		6.4		0.024	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	mg/kg		8000		22	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	mg/kg		320	5	0.0027	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/kg					--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	mg/kg		320	50	0.027	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	mg/kg					--	--	--	--	--	--	--	--	--	--	--

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Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T2-35 9/13/23	T2-40 9/13/23	T2-40 Dup 9/13/23	T3-5 9/13/23	T3-10 9/13/23	T3-15 9/13/23	T3-20 9/14/23	T3-30 9/14/23	T3-35 9/14/23	T3-40 9/14/23	T4-20-0821 8/21/2025
Semi-Volatile Organic Compounds (cont.)																
Acenaphthene	mg/kg		4800		49	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Anthracene	mg/kg		24000		1100	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	mg/kg	0.1	24	0.19	3.9	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Benzoic acid	mg/kg		320000		260	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	mg/kg		240		0.21	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl) ether	mg/kg			0.91	0.00022	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	mg/kg		1600	71	13	--	--	--	--	--	--	--	--	--	--	--
Butylbenzyl phthalate	mg/kg		16000	530	13	--	--	--	--	--	--	--	--	--	--	--
Carbazole	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Chrysene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	mg/kg		80		1.5	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	mg/kg		64000		72	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	mg/kg		8000		57	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	mg/kg		800		450	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	mg/kg		3200		630	--	--	--	--	--	--	--	--	--	--	--
Fluorene	mg/kg		3200		51	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	mg/kg		64	0.63	0.44	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	mg/kg		80	13	0.012	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	mg/kg		480		1.5	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	mg/kg		56	25	0.0088	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Isophorone	mg/kg		16000	1100	0.49	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	mg/kg	5	1600		4.5	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	mg/kg		160		0.1	--	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	mg/kg			0.14	0.00012	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	mg/kg			200	1	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	mg/kg		400	2.5	0.016	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	mg/kg					--	--	--	--	--	--	--	--	--	--	--
Phenol	mg/kg		4000		8	--	--	--	--	--	--	--	--	--	--	--
Pyrene	mg/kg		2400		330	--	--	--	--	--	--	--	--	--	--	--
Pyridine	mg/kg		80		0.043	--	--	--	--	--	--	--	--	--	--	--

Notes

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U = Not detected above laboratory reporting limit

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T4-48-0821 8/21/2025	T5-25-0819 8/19/2025	T5-58-0819 8/19/2025	T13-65-0819 (T5-58 Dup) 8/19/2025	T6-20-0809 8/9/2025	T6-55-0809 8/9/2025	T7-70-0725 7/25/2025	T7-80-0725 7/25/2025	Trip Blank 7/25/2025
Total Petroleum Hydrocarbons														
Gasoline Range Organics	mg/kg	1000/30*				5 U	**53**	15 J	8.7 J	15	5 U	**50**	5 U	--
TPH-Dx														
Diesel Range Organics	mg/kg	2000				50 U	1100	50 U	50 U	140	50 U	1600	50 U	--
Lube Oil	mg/kg	2000				200 U	**4800**	200 U	200 U	660	200 U	**2100**	200 U	--
Total TPH-Dx	mg/kg	2000				250 U	**5900**	250 U	250 U	800	250 U	**3700**	250 U	--
Metals														
Arsenic	mg/kg	20	4.8	0.031	2.9	1.3	--	1.1	1 U	--	1.0 J	--	**4.9** J	--
Barium	mg/kg		16000		1600	140	--	32	34	--	110	--	86 J	--
Cadmium	mg/kg	2	80		0.69	1 U	--	1 U	1 U	--	1 U	--	1 U	--
Chromium	mg/kg				2000	5 U	--	5 U	5 U	--	5 U	--	8.6 J	--
Lead	mg/kg	250			3000	2.5	--	13 J	3.8 J	--	2.7	--	1.7 J	--
Mercury	mg/kg	2			2.1	1 U	--	1 U	1 U	--	1 U	--	1 U	--
Selenium	mg/kg		400		5.2	1 U	--	1 U	1 U	--	1 U	--	1 U	--
Silver	mg/kg		400		14	1 U	--	1 U	1 U	--	1 U	--	1 U	--
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	mg/kg		2400	38	0.0098	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,1,1-Trichloroethane	mg/kg	2	160000		1.5	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U
1,1,2,2-Tetrachloroethane	mg/kg		1600	5	0.0012	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.2 U
1,1,2-Trichloroethane	mg/kg		320	18	0.017	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.5 U
1,1-Dichloroethane	mg/kg		16000	180	0.041	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U
1,1-Dichloroethene	mg/kg		4000		0.046	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U
1,1-Dichloropropene	mg/kg					0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,2,3-Trichlorobenzene	mg/kg		64		0.2	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	2.5 U	0.25 U	1 U
1,2,3-Trichloropropane	mg/kg		320	0.0063	0.0000024	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	2.5 U	0.25 U	1 U
1,2,4-Trimethylbenzene	mg/kg		800		1.3	0.05 U	0.25	0.2	0.18	0.15 J	0.05 UJ	0.5 U	0.05 U	1 U
1,2-Dibromo-3-chloropropane	mg/kg		16	0.23	0.00091	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	0.5 U	10 U
1,2-Dibromoethane	mg/kg	0.005	720	0.5	0.00027	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.05 U	0.005 U	0.01 U
1,2-Dichlorobenzene	mg/kg		7200		7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,2-Dichloroethane	mg/kg		480	11	0.023	0.003 U	0.003 U	0.003 U	0.003 U	0.003 UJ	0.003 UJ	0.03 U	0.003 U	0.2 U
1,2-Dichloropropane	mg/kg		3200	27	0.025	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,3,5-Trimethylbenzene	mg/kg		800		1.3	0.05 U	0.16	0.12	0.11	0.068 J	0.05 UJ	0.5 U	0.05 U	1 U
1,3-Dichlorobenzene	mg/kg					0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,3-Dichloropropane	mg/kg		1600		0.88	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
2,2-Dichloropropane	mg/kg					0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
2-Butanone	mg/kg		48000		20	1 U	1 U	1 U	1 U	1 UJ	1 UJ	10 U	1 U	20 U
2-Chlorotoluene	mg/kg		1600		1.9	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
2-Hexanone	mg/kg		400		0.17	1 U	1 U	1 U	1 U	1 UJ	1 UJ	10 U	1 U	10 U
4-Chlorotoluene	mg/kg		1600		1.9	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Acetone	mg/kg		72000		29	5 U	5 UJ	5 U	5 U	5 UJ	5 UJ	50 U	5 U	50 U
Benzene	mg/kg	0.03	320	18	0.027	0.002 U	**0.032**	**0.15** J	**0.085** J	0.0062 J	0.002 UJ	**0.031**	0.002 U	0.35 U
Bromobenzene	mg/kg		640		0.56	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Bromoform	mg/kg		1600	130	0.36	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	5 U
Bromomethane	mg/kg		110		0.051	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	0.5 U	5 U
Carbon tetrachloride	mg/kg		320	14	0.041	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.5 U
CFC-11	mg/kg		24000		23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	0.5 U	1 U
CFC-12	mg/kg		16000		38	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	0.5 U	1 U
Chlorobenzene	mg/kg		1600		0.86	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Chloroethane	mg/kg					0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	1 U	0.1 U	1 U
Chloroform	mg/kg		800	32	0.074	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Chloromethane	mg/kg					0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	0.5 U	10 U
cis-1,2-Dichloroethene	mg/kg		160		0.079	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U

Table 4. Gas Probe and Thermistor Soil Analytical Results, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-cancer	MTCA Method B Protective of groundwater	T4-48-0821 8/21/2025	T5-25-0819 8/19/2025	T5-58-0819 8/19/2025	T13-65-0819 (T5-58 Dup) 8/19/2025	T6-20-0809 8/9/2025	T6-55-0809 8/9/2025	T7-70-0725 7/25/2025	T7-80-0725 7/25/2025	Trip Blank 7/25/2025
Volatile Organic Compounds (cont.)														
cis-1,3-Dichloropropene	mg/kg					0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.4 U
Dibromochloromethane	mg/kg		1600	12	0.024	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.5 U
Dibromomethane	mg/kg		800		0.36	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Dichlorobromomethane	mg/kg		1600	16	0.033	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.5 U
Ethylbenzene	mg/kg	6	8000		5.9	0.002 U	0.94	1.2	1.1	0.079 J	0.002 UJ	0.30	0.002 U	1 U
Hexachlorobutadiene	mg/kg		80	13	0.012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	2.5 U	0.25 U	0.5 U
Hexane	mg/kg		4800		72	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	2.5 U	0.25 U	5 U
Isopropylbenzene (Cumene)	mg/kg		8000		15	0.05 U	0.78	0.88	0.94	0.16 J	0.05 UJ	0.5 U	0.05 U	1 U
m, p-Xylene	mg/kg		16000		13	0.004 U	0.35	0.33	0.32	0.031 J	0.004 UJ	0.099	0.004 U	2 U
Methyl isobutyl ketone	mg/kg		6400		2.7	1 U	1 U	1 U	1 U	1 UJ	1 UJ	10 U	1 U	10 U
Methyl t-butyl ether	mg/kg	0.1		560	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U
Methylene chloride	mg/kg	0.02	480	94	0.022	0.4 U	0.4 U	0.4 U	0.4 U	0.4 UJ	0.4 UJ	4 U	0.4 U	5 U
Naphthalene	mg/kg	5	1600		4.5	0.01 U	0.24	0.071 J	0.028 J	10 J	0.01 UJ	4.8	0.01 U	1 U
n-Propylbenzene	mg/kg		8000		16	0.05 U	0.13	0.12	0.11	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
o-Xylene	mg/kg		16000		14	0.002 U	0.27	0.21	0.2	0.042 J	0.002 UJ	0.11	0.002 U	1 U
p-Isopropyltoluene	mg/kg		320		0.86	0.05 U	0.54	0.41	0.35	0.1 J	0.05 UJ	0.5 U	0.05 U	1 U
sec-Butylbenzene	mg/kg		8000		25	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Styrene	mg/kg		16000		2.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
tert-Butylbenzene	mg/kg		8000		20	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	1 U
Tetrachloroethene	mg/kg	0.05	480	480	0.05	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	0.5 U
Toluene	mg/kg	7	6400		4.5	0.008 U	0.24	0.3 J	0.2 J	0.0094 J	0.008 UJ	0.08 U	0.008 U	1 U
trans-1,2-Dichloroethene	mg/kg		1600		0.52	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	1 U
trans-1,3-Dichloropropene	mg/kg					0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	0.05 U	0.4 U
Trichloroethene	mg/kg	0.03	40	12	0.025	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	0.05 U
Vinyl chloride	mg/kg		240	0.67	0.0017	0.002 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.02 U	0.002 U	0.02 U
Semi-Volatile Organic Compounds														
1,2,4-Trichlorobenzene	mg/kg		800	34	0.56	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
1,2-Dichlorobenzene	mg/kg		7200		7	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
1,3-Dichlorobenzene	mg/kg					0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
1,4-Dichlorobenzene	mg/kg		5600	190	1.2	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
1-Methylnaphthalene	mg/kg		5600	20	0.047	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
2,2'-Oxybis(1-chloropropane)	mg/kg		3200	14	0.0035	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
2,4,5-Trichlorophenol	mg/kg		8000		58	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
2,4,6-Trichlorophenol	mg/kg		80	91	0.092	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
2,4-Dichlorophenol	mg/kg		240		0.33	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
2,4-Dimethylphenol	mg/kg		1600		4.4	0.5 U	--	5 U	2.5 U	--	0.5 U	--	0.5 U	0.5 U
2,4-Dinitrophenol	mg/kg		160		0.13	1 U	--	10 UJ	5 UJ	--	1 U	--	1 U	1 U
2,4-Dinitrotoluene	mg/kg		160	3.2	0.0044	0.12 U	--	1.2 U	0.62 U	--	0.12 U	--	0.12 U	0.12 U
2,6-Dinitrotoluene	mg/kg		24	0.67	0.00092	0.12 U	--	1.2 U	0.62 U	--	0.12 U	--	0.12 U	0.12 U
2-Chloronaphthalene	mg/kg		6400		34	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
2-Chlorophenol	mg/kg		400		0.47	0.12 U	--	1.2 U	0.62 U	--	0.12 U	--	0.12 U	0.12 U
2-Methylnaphthalene	mg/kg		320		1.7	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
2-Methylphenol	mg/kg		4000		8.1	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
2-Nitroaniline	mg/kg		800		1	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
2-Nitrophenol	mg/kg					0.5 UJ	--	5 UJ	2.5 UJ	--	0.5 U	--	0.5 U	0.5 U
3-Methylphenol + 4-Methylphenol	mg/kg		4000		8	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
3-Nitroaniline	mg/kg					0.5 U	--	5 U	2.5 U	--	0.5 U	--	0.5 U	0.5 U
4,6-Dinitro-2-methylphenol	mg/kg		6.4		0.024	1 UJ	--	10 UJ	5 UJ	--	1 U	--	1 U	1 U
4-Chloro-3-methylphenol	mg/kg		8000		22	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
4-Chloroaniline	mg/kg		320	5	0.0027	5 U	--	50 U	25 U	--	5 U	--	5 U	5 U
4-Chlorophenyl phenyl ether	mg/kg					0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
4-Nitroaniline	mg/kg		320	50	0.027	0.5 UJ	--	5 UJ	2.5 UJ	--	0.5 UJ	--	0.5 U	0.5 U
4-Nitrophenol	mg/kg					0.5 U	--	5 U	2.5 U	--	0.5 U	--	0.5 U	0.5 U

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Semi-Volatile Organic Compounds (cont.)														
Acenaphthene	mg/kg		4800		49	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Acenaphthylene	mg/kg					0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Anthracene	mg/kg		24000		1100	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Benz[a]anthracene	mg/kg					0.005 U	--	0.059	0.025 U	--	0.005 U	--	0.005 U	0.005 U
Benzo(a)pyrene	mg/kg	0.1	24	0.19	3.9	0.0025 U	--	0.044	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Benzo(b)fluoranthene	mg/kg					0.0025 U	--	0.097	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Benzo(ghi)perylene	mg/kg					0.005 U	--	0.05 U	0.025 U	--	0.005 U	--	0.005 U	0.005 U
Benzo(k)fluoranthene	mg/kg					0.0025 U	--	0.027	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Benzoic acid	mg/kg		320000		260	1 UJ	--	10 U	5 U	--	1 U	--	1 U	1 U
Benzyl alcohol	mg/kg					0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
Bis(2-chloroethoxy)methane	mg/kg		240		0.21	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Bis(2-chloroethyl) ether	mg/kg			0.91	0.00022	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Bis(2-ethylhexyl) phthalate	mg/kg		1600	71	13	0.5 U	--	5 U	2.5 U	--	0.5 U	--	0.5 U	0.5 U
Butylbenzyl phthalate	mg/kg		16000	530	13	0.25 UJ	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
Carbazole	mg/kg					0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Chrysene	mg/kg					0.0025 U	--	0.088	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Dibenzo(a,h)anthracene	mg/kg					0.005 U	--	0.05 U	0.025 U	--	0.005 U	--	0.005 U	0.005 U
Dibenzofuran	mg/kg		80		1.5	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Diethyl phthalate	mg/kg		64000		72	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
Dimethyl phthalate	mg/kg					0.12 U	--	1.2 U	0.62 U	--	0.12 U	--	0.12 U	0.12 U
Di-n-butyl phthalate	mg/kg		8000		57	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
Di-n-octyl phthalate	mg/kg		800		450	0.5 U	--	5 U	2.5 U	--	0.5 U	--	0.5 U	0.5 U
Fluoranthene	mg/kg		3200		630	0.0025 U	--	0.057	0.012 U	--	0.0031	--	0.0025 U	0.0025 U
Fluorene	mg/kg		3200		51	0.0025 U	--	0.025 U	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Hexachlorobenzene	mg/kg		64	0.63	0.44	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Hexachlorobutadiene	mg/kg		80	13	0.012	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Hexachlorocyclopentadiene	mg/kg		480		1.5	0.05 UJ	--	0.5 UJ	0.25 UJ	--	0.05 UJ	--	0.05 UJ	0.05 U
Hexachloroethane	mg/kg		56	25	0.0088	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Indeno(1,2,3-cd)pyrene	mg/kg					0.005 U	--	0.05 U	0.025 U	--	0.005 U	--	0.005 U	0.005 U
Isophorone	mg/kg		16000	1100	0.49	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Naphthalene	mg/kg	5	1600		4.5	0.005 U	--	0.05 U	0.025 U	--	0.005 U	--	0.005 U	0.005 U
Nitrobenzene	mg/kg		160		0.1	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
N-Nitroso-di-n-propylamine	mg/kg			0.14	0.00012	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
N-Nitrosodiphenylamine	mg/kg			200	1	0.05 U	--	0.5 U	0.25 U	--	0.05 U	--	0.05 U	0.05 U
Pentachlorophenol	mg/kg		400	2.5	0.016	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U
Phenanthrene	mg/kg					0.0025 U	--	0.025 U	0.012 U	--	0.0092	--	0.0025 U	0.0025 U
Phenol	mg/kg		4000		8	0.12 U	--	1.2 U	0.62 U	--	0.12 U	--	0.12 U	0.12 U
Pyrene	mg/kg		2400		330	0.0025 U	--	0.068	0.012 U	--	0.0025 U	--	0.0025 U	0.0025 U
Pyridine	mg/kg		80		0.043	0.25 U	--	2.5 U	1.2 U	--	0.25 U	--	0.25 U	0.25 U

Notes

Metals = Metals (RCRA 8) analyzed by EPA Method SW6020

SVOCs = Semivolatile organic compounds analyzed using EPA Method 8270E

TPH-Dx = Diesel-range organics, total petroleum hydrocarbons (diesel and motor oil) analyzed using method NWTPH-Dx

TPH-Gx = Gasoline-range organics, total petroleum hydrocarbons analyzed using method NWTPH-Gx

VOCs = Volatile Organic Compounds analyzed by EPA Method 8260D

* = Cleanup level if benzene present

BOLD = Exceeds cleanup level

-- = Not analyzed

mg/kg = milligrams per kilogram

J = Estimated value

U = Not detected above laboratory reporting limit

Table 5. Monitoring Well Construction Summary, Rocky Top Environmental Limited Purpose Landfill

Well ID	Northing	Easting	Ground Elevation (ft)	TOC Elevation (ft)	Screen Interval (ft bgs)	Completion Zone	Static Water Level [1] (ft below TOC)	Water Level Elevation[1] (ft)
MW-1S	473263.045	1593612.052	1770.14	1772.64	115-135	SA	106.70	1670.241
MW-2S	473814.19	1591095.99	1856.31	1858.36	310-330	SA	289.36	1569
MW-3S	473404.76	1592840.9	1843.82	1845.92	188-1985	SA	172.36	1673.56
MW-4S	472860.94	1591915.35	1843.44	1845.59	49-69	SA	44.12	1801.47
MW-5S	473452.58	1591789.89	1881.53	1883.88	222-242	SA	218.44	1665.44
MW-6S	473095.44	1592102.5	1822.97	1825.31	110-130	SA	98.50	1726.81
MW-7D	473475.06	1591782.75	1881.68	1883.88	475-495	IZ	113.11	1701.89
MW-8D	473169.85	1590740.82	1861.6	1863.94	375-405	IZ	449.12	1434.76
MW-9D	473421.5	1592857.26	1845.25	1847.49	420-440	IZ	302.74	1561.2
MW-10D	471017.47	1592164.59	1986.47	1988.77	150-170	IZ	431.80	1415.69
MW-11S	473646.54	1592863.466	1776.44	1778.94	219-239	SA	80.86	1907.91

Notes

[1] Measured on 12/2/2025

bgs = below ground surface

ft = feet

SA = Shallow Aquifer

TOC = Top of casing

IZ = Interflow zone

Table 6. Field Parameters, Nitrate, Petroleum Hydrocarbons, and Volatile Organic Compounds Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MCL	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-Cancer	MW-1S		MW-2S						MW-3S							MW-4S				
						9/10/2025	12/4/2025	9/12/2024	12/11/2024	4/1/2025	6/17/2025	9/9/2025	12/3/2025	9/12/2024	12/11/2024	3/31/2025	6/18/2025	MW-13S (Dup) 6/18/2025	9/10/2025	12/3/2025	9/11/2024	12/12/2024	4/1/2025	6/18/2025	9/10/2025
Field Data									1/0/1900																
pH						9.3$_R$	8.38	7.91	8.36 R	7.59	7.15	7.26	7.63	7.69	7.90 R	7.09	6.87	--	8.83$_R$	6.95	7.76	8.12 R	7.13	6.72	8.12$_R$
Conductivity	µmhos/cm	700 **				257.9$_C$	244.9	176.8	161.4	120	182.6	**709.6$_C$**	174.9	630	563	432	669	--	689$_C$	627	**973**	**786**	**752**	**1,207**	**1131$_C$**
Temperature	C					15.4	12.8	14.2	13.0	13.73	14.9	16.6	11.3	14.4	13.6	13.69	14.7	--	15	13.6	13.1	10.8	12.33	13.4	19.4
Redox	mV					-74.1$_C$	25.3	-72.1	-186.0	192	192.2	181.6	158.8	-73.9	-185.4	172	247.6	--	-1.2$_C$	182.3	-96.9	-181.2	187	288.6	-5.2$_C$
Dissolved Oxygen	mg/L					0.09	0.60	6.04	6.93	7.28	7.52	7.25	8.96	4.88	4.65	4.77	5.39	--	5.00	7.61	4.04	4.33	5.77	4.96	8.11
Turbidity	NTU					2.36	7.51	0.00	0.00	0.06	49.60	0.38	0.00	0.00	0.44	0.21	2.64	--	0.25	0.00	0.00	0.59	0.36	49.96	3.12
Inorganic Parameters																									
Nitrate	mg/L-N	10 *			26	<0.200	0.206	0.60	0.64	0.702	0.686	0.731	0.703	**11**	**12**	**11.3**	**12.0**	**12.1**	**11.6**	**12.4**	**47**	**37**	**62.8**	**78.2**	**66.3**
Total Dissolve Solids	mg/L	500				130	150	140	140	160	140	120	120 H	320	380	420	420	400	410	400	**590**	**540**	**710**	**720**	**640**
Total Petroleum Hydrocarbons																									
Gasoline Range Organics [a]	µg/L		1000			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TPHDx																									
Diesel Range Organics	µg/L					<200	<210	<210	<210	<210	<210	<210	<220	<210	<220	<200	<210	<210	<210	<210	<210	<220	<210	<200	<250
Lube Oil Range Organics	µg/L					<200	<210	<210	<210	<210	<210	<210	<220	<210	<220	<200	<210	<210	<210	<210	<210	<220	<210	<200	<250
Total TPHDx	µg/L		500			<200	<210	<210	<210	<210	<210	<210	<220	<210	<220	<200	<210	<210	<210	<210	<210	<220	<210	<200	<250
Volatile Organic Compounds																									
Chloromethane	µg/L					<1.0	<1.0	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.3	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	µg/L	2 *	0.2	0.029	24	**0.030**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromomethane	µg/L				11	<1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.4
Chloroethane	µg/L					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11, Trichlorofluoromethane	µg/L				2400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	µg/L	7 *			400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acetone	µg/L				7200	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl Iodide	µg/L					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	µg/L				800	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	5 *	5	5.8	48	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acrylonitrile	µg/L			0.081	8	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0
Trans-1,2-Dichloroethene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L			7.7	1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Acetate	µg/L				8000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	µg/L	70 *			16	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Butanone	µg/L				4800	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	80 * THM		1.4	80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200 *	200		16000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride	µg/L	5 *		0.63	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5 *	5	0.8	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	5 *	5	0.48	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethene	µg/L	5 *	5	0.54	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5 *		1.2	320	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromomethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorobromomethane	µg/L	80 * THM		0.71	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
4-methyl-2-pentanone	µg/L				640	<2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7
Toluene	µg/L	1000 *	1000		640	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	µg/L	5 *		0.77	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethene	µg/L	5 *	5	21	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L				40	<2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6
Dibromochloromethane	µg/L	80 * THM		0.52	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (EDB)	µg/L	0.05 *	0.01	0.022	72	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L			1.7	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	700 *	700		800	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m, p-Xylene	µg/L		1000		1600	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-Xylene	µg/L				1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	µg/L	100 *			1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	80 * THM		5.5	160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	µg/L			0.22	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2,3-Trichloropropane	µg/L			0.00038	32	<0.20	<0.20	<0.20	<0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.27	<0.20	<0.20	<0.20
trans-1,4-Dichloro-2-butene	µg/L					<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0
1,4-Dichlorobenzene	µg/L	75 *		8.1	560	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	600 *			720	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromo-3-chloropropane	µg/L	0.2 *		0.014	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/L		160		160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table 6. Field Parameters, Nitrate, Petroleum Hydrocarbons, and Volatile Organic Compounds Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MCL	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-Cancer	MW-4S (cont.)		MW-5S							MW-6S								MW-11S	
						MW-13S (Dup) 9/10/2025	12/3/2025	9/11/2024	MW-13S (Dup) 9/11/2024	12/11/2024	3/31/2025	6/17/2025	9/9/2025	12/2/2025	9/11/2024	12/12/2024	MW-13S (Dup) 12/12/2024	4/1/2025	MW-13S (Dup) 4/1/2025	6/18/2025	9/10/2025	12/3/2025	MW-13S (Dup) 12/3/2025	9/10/2025	12/2/2025
Field Data																								
pH						--	6.97	8.49	--	8.46_R	7.87	7.49	7.72	7.75	8.25	8.38_R	--	7.51	--	7.02	9.27_R	7.37	--	9.37_R	7.74
Conductivity	µmhos/cm	700 **				--	**1036**	356.6	--	362.3	525	403.2	**709.9$_C$**	356.8	501	504	--	389	--	591	617_C	622	--	271_C	270.2
Temperature	C					--	12.0	15.6	--	13.9	13.8	14.7	17.8	13.9	13.3	11.5	--	12.36	--	13.2	14.1	12.2	--	14.4	13.1
Redox	mV					--	188.6	-149.7	--	-218.1	-187	-60.4	8.5	123.3	-104.2	-194.5	--	165	--	272.7	-32.4_C	172.8	--	-17.0_C	170.8
Dissolved Oxygen	mg/L					--	6.76	0.14	--	0.10	8.75	2.27	1.18	2.57	4.06	4.19	--	4.26	--	4.38	3.97	5.92	--	0.44	1.29
Turbidity	NTU					--	0.00	2.52	--	2.14	0.25	7.50	1.61	0.00	0.00	1.78	--	0.5	--	2.51	0.33	0.00	--	4.91	0.00
Inorganic Parameters																								
Nitrate	mg/L-N	10 *			26	**68.1**	**70.5**	<0.050	0.051	0.092	0.0800	<0.200	0.239	<0.200	9.2	8.6	9.9	**11.3**	**11.6**	**11.8**	**12.8**	**15.4**	**15.5**	0.551	1.26
Total Dissolve Solids	mg/L	500				**670**	**720**	190	170	230	330	230	210	220	170	360	340	390	430	330	330 J	410	440	150	170
Total Petroleum Hydrocarbons																								
Gasoline Range Organics [a]	µg/L		1000			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TPHDx																								
Diesel Range Organics	µg/L					<240	<210	<220	<210	<210	<200	<210	<210	<200	<200	<210	<220	<200	<210	<200	<240	<240	<240	<200	<200
Lube Oil Range Organics	µg/L					<240	<210	<220	<210	<210	<200	<210	<210	<200	<200	<210	<220	<200	<210	<200	<240	<240	<240	<200	<200
Total TPHDx	µg/L		500			<240	<210	<220	<210	<210	<200	<210	<210	<200	<200	<210	<220	<200	<210	<200	<240	<240	<240	<200	<200
Volatile Organic Compounds																								
Chloromethane	µg/L					<1.0	<1.0	<1.3	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.3	<1.0	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	µg/L	2 *	0.2	0.029	24	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromomethane	µg/L				11	<1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<2.0	<1.0	<1.4	<2.0
Chloroethane	µg/L					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11, Trichlorofluoromethane	µg/L				2400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	µg/L	7 *			400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acetone	µg/L				7200	<5.0	<5.0	<5.0	<5.0	<5.0	<6.7	<6.7	<5.0	<5.0	<5.0	<5.0	<5.0	<6.7	<5.0	<6.7	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl Iodide	µg/L					<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<1.0	<1.4	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	µg/L				800	<0.20	<0.20	<0.20	<0.20	<0.20	<0.26	<2.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.26	<0.20	<2.6	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	5 *	5	5.8	48	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acrylonitrile	µg/L			0.081	8	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,2-Dichloroethene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L			7.7	1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Acetate	µg/L				8000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	µg/L	70 *			16	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Butanone	µg/L				4800	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	80 * THM		1.4	80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200 *	200		16000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride	µg/L	5 *		0.63	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5 *	5	0.8	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	5 *	5	0.48	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethene	µg/L	5 *	5	0.54	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5 *		1.2	320	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromomethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorobromomethane	µg/L	80 * THM		0.71	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
4-methyl-2-pentanone	µg/L				640	<2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7	<2.0	<2.0	<2.7	<2.0
Toluene	µg/L	1000 *	1000		640	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	µg/L	5 *		0.77	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethene	µg/L	5 *	5	21	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L				40	<2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0	<2.0	<2.6	<2.0
Dibromochloromethane	µg/L	80 * THM		0.52	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (EDB)	µg/L	0.05 *	0.01	0.022	72	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L			1.7	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	700 *	700		800	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m, p-Xylene	µg/L		1000		1600	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-Xylene	µg/L				1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	µg/L	100 *			1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	80 * THM		5.5	160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	µg/L			0.22	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2,3-Trichloropropane	µg/L			0.00038	32	<0.20	<0.20	<0.20	<0.20	<0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
trans-1,4-Dichloro-2-butene	µg/L					<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	µg/L	75 *		8.1	560	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	600 *			720	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromo-3-chloropropane	µg/L	0.2 *		0.014	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/L		160		160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table 6. Field Parameters, Nitrate, Petroleum Hydrocarbons, and Volatile Organic Compounds Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MCL	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-Cancer	Trip Blank						
						6/13/2024	9/12/2024	12/11/2024	3/31/2025	6/17/2025	9/9/2025	12/2/2025
Field Data												
pH						--	--	--	--	--	--	--
Conductivity	µmhos/cm	700 **				--	--	--	--	--	--	--
Temperature	C					--	--	--	--	--	--	--
Redox	mV					--	--	--	--	--	--	--
Dissolved Oxygen	mg/L					--	--	--	--	--	--	--
Turbidity	NTU					--	--	--	--	--	--	--
Inorganic Parameters												
Nitrate	mg/L-N	10 *			26	--	--	--	--	--	--	--
Total Dissolve Solids	mg/L	500										
Total Petroleum Hydrocarbons												
Gasoline Range Organics [a]	µg/L		1000			<100	<100	<100	<100	<100	<100	--
TPHDx												--
Diesel Range Organics	µg/L					--	--	--	--	--	--	--
Lube Oil Range Organics	µg/L					--	--	--	--	--	--	--
Total TPHDx	µg/L		500				--	--	--	--	--	--
Volatile Organic Compounds						--	--	--				
Chloromethane	µg/L					<1.0	<1.4	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	µg/L	2 *	0.2	0.029	24	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromomethane	µg/L				11	<1.0	<1.0	<1.0	<1.0	<1.0	<1.4	<2.0
Chloroethane	µg/L					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11, Trichlorofluoromethane	µg/L				2400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	µg/L	7 *			400	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acetone	µg/L				7200	<6.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl Iodide	µg/L					<1.4	<1.0	<1.0	<1.0	<1.3	<1.0	<1.0
Carbon Disulfide	µg/L				800	<0.26	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	5 *	5	5.8	48	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acrylonitrile	µg/L			0.081	8	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
Trans-1,2-Dichloroethene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L			7.7	1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Acetate	µg/L				8000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	µg/L	70 *			16	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Butanone	µg/L				4800	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	80 * THM		1.4	80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200 *	200		16000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride	µg/L	5 *		0.63	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5 *	5	0.8	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	5 *	5	0.48	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethene	µg/L	5 *	5	0.54	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5 *		1.2	320	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromomethane	µg/L					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorobromomethane	µg/L	80 * THM		0.71	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
4-methyl-2-pentanone	µg/L				640	<2.0	<2.0	<2.0	<2.0	<2.0	<2.7	<2.0
Toluene	µg/L	1000 *	1000		640	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,3-Dichloropropene	µg/L			0.44	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	µg/L	5 *		0.77	32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethene	µg/L	5 *	5	21	48	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L				40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0
Dibromochloromethane	µg/L	80 * THM		0.52	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (EDB)	µg/L	0.05 *	0.01	0.022	72	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	µg/L	100 *			160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L			1.7	240	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	700 *	700		800	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m, p-Xylene	µg/L		1000		1600	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-Xylene	µg/L				1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	µg/L	100 *			1600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	80 * THM		5.5	160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	µg/L			0.22	160	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2,3-Trichloropropane	µg/L			0.00038	32	<0.20	<0.20	<0.27	<0.27	<0.27	<0.20	<0.20
trans-1,4-Dichloro-2-butene	µg/L					<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	µg/L	75 *		8.1	560	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	600 *			720	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromo-3-chloropropane	µg/L	0.2 *		0.014	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/L		160		160	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table 6. Field Parameters, Nitrate, Petroleum Hydrocarbons, and Volatile Organic Compounds (VOCs) Results, MTCA Limited Remedial Investigation, Rocky Top Environmental Limited Purpose Landfill

Notes:

MCL = Maximum Contaminant Level, State Drinking Water Regulations (Chapter 246-290 WAC)
MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
[a] = Gasoline with no benzene present
* = Primary
** = Secondary
*** = Carcinogen
*THM = Primary MCL for the sum of all trihalomethanes
*XYL = Primary MCL for the sum of all xylenes
BOLD = Exceeds MCL or MTCA cleanup level
< = Not detected
-- = Not analyzed
[c] = Estimated value due to meter calibration error
R = Rejected due to field meter calibration error
µmhos/cm = micromhos per centimeter
C = Celsius
mV = millivolt
mg/L = milligrams per liter
NTU = Nephelometric Turbidity Unit
µg/L = micrograms per liter

Table 7. Per- and Poly-fluoroalkyl Substances (PFAS) Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Parameter	Units	Cleanup Level			MW-1S		MW-2S						MW-3S						
		MTCA B Non-Cancer	MTCA B Cancer	MCL	9/10/2025	12/4/2025	9/12/2024	12/11/2024	4/1/2025	6/17/2025	9/9/2025	12/3/2025	9/12/2024	12/11/2024	3/31/2025	6/18/2025	MS-13S (Dup) 6/18/2025	9/10/2025	12/3/2025
Perfluoroalkyl Sulfonic Acids (PFSAs)																			
Perfluorobutane sulfonic acid (PFBS)	ng/L	4800			<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	13	8.1	9.6	12	12	11	10
Perfluoropentane sulfonic acid (PFPeS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	1.8 J	3.2	2.8	2.8	2.3
Perfluorohexane sulfonic acid (PFHxS)	ng/L	0.0064		10	<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	6.7	<5.4	3.9 J	7.6	7.2	6.5	5.3
Perfluoroheptane sulfonic acid (PFHpS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorooctane sulfonic acid (PFOS)	ng/L	1.6	2.2	4.0	<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	2.5 J	4.0	3.3	3.8	3.2
Perfluorononane sulfonic acid (PFNS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorodecane sulfonic acid (PFDS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorododecane sulfonic acid (PFDoS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluoroalkyl Carboxylic Acids (PFCAs)																			
Perfluorobutanoic acid (PFBA)	ng/L	8000			<2.0	<2.0	<4.5	<5.3	<4.4	<2.0	<2.0	<2.0	33	31	27	84	78	87	61
Perfluoropentanoic acid (PFPeA)	ng/L				0.79 J	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	74	49	42	87	82	79	56
Perfluorohexanoic acid (PFHxA)	ng/L	8000			0.65 J	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	43	34	25	62	57	54	38
Perfluoroheptanoic acid (PFHpA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	25	17	13	31	29	27	18
Perfluorooctanoic acid (PFOA)	ng/L	0.48	0.003	4.0	0.68 J	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	**29**	**21**	**15**	**34**	**33**	**35**	**22**
Perfluorononanoic acid (PFNA)	ng/L	40		10	<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	0.65 J	0.64 J	1.1 J	0.79 J
Perfluorodecanoic acid (PFDA)	ng/L	0.032			<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluoroundecanoic acid (PFUnDA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorododecanoic acid (PFDOA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorotridecanoic acid (PFTrDA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluorotetradecanoic acid (PFTDA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluoroalkyl Sulfonamido Substances																			
Perfluorooctane sulfonamide (PFOSAm)	ng/L				0.85 J	2.9	<4.5	<5.3	<4.4	<1.8	0.83 J	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Methylperfluorooctane sulfonamide (MeFOSA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Ethylperfluorooctane sulfonamide (EtFOSAm)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Fluorotelomer Sulfonic Acids (FTSAs)																			
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	ng/L	3200			<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Fluorotelomer Carboxylic Acids (FTCAs)																			
4,4,5,5,6,6,6-Heptafluorohexanoic acid (3:3 FTCA)	ng/L				<18	<19	<180	<210	<170	<18	<19	<20	<190	<220	<170	<18	<18	<18	<19
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	ng/L				<18	<19	<180	<210	<170	<18	<19	<20	<190	<220	<170	<18	<18	<18	<19
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	ng/L				<18	<19	<180	<210	<170	<18	<19	<20	<190	<220	<170	<18	<18	<18	<19
Perfluoroalkyl Ether Sulfonic Acids (PFESAs)																			
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluoroalkyl Ether Carboxylic Acids (PFECAs)																			
Perfluoro-3-methoxypropanoic acid (PFMPA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	ng/L	24		10	<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/L				<1.8	<1.9	<4.5	<5.3	<4.4	<1.8	<1.9	<2.0	<4.7	<5.4	<4.3	<1.8	<1.8	<1.8	<1.9
MCL Hazard Index for Mixtures of HFPO-DA, PFBS, PFHxS, and PFNA																			
Hazard Index	unitless				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.3	0.4	0.8	--	0.8	0.6
Running Annual Average Hazard Index (2025)	unitless			1	0.0		0.0						0.7						

Notes:

MCL = Maximum contaminant level, compliance is currently established using the MCL compared to running annual average (Chapter 246-290 WAC)

MTCA = Model Toxics Control Act (Chapter 173-340 WAC), MCLs are currently being used rather than MTCA Method B Cleanup levels (Ecology 2024, Selection of Human Health Toxicity for PFAS Chemicals)

< = Not detected

-- = Not calculated

J = Estimated value

ng/L = nanograms per liter

Table 7. Per- and Poly-fluoroalkyl Substances (PFAS) Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Parameter	Units	Cleanup Level			MW-4S							MW-5S						
		MTCA B Non-Cancer	MTCA B Cancer	MCL	9/12/2024	12/12/2024	4/1/2025	6/18/2025	9/10/2025	MW-13S (Dup) 9/10/2025	12/3/2025	9/12/2024	MW-13S (Dup) 9/12/2024	12/11/2024	3/31/2025	6/17/2025	9/9/2025	12/2/2025
Perfluoroalkyl Sulfonic Acids (PFSAs)																		
Perfluorobutane sulfonic acid (PFBS)	ng/L	4800			4.8	<5.3	4.2 J	5.4	5.6	5.4	5.0	<4.6	<4.9	<5.3	4.3	<2.1	<2.0	<1.9
Perfluoropentane sulfonic acid (PFPeS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorohexane sulfonic acid (PFHxS)	ng/L	0.0064		10	<4.5	<5.3	0.84 J	0.69 J	0.84 J	0.71 J	0.96 J	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoroheptane sulfonic acid (PFHpS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorooctane sulfonic acid (PFOS)	ng/L	1.6	2.2	4.0	<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorononane sulfonic acid (PFNS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorodecane sulfonic acid (PFDS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorododecane sulfonic acid (PFDoS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoroalkyl Carboxylic Acids (PFCAs)																		
Perfluorobutanoic acid (PFBA)	ng/L	8000			23	17	31	39	39	39	37	<4.6	<4.9	<5.3	47	6.0	4.9	4.5
Perfluoropentanoic acid (PFPeA)	ng/L				21	7.9	25	42	42	41	33	<4.6	<4.9	<5.3	21	3.8	3.0	2.9
Perfluorohexanoic acid (PFHxA)	ng/L	8000			8.6	<5.3	19	32	29	28	25	<4.6	<4.9	<5.3	11	2.6	1.7 J	1.7 J
Perfluoroheptanoic acid (PFHpA)	ng/L				<4.5	<5.3	9.0	17	14	14	13	<4.6	<4.9	<5.3	1.2 J	<2.1	<2.0	<1.9
Perfluorooctanoic acid (PFOA)	ng/L	0.48	0.003	4.0	<4.5	<5.3	3.2 J	**6.8**	**6.3**	**5.9**	**5.8**	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorononanoic acid (PFNA)	ng/L	40		10	<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorodecanoic acid (PFDA)	ng/L	0.032			<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoroundecanoic acid (PFUnDA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorododecanoic acid (PFDOA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorotridecanoic acid (PFTrDA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluorotetradecanoic acid (PFTDA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoroalkyl Sulfonamido Substances																		
Perfluorooctane sulfonamide (PFOSAm)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	1.1 J	0.87 J	0.76 J
N-Methylperfluorooctane sulfonamide (MeFOSA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
N-Ethylperfluorooctane sulfonamide (EtFOSAm)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Fluorotelomer Sulfonic Acids (FTSAs)																		
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	ng/L	3200			<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Fluorotelomer Carboxylic Acids (FTCAs)																		
4,4,5,5,6,6,6-Heptafluorohexanoic acid (3:3 FTCA)	ng/L				<180	<210	<190	<18	<21	<18	<20	<190	<190	<210	<170	<21	<20	<19
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	ng/L				<180	<210	<190	<18	<21	<18	<20	<190	<190	<210	<170	<21	<20	<19
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	ng/L				<180	<210	<190	<18	<21	<18	<20	<190	<190	<210	<170	<21	<20	<19
Perfluoroalkyl Ether Sulfonic Acids (PFESAs)																		
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoroalkyl Ether Carboxylic Acids (PFECAs)																		
Perfluoro-3-methoxypropanoic acid (PFMPA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	ng/L	24		10	<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/L				<4.5	<5.3	<4.6	<1.8	<2.1	<1.8	<2.0	<4.6	<4.9	<5.3	<4.3	<2.1	<2.0	<1.9
MCL Hazard Index for Mixtures of HFPO-DA, PFBS, PFHxS, and PFNA																		
Hazard Index	unitless				0.2	0.2	0.09	0.07	0.09	--	0.1	0.0	--	0.0	0.002	0.0	0.0	0.0
Running Annual Average Hazard Index (2025)	unitless			1				0.1							0.0			

Notes:

MCL = Maximum contaminant level, compliance is currently established using the MCL compared to running annual averag

MTCA = Model Toxics Control Act (Chapter 173-340 WAC), MCLs are currently being used rather than MTCA Method B Cleanu (Ecology 2024, Selection of Human Health Toxicity for PFAS Chemicals)

< = Not detected

-- = Not calculated

J = Estimated value

ng/L = nanograms per liter

Table 7. Per- and Poly-fluoroalkyl Substances (PFAS) Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Parameter	Units	Cleanup Level			MW-6S									MW-11S	
		MTCA B Non-Cancer	MTCA B Cancer	MCL	9/12/2024	12/12/2024	MS-13S (Dup) 12/12/2024	4/1/2025	MS-13S (Dup) 4/1/2025	6/18/2025	9/10/2025	12/3/2025	MS-13S (Dup) 12/3/2025	9/10/2025	12/2/2025
Perfluoroalkyl Sulfonic Acids (PFSAs)															
Perfluorobutane sulfonic acid (PFBS)	ng/L	4800			6.6	5.1	<4.9	6.3	6.9	7.2	7.2	7.7	7.5	<1.9	<1.9
Perfluoropentane sulfonic acid (PFPeS)	ng/L				<4.3	<4.8	<4.9	1.1 J	1.0 J	1.2 J	1.2 J	1.3 J	1.3 J	<1.9	<1.9
Perfluorohexane sulfonic acid (PFHxS)	ng/L	0.0064		10	<4.3	<4.8	<4.9	1.1 J	1.0 J	1.0 J	0.81 J	1.1 J	1.1 J	<1.9	<1.9
Perfluoroheptane sulfonic acid (PFHpS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorooctane sulfonic acid (PFOS)	ng/L	1.6	2.2	4.0	<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorononane sulfonic acid (PFNS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorodecane sulfonic acid (PFDS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorododecane sulfonic acid (PFDoS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluoroalkyl Carboxylic Acids (PFCAs)															
Perfluorobutanoic acid (PFBA)	ng/L	8000			9.1	8.5	7.9	9.5	9.6	12	14	16	15	<2.0	<2.0
Perfluoropentanoic acid (PFPeA)	ng/L				<4.3	5.5	5.4	8.1	7.9	12	15	19	18	<1.9	<1.9
Perfluorohexanoic acid (PFHxA)	ng/L	8000			<4.3	<4.8	<4.9	4.7 J	4.9	8.3	11	13	12	<1.9	<1.9
Perfluoroheptanoic acid (PFHpA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	0.90 J	1.3 J	1.5 J	1.5 J	<1.9	<1.9
Perfluorooctanoic acid (PFOA)	ng/L	0.48	0.003	4.0	<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorononanoic acid (PFNA)	ng/L	40		10	<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorodecanoic acid (PFDA)	ng/L	0.032			<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluoroundecanoic acid (PFUnDA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorododecanoic acid (PFDOA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorotridecanoic acid (PFTrDA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluorotetradecanoic acid (PFTDA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluoroalkyl Sulfonamido Substances															
Perfluorooctane sulfonamide (PFOSAm)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	0.54 J	0.60 J
N-Methylperfluorooctane sulfonamide (MeFOSA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
N-Ethylperfluorooctane sulfonamide (EtFOSAm)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Fluorotelomer Sulfonic Acids (FTSAs)															
1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	ng/L	3200			<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Fluorotelomer Carboxylic Acids (FTCAs)															
4,4,5,5,6,6,6-Heptafluorohexanoic acid (3:3 FTCA)	ng/L				<170	<190	<200	<190	<180	<18	<18	<19	<20	<19	<19
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	ng/L				<170	<190	<200	<190	<180	<18	<18	<19	<20	<19	<19
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	ng/L				<170	<190	<200	<190	<180	<18	<18	<19	<20	<19	<19
Perfluoroalkyl Ether Sulfonic Acids (PFESAs)															
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluoroalkyl Ether Carboxylic Acids (PFECAs)															
Perfluoro-3-methoxypropanoic acid (PFMPA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Perfluoro-4-methoxybutanoic acid (PFMBA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	ng/L	24		10	<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/L				<4.3	<4.8	<4.9	<4.7	<4.5	<1.8	<1.8	<1.9	<2.0	<1.9	<1.9
MCL Hazard Index for Mixtures of HFPO-DA, PFBS, PFHxS, and PFNA															
Hazard Index	unitless				0.2	0.2	--	0.1	--	0.004	0.08	0.1	--	0.0	0.0
Running Annual Average Hazard Index (2025)	unitless			1					0.1						0.0

Notes:

MCL = Maximum contaminant level, compliance is currently established using the MCL compared to running annual averag

MTCA = Model Toxics Control Act (Chapter 173-340 WAC), MCLs are currently being used rather than MTCA Method B Cleanı (Ecology 2024, Selection of Human Health Toxicity for PFAS Chemicals)

< = Not detected

-- = Not calculated

J = Estimated value

ng/L = nanograms per liter

Table 8. Dioxins and Furans Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Parameter	Units	MTCA Method B Cancer CUL	MTCA Method B Non-Cancer CUL	TEF	MW-2S						MW-3S						MW-4S					
					9/12/2024	TEF	12/11/2024	TEF	4/1/2025	TEF	9/12/2024	TEF	12/11/2024	TEF	3/31/2025	TEF	9/12/2024	TEF	12/12/2024	TEF	4/1/2025	TEF
Dioxin Congeners																						
2,3,7,8-Tetrachloro dibenzo-p-dioxin	pg/L	0.34	5.60	1	<0.797	--	<1.46	--	<1.28	--	<1.92	--	<1.81	--	<1.17	--	<1.18	--	<2.64	--	<0.846	--
1,2,3,7,8-Pentachloro dibenzo-p-dioxin	pg/L			1	<0.959	--	<1.10	--	<1.69	--	<2.10	--	<1.05	--	<2.10	--	<2.00	--	<0.840	--	<1.44	--
1,2,3,4,7,8-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<1.28	--	<2.11	--	<2.04	--	<1.72	--	<1.83	--	<2.33	--	<1.60	--	<1.86	--	<2.33	--
1,2,3,6,7,8-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<1.30	--	<2.28	--	<2.19	--	<2.20	--	<1.91	--	<2.59	--	<1.93	--	<1.99	--	<2.60	--
1,2,3,7,8,9-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<1.44	--	<2.40	--	<2.27	--	<2.55	--	<1.86	--	<2.40	--	<1.81	--	<2.01	--	<2.57	--
1,2,3,4,6,7,8-Heptachloro dibenzo-p-dioxin	pg/L			0.01	<1.90	--	<3.30	--	<4.10	--	3.83 J	0.0383 J	1.34 J	0.0134 J	<2.49	--	73.7	0.737	<2.17	--	<2.47	--
1,2,3,4,6,7,8,9-Octachloro dibenzo-p-dioxin	pg/L			0.0003	2.60	0.000780	<2.96	--	110	0.0330	21.7 J	0.00651 J	<10.2	--	<6.93	--	<4.11	--	<3.42	--	<12.7	--
Furan Congeners																						
2,3,7,8-Tetrachloro dibenzofuran	pg/L			0.1	<0.652	--	<0.801	--	<2.30	--	<1.31	--	<0.853	--	<0.619	--	<0.875	--	<0.704	--	<0.789	--
1,2,3,7,8-Pentachloro dibenzofuran	pg/L			0.03	<0.585	--	<0.750	--	<2.85	--	<1.27	--	<0.551	--	<1.42	--	<1.25	--	<0.652	--	<0.647	--
2,3,4,7,8-Pentachloro dibenzofuran	pg/L			0.3	<0.548	--	<0.660	--	<3.02	--	<1.25	--	<0.507	--	<0.709	--	<1.38	--	<0.504	--	<0.639	--
1,2,3,4,7,8-Hexachloro dibenzofuran	pg/L			0.1	<0.685	--	<0.819	--	<4.14	--	<1.36	--	<0.826	--	<0.502	--	1.59 J	0.159 J	<0.634	--	<0.515	--
1,2,3,6,7,8-Hexachloro dibenzofuran	pg/L			0.1	<0.736	--	<0.876	--	<2.16	--	<1.47	--	<0.882	--	<0.475	--	1.4 J	0.14 J	<0.691	--	<0.497	--
1,2,3,7,8,9-Hexachloro dibenzofuran	pg/L			0.1	<0.743	--	<1.30	--	<2.63	--	<1.59	--	<1.33	--	<0.565	--	1.94 J	0.194 J	<1.25	--	<0.575	--
2,3,4,6,7,8-Hexachloro dibenzofuran	pg/L			0.1	<1.05	--	<0.827	--	<2.78	--	<2.09	--	<0.965	--	<0.624	--	<1.58	--	<0.689	--	< 0.720	--
1,2,3,4,6,7,8-Heptachloro dibenzofuran	pg/L			0.01	<0.835	--	<1.01	--	1.79 J	0.0179	<1.59	--	<1.05	--	<0.279	--	17.7 J	0.177 J	<0.806	--	<0.763	--
1,2,3,4,7,8,9-Heptachloro dibenzofuran	pg/L			0.01	<1.33	--	<1.34	--	<1.57	--	<1.78	--	<1.39	--	<0.416	--	2.68 J	0.0268 J	<1.54	--	<0.942	--
1,2,3,4,6,7,8,9-Octachloro dibenzofuran				0.0003	<1.83	--	<2.14	--	2.63 J	0.0008	4.02 J	0.001206 J	<2.73	--	<2.27	--	104 J	0.0312 J	<3.46	--	<1.98	--
Totals TEQ	pg/L	0.34	5.60			0.00078		0		0.0517		0.046016 J		0.0134 J		0		**1.465 J**		0		0

Notes:

MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
TEQ = Toxicity Equivalency Quotient
TEF = Toxic Equivalency Factor
Bold = Exceeds MTCA cleanup level
< = Not detected
-- = Not calculated
J = Estimated value
pg/L = picograms per liter

Table 8. Dioxins and Furans Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Parameter	Units	MTCA Method B Cancer CUL	MTCA Method B Non-Cancer CUL	TEF	MW-5S						MW-6S								
					9/12/2024	TEF	12/11/2024	TEF	3/31/2025	TEF	9/12/2024	TEF	MW-13S (Dup) 9/12/2024	12/12/2024	TEF	MW-13S (Dup) 12/12/2024	4/1/2025	TEF	MW-13S (Dup) 4/1/2025
Dioxin Congeners																			
2,3,7,8-Tetrachloro dibenzo-p-dioxin	pg/L	0.34	5.60	1	<1.57	--	<1.07	--	<1.88	--	<1.22	--	<0.895	<0.926	--	<2.50	<1.07	--	<1.24
1,2,3,7,8-Pentachloro dibenzo-p-dioxin	pg/L			1	<1.87	--	<1.01	--	<1.46	--	<1.91	--	<1.65	<1.05	--	<1.13	<1.71	--	<1.90
1,2,3,4,7,8-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<2.07	--	<2.45	--	<3.20	--	<1.98	--	<2.08	<1.65	--	<2.05	<2.22	--	<1.40
1,2,3,6,7,8-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<2.40	--	<2.75	--	<3.23	--	<1.99	--	<2.29	<1.76	--	<2.55	<2.40	--	<1.39
1,2,3,7,8,9-Hexachloro dibenzo-p-dioxin	pg/L			0.1	<2.42	--	<2.50	--	<3.51	--	<2.05	--	<2.37	<1.77	--	<2.42	<2.47	--	<1.48
1,2,3,4,6,7,8-Heptachloro dibenzo-p-dioxin	pg/L			0.01	<3.53	--	<1.71	--	<2.71	--	<2.23	--	<3.11	<1.71	--	<2.23	<3.31	--	<1.80
1,2,3,4,6,7,8,9-Octachloro dibenzo-p-dioxin	pg/L			0.0003	12.6 J	0.00378 J	<5.66	--	<5.94	--	13.4 J	0.00402 J	<6.67	<3.37	--	<4.03	<5.61	--	<4.25
Furan Congeners																			
2,3,7,8-Tetrachloro dibenzofuran	pg/L			0.1	<1.27	--	<0.840	--	<1.18	--	1.1	--	<0.683	<0.822	--	<0.715	<1.01	--	<0.653
1,2,3,7,8-Pentachloro dibenzofuran	pg/L			0.03	<1.42	--	<0.812	--	< 4.30	--	<1.25	--	<1.06	<0.776	--	<0.736	<0.805	--	<0.686
2,3,4,7,8-Pentachloro dibenzofuran	pg/L			0.3	<1.04	--	<0.612	--	<3.43	--	<1.19	--	<0.854	<0.705	--	<0.548	<0.791	--	<0.569
1,2,3,4,7,8-Hexachloro dibenzofuran	pg/L			0.1	<1.55	--	<0.805	--	<1.36	--	<1.26	--	<1.03	<0.819	--	<0.782	<0.725	--	<0.578
1,2,3,6,7,8-Hexachloro dibenzofuran	pg/L			0.1	<1.55	--	<0.892	--	<1.44	--	<1.28	--	<1.09	<0.867	--	<0.886	<0.703	--	<0.552
1,2,3,7,8,9-Hexachloro dibenzofuran	pg/L			0.1	<1.51	--	<1.30	--	<1.71	--	<1.38	--	<1.15	<1.35	--	<1.26	<0.867	--	<0.658
2,3,4,6,7,8-Hexachloro dibenzofuran	pg/L			0.1	<1.94	--	<0.882	--	<1.86	--	<1.66	--	<1.48	<0.907	--	<0.953	<1.05	--	<0.752
1,2,3,4,6,7,8-Heptachloro dibenzofuran	pg/L			0.01	<2.07	--	<0.836	--	<0.708	--	<1.53	--	<1.59	<1.22	--	<0.697	<0.712	--	<0.373
1,2,3,4,7,8,9-Heptachloro dibenzofuran	pg/L			0.01	<2.72	--	<1.25	--	<0.922	--	<2.11	--	<2.14	<1.60	--	<1.01	<0.886	--	<0.483
1,2,3,4,6,7,8,9-Octachloro dibenzofuran				0.0003	<7.13	--	<2.67	--	<2.85	--	<3.02	--	<5.06	<2.65	--	<2.37	<2.49	--	<1.79
Totals TEQ	pg/L	0.34	5.60			0.00378 J		0		0		0.00402 J			0			0	

Notes:

MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
TEQ = Toxicity Equivalency Quotient
TEF = Toxic Equivalency Factor
Bold = Exceeds MTCA cleanup level
< = Not detected
-- = Not calculated
J = Estimated value
pg/L = picograms per liter

Table 9. Semi-Volatile Organic Compounds Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Cleanup Level			MW-2S		MW-3S			MW-4S		MW-5S		MW-6S		
		MTCA B Cancer	MTCA B Non-Cancer	MCL	12/11/2024	6/17/2025	12/11/2024	6/18/2025	MW-13S (Dup) 6/19/2025	12/12/2024	6/18/2025	12/12/2024	6/17/2025	12/12/2024	MW-13S (Dup) 12/12/2024	6/18/2025
(3+4)-Methylphenol (m,p-Cresol)	µg/L		1600 / 800		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,2,4-Trichlorobenzene	µg/L	1.5	80	70	<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,2-Dichlorobenzene	µg/L		720	600	<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,2-Dinitrobenzene	µg/L		1.6		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,2-Diphenylhydrazine	µg/L	0.11 A			<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,3-Dichlorobenzene	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,3-Dinitrobenzene	µg/L		1.6		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,4-Dichlorobenzene	µg/L	8.1	560	75	<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1,4-Dinitrobenzene	µg/L		1.6		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
1-Methylnaphthalene	µg/L	0.86	560		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
2,3,4,6-Tetrachlorophenol	µg/L		480		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,3,5,6-Tetrachlorophenol	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,3-Dichloroaniline	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,4,5-Trichlorophenol	µg/L		1600		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,4,6-Trichlorophenol	µg/L	8	16		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,4-Dichlorophenol	µg/L		48		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,4-Dimethylphenol	µg/L		320		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,4-Dinitrophenol	µg/L		32		<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
2,4-Dinitrotoluene	µg/L	0.28 A	32		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2,6-Dinitrotoluene	µg/L	0.058 A	4.8		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2-Chloronaphthalene	µg/L		640		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2-Chlorophenol	µg/L		40		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2-Methylnaphthalene	µg/L		32		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
2-Methylphenol (o-Cresol)	µg/L		800		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2-Nitroaniline	µg/L		160		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
2-Nitrophenol	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
3,3-Dichlorobenzidine	µg/L	0.19 A			<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
3-Nitroaniline	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4,6-Dinitro-2-methylphenol	µg/L		1.3 A		<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
4-Bromophenyl-phenylether	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4-Chloro-3-methylphenol	µg/L		1600		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4-Chloroaniline	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4-Chlorophenyl-phenylether	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4-Nitroaniline	µg/L	4.4	64		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
4-Nitrophenol	µg/L				<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Acenaphthene	µg/L		480		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Acenaphthylene	µg/L				<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Aniline	µg/L	15	110		<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Anthracene	µg/L		2400		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Benzyl alcohol	µg/L		1600		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
bis(2-Chloroethoxy)methane	µg/L		48		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
bis(2-Chloroethyl)ether	µg/L	0.04 A			<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
bis(2-Chloroisopropyl)ether	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
bis(2-Ethylhexyl)phthalate	µg/L	6.3	320	6	<0.98	<4.8	2.8	<4.9	<4.8	<1	<4.8	<0.96	<4.8	<1	<1	<4.8
bis-2-Ethylhexyladipate	µg/L	73	9600	400	<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Butylbenzylphthalate	µg/L	46	3200		<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Carbazole	µg/L				<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95

Table 9. Semi-Volatile Organic Compounds Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	Cleanup Level			MW-2S		MW-3S			MW-4S		MW-5S		MW-6S		
		MTCA B Cancer	MTCA B Non-Cancer	MCL	12/11/2024	6/17/2025	12/11/2024	6/18/2025	MW-13S (Dup) 6/19/2025	12/12/2024	6/18/2025	12/12/2024	6/17/2025	12/12/2024	MW-13S (Dup) 12/12/2024	6/18/2025
Dibenzofuran	µg/L		8		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Diethylphthalate	µg/L		13000		<0.98	<4.8	<0.96	<4.9	<4.8	<1	<4.8	<0.96	<4.8	<1	<1	<4.8
Dimethylphthalate	µg/L				<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Di-n-butylphthalate	µg/L		1600		<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Di-n-octylphthalate	µg/L		160		<0.98	<4.8	<0.96	<4.9	<4.8	<1	<4.8	<0.96	<4.8	<1	<1	<4.8
Fluoranthene	µg/L		640		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Fluorene	µg/L		320		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Hexachlorobenzene	µg/L	0.027 A	6.4	1	<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Hexachlorobutadiene	µg/L	0.56 A	8		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Hexachlorocyclopentadiene	µg/L		48	50	<4.9	<0.95	<4.8	<0.98	<0.95	<5.2	<0.95	<4.8	<0.97	<5.1	<5.2	<0.95
Hexachloroethane	µg/L	1.1	5.6		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Isophorone	µg/L	92	3200		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Naphthalene	µg/L	160	160		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Nitrobenzene	µg/L		16		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
n-Nitrosodimethylamine	µg/L	0.00023 A	0.064 A		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
n-Nitroso-di-n-propylamine	µg/L	0.013 A			<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
n-Nitrosodiphenylamine	µg/L		18		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Pentachlorophenol	µg/L	0.22 A	80	0.042 A	<4.9	<4.8	<4.8	<4.9	<4.8	<5.2	<4.8	<4.8	<4.8	<5.1	<5.2	<4.8
Phenanthrene	µg/L				<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Phenol	µg/L		4800		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95
Pyrene	µg/L		4800		<0.098	<0.098	<0.096	<0.098	<0.098	<0.1	<0.098	<0.096	<0.098	<0.1	<0.1	<0.098
Pyridine	µg/L		8		<0.98	<0.95	<0.96	<0.98	<0.95	<1	<0.95	<0.96	<0.97	<1	<1	<0.95

Notes:

A = Reporting Limit (practical quantitation limite) is above the Cleanup Level
MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
MCL = Maximum Contamination Level (Chapter 246-290 WAC)
Cleanup levels as published in Cleanup Levels and Risk Calculations (Ecology, February 2025)
< = Not detected
µg/L = micrograms per liter

Table 10. Carcinogenic Polycyclic Aromatic Hydrocarbons Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

		Cleanup Level			MW-2S				MW-3S						MW-4S			
					12/11/2024		6/17/2025		12/11/2024		6/18/2025		MW-13S (Dup) 6/18/2025		12/12/2024		6/18/2025	
Analyte	Units	MTCA Method A	MCL	TEF[1]	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ
Benzo(a)anthracene	µg/L	0.1		0.1	<0.0098	0.00098	<0.0095	0.00095	<0.0096	0.00096	<0.0098	0.00098	<0.0095	0.00095	<0.0100	0.00100	<0.0095	0.00095
Benzo(a)pyrene	µg/L	0.1	0.2	1	<0.0098	0.00980	<0.0095	0.0095	<0.0096	0.00960	<0.0098	0.00980	<0.0095	0.00950	<0.0100	0.01000	<0.0095	0.00950
Benzo(b)fluoranthene	µg/L	0.1		0.1	<0.0098	0.00098	<0.0095	0.00095	<0.0096	0.00096	<0.0098	0.00098	<0.0095	0.00095	<0.0100	0.00100	<0.0095	0.00095
Benzo(j,k)fluoranthene	µg/L	0.1		0.1	<0.0098	0.00098	<0.0095	0.00095	<0.0096	0.00096	<0.0098	0.00098	<0.0095	0.00095	<0.0100	0.00100	<0.0095	0.00095
Chrysene	µg/L	0.1		0.01	<0.0098	0.000098	<0.0095	0.000095	<0.0096	0.000096	<0.0098	0.000098	<0.0095	0.000095	<0.0100	0.000100	<0.0095	0.000095
Dibenzo(a,h)anthracene	µg/L	0.1		0.1	<0.0098	0.00098	<0.0095	0.00095	<0.0096	0.00096	<0.0098	0.00098	<0.0095	0.00095	<0.0100	0.00100	<0.0095	0.00095
Indeno(1,2,3-cd)pyrene	µg/L	0.1		0.1	<0.0098	0.00098	<0.0095	0.00095	<0.0096	0.00096	<0.0098	0.00098	<0.0095	0.00095	<0.0100	0.00100	<0.0095	0.00095
Total cPAH TEQ	µg/L	0.1				0.0148		0.0143		0.0145		0.0148		0.0143		0.0151		0.0143

Table 10. Carcinogenic Polycyclic Aromatic Hydrocarbons Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

		Cleanup Level			MW-5S				MW-6S					
					12/11/2024		6/17/2025		12/12/2024		MW-13S (Dup) 12/12/2024		6/18/2025	
Analyte	Units	MTCA Method A	MCL	TEF[1]	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ
Benzo(a)anthracene	µg/L	0.1		0.1	<0.0096	0.00096	<0.0097	0.00097	<0.0100	0.00100	<0.0100	0.00100	<0.0095	0.00095
Benzo(a)pyrene	µg/L	0.1	0.2	1	<0.0096	0.00960	<0.0097	0.00970	<0.0100	0.01000	<0.0100	0.01000	<0.0095	0.00950
Benzo(b)fluoranthene	µg/L	0.1		0.1	<0.0096	0.00096	<0.0097	0.00097	<0.0100	0.00100	<0.0100	0.00100	<0.0095	0.00095
Benzo(j,k)fluoranthene	µg/L	0.1		0.1	<0.0096	0.00096	<0.0097	0.00097	<0.0100	0.00100	<0.0100	0.00100	<0.0095	0.00095
Chrysene	µg/L	0.1		0.01	<0.0096	0.000096	<0.0097	0.000097	<0.0100	0.000100	<0.0100	0.000100	<0.0095	0.000095
Dibenzo(a,h)anthracene	µg/L	0.1		0.1	<0.0096	0.00096	<0.0097	0.00097	<0.0100	0.00100	<0.0100	0.00100	<0.0095	0.00095
Indeno(1,2,3-cd)pyrene	µg/L	0.1		0.1	<0.0096	0.00096	<0.0097	0.00097	<0.0100	0.00100	<0.0100	0.00100	<0.0095	0.00095
Total cPAH TEQ	µg/L	0.1				0.0145		0.0146		0.0151		0.0151		0.0143

Notes:

[1] TEF is unitless

TEF = Toxicity Equivalency Factor for cPAHs using MTCA Table 708-2 and WAC 173-340-708

TEQ = Toxicity Equivalency Quotient Concentration for benzo(a)pyrene

MTCA = Model Toxics Control Act (Chapter 173-340 WAC)

MCL = Maximum Contamination Level (Chapter 246-290 WAC)

< = Not detected

µg/L = micrograms per liter

Table 11. EPA Priority Pollutant Metals Results in Groundwater, Rocky Top Environmental Limited Purpose Landfill

Analyte	Units	MCL	MTCA Method A	MTCA Method B Cancer	MTCA Method B Non-Cancer	MW-1S	MW-2S	MW-3S		MW-4S		MW-5S	MW-6S		MW-11S
						9/10/2025	4/1/2025	3/31/2025	9/10/2025	4/1/2025	MW-13S (Dup) 9/10/2025	3/31/2025	4/1/2025	MW-13S (Dup) 4/1/2025	9/10/2025
Antimony, Total	mg/L	0.006 *			0.0064	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
Antimony, Dissolved	mg/L					--	<0.0050	<0.0050	--	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Arsenic, Total	mg/L	0.010 *	0.005			<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033
Arsenic, Dissolved	mg/L					--	<0.0030	<0.0030	--	<0.0030	--	<0.0030	<0.0030	<0.0030	--
Berylium, Total	mg/L	0.004 *			0.032	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Berylium, Dissolved	mg/L					--	<0.010	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--
Cadmium, Total	mg/L	0.005 *	0.005		0.008	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044
Cadmium, Dissolved	mg/L					--	<0.0040	<0.0040	--	<0.0040	--	<0.0040	<0.0040	<0.0040	--
Chromium, Total	mg/L	0.1 *	0.05			<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Chromium, Dissolved	mg/L					--	<0.010	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--
Copper, Total	mg/L	1.3			0.64	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Copper, Dissolved	mg/L					--	<0.010	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--
Lead, Total	mg/L		0.015			<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
Lead, Dissolved	mg/L					--	<0.0010	<0.0010	--	<0.0010	--	<0.0010	<0.0010	<0.0010	--
Mercury, Total	mg/L	0.002 *	0.002			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Mercury, Dissolved	mg/L					--	<0.00050	<0.00050	--	<0.00050	--	<0.00050	<0.00050	<0.00050	--
Nickel, Total	mg/L				0.32	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022
Nickel, Dissolved	mg/L					--	<0.020	<0.020	--	<0.020	--	<0.020	<0.020	<0.020	--
Selenium, Total	mg/L	0.05 *			0.08	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
Selenium, Dissolved	mg/L					--	<0.0050	<0.0050	--	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Silver, Total	mg/L	0.1 **			0.08	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Silver, Dissolved	mg/L					--	<0.010	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--
Thallium, Total	mg/L	0.002 *			0.00016	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
Thallium, Dissolved	mg/L					--	<0.0050	<0.0050	--	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Zinc, Total	mg/L	5.0 **			4.8	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
Zinc, Dissolved	mg/L					--	<0.025	<0.025	--	<0.025	--	<0.025	<0.025	<0.025	--

Notes:

MCL = Maximum Contaminant Level, State Drinking Water Regulations (Chapter 246-290 WAC)
MTCA = Model Toxics Control Act (Chapter 173-340 WAC)
[a] = Gasoline with no benzene present
* = Primary
** = Secondary
*** = Carcinogen
*THM = Primary MCL for the sum of all trihalomethanes
*XYL = Primary MCL for the sum of all xylenes
< = Not detected
-- = Not analyzed
mg/L = milligrams per liter

Table 12. Remedial Techniques for Fire Control, Rocky Top Limited Purpose Landfill

Remedial Approach	Deep Hot Spot Scenario	Methodology	Risks
Capping/Sealing	Commonly undertaken. Usually involves sealing specific points of air ingress. Smothering has less effect with depth.	Reduction of oxygen	Tough to impact deep fires and prolonged fire duration due to slow processes
Excavation/Trenching	Less likely to be undertaken with increased depth.	Removal of heat/Seal off Hot spot	Difficulty on steep slopes and with depth, risk of increased fire activity due to oxygen, risk of increased emissions
Dousing	Commonly undertaken, usually by injection into the waste mass. Requires targeted approach to increase chances of success	Removal of heat and reduction of oxygen	Creation of leachate and waste to groundwater pathway of additional contaminants
Inject inert gas	Potential but only if exact location of core is known and injection can be targeted to hot spot core	Removal of oxygen some reduction of heat depending upon the gas used	Gas displaced by oxygen or not directed in the correct location
Inject liquid CO_2	Sometimes undertaken, depths from 15 to 21 feet	Removal of oxygen and heat	Gas dissipated by oxygen or not directed in the correct location
Grouting	Possible, limited data but some success	Removal of oxygen and sealing off hot spots from fuel	Expensive to implement, complete sealing difficult to determine and achieve

Notes

CO_2 = Carbon Dioxide

Table 13. Remedial Techniques for Leachate and Groundwater Control, Rocky Top Limited Purpose Landfill

Remedial Approach	Groundwater Leachate Scenario	Methodology	Risks
Capping/Sealing	Commonly undertaken. Reduces infiltration and leachate generation.	Reduction of water/leachate	Longer-term success rate, less active remediation
Excavation/Removal of contaminated sediment	Usually only in shallow soil environments	Removes residual saturated soils	Not feasible in landfill environment
Pump and Treat	Undertaken when high concentrations are present	Reduces flow pathway of contaminants	Not effective in lower permeability aquifers or mostly arid landfills
Injection of chemical adjuncts	Commonly undertaken for in-situ chemical oxidation/reduction	Enhances aerobic or anaerobic degradation	Not effective in low-permeability aquifers, particularly for Site COPCs
Grouting/Slurry Walls	Often undertaken to prevent downgradient migration of contaminants	Creates impermeable barriers	Expensive to implement, requires directional drilling

Notes

CPOCs = contaminants of potential concern

Appendix A

DTG Yakima – Agreed Order No. DE 21624 – Monthly Progress Letter – August 2026

October 5, 2026

Luke LeMond
Site Manager
Solid Waste Program
State of Washington Dept. of Ecology
Central Regional Office
1250 West Alder St.
Union Gap, WA 98903-0009

Re: DTG Yakima – Agreed Order No. DE 21624 – Monthly Progress Letter – September

Dear Mr. LeMond:

In accordance with Section 7.3 of Agreed Order (AO) No. DE 21624, the following is a description of the actions taken during September 2026 to implement the requirements of this AO.

Activities:
On-site activities included weekly gas probe and every other week ambient monitoring. The monitoring data summary through September 2026 from Landfill Fire Control, Inc. (LFCI) is attached.

The aerial survey of RTE was flown the week of September 1, 2026.

Q3 landfill gas monitoring was performed September 2, 2026 and submitted to Ecology September 8, 2026.

Q3 groundwater monitoring was performed the week of September 7, 2026.

A regulatory review meeting was held on September 10, 2026 to discuss drafting the Remedial Investigation Report.

Parametrix continued to develop the Q2 groundwater report.

Parametrix submitted the revised Draft Interim Action Work Plan to Ecology on September 24, 2026.

Deviations from Plans (if any):
None.

Deviations Description from the Scope of Work and Schedule:
None.

All Data Received or Collected:
Ambient and gas probe data for gases and temperature were emailed, separately, to Ecology weekly after measurements were taken. Gas probe data was entered into the tracking spreadsheets and assessed by LFCI. The summary of the data has been included as an attachment.

Deliverables for the Upcoming Month:
Deliverables will include:

- Weekly ambient and gas probe data
- Q2 Groundwater Report
- October Progress Report

Please contact me to discuss any of the above items.

Respectfully,

Ian Sutton
Sr. Director of Engineering
DTG Recycling
isutton@dtgrecycle.com

Enclosures to follow: LFCI Data Update – September 2026

cc: mbrady@parametrix.com
steven.newchurch@co.yakima.wa.us

October 4th, 2026 LFCIPRJ-2023-001

Mr. Ian Sutton, Director of Engineering
DTG Recycle
P.O. Box 14302 Mill Creek, WA 98082

By email: isutton@dtgrecycle.com

Re: Monthly Data Assessment Report DTG Yakima Landfill Fire Incident – Sept. 2026

Dear Mr. Sutton,

LFCI has prepared a monthly review and update of gas and temperature monitoring data that is being collected at the DTG Recycle Landfill Fire in Yakima, Washington. The update includes maps showing the spatial distribution of temperature, carbon monoxide, and oxygen within the monitoring area and presents the data collected, highlighting trends and interpreting the results.

Data continues to support overall cooling of the landfill with temperatures trending downward in all wells. The rate of cooling is becoming slower over time, which is typical of landfill fires on account of the strong insulating properties of C&D waste.

In September, CO values have been on a downward trend, except at T-6D, which spiked up in August, and has been decreasing with oscillations since. Spatial plots indicate that the most active smolder has now shifted to the south, with activity centered on T-6.

Temperatures in all wells have continued trending downward, but the rate of cooling is becoming very slow in the warmest wells which are all now converging on 212F, the temperature at which water starts to boil, and conversely, water vapour converts to liquid on cooling. This phase change releases a lot of heat and as a result, cooling below 212F takes a long time.

Plotting the temperature data in plan view clearly shows that the area affected by fire has markedly decreased over time. As stated in previous monthly updates, LFCI believes that the data shows a small smolder continues to be active near GP-3, and that the rate of smolder activity in this area is steadily decreasing, however slowly. Based on the extinguishment target of temperature dropping below 180°F, on account of the flattening of the temperature curves of the hottest wells, we are now projecting that the fire will be declared extinguished late 2027 if no further intervention is taken to inhibit air entry. Also, the spike in CO concentrations around T-6 and T-3 indicated rewarming activity in that area, but the latest readings indicate things are again becoming less active.

Overall, O_2 levels in the upper zone of waste have been declining since July, 2025, but have experienced a large uptick from 7% to 15% in Sept. This is of concern, and may be indicative of additional desiccation cracking in the soil cover as there have not been large atmospheric pressure swing cycles since March, 2026.

Based on this assessment, LFCI recommends that monitoring continue on a weekly basis until it can be shown that CO levels in all locations have decreased to below 500ppm, once corrected for cross sensitivity effects. At that time, monitoring can be decreased for prevention purposes.

We continue to be concerned about the decreasing effectiveness of the soil cover that has been placed at this site. We suspect that on account of desiccation of the soil cover, it is allowing more air to enter the subsurface. As a result, the goal oxygen levels of less than 5% are not being reached. We believe that the landfill phase would benefit from final progressive closure with a geomembrane cap, which would inhibit further oxygen intrusion.

We trust that this report provides the information you require, and should you need anything else please don't hesitate to contact the undersigned.

Sincerely,

LANDFILL FIRE CONTROL INC.

Dr. Tony Sperling, P.Eng.
President

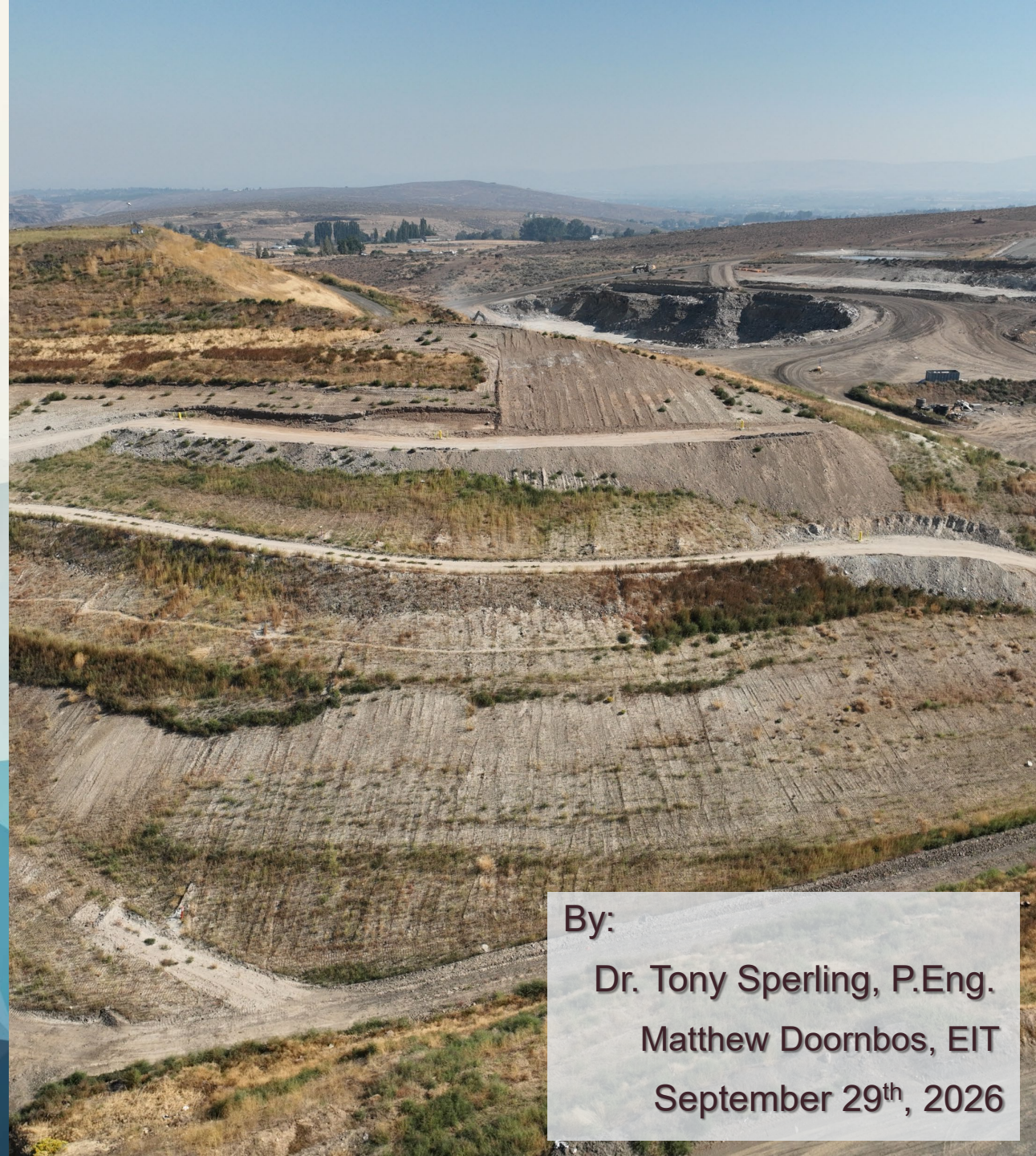
October 4th, 2026

LANDFILL FIRE CONTROL INC.
#8-1225 East Keith Rd., North Vancouver, BC – V7J 1J3
P: (604)-986-7723 E: sperling@sperlinghansen.com
www.landfillfire.com

DTG LPL LANDFILL FIRE INVESTIGATIONS AND MITIGATION

Monthly Monitoring Data Review

September 2026



By:

Dr. Tony Sperling, P.Eng.

Matthew Doornbos, EIT

September 29th, 2026

Introduction

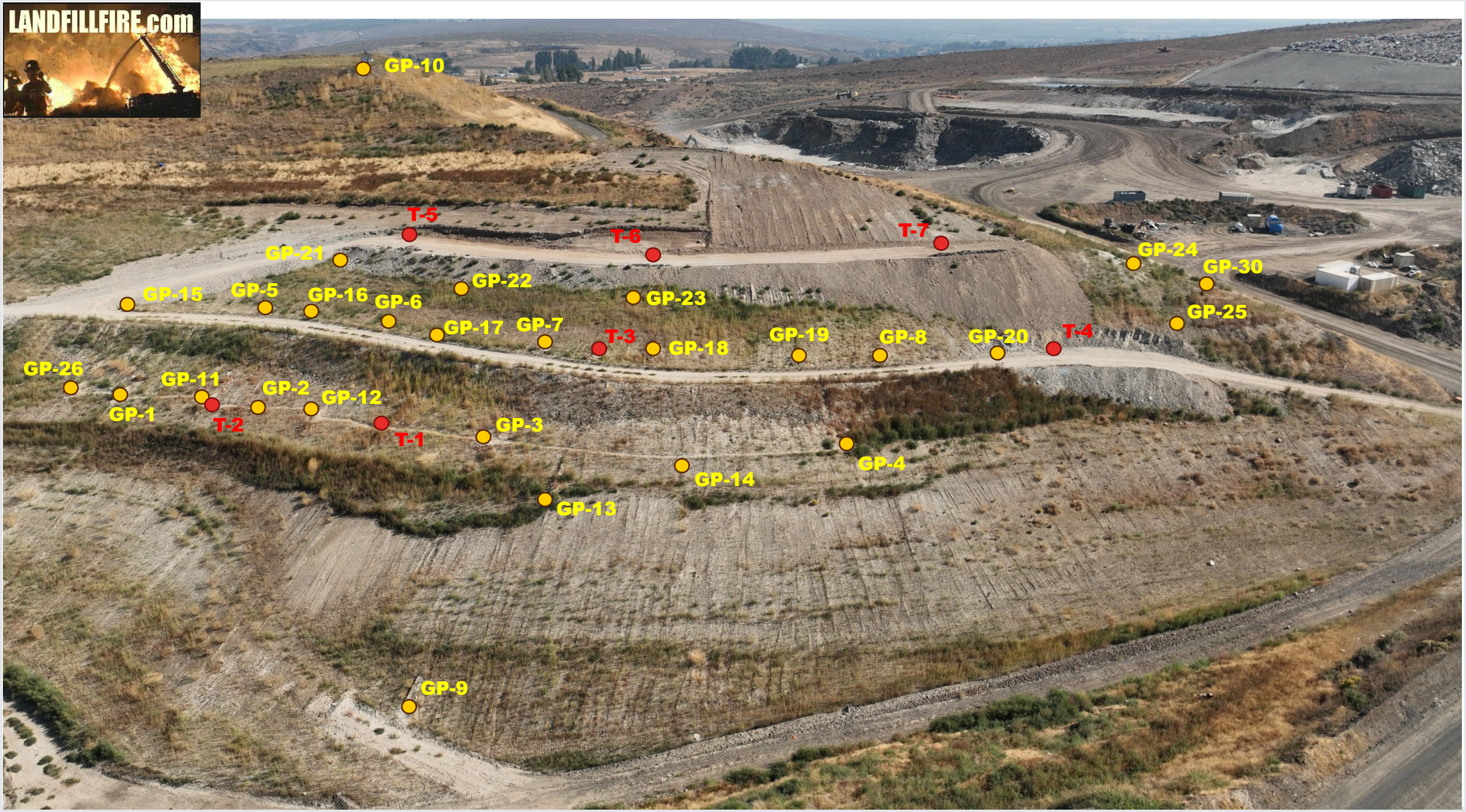
BHP Locations

- There have been 31 Ground Probes installed, 3 of which are no longer monitored. 26 probes are monitored weekly, and 2 are monitored on a bi-weekly basis.
- Three additional thermistor wells were installed in mid-2023, which are monitored at varying depths to better determine the location of the hotspot.
- Four more thermistor wells were installed in mid-2025 to better determine the extent of the area with elevated temperatures as the fire comes closer to extinguishment.

Monitoring Data Review

- The monitoring locations are measured for levels of gas that would indicate a fire or increased thermal activity, including Carbon Monoxide, Oxygen, VOCs, Hydrogen, Hydrogen Sulfide, and Methane.
- In addition to gas levels, the temperature in each well is recorded.

Overall Interpretation


LANDFILLFIRE.com
GP-10
T-5
T-6
T-7
GP-21
GP-22
GP-23
GP-24
GP-30
GP-15
GP-5
GP-16
GP-6
GP-17
GP-7
T-3
GP-18
GP-19
GP-8
GP-20
T-4
GP-25
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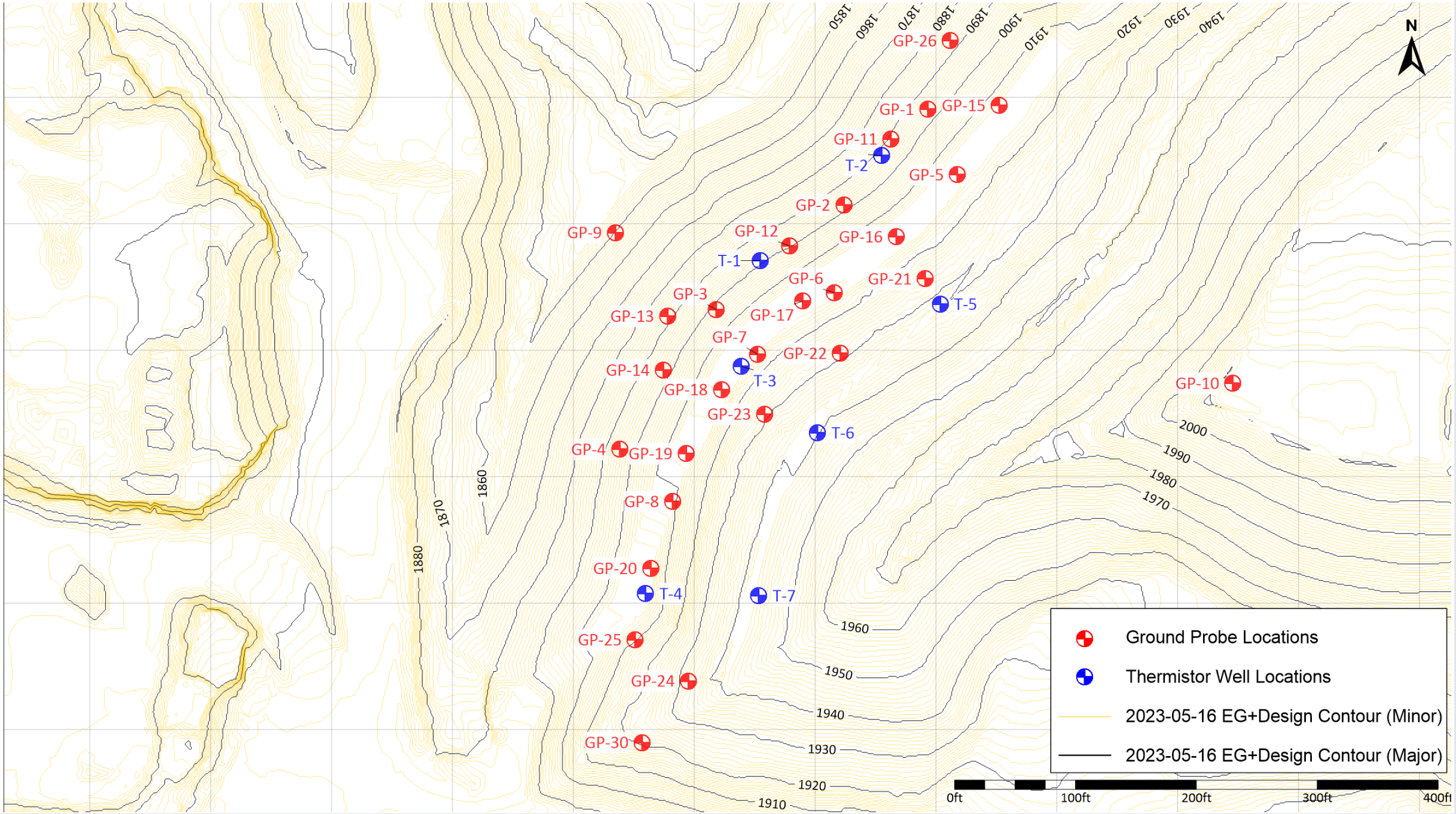
GP-14
GP-13
GP-9


GP-26
GP-1
GP-15
GP-11
T-2
GP-5
GP-2
GP-9
GP-12
GP-16
T-1
GP-6
GP-21
GP-3
T-5
GP-13
GP-17
GP-7
GP-22
GP-14
T-3
GP-18
GP-10
GP-23
T-6
GP-4
GP-19
GP-8
GP-20
T-4
T-7
GP-25
GP-24
GP-30
1850
1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
N
Ground Probe Locations
Thermistor Well Locations
2023-05-16 EG+Design Contour (Minor)
2023-05-16 EG+Design Contour (Major)
0ft
100ft
200ft
300ft
400ft

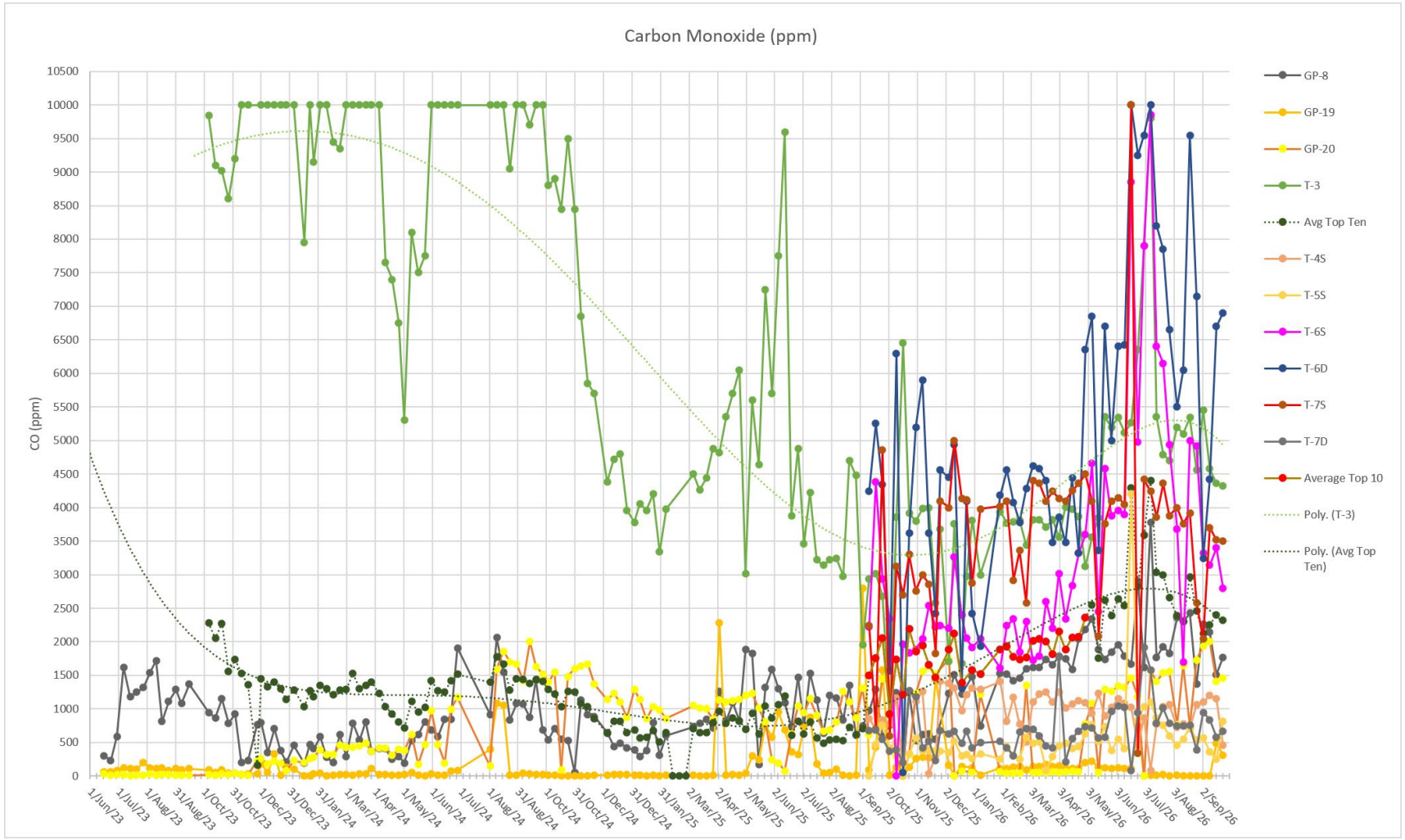
Carbon Monoxide

Overall, the high CO observed in some of the monitoring wells has shown a decrease over the past month. Some spikes in CO levels will continue to be monitored to ensure they do not persist as a consistent measurement.

The highest readings are currently being observed at T-6D, T-3, T-7S and T-6S.

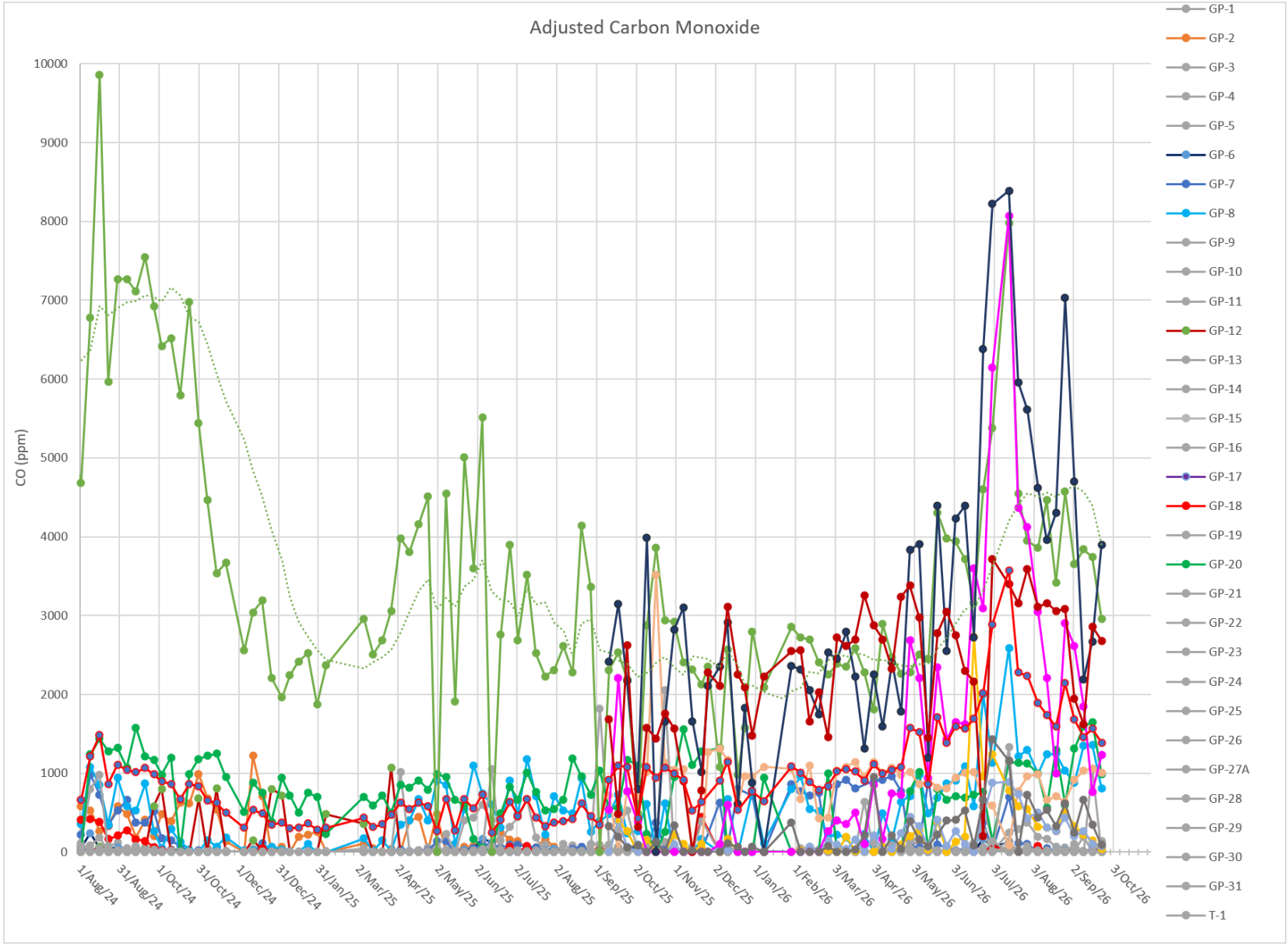
All of the readings have been trending downward in September, as indicated by the average of the 10 highest CO readings.

In the spatial plan, the green zone downslope has shrunk significantly in the last week, indicating reduced expansion of the CO impact zone and a less active smolder.

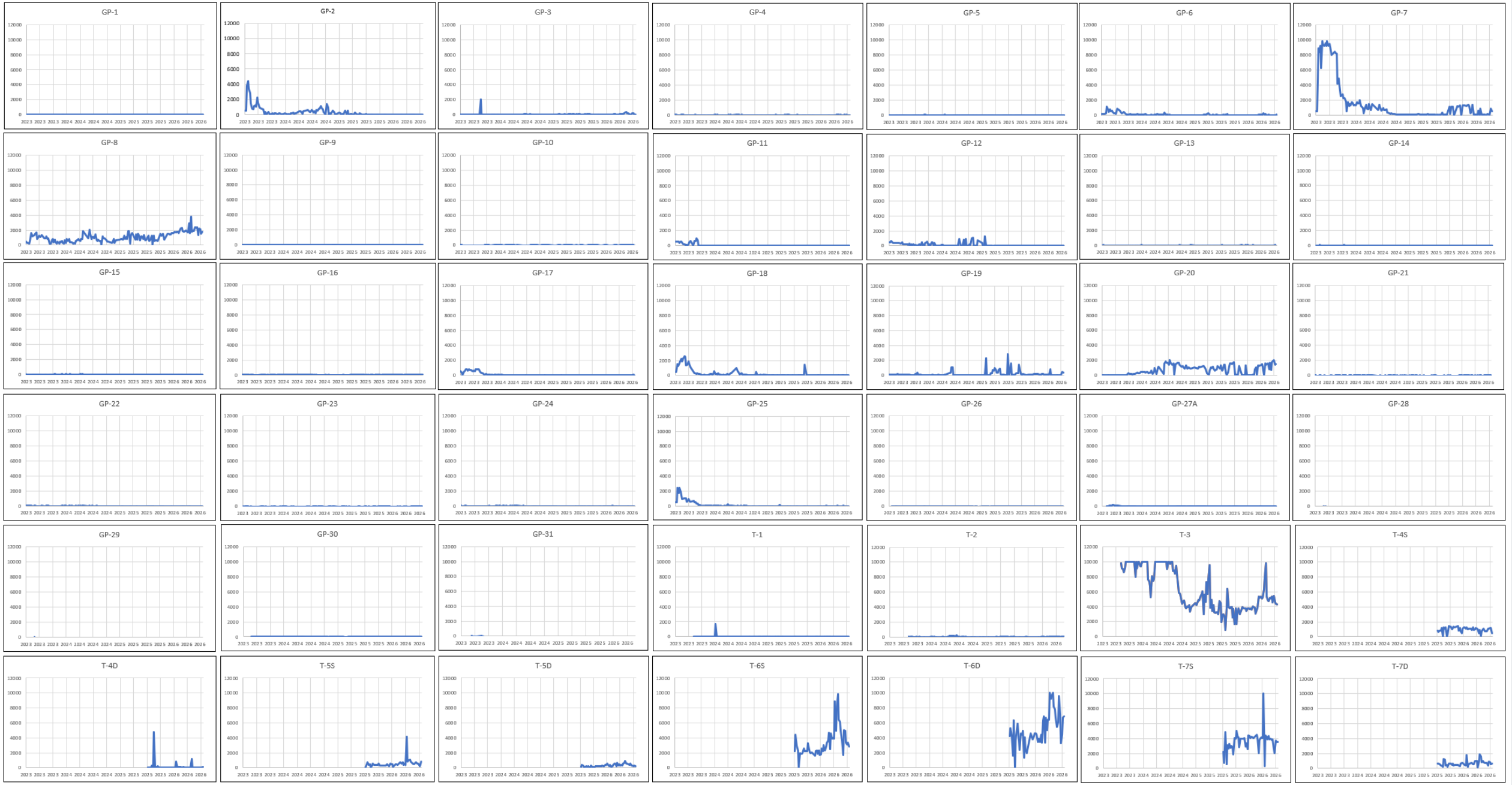


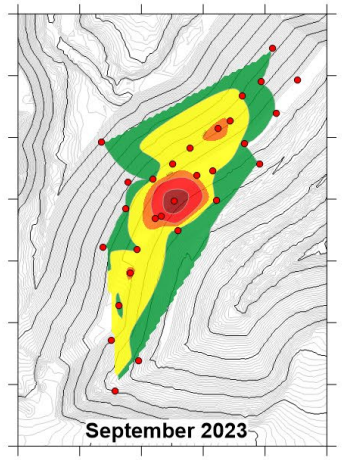
CO Adjusted for H2 Gas

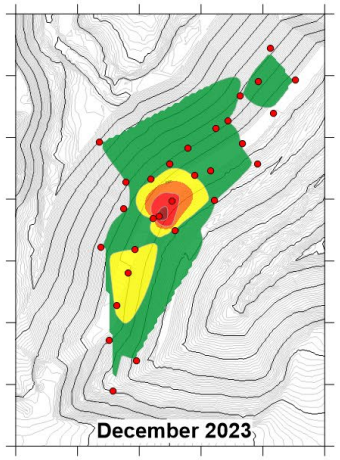
Adjusted CO measurements are trending in a similar pattern to unadjusted CO, with a general decrease over the past few months.

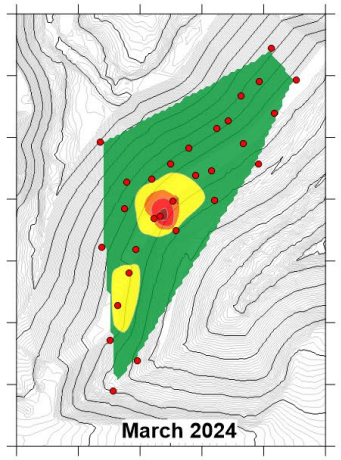


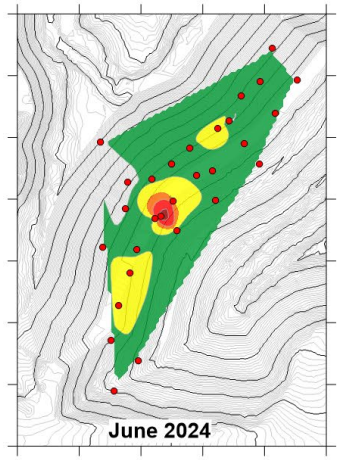
CO Levels by Individual Wells

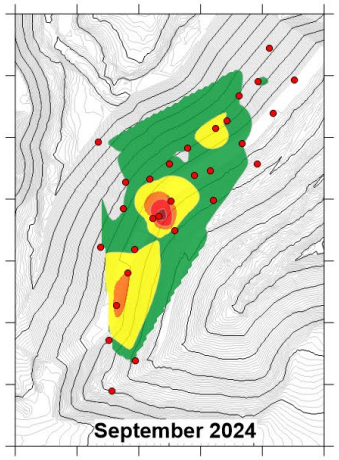


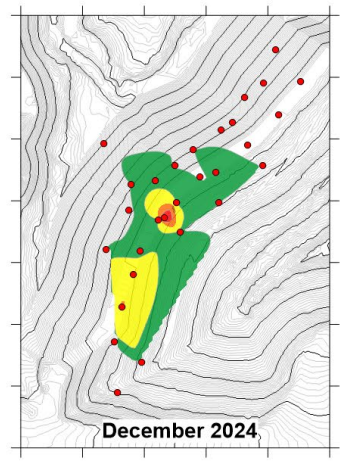


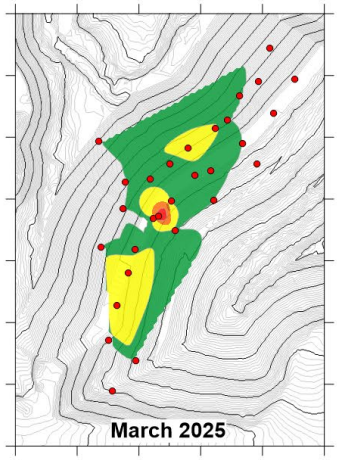


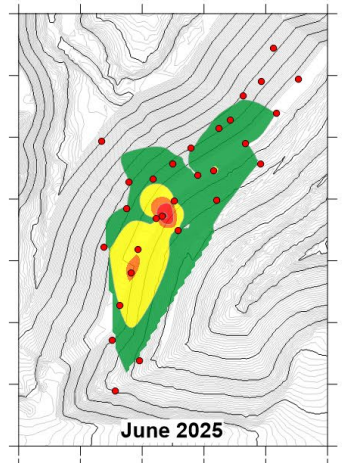


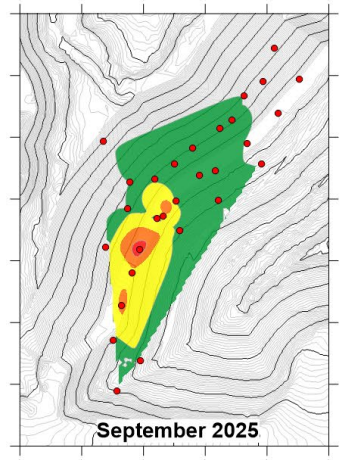


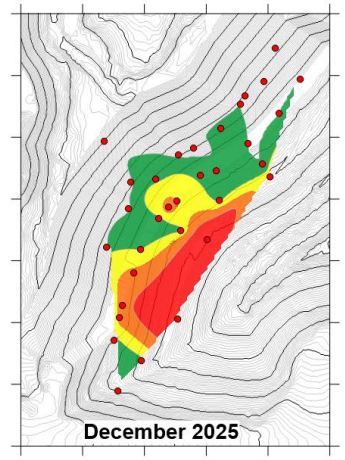


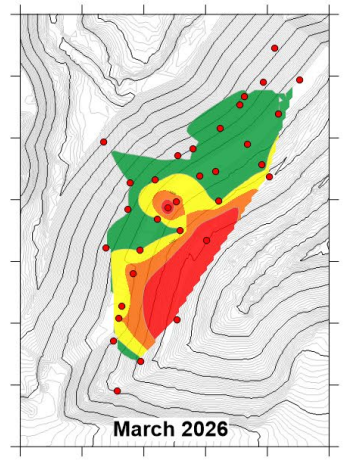


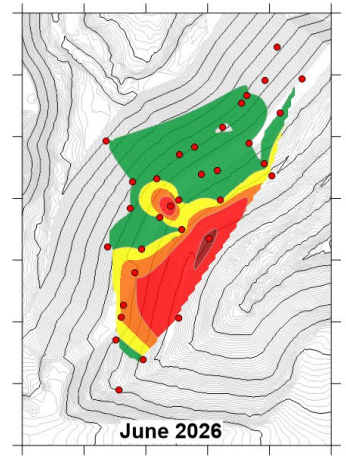


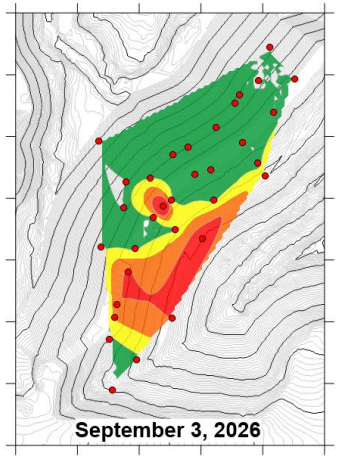


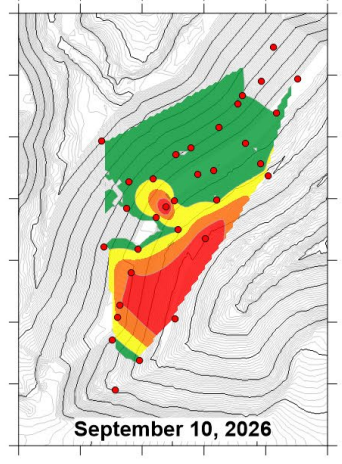


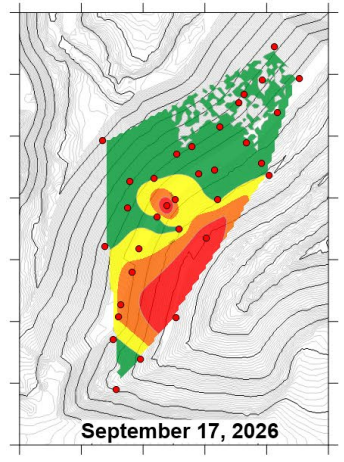


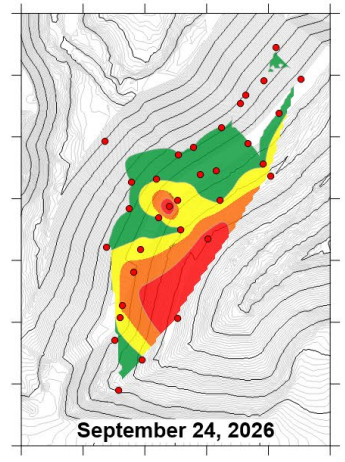


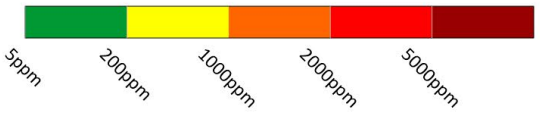












- Data taken from first monitoring event of each month unless noted otherwise
- Data has been interpolated between data points
- Datapoints (probe locations) represented in red
- CO levels are measured in ppm
- Ground contours are of existing ground at beginning of project, with design contours added for after addition of fill

LFCI Temperature Scale

LFCI uses this temperature scale to evaluate subsurface temperature data.

Currently, the highest recorded temperature at the site is 237.3F, at T-4 which is at the low range of the “Suspected Subsurface Exothermic Reaction in MSW”, indicative of a very gradual smolder.

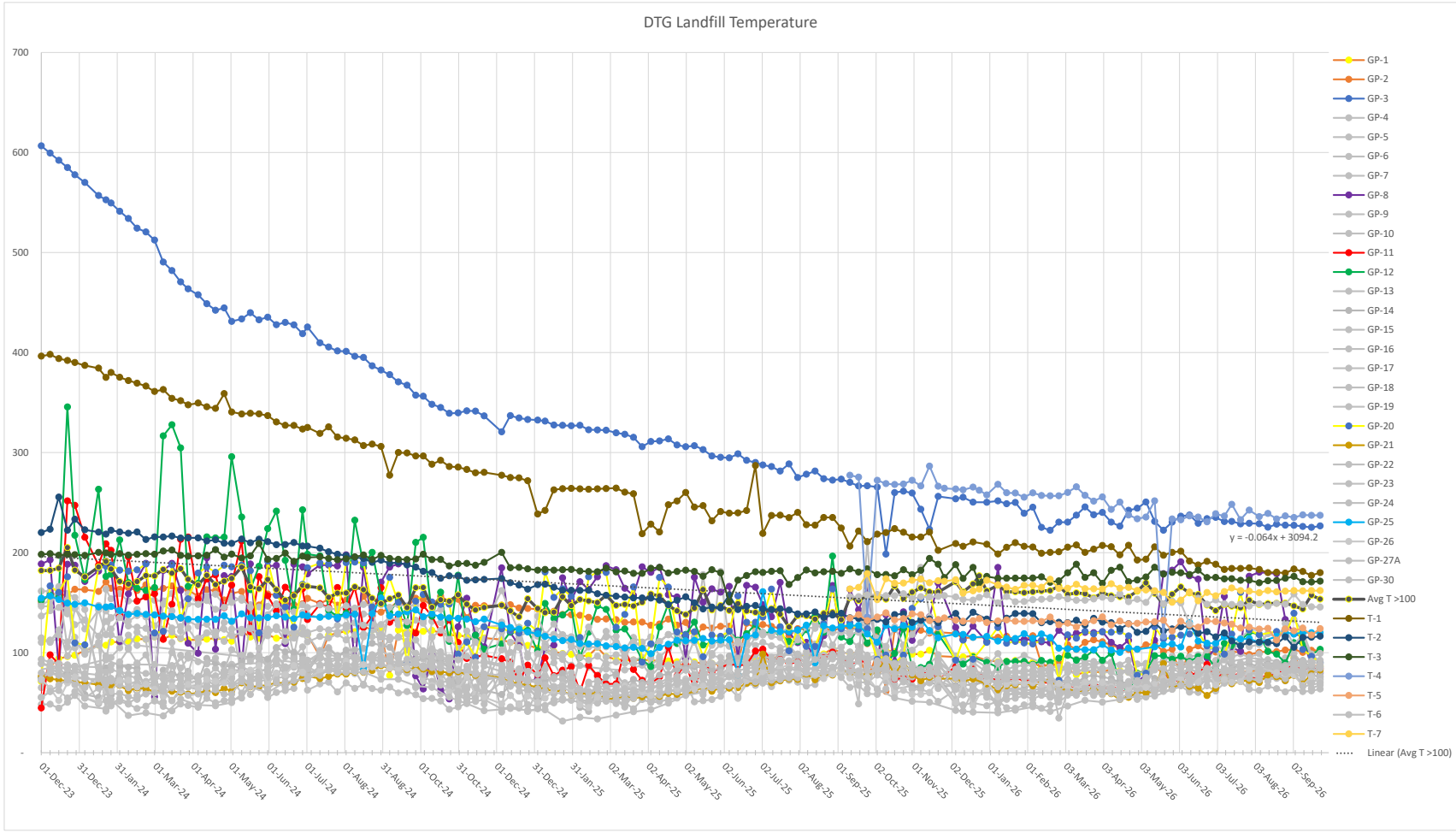
This well continues on a steady cooling trend, with temperatures decreasing from a high of 286F in November of 2025.

Fahrenteit Deg F	Celcius Deg C			
1,832	1,000	Fire		Fire
1,382	750			
932	500			
608	320		Upper Limit of Torrefaction (low temp. Pyrolysis)	
601	316		Wood ignites spontaneously	
500	260	Exothermic Deay of Wood		Exothermic Pyrolysis
400	204			
392	200			
392	200		Minimum temperature for Industrial Water Gas Shift Reaction (fast)	
324	162		Melting point of EVOH Resin	
300	149			
290	143	Suspected Subsurface Exothermic Reaction in MSW		Possible Exothermic Reactions
280	138			
270	132		Melting point of HDPE Liner (125 to 130C)	
260	127			
250	121			
240	116			
230	110			
220	104		Trigger Temperature for Exothermic Chemical Activity (104C)	
212	100		Boiling Point of Water	
210	99	Heat Transfer and Exothermic Metal Oxidation		Chemical Heating Up
200	93			
190	88			
180	82			
176	80		Maximum Biological Temperature per LFCI experience	
175	79		Trigger for Elevated Temperatures in Gas Extraction Wells	
170	77			
167	75	Aerobic Biological Decomposition	Upper Limit of Aerobic Biologic Decomposition Temps.	Aerobic Warm
165	74		Maximum temperature for methanogenesis	
160	71			
150	66			
145	63		Temperature to which vaiance issued for running hot wells	
140	60			
131	55	Anaerobic Biological Decomposition	NSPS standard for maximum temperature in well	Anaerobic Normal
130	54			
120	49			
110	43			
100	38			
90	32			
80	27			
70	21			
60	16			

Temperature (F)

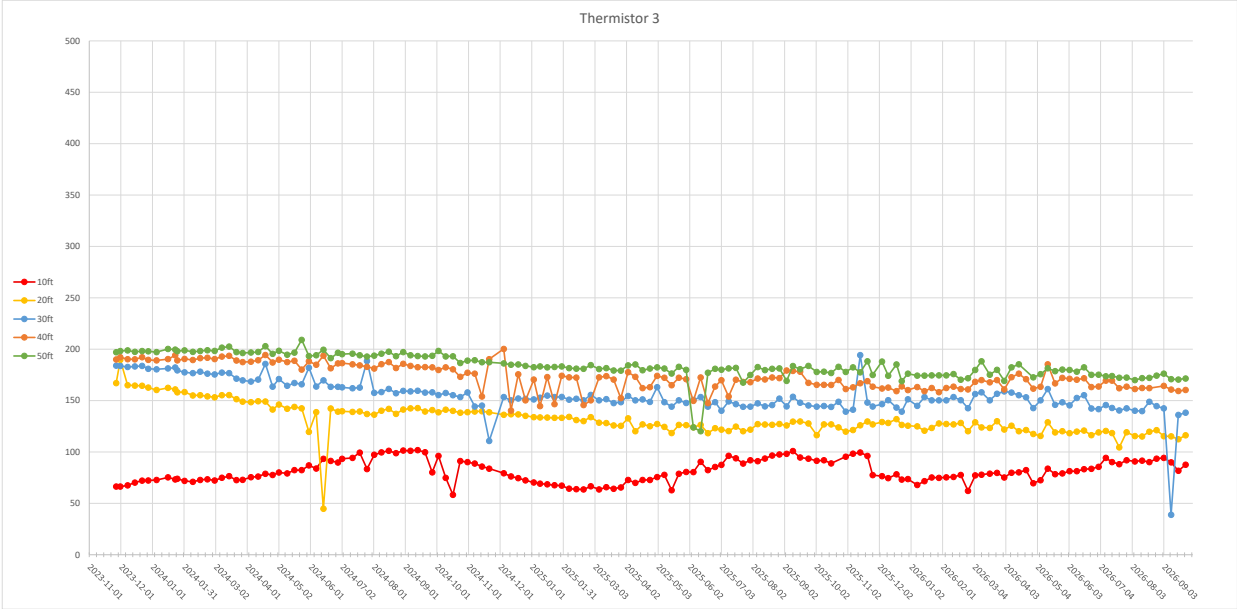
September monitoring saw leveling off of the cooling trend around 220F. This is because there is a strong phase change occurring as water evaporates at 212F. As water vapour condenses to gas, a lot of thermal energy is released maintaining elevated temperatures at 212F until all free moisture in the gas phase is condensed. Once this occurs, temperatures are expected to start cooling more rapidly again.

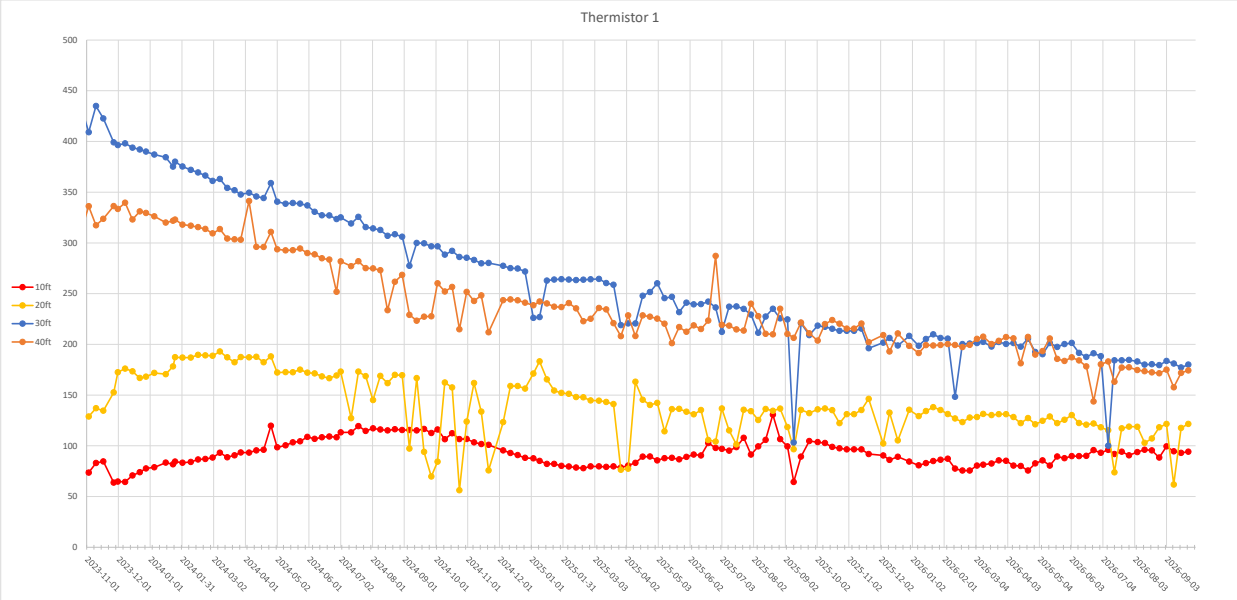
LFCI continues to see overall decreasing trends in the three hottest locations (GP-3, T-4, and T-1). The increases previously noted have continued decreasing.

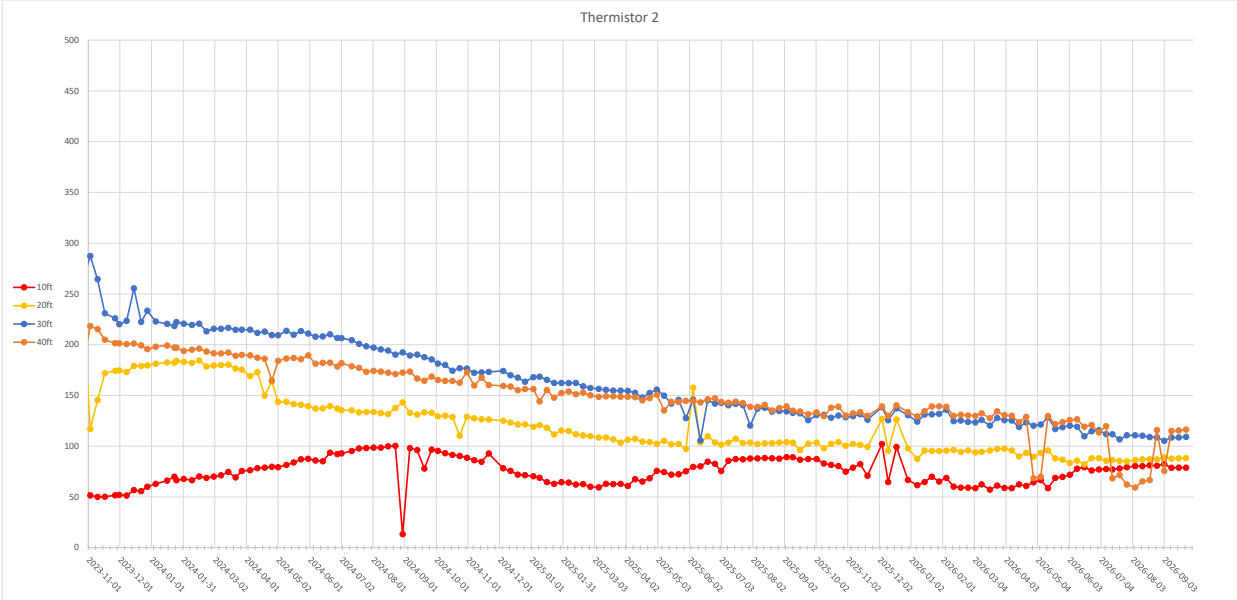


Thermistor Temperatures (T1-T3)

Thermistor temperatures are generally trending downward, but the rate of cooling continues to slow in T-1, which was historically the hottest well. T-2 and T-3 temperatures are all trending downward as well. Shallow locations in all three thermistor wells continue to show seasonal warming and cooling trends. With all temperatures in the thermistors dropping below 200F, temperatures are now below the boiling point of water, and in the chemical heating up zone, no longer indicative of exothermic activity.



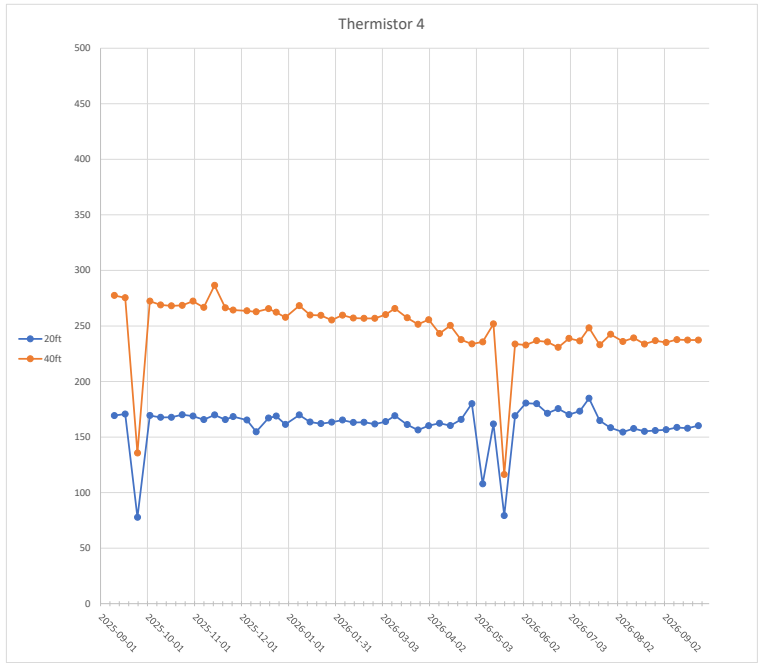


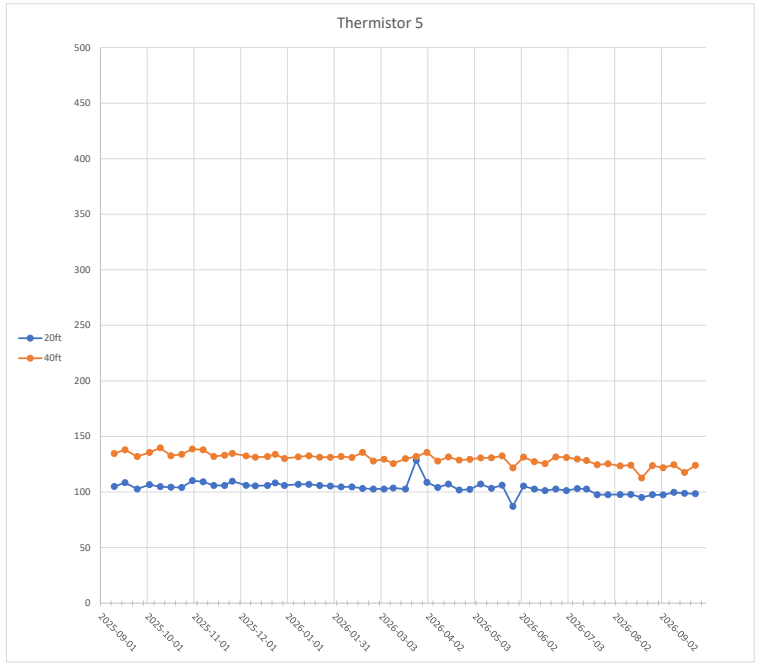


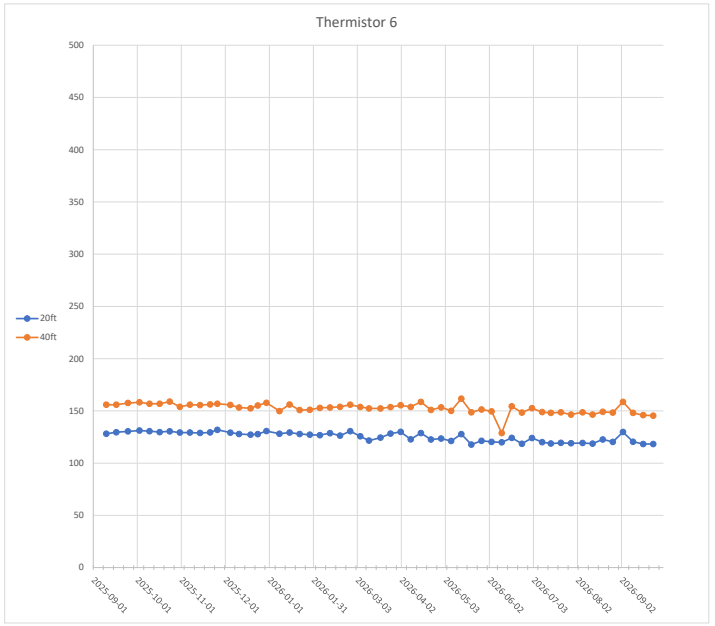
Thermistor Temperatures (T4-T7)

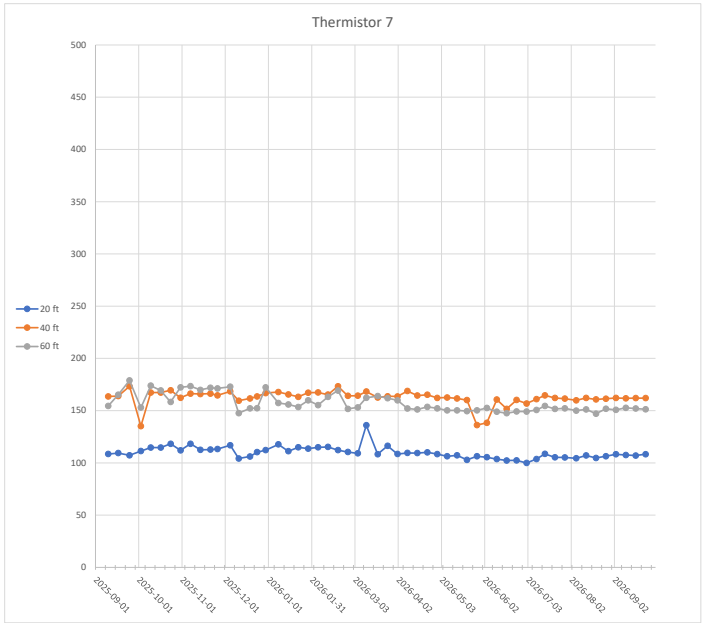
The thermistors installed in 2025 exhibit mostly stable trends, with little fluctuation in temperature seen over the year of monitoring. T-4 has shown a gradual decrease in temperature over time, while other wells remain at the same level (but at cooler temperatures) throughout the monitoring period.

The observed temperatures in the wells of 100 to 150F are normal temperatures of aerobically active landfills and at the low end of temperatures seen across the site. However, T-4 is exhibiting elevated temperatures similar to that seen at the hotspot in GP-3, indicative of nearby smoldering activity.







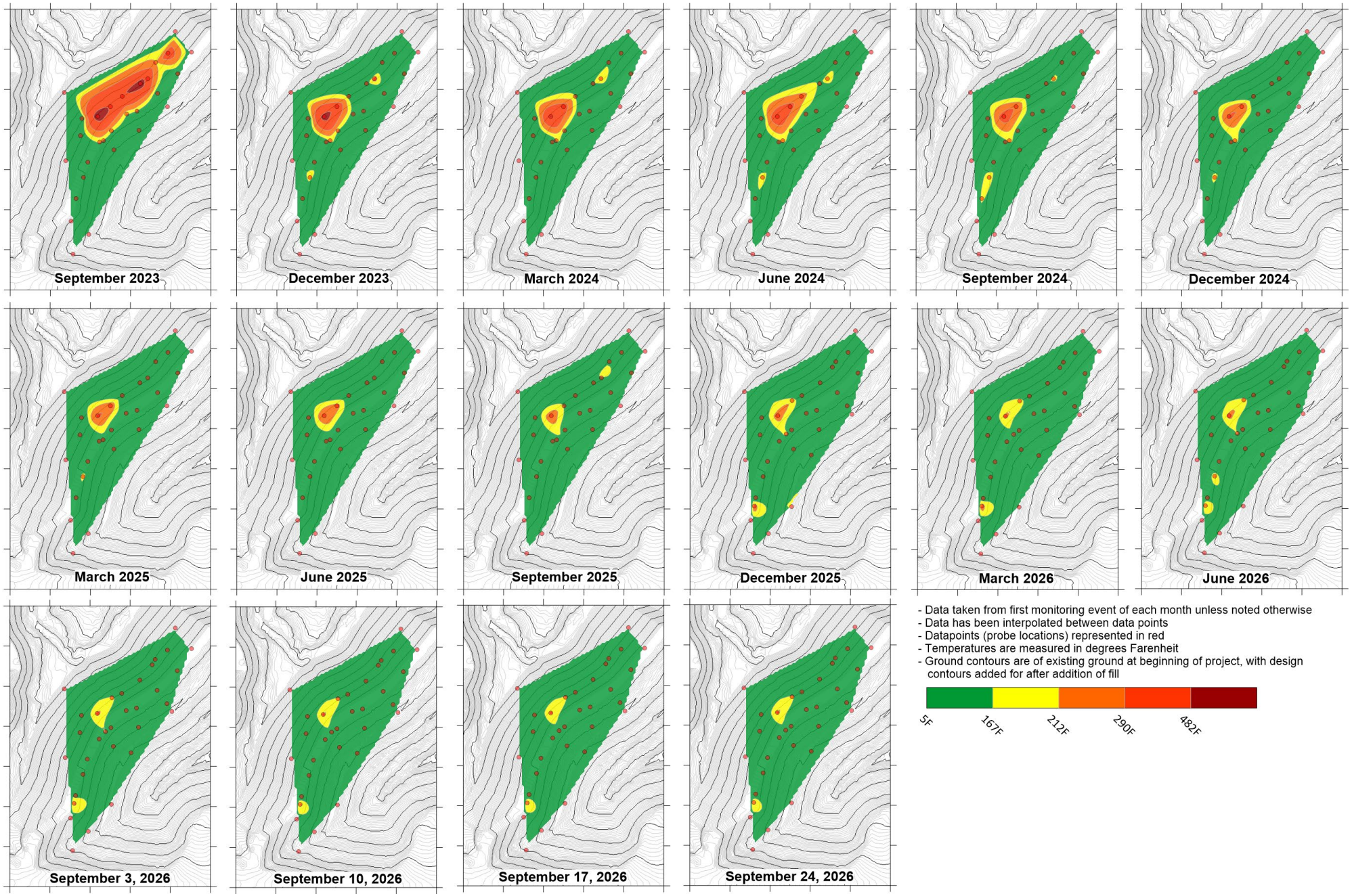


Heat Map Interpretation

The heat map continues to show that the main fire zone has been cooling over time and that the smolder is being effectively contained. However, a new hot zone was identified in the southern portion of the site around T-4 and GP-20 since late 2025. During LFCI's initial site inspection active smoke and elevated temperatures were noted in that area, and this area was covered with soil as part of the initial fire response. Additional soil cover was placed following a road cut excavation for drill rig access. Since the soil was placed, the wells have been on a slow and steady cooling trend with the size of the elevated temperature zones steadily shrinking over time.

Temperature Mapping

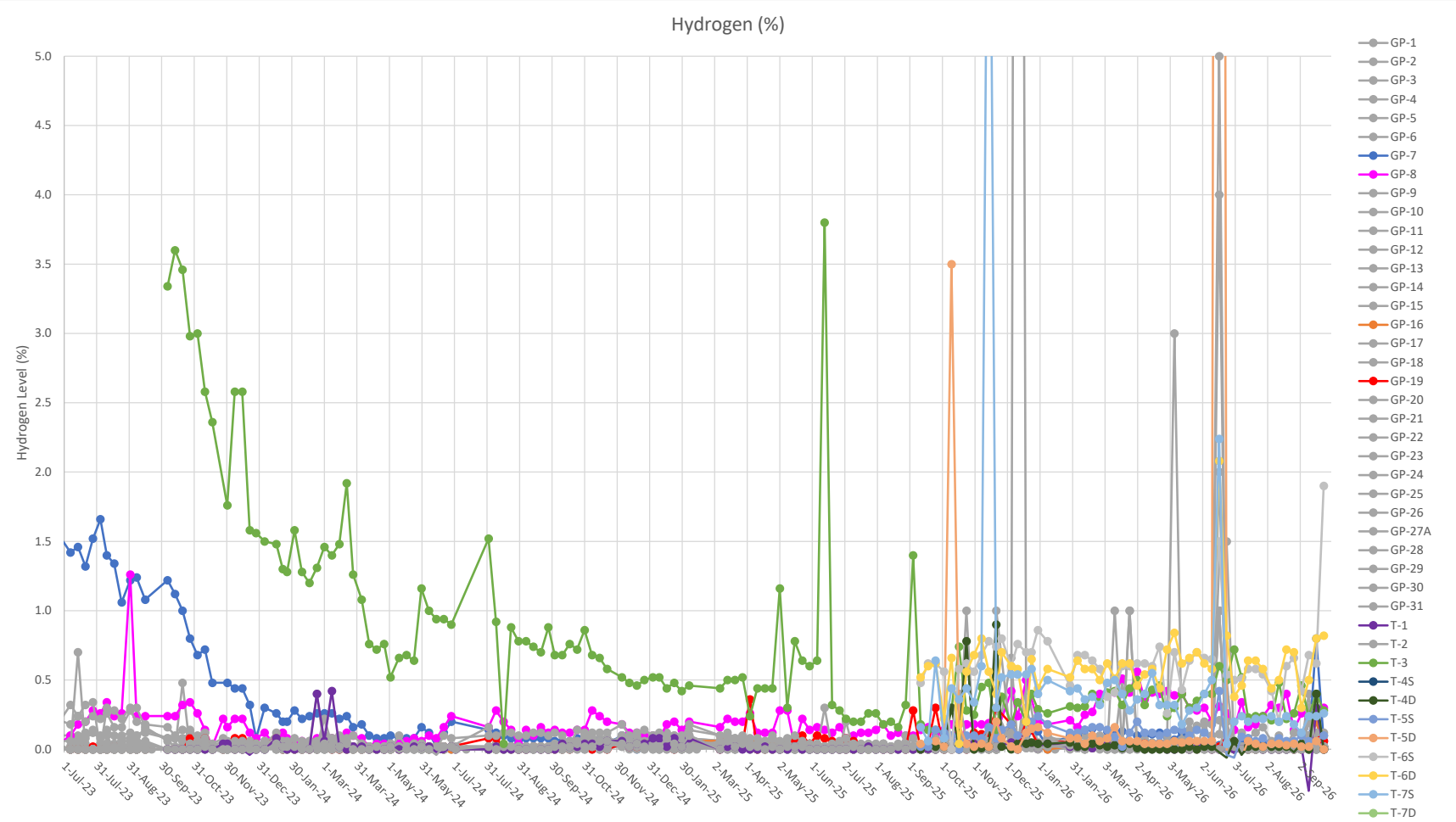
- Central fire zone temps have been steadily decreasing.
- Southern zone flared up in Dec. 2025. Has been cooling slowly since covered with soil



Hydrogen

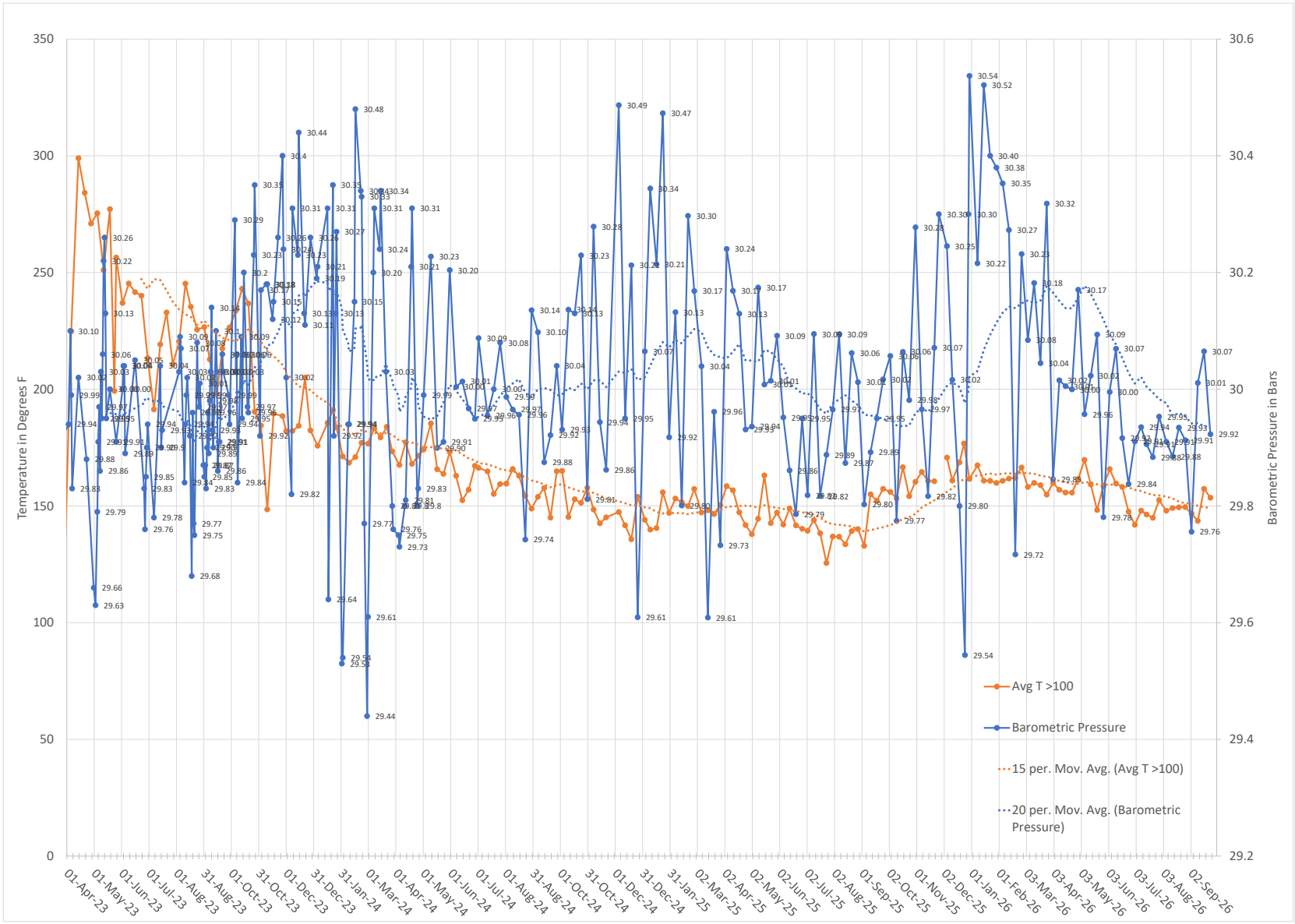
The hydrogen measurements in September did not exhibit any major trends except for an uptick in T-6S during the last reading on Sept. 24, 2026.

Hydrogen gas is one of the products of smolder activity, with the data indicating that a low level smolder continues to be active in the area. The spikes in some measurements seem to be outliers and are not indicative of a high trend.



Barometric Pressure

LFCI expects that over the next fall and winter months the ambient pressure at the site will increase once again and potentially increase the oxygen intrusion in the landfill. This may trigger an uptick in smolder activity and some increases in CO and well temperature.



Oxygen

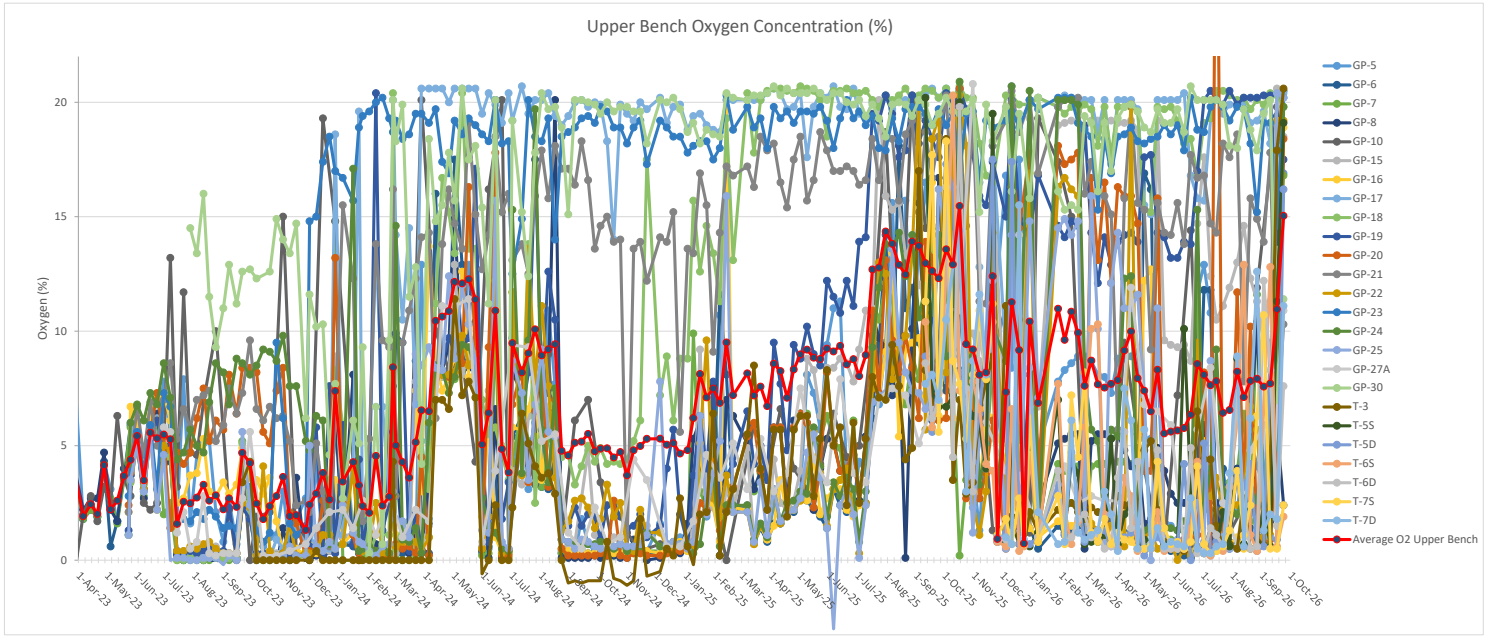
The oldest portion of the landfill is relatively inert and biologically inactive, producing very little methane. As a result, the pore space is full of atmospheric air leading to the generally high oxygen concentrations. The time series plots are difficult to read due to large swings in some of the wells, however in plan view, oxygen levels appear to have on a downward trend since Aug 1, 2025.

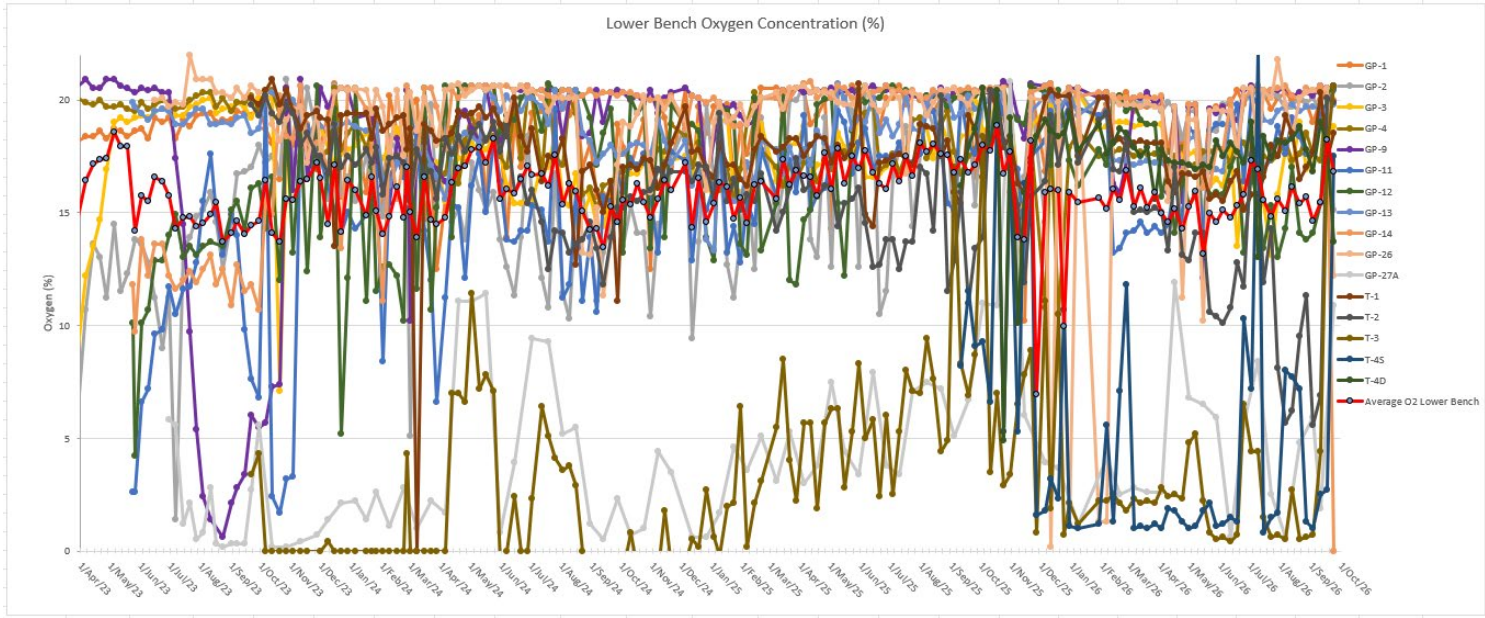
The red line with black markers represents average O2 concentrations in the Upper Bench. Although there is a seasonal oscillation with higher O2 levels in May through August each year, the general seasonal trend has been downward, with August highs in 2024 being 12%, in 2025 being 14%and in 2026 being 7%.

There has been a significant air incursion event during last set of readings with oxygen levels in upper bench increasing from 7% to 15%. Such a large uptick is likely to increase thermal activity of smolders in October.

The Lower Bench oxygen levels were also showing a positive downward trend to 15% but have spiked up in mid September.

LFCI continues to be of the opinion that the landfill would benefit from additional capping of the landfill surface which would completely inhibit oxygen entry during pressure swing cycles.



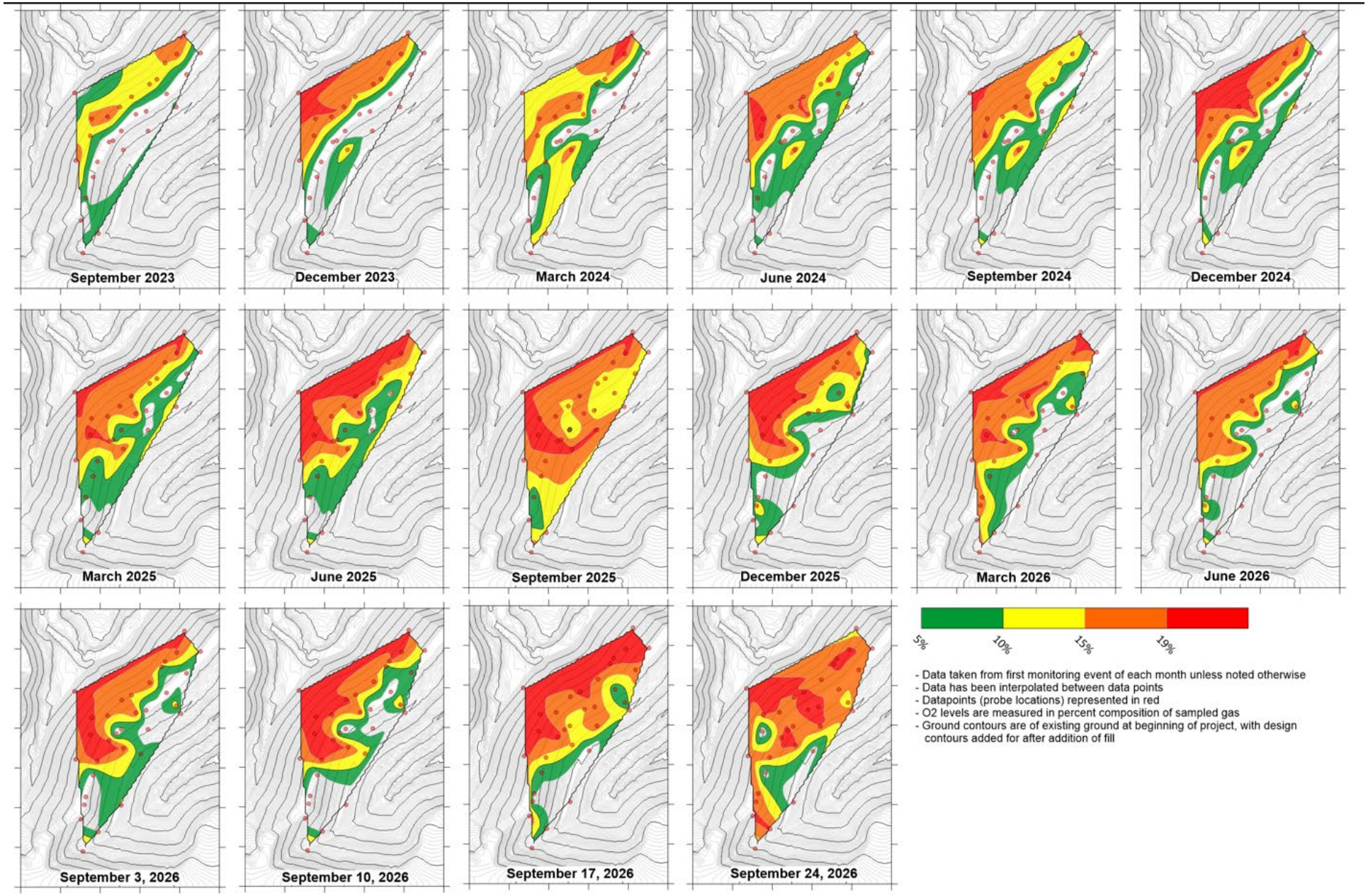


Oxygen Mapping

Oxygen levels in upper slope have increased in September, 2026.

O2 levels in toe area increased in mid Sept. and then declined back to orange level.

Goal is to get oxygen down to less than 5%. Current cover is not achieving this objective.

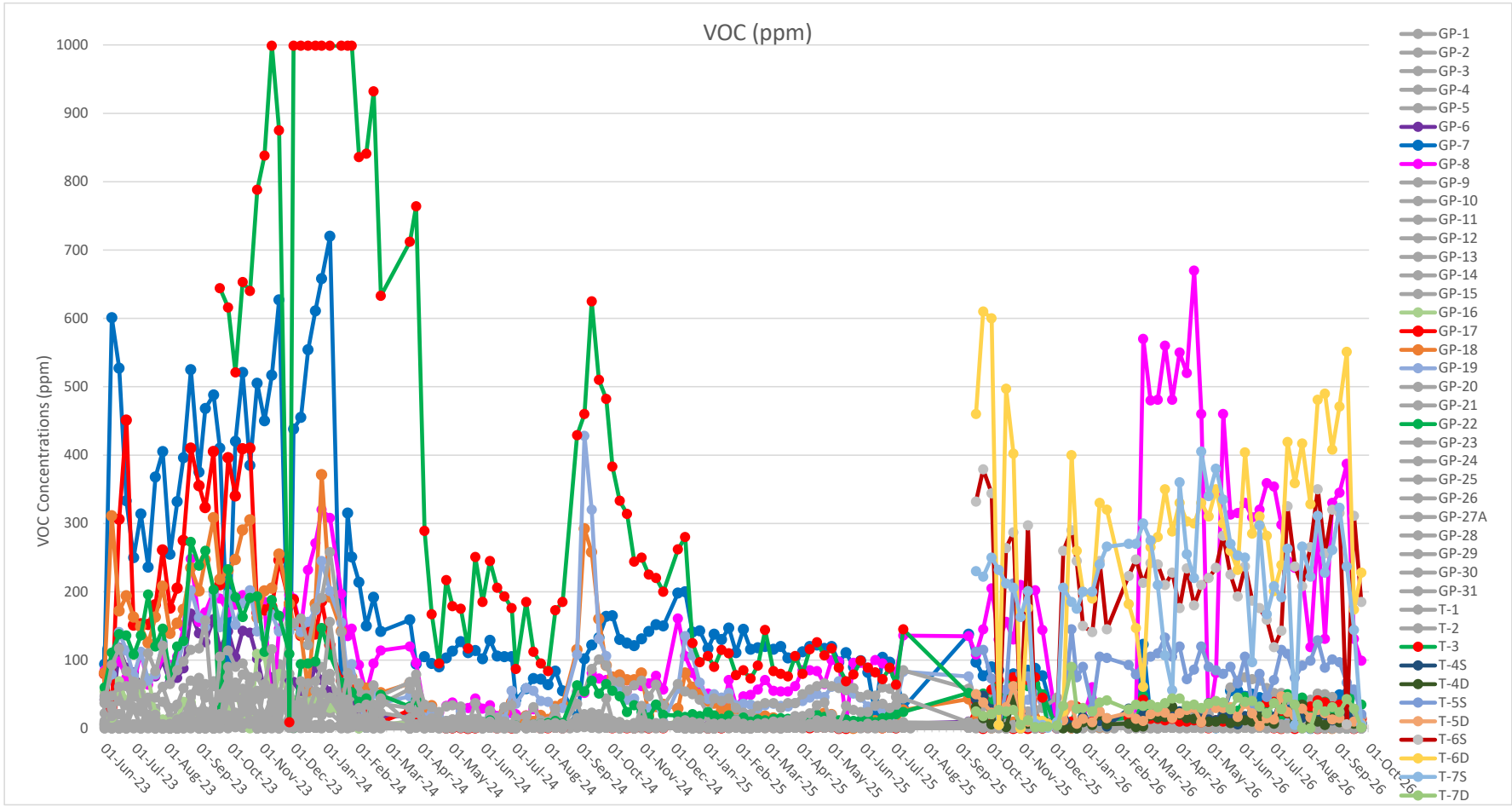


Volatile Organic Compounds

GP-8, T-6D, and T-6S are the locations showing the highest VOC levels through September, with a general decrease over the latest monitoring event in September.

As the deeper portions of T-6 and T-7 are deep in the landfill, they are less impacted by dilution effects of atmospheric air cycling in and out of the landfill during pressure swings. Consistently higher VOC concentrations are being observed at T6D.

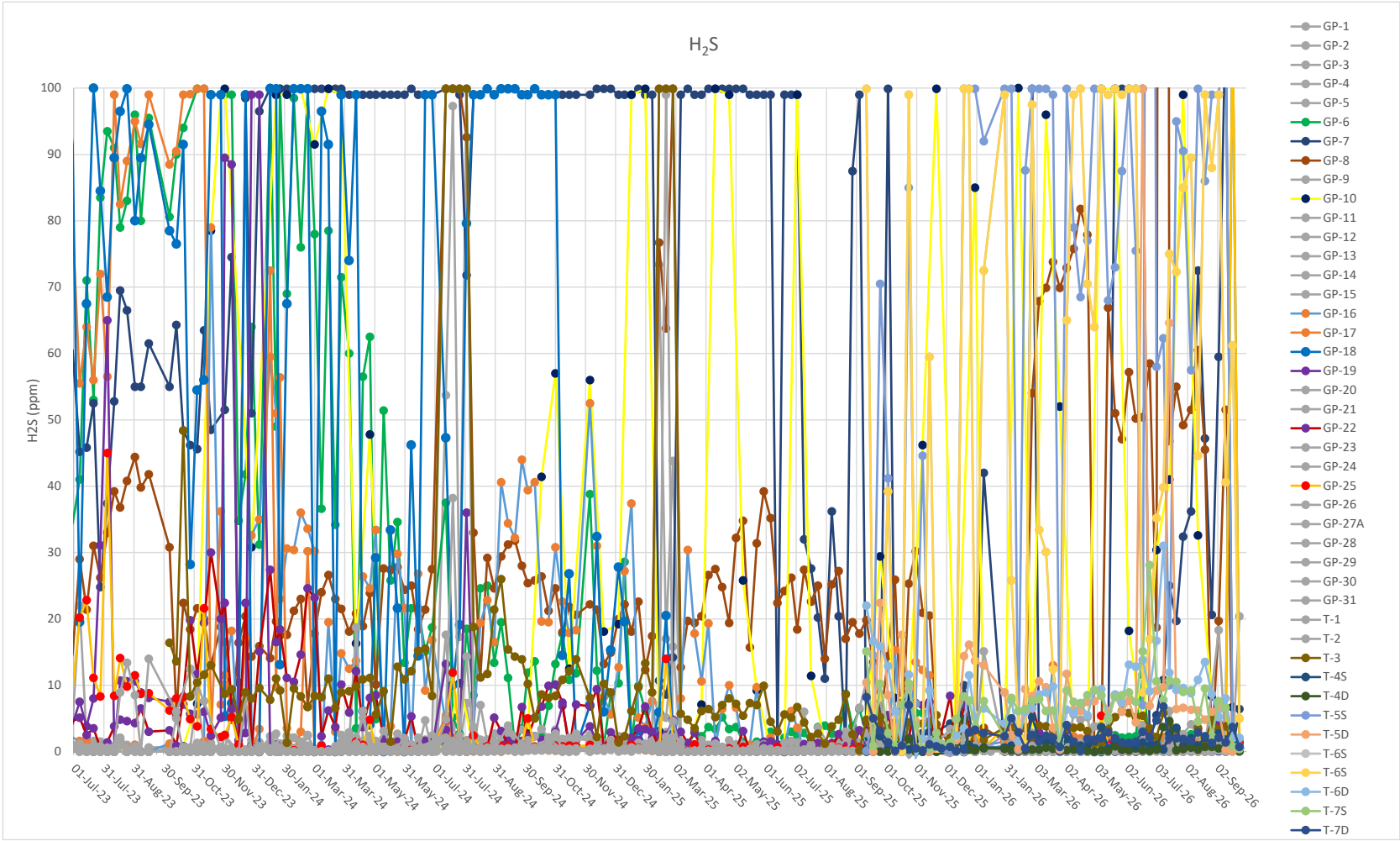
GP-8 was previously high through July of 2026 but for the past two monitoring events has been between 100-200ppm.



Hydrogen Sulfide

H_2S data continues to be noisy, likely affected by atmospheric pressure fluctuation. Most locations are low, but some locations such as T-5S and T-6S continue to fluctuate wildly.

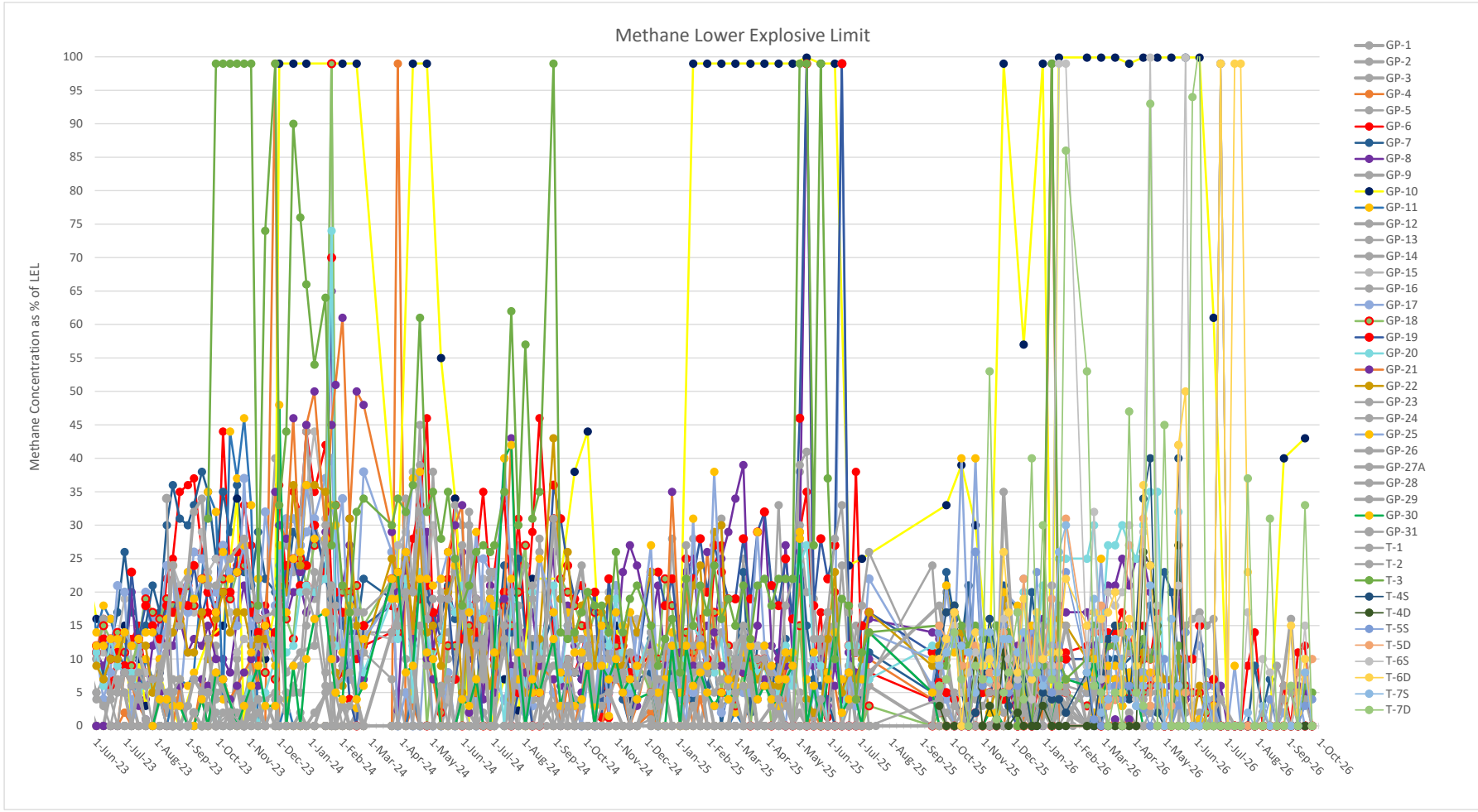
As mentioned previously, it is possible that the H_2S sensors are being impacted by CO cross interference. This seems to be confirmed as overall CO concentrations are decreasing, and the reported H2S concentrations are dropping as well.



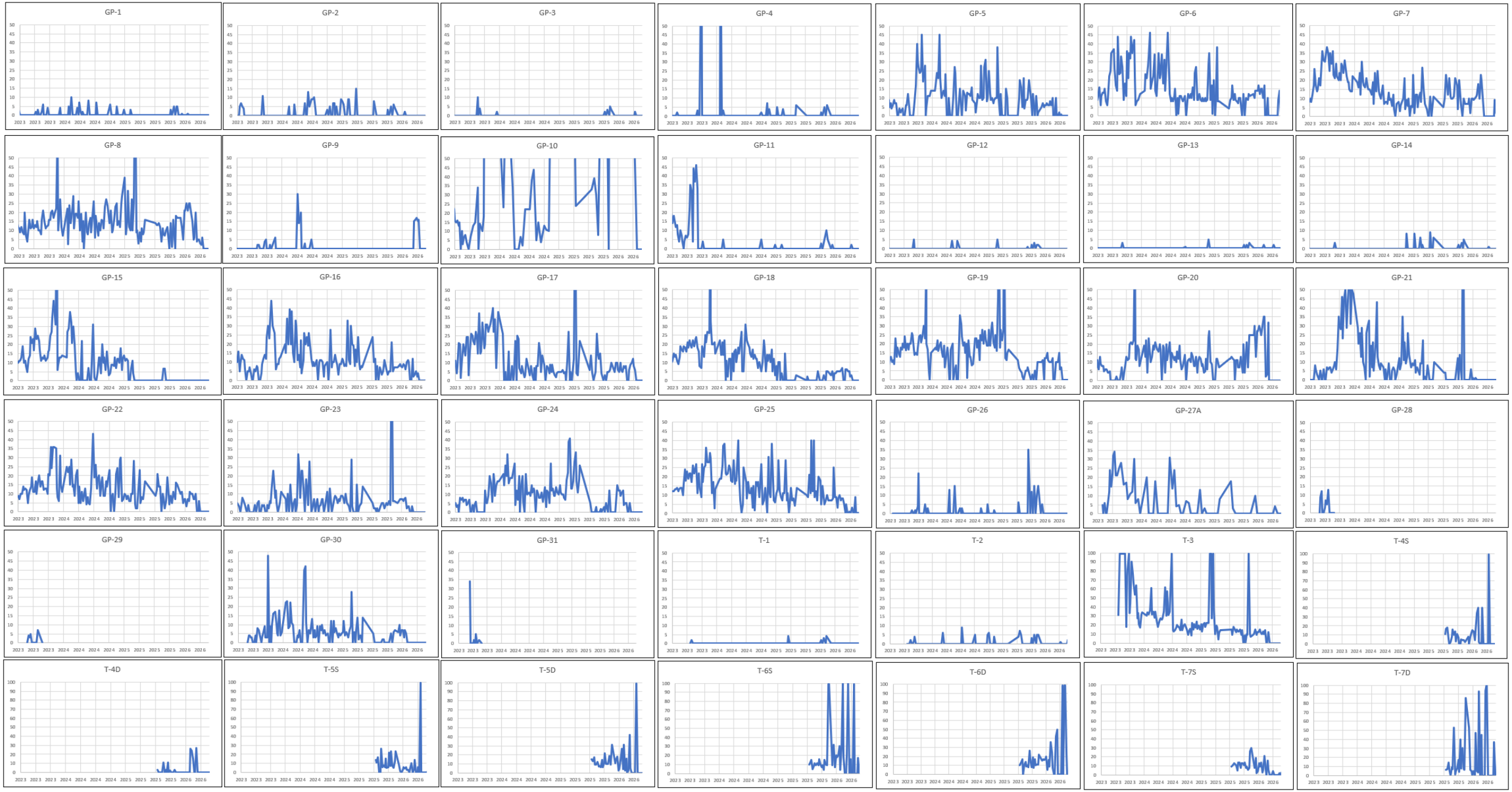
Lower Explosive Limit

Several data points are fluctuating wildly – the direct methane composition is a better indicator of levels within the landfill. Most monitoring points are reporting below 20% of the LEL.

There appears to be a general downward trend in LEL, suggesting that the landfill is becoming biologically inactive (dry tomb).



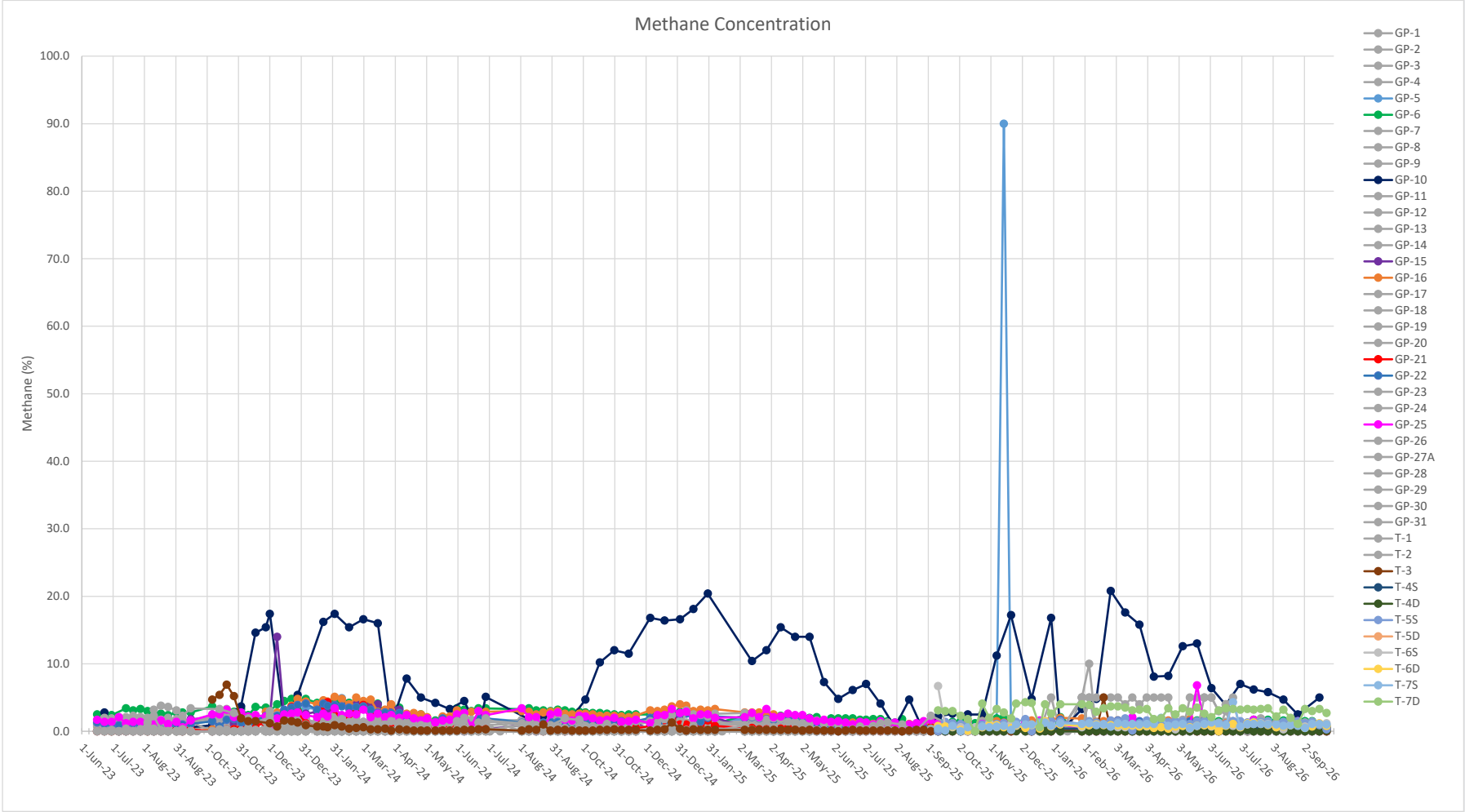
LEL for individual GP

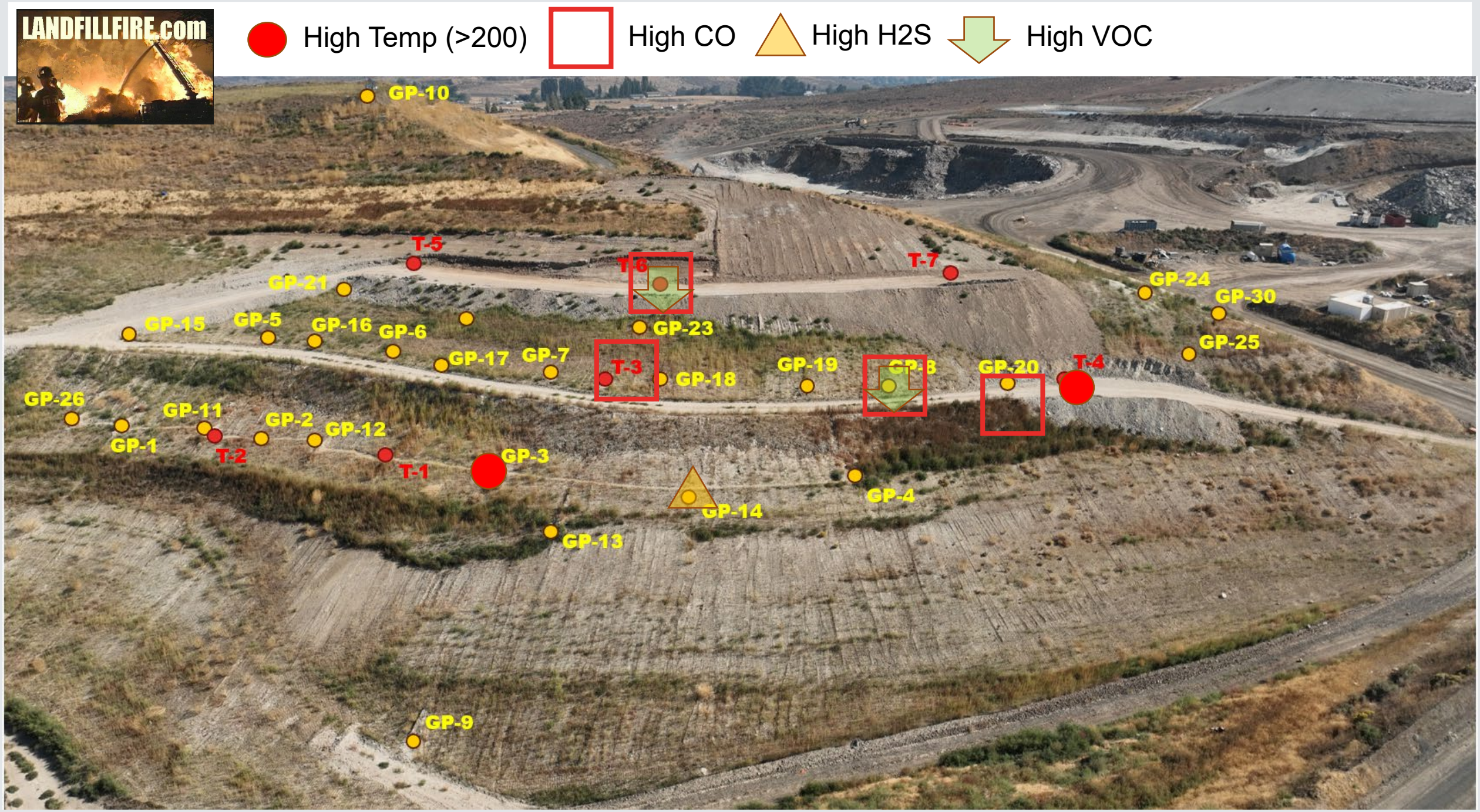


Methane

Methane levels for most wells are converging between 0 and 2.5% indicating that landfill is not biologically active. Only well GP-10 has been indicating consistently higher methane concentrations.

There appears to be a seasonal fluctuation with high methane levels occurring in Jan of each year in crest monitor GP-10. The cause is unclear, but LFCI believes this is possibly due to freezing or snowpack on the landfill surface preventing methane from escaping. This pattern has appeared again over 2026, and it is expected that the methane concentration in this well will remain low over the next few months until the winter.




LANDFILLFIRE.com
High Temp (>200)
High CO
High H2S
High VOC
GP-10
T-5
GP-21
T-6
T-7
GP-24
GP-30
GP-15
GP-5
GP-16
GP-6
GP-23
GP-25
GP-17
GP-7
T-3
GP-18
GP-19
GP-8
GP-20
T-4
GP-26
GP-11
GP-2
GP-12
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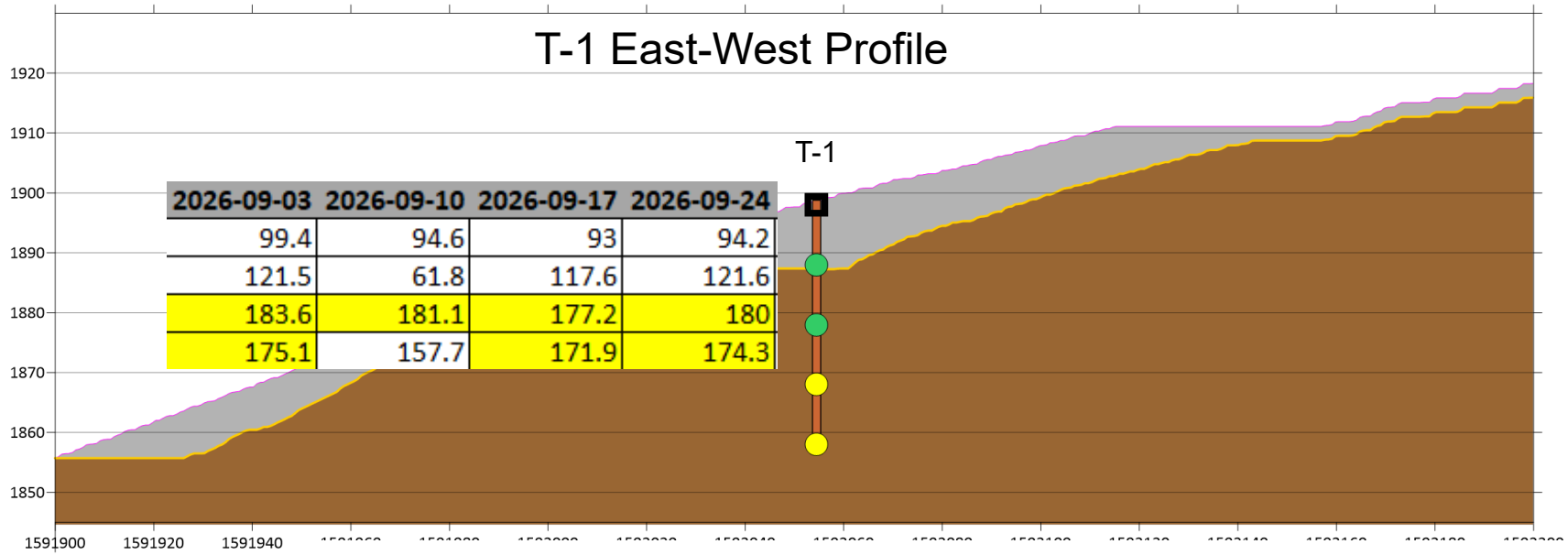
GP-14
GP-4
GP-13
GP-9


T-1 East-West Profile
T-1
2026-09-03 2026-09-10 2026-09-17 2026-09-24
99.4 94.6 93 94.2
121.5 61.8 117.6 121.6
183.6 181.1 177.2 180
175.1 157.7 171.9 174.3
1920
1910
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1890
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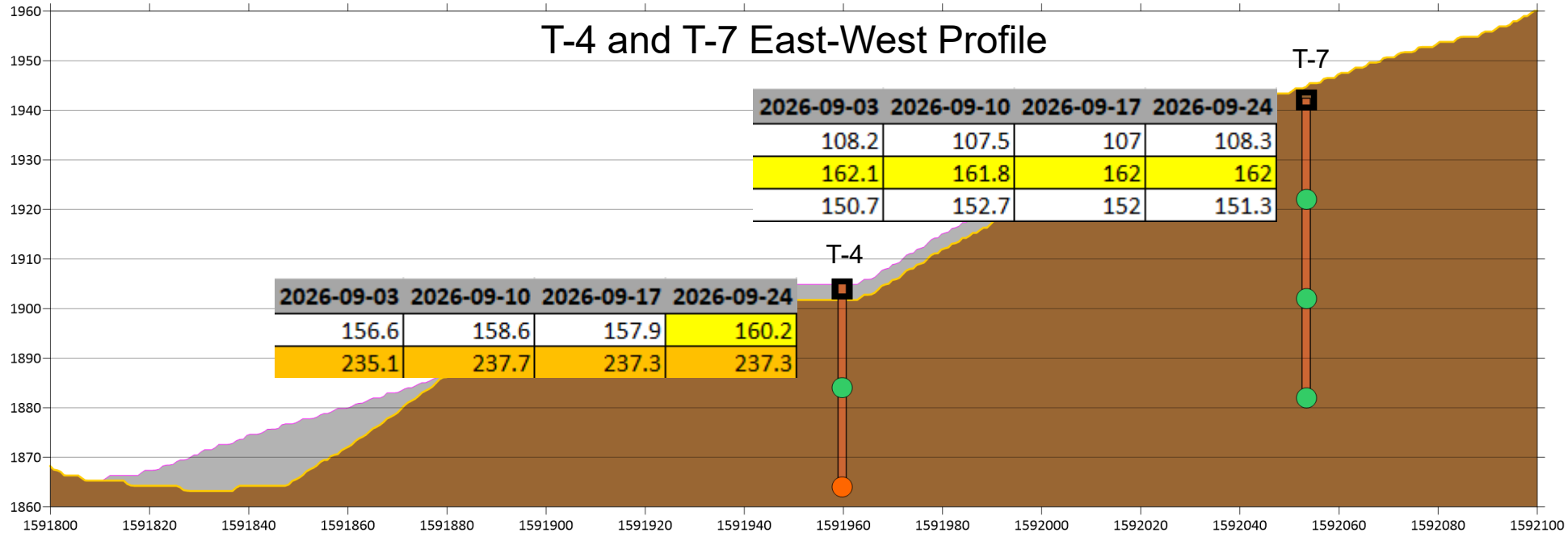
1850
1591900
1591920
1591940


T-4 and T-7 East-West Profile
T-7
2026-09-03 2026-09-10 2026-09-17 2026-09-24
108.2 107.5 107 108.3
162.1 161.8 162 162
150.7 152.7 152 151.3
T-4
2026-09-03 2026-09-10 2026-09-17 2026-09-24
156.6 158.6 157.9 160.2
235.1 237.7 237.3 237.3
1960
1950
1940
1930
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Data Interpretation

LFCI believes that suppression efforts continue to work, but slowly after the initial decrease in smolder activity. CO levels and temperatures have decreased dramatically since cover fill was placed. Temperatures initially decreased, but have levelled off to a slower cooling trend since December 2024, as have most gas concentrations with the temperature graphs indicating that the cooling is following a trend similar to an exponential decay model.

In LFCI's experience, CO has been the best indicator of suppression at other landfill sites and is effective at indicating subsurface smolder activity at this site as well. Currently, the highest CO levels are at T-6D, these spiked up in June-July to 8,000 ppm in both T-6D and T-6S, but are now on a strong downward trend at 4,000 ppm. T-3 also experienced the same spike, suggesting that the gas observed in all three wells was likely originating in from the same hotpsot. LFCI uses a concentration of 1,000 ppm as the primary indicator of active smolder activity. At this time, T-6D, T-7S, T-6S are all elevated above 3,000 ppm, but are currently exhibiting a strong downward trend.

Elevated VOC levels in T-6D, T-6S, T-7S and GP-8 are consistent with elevated CO readings, indicating that that the smolder is most active in the southern area at this time.

Temperature tracking is indicating that the subsurface is cooling over time and size of the hot spots is consistently shrinking, indicating that the smolder is becoming less active over time.

High O2 continues to fluctuate seasonally, but appears to be on a seasonal decreasing trend, with August high O2 levels decreasing year on year. There has been a large O2 incursion in mid Sept. which could trigger an increase in CO and temps.

Based on temperature, CO and VOC readings, LFCI believes that the main smolder around T-1 and GP-3 is less and less active, and main smolder activity is now in the southern quadrant around T-4.

Appendix B

Health and Safety Plan

DOCUMENT UNCONTROLLED WHEN PRINTED

CONTRACTOR SAFETY PROGRAM

Program ID No: DTG CONTR PROG 007

This program is applicable to all DTG Recycle, Inc. facilities.

DOCUMENT CONTROL

Managed by: Sr. EHS Managers	**Responsible Position(s):** EHS Team/Site Supervisors/Operations Leaders	**Version:** 1.0
Approved by: Vita Williams	**Title:** Vice President of EHS	
Approving Signature:	**Date:** 10/17/2023	

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1. INTRODUCTION

It is DTG Recycle policy that the establishment of safe, healthy working conditions and the implementation of safe working practices are essential. Every contractor must conduct her/his activities so that equipment, supplies, and work practices are safe for the contractor, company employees, and for all third parties. The contractor must comply with all applicable safety, fire protection, and health regulations. This program serves to make each contractor aware of this policy before the contractor is permitted to commence work for DTG Recycle.

The contractor must indicate that all items furnished, and all work performed will comply with the applicable requirements of the Occupational Safety and Health Act of 1970 as well as all other state and local standards and regulations (OSHA 29 CFR Part 1910 and WAC 296-800-100).

In furtherance of this, the company's policy, procedures, and requirements are detailed in the rules following this introduction which serve as a reminder of some of the more common hazards and of appropriate accident prevention measures. It is not intended to substitute for regulations.

The contractor:

- Will employ only properly trained persons who are competent in the performance of their trades, callings, and duties. Training documentation must be available to the company, if requested. In addition, contractor employees may need to attend specific DTG Recycle hazard awareness training. If required, the Project Manager will collaborate with the EHS Manager for training dates and times.
- Will comply with the health and safety rules contained herein.
- Is not relieved of any of obligations under statute and law.
- Undertakes to indemnify the company against any liability incurred as a result of any injury to persons, or loss or damage to property arising out of the work.

No permission or consent by or on behalf of the company shall in any way relieve the contractor of his liability for accidents, injury, and/or damage.

This document is issued to each Contractor under the title "Contractors Safety Program". Acknowledgment of receipt and agreement to observe is required prior to the commencement of any work. Before the work is begun, the Contractor Safe Work Certification (**007-A1**) must be signed and returned to DTG Recycle by the contractor.

1.1 Contact Information/Emergency Numbers

Before the Contractor starts work on DTG Recycle property, the Project Manager must contact the contractor, and record the indicated contact information on the Contractor Contact Information & Emergency Numbers (**007-A6**) form. A copy of the Contractor Contact Information & Emergency Numbers (**007-A6**) form must be provided to the contractor. The copy should be posted at the worksite.

Competent Person information must be supplied when contractor work activities will require a Competent Person according to OSHA 29 CFR Part 1910 or WAC 296-800-100 regulations.

1.2 Definitions

Throughout this document the foregoing titles have the following meaning:

Company: DTG Recycle

Contractor: A company, firm, or person which has a Purchase Order or contract to perform work or services for DTG Recycle and any subcontractor(s) employed by the contractor to carry out this work or service.

Project Manager: The representative of DTG Recycle who is responsible for the Contractor working on Company property, including any subcontractor(s) employed by the Contractor to perform the work. He/she usually will give authorization and instruction.

1.3 Pre-Contract Conditions

Prior to the commencement of any contract work, the project manager must discuss with a responsible person representing the Supplier/Contractor, the health, safety, and fire protection rules which are considered necessary by the company.

In addition, the Project Manager must be notified before work commences.

The contractor must ensure that:

a) The site of operations is clearly defined.
b) He/she has been informed of the emergency procedures and first aid facilities available for the contractor employees.
c) He/she has been informed of the hazards to which contractor employees may be exposed while performing their work (Hazard Communication) and made aware of the location of Safety Data Sheets for all company chemicals to which they may be exposed while performing their work.

d) He/she receives information about hazardous or secure areas where entry is not usually permitted unless certain safety instruction is obtained.
e) That all contractor personnel, including all subcontractor personnel, who will work on company property complete a mandatory safety briefing conducted by the Project Manager, with appropriate assistance from the EHS lead, before beginning any work.
f) Contractor employees, including subcontractors, receive any special information concerning company processes which may affect or involve the contract work.
g) The precautions required by these rules are fully observed. The contractor is responsible for inspecting and policing its respective areas for conformance to all applicable environmental, health, and safety practices, including those outlined in this program. No work will be conducted under conditions that are unsanitary or hazardous to health, safety, or the environment.
h) The contractor will act immediately upon reports by the Project Manager where there is a violation of these health or safety rules or any other regulatory issues.
i) All outside inspections (WISHA , Fire Department, Building Department, Department of Ecology, etc.) conducted of the contractor are immediately reported to EHS, either directly or via the Project Manager.
j) The Contractor Safe Work Certification (**007-A1**) is signed.

Failure to adhere to these rules may result in the contractor being removed from the DTG Recycle job site.

2. GENERAL SAFETY RULES

2.1 Visitor Log

All visitors on the company property must sign-in on the designated Visitor Sign-In Log upon entering company property, and sign-out upon leaving company property.

2.2 Accidents and Reporting

The company investigates all accidents that occur on company property. All accidents must be reported to the Project Manager immediately. This includes traffic accidents on company property or damage to property.

Except where agreed upon in advance by the company, the contractor is responsible for the provision of emergency medical treatment, transportation of injured personnel to the contractor's designated medical facility, all necessary first aid supplies for contractor personnel, and for assuring contractor personnel know

how to contact the arranged provider of medical services prior to commencing work.

2.3 Access and Passageways

Nothing shall be done, or omitted to be done, by the contractor or contractor employees that obstructs or renders unsafe any means of access or egress of company employees or vehicles to, from or within the premises.

Permission must be obtained from the Project Manager and Environmental, Health and Safety (EHS) manager for the restriction of movement or the creation of any temporary obstruction. The contractor will supply, position, and maintain all necessary fencing, lighting, signs, and other warning devices to ensure safety at all times.

Care must be taken to avoid the casual trailing of supply lines and cables carrying air, gas, electricity, etc. in or across passageways.

2.4 Tools and Equipment

The contractor must provide her/his own tools, equipment, and supplies for the contracted scope of work and is responsible for:

- The adequacy, safe condition, and use of all structures, scaffolding, equipment, and tools used in the execution of contractor work, whether such equipment and tools are the property of the company or otherwise.
- Use of any company equipment or tools by the contractor is by strict exception under unique circumstances only and requires the express prior permission of the VP of Health & Safety.

All contractor equipment or tools must comply with OSHA and other regulations and all relevant local, state and federal codes.

2.5 Toxic or Hazardous Materials – Use, Storage, & Handling

The Project Manager and EHS Manager must be advised prior to the commencement of any operation involving the use of toxic or hazardous materials. Safety Data Sheets (SDS) must be provided to the EHS Manager before any hazardous materials are brought onto company property. All chemical containers must be properly labeled.

The contractor must observe all applicable hazardous materials regulations (asbestos, flammables, control of release to environment, etc.) and arrange storage to minimize the possibility of any material entering a catch basin, storm

drain or sanitary drain. Improper or potentially damaging releases to air, water or land must be prevented.

The contractor must consult the Project Manager on the storage, handling, and management of such materials.

2.6 Control of Dust, Fumes, and Vapor

No internal combustion or compression ignition engine may be used inside buildings or any confined space unless properly rated for the environment and adequate provision is in place to conduct exhaust gases to the outside air, or the area is adequately ventilated to prevent the accumulation of dangerous gases.

The creation of dust, fumes, or any other impurity which could be offensive or injurious to health or could cause damage to property must be effectively prevented or controlled.

2.7 Fire Precautions and Evacuation

The contractor, subcontractors, and contractor employees must adhere to all OSHA, Fire Department, Building Department, DTG Recycle, Insurance Carrier, and other applicable safety, health, and fire protection regulations.

General information relating to company alarms and evacuation procedures are:

Fire/Evacuation Alarm: Bell, Horn, or Siren Sound

Evacuation Procedure:

- If you hear the Fire/Evacuation alarm, follow the most direct route to the nearest exit door to evacuate the building.
- Comply with the instructions of any company evacuation team members who assist and direct you in the course of evacuating the building.
- After evacuating outside the building, proceed away from the building to the nearest evacuation assembly/rally point area. Identify yourself to the assembly/rally point leader and remain there for further instruction.
- Permission to re-enter the buildings is given only by the responding municipal fire department or company representative.
- BEFORE an emergency situation occurs and before starting work on premises, the contractor must ensure contractor employees know the evacuation route(s) from the building area(s) where they will be working.

To Signal an Emergency:

Activate the nearest fire alarm pull station or telephone the emergency number provided on the Contractor Contact Information & Emergency Numbers (**007-A6**) form.

The Project Manager must consult with and make contractor employees sufficiently aware of the building fire alarm system, means of escape, and evacuation procedures for the area in which they will work. It is the contractor's responsibility to assure his own employees are informed about fire evacuation procedures and to check them off the premises in the event of an emergency requiring evacuation.

The contractor must provide portable fire extinguishers for use by the contractor's trained employees when hot work is performed. Discharge of a fire extinguisher on premises requires a report to be submitted to the EHS Manager.

Fire hydrants are for emergency use only and are not to be used by the contractor except strictly within the scope of contracted work and unless specifically authorized by the EHS Manager

Tarpaulins used for protection of equipment, as security barriers, etc., must be flame retardant and asbestos-free.

Where any work requires interference with or shut down of any fire detection, suppression, protection, or alarm signaling systems of equipment, prior notification and written approval must be secured and notification made via the Project Manager and EHS Manager to notify the insurance company ahead of time.

A company Hot Work Permit must be secured via the Project Manager and a contractor fire watch posted prior to start of any cutting, welding, or spark producing work.

2.8 Machinery in Motion

No work may commence near or above machinery in motion without the permission of the Project Manager and EHS Manager.

The contractor must use appropriate lockout/tagout practices when working with equipment or systems, and the contractor must not remove, displace, or defeat any guard, fencing, or other safety equipment fixed to, or provided at, any machinery or from any place where provided, except within the specific scope of the work contracted. Any removed guard, fencing, or other safety equipment must be replaced by the contractor immediately after the work has been completed. The contractor must ensure that no machinery is set in motion without first replacing all guards and safety devices.

2.9 Disposal of Waste

The contractor is responsible to keep work areas safe, neat, and orderly at all times. The contractor must place waste material in an agreed temporary storage location until final removal from company property. All accumulations of combustible waste must be removed from the building at the end of each working day.

The contractor is required to comply with federal, state, and local regulations governing the management and disposal of waste. Contractor-owned residual hazardous materials stocks, hazardous waste, and empty chemical containers must not be placed into waste containers owned or leased by DTG Recycle.

If toxic or hazardous waste will be generated during contractor work, prior discussion and arrangements with the EHS Manger are required regarding waste management. Disposal on DTG Recycle property will not be permitted.

2.10 Noise Control

The contractor is required to comply with OSHA and local environmental noise control requirements, and it is expected that all contractor machinery and tools are designed and used to prevent the generation of nuisance levels of noise. The contractor is responsible for all personal protective equipment for contractor employees.

2.11 Overhead Work

No work may be performed above company employees or over passageways or roads, including air lifts, until appropriate precautions (i.e. protective scaffolding, personnel evacuation, etc.) are taken to ensure the safety of persons below. Permission from the Project Manager and EHS Manager is required.

2.12 Working at Heights/Fall Protection

All ladders, step ladders, scaffolds, lifts, safety harnesses, or other fall protection used or intended for use must be of sound construction, adequate strength, sufficient length, properly maintained, and used in accordance with the manufacturer's requirements and applicable regulations. Fall protection is required if construction personnel are working within ten feet of unprotected elevations above 6 feet (4 feet for non-construction personnel). It is the responsibility of the contractor to supply all fall protection equipment and training.

The contractor must determine that anchor points to be used are structurally sound and secure, are adequate for the intended use, and meet OSHA

requirements for location and strength. Where any doubt exists, the contractor must report these concerns to the Project Manager.

All temporary structures (scaffolds, etc.) erected by the contractor for the purpose of allowing contractor employees to work at heights must be constructed in accordance with OSHA and other applicable standards.

2.13 Work Near Overhead Cables

No work may be carried out in the vicinity of overhead cabling (including the handling or carrying of long metal objects and movements involving jibs, masts, arms, or other elevated parts) until the Project Manager has been advised and the appropriate precautions have been taken by the contractor to comply with OSHA standards and protect employee safety.

2.14 Protective Clothing and Equipment

Many DTG Recycle work areas require the wearing of personal protective equipment (PPE) when the area is entered. If contractor employees must work in these areas, it is the contractor's responsibility to supply the necessary PPE and/or other safety devices (i.e. bump caps, hearing protection, safety toe shoes, safety glasses, clothing, etc.). PPE such as hearing protection must be used by contractor employees when/where a requirement is posted by DTG Recycle. Minimum PPE requirements at DTG sites include class 2 hi vis vest or jacket, safety toe boots, safety glasses, and a hard hat.

2.15 Building Operations Including Repair, Painting, and Demolition

The contractor is responsible for ensuring that building operations are carried out in accordance with all relevant federal, state and local regulations. Attention must be given to the provision of guardrails and toe-boards on working platforms and workplaces, passageways, etc.

Articles must be properly raised and lowered and must not be thrown or dropped from heights where they are liable to cause injury.

All overhead scaffolds or staging must be left in a safe condition and loose tools removed and secured against falling at the end of each work shift.

2.16 Electrical Installation and Repair (Including Electronics)

Contractor electrical work must be performed only by those having the necessary qualifications, competence, and licensing. All installations and work practices must conform to applicable codes and standards (NFPA, OSHA, NEC, etc.).

The contractor must ensure that its employees and subcontractors are properly trained and equipped to comply with NFPA 70E arc flash protection requirements. Only qualified persons with proper personal protective equipment are permitted to work in an arc flash hazard zone. Prior to allowing contractor employees to work on or near exposed electrical conductors and circuit parts operating at more than 50 volts or 25 Amps, Lockout/Tagout must be implemented. If live parts are not placed in an electrically safe work condition, because de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations, it is energized electrical work and will be performed by written permit only. Energized electrical work must not begin until an energized electrical work permit compliant with NFPA 70E has been completed.

2.17 Supervision

The contractor must ensure that his employees and subcontractors are always supervised. The contractor is responsible for the safety of contractor and subcontractor employees, and the work site.

2.18 Storage

The contractor is not permitted to store equipment or materials on company property without written permission from the Project Manager. At no time must access or egress of personnel or vehicles be obstructed due to storage.

2.19 Warning Signs

All warning signs must conform to industry standards and/or applicable codes or regulation (i.e. ANSI Z53.1, OSHA, etc.).

2.20 Sanitation

The company's sanitary facilities are available for use by the contractor employees only as agreed to previously by the Project Manager. The contractor must provide and properly supervise portable work site sanitary facilities when required.

2.21 Traffic Control and Speed Restrictions

Vehicles brought onto company premises must be in safe working order and properly insured. The speed of vehicles driving on company property must be consistent with safety and not exceed any limit specified on signs displayed around the property. Traffic control devices, signals, and signs must be observed at all times.

2.22 Smoking Restrictions

Smoking is prohibited inside all company buildings. Smoking is permitted only within designated outdoor smoking areas. The Project Manager is responsible for identifying smoking areas available to contractor employees.

2.23 Temporary Heating Devices (Salamanders)

Temporary heating devices may be used only with the approval of the EHS Manager. All devices must be Underwriters Laboratory (UL) approved and in good condition. They must be guarded from traffic and at least ten feet from any ignitable material or structure.

3. SPECIAL PRECAUTIONS

3.1 Entry into Confined Spaces

When work is required inside any vessel, tank, chamber, pipe, manhole, catch basin, flue, or other confined space, the contractor must not allow any contractor employees to enter such a space without a contractor-issued Confined Space Entry Permit.

- The contractor will notify the Project Manager and Environmental, Health, and Safety Manager of the proposed confined space entry and present a copy of the contractor's written confined space entry program.
- The EHS Manager will provide the contractor with a list of site-specific confined spaces when the contractor provides notification that a confined space entry will take place during the work activity.
- The EHS Manager will provide the contractor with an acknowledgment yielding confined space entry program control to the contractor for the specific date and entry task. The contractor assumes responsibility for the entire confined space entry task including all OSHA requirements such as supervision, communication, air monitoring, entry supervisor, entrant, attendant, standby personnel, personal protective equipment, training, rescue operations and actual issuance and management of a compliant Confined Space Entry Permit. The contractor is responsible for supplying all necessary equipment.
- The Contractor will notify the EHS Manager when the confined space entry has concluded and of any problems that should be noted for any future entrants.

The contractor may only issue a Confined Space Entry Permit when the space concerned is safe to enter and all requirements of OSHA Regulations are met.

3.2 Excavations

The contractor is not permitted to carry out excavation work without consulting the Project Manager who will give permission to dig after identifying any site-specific precautions such as the position of known underground structures or conditions such as tanks, buried electric cables, drains, gas, sprinkler and water mains, etc. The contractor is required to conduct a thorough work site inspection, review, and contact Dig Safe. The contractor is responsible for any damage done to underground structures or services, and for providing both emergency and permanent repairs to restore any damage to a safe and functional operating condition.

The contractor must obtain local permits. Excavations or openings must be securely fenced, covered over (i.e. steel plates), or otherwise protected, including the use of warning lights, where appropriate, during hours of darkness or poor visibility.

The contractor is responsible for the proper shoring of excavations and trenching in accordance with OSHA and other applicable regulations. Prior to any dewatering, the contractor must discuss planned water and silt controls with the Project Manager and EHS Manager.

All soil fill brought on the property must be clean, with appropriate certification and test data.

Prior permission from the Project Manager is required before removal of excavated soils from company property.

3.3 Pressure Vessels

Pressure vessels used by the contractor such as compressed air receivers and vessels used for spraying paint and similar materials must have been tested and bear current state inspection certification, where applicable under state law.

3.4 Cranes, Hoists, Lifting Appliances, Tackle, and Vehicles

The contractor must not use the company's equipment including cranes, hoists, lifting appliances, tackle, ladders, tools, and vehicles, unless specifically agreed under the terms of the contract with permission from the VP of Health & Safety. When access to such company equipment is desired by the contractor, the contractor must submit a request to the Project Manager. Upon company review of the contractor request, the company may communicate permission via the Project Manager based on contractual agreement, need, and competency of operating

personnel. The contractor is responsible for the equipment's fitness for the specific purpose.

No lifting chain, rope or lifting tackle, crane or lifting machinery may be used on company property unless inspected and maintained in accordance with applicable regulations, and certified where required.

It is forbidden to load a crane beyond the safe working load marked upon it. In the case of a jib crane in which the angle of jib can be altered, the safe working load is that which corresponds with the angle shown on the automatic indicator or table of safe working loads attached to the crane.

It is forbidden for any load to be suspended on any lifting or hoisting equipment unless an operator is at the controls. No lifting over company personnel or visitors is permitted. All slinging and lifting operations must be supervised and signaled by trained personnel. Setting up safe zones and drop zones is the responsibility of the contractor

3.5 Use of Electrically Driven Portable Tools

All contractor portable electrically driven tools or equipment intended for use on company property must be inspected by a qualified contractor representative. The contractor is responsible to supply and use ground fault circuit interrupter (GFCI) extension cords or GFCI portable outlets as required by OSHA.

Portable tools must be connected to the electrical supply by means of a 3-wire cable and 3 pin plug and socket (double insulated tools excepted). Where a 3-phase supply is to be used, 4-wire cable and 4 pin plugs and sockets with ground connections must be used. All such tools must be protected by ground-fault circuit interrupters.

The use of extension cords is not encouraged, and they must not be run across floors or through closing doors or windows and not trailed so as to present a hazard. All electrical equipment and associated wiring must meet NEC and OSHA regulations.

Portable electric lamps must be suitably secured and protected. Lamps used in wet environments must be restricted to voltages not exceeding 25 volts or must be protected by ground-fault circuit interrupters.

3.6 Powder Actuated Tools

The use of powder actuated (percussion) tools must be approved by the Project Manager.

These tools must be used only by competent persons and must be under lock and key when not in use. Extreme care must be taken to ensure that the tools are correctly charged and working surfaces are suitable for the use of powder actuated devices.

3.7 Compressed Gas Cylinders

The storage or use of compressed gas cylinders must be approved by the Project Manager and EHS Manager. Cylinders must be appropriately secured at all times. The indoor use of propane, or other flammable gases, is not encouraged where practical alternatives are available.

3.8 Petroleum, Cellulose, and other Combustible or Flammable Liquids and Mixtures

The contractor must consult the Project Manager before use of combustible or flammable fluids such as petroleum-based paints or adhesives, cellulose-based paints and thinners, combustible, or flammable cleaners, etc., inside a building.

Flammable fluids must not be stored inside buildings except as permitted by regulations, subject to review by the EHS Manager, and stored in an approved cabinet or storage room designed for the purpose.

Work carried out with combustible or flammable fluids is not permitted without strict observation of “no smoking” rules and strict control of spark-producing equipment and open flames. The contractor must provide the means of ensuring adequate ventilation to prevent potentially dangerous concentrations of flammable or other hazardous atmospheres and is responsible for displaying appropriate warning notices such as "No Smoking" and "No Open Flame".

3.9 Explosive and Radioactive Materials

Explosive and radioactive materials are not to be brought onto company property without prior written notice from the contractor and written permission from the Project Manager and EHS Manager. All appropriate licenses and permits are the responsibility of the supplier/contractor. Explosives, radiation sources, and radiation producing equipment will be secured under lock and key when not in use.

3.10 Fork Truck and Other Powered Industrial Trucks

The contractor's powered industrial trucks must not be used on company property without the permission of the Project Manager. Trucks must only be driven by the contractor’s competent, licensed personnel, and must comply with all applicable regulations.

3.11 Hot Work

The contractor must inform the Project Manager of intended hot work including flame cutting, welding, soldering and other spark producing work tasks (i.e. grinding). A written Hot Work Permit must be issued by a Project Manager **before** work is started. The contractor is responsible for posting a fire watch. The contractor is responsible for compliance with any local ordinance that may require a municipal hot work permit.

3.12 Lasers

Where contractor work involves the use of a laser device on DTG Recycle property, the contractor must inform the EHS Manager prior to its use and must ensure the equipment is constructed and operated according to the safety requirements of ANSI Z136.1 and all applicable codes and regulations.

3.13 Safety Data Sheets

If the contractor intends to bring any chemical materials onto company property, a Safety Data Sheet for each such material, and a list by chemical name and quantity for each such material, must be provided to the Project Manager and the EHS Manager at least twenty-four hours before the material arrives. Chemical materials include any gases, liquids, powders, or solids, such as acids, adhesives, alkalis, bases, caustics, cleaners, coatings, coolants, corrosives, degreasers, encapsulants, epoxies, explosives, finishes, flammables, fluxes, inks, lubricants, oils, paints, reactive agents, sealants, solders, solvents, strippers, thinners, toners, varnishes, waxes, and any similar materials.

3.14 Asbestos-Containing Building Material

The contractor will meet with the Project Manager to review all work that may involve the removal, abatement, or disturbance of asbestos-containing building materials. The EHS Manager must be notified prior to beginning such work and any asbestos-containing wastes which are generated will be managed for disposal subject to the review of the EHS Manager.

The contractor is prohibited from disturbing asbestos-containing material unless specifically required by the scope of work and only if properly qualified to perform the work. Should accidental disturbance of asbestos-containing material occur, the contractor must immediately suspend operations and notify the Project Manager and EHS Manager.

For contracts requiring the removal of asbestos-containing material, the contractor is responsible for securing all permits and meeting applicable state, federal and local environmental and safety laws.

3.15 Lead-Containing Building Material

Should accidental disturbance of lead-containing material occur, the contractor must immediately suspend operations and notify the EHS Manager and Project Manager. The contractor is prohibited from disturbing lead containing material unless specifically required by the scope of work.

3.16 Lockout/Tagout – Hazardous Energy Control

The Project Manager and Maintenance Manager must be notified when contractor lockout/tagout is to be used. The contractor must conform to OSHA lockout/tagout requirements. Contractors must provide their own lockout/tagout materials, i.e. padlocks, warning tags, hasps, valve covers, etc. Adequate signs and/or labels will be displayed or attached, as necessary, to notify company personnel of a contractor lockout/tagout condition. The contractor is responsible for monitoring subcontractors.

Whenever the contractor is to be engaged in lockout/tagout activities, the Project Manager and the contractor must inform each other of their respective lockout/tagout procedures. The Project Manager must ensure that company employees understand and comply with the restrictions and prohibitions of the contractor's energy control program.

3.17 State and Local Requirements

In some state and local jurisdictions, additional requirements may apply to contractors who will be working on DTG Recycle premises. As required, the following documents will be presented to the Project Manager and approved by the EHS Manager prior to commencement of work.

- A copy of the Federal/State 300A Injury Summary Log for the previous three years.
- Written disclosure of any violations received from federal or state agencies such as OSHA, WA L&I, OR-OSHA, DOT (as applicable), etc., in the previous 3 years.
- If the contractor will be providing construction or maintenance services, the contractor may need to provide a list of employee names and contact information including: Project Manager, Safety Officer, and other project personnel.
- A list of subcontractor names.

- Applicable training certificates or current training records that pertain to specific hazards of the contracted work. Records must include the first and last name of trained employees, title of the training, and the date that the training was performed. The Project Manager and EHS Manager will determine the specific training records that need to be provided.

4. ROLES AND RESPONSIBILITIES

Contractor

- Adhere to this program and DTG Recycle's EHS Policy.
- Responsible for following their own safety and health program and complying with all federal, state, and local laws, in addition to any site-specific requirements established by this program or DTG Recycle.
- Provide a safety representative or designate an individual responsible for addressing worksite EHS concerns.
- Depending on the nature of the work and potential hazards, and upon request, submit a plan detailing the scope of work to EHS for review.
- Ensure all employees have the proper knowledge and training (e.g., OSHA 10hour or 30-hour, the general safety requirements for the project, as well as any task-specific training required) and access to required personal protective equipment.
- Proof of training must be available upon request.
- Ensure subcontractors adhere to all safety and health requirements.
- Report all incidents to DTG Recycle's Project Managers and OSHA, if applicable.

Project Manager

- Adhere to the requirements of this program.
- Notify EHS of all incidents, injuries, near misses, unsafe act/conditions.
- Coordinate shutdowns, lockout/tagout, hot work permits, confined space entries, fire protection or detection system impairments, or any other tasks requiring authorization, permitting, support, or intervention.
- Notify and collaborate with EHS to address environmental, health, and safety concerns (e.g., potential asbestos, lead-based paint, working at heights, working in confined spaces).
- Notify contractors of known hazardous conditions and provide site-specific information (e.g., confined space assessments, asbestos testing results, rooftop anchor certifications).

EHS Manager

- Adhere to the requirements of this program.
- Review and update this program, as necessary.
- Provide guidance and technical assistance as needed, including assistance in reviewing and accepting contractor safety and work plans.

5. MONITORING, EVALUATION AND REVIEW

The DTG Recycle Contractor Safety Program will be monitored, evaluated, and reviewed periodically and through implementation and use. Adjustments and improvements will be determined as the need for improvement is identified.

6. DEFINITON AND ABBREVIATIONS

Contractor – Contractors, subcontractors, service providers and vendors providing singular or multiple services to DTG Recycle. It includes, but is not limited to contractors, subcontractors, resident contractors, moving, cleaning, repair & maintenance, equipment installation and service, hazardous waste contractors, technology service and installation, inspection services and other outsourced activities.

7. ASSOCIATED DOCUMENTS

007-A1 Contractor Safe Work Certification
007-A2 Contractor Acknowledgment
007-A3 Scope of Work
007-A4 Contractor Safety Training Matrix
007-A5 General Safety Rules for Contract Personnel
007-A6 Contractor Contact Information & Emergency Numbers
007-A7 Contractor Health & Safety Inspection
007-A8 Contractor Hazard Assessment

8. REFERENCES

REVISION RECORD

Date	Version	Revision Description
10/17/2023	1.0	Initial

Scope of Work

Use this form to provide a detailed explanation of work that is to be performed as part of a contract.

Contractor Company Name:	Parametrix, Inc.

Contractor Name:	Laura Lee
Phone Number:	206-394-3665
Email:	lblee@parametrix.com

Project Name:	Yakima Engineering and Environmental Services
Project Location:	41 Rocky Top Rd, Yakima, WA 98908
Proposed Start Date:	May 6, 2024
Proposed Completion Date:	Ongoing

Scope of Work:

Provide engineering and environmental facility support. Onsite work will include, but not be limited to:

- Groundwater monitoring
- MTCA support
- Phase 2 Development CQA
- PCS remediation
- Facility design services
- Survey

Appendix C

Inadvertent Discovery Plan

INADVERTENT DISCOVERY PLAN

PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s): DTG-Anderson Landfill Location: 41 Rocky Top Rd, Yakima

Project Lead/Organization: Luke LeMond/Ecology County: Yakima

If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.

1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. ***Always assume these are live and never touch or move.***
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to ***Stop-Protect-Notify***. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

Project Lead Contacts

Primary Contact		Alternate Contact	
Name:	Ian Sutton	Name:	Mike Brady
Organization:	DTG	Organization:	Parametrix
Phone:	509-421-4807	Phone:	206-604-8570
Email:	isutton@dtgrecycle.com	Email:	mbrady@parametrix.com

Ecology Contacts (completed by Ecology Project Manager)

Ecology Project Manager		Alternate or Cultural Resource Contact	
Name:	Luke LeMond	Name:	Sydney Hanson
Program:	SWM	Program:	TCP
Phone:	509-379-3961	Phone:	564-999-1054
Email:	llem461@ecy.wa.gov	Email:	syha461@ecy.wa.gov

STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.

DAHP Contacts:

Name: Rob Whitlam, PhD
Title: State Archaeologist
Cell: 360-890-2615
Email: Rob.Whitlam@dahp.wa.gov
Main Office: 360-586-3065

Human Remains/Bones:

Name: Guy Tasa, PhD
Title: State Anthropologist
Cell: 360-790-1633 (24/7)
Email: Guy.Tasa@dahp.wa.gov

4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

Tribe:	Yakama Nation	Tribe:	
Name:	Casey Barney	Name:	
Title:	Program Manager Cultrual Resources	Title:	
Phone:	509-865-5121	Phone:	
Email:	casey_barney@yakama.com	Email:	
Tribe:		Tribe:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:		State Agency:	
Agency:		Agency:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under ***Stop-Protect-Notify.*** For specific instructions on how to handle a human remains discovery, see: *RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions*.

Suggestion: If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist
Guy.Tasa@dahp.wa.gov
(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

   Enter contact information below (required):
   - Local Medical Examiner or Coroner name and phone: Jim Curtice 509-574-1610
   - Local Law Enforcement main name and phone: Robert Udell 509-574-2500
   - Local Non-Emergency phone number (911 if without a non-emergency number): 509-574-2500
2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.

Further activities:

- Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological resources discovered during construction are protected by state law RCW 27.53 and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below

surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

8. PROCEEDING WITH WORK

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

9. ORGANIZATION RESPONSIBILITY

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

10. ADDITIONAL RESOURCES

Informative Video

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

Ecology's IDP Video (https://www.youtube.com/watch?v=ioX-4cXfbDY)

Informational Resources

DAHP (https://dahp.wa.gov)

Washington State Archeology (DAHP 2003)
(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

Association of Washington Archaeologists (https://www.archaeologyinwashington.com)

Potentially Interested Tribes

Interactive Map of Tribes by Area
(https://dahp.wa.gov/archaeology/tribal-consultation-information)

WSDOT Tribal Contact Website
(https://wsdot.wa.gov/tribal/TribalContacts.htm)

11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Implement the IDP if you see…

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.



Stone artifacts from Oregon.



Stone artifacts from Washington.



Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see…

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.



Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website.



Artifacts from unknown locations (left and right images).



Implement the IDP if you see…

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (dentalium) or tusk.









Upper Left:*Bone Awls from Oregon.*

Upper Center: *Bone Wedge from California.*

Upper Right: *Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.*

Above: *Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.*



Implement the IDP if you see…

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.





Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry*.







Implement the IDP if you see…

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks).



Shell Midden pocket in modern fill discovered in sewer trench.



Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.





Hearth excavated near Hamilton, WA.

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.





Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*





Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.



Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*





Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*





Implement the IDP if you see…

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.



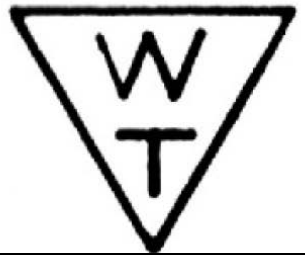


Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.



Right: *Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.*





Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).



Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see…

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.









Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

Potential human remains.

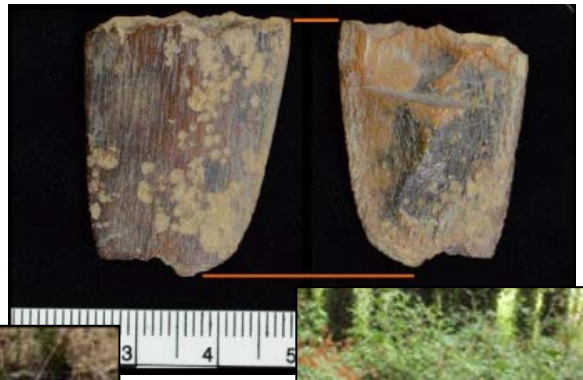
Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.



Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.









Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: *Read the plan!*