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DEPARTMENT OF ECOLOGY
State of Washington

PUBLIC REVIEW DRAFT CLEANUP ACTION PLAN

SIMPLOT SOILBUILDERS SUNNYSIDE CLEANUP SITE

Prepared for

Washington Department of Ecology
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Lacey, Washington 98503

Prepared by

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Facility Site ID: 76742139
Cleanup Site ID: 2558

February 17, 2026

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ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
Agreed Order	Agreed Order No. DE 16446
ARARs	applicable, relevant, and appropriate requirements
bgs	below ground surface
CAP	Cleanup Action Plan
CLARC	Clean Up and Risk Calculation
COCs	constituents of concern
CSM	Conceptual Site Model
DPT	direct-push technology
DRO	diesel-range organics
Ecology	State of Washington Department of Ecology
EDB	ethylene dibromide
FS	Feasibility Study
Geosyntec	Geosyntec Consultants, Inc.
GRO	gasoline-rango organics
HDR	HDR Engineering, Inc.
IHSs	indicator hazardous substances
ISCO	in-situ chemical oxidation
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NSZD	natural source zone depletion
PAHs	polycyclic aromatic hydrocarbons
PID	photoionization detector
PLP	Potentially Liable Person
PRB	permeable reactive barrier
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
SEPA	State Environmental Policy Act

SGS	Simplot Grower Solutions
Simplot	J.R. Simplot Company
SVOCs	semi-volatile organic compounds
the Site	Former Simplot Cleanup Site (300 1st Street in Sunnyside, Washington)
TPH	total petroleum hydrocarbons
CULs	Cleanup Levels
VOCs	volatile organic compounds
WAC	Washington Administrative Code

EXECUTIVE SUMMARY

This *Cleanup Action Plan* (CAP), prepared by Geosyntec Consultants, Inc. (Geosyntec) on behalf of J.R. Simplot Company (Simplot), presents an evaluation of potential remedial alternatives to address subsurface impacts at the Simplot Grower Solutions (SGS) facility located at 300 1st Street in Sunnyside, Washington (the Site) and consists of three parcels within Yakima County (Parcel Nos. 22102523444, 22102523445, and 22102523446), encompassing approximately 2.7 acres. The Site is located in a mixed industrial and residential area with residential properties east and south of the property.

Simplot has used the Site as an agricultural distribution facility since the early- to mid-1960s (HDR Engineering, Inc. [HDR] 2009). A historical review conducted by HDR identified general area land use as agricultural warehouses, lumber yards, coal storage, and railroad transportation dating back to the early 1900s. Previous remedial investigations have identified nitrate and ammonia, volatile organic compounds (VOCs), heavy metals, herbicides, and petroleum-related constituents in the soil and groundwater at the Site.

This CAP has been prepared under the requirements of Agreed Order No. DE 16446 between the State of Washington Department of Ecology (Ecology) and Simplot. This CAP describes the proposed cleanup action for this site and sets forth the regulatory requirements that the cleanup must meet. The selected remedy described in the following report includes mixing an oxidant into the identified areas of shallow vadose zone soils, in-situ chemical oxidation (ISCO) of saturated soils and groundwater via direct-push injection, and installation of a permeable reactive barrier (PRB) to contain remaining constituents on-site.

1. INTRODUCTION

This *Cleanup Action Plan* (CAP) for the former Simplot Site (the Site) was prepared by Geosyntec Consultants, Inc. (Geosyntec) at the request of the Washington Department of Ecology (Ecology). The Site is located at 300 South 1st Street in Sunnyside, Washington. The Site Location Map is provided as Figure 1. A map of the Site vicinity is provided as Figure 2. The purpose of this CAP is to provide a proposed cleanup action to address constituents of concern (COCs) in soil and groundwater remaining at the Site following the completion of previous corrective actions executed in 2007. The CAP also details the recommendations outlined in the *Feasibility Study* (FS) (Geosyntec 2023b) and the results of the post-FS sampling completed in May 2024 (Geosyntec 2024). Specific purposes of this plan are further described in Section 1.2.

1.1 Regulatory Framework

On June 26, 2019, Simplot entered into Agreed Order No. DE 16446 (Agreed Order) with Ecology which outlined a pathway for remediation of the Site. The Agreed Order named Simplot as the Potentially Liable Person (PLP) under Model Toxics Control Act (MTCA) regulations, requiring Simplot to execute the requirements for Site remediation.

Under the requirements of the Agreed Order, Simplot conducted additional sampling activities through 2022 to complete a multi-phase remedial investigation (RI) to assess the nature and extent of subsurface contamination at the Site (HDR 2020, 2021, 2022, 2023).

Simplot submitted a technical memorandum outlining proposed remedial cleanup action alternative technologies to Ecology on September 22, 2023 (Geosyntec 2023a). Ecology responded via email on September 29, 2023, stating that the proposed technologies comply with the requirements of WAC 173-340-350. The proposed cleanup action alternative and the results of the RI, FS, post-FS, and prior investigations have been incorporated into the development of this CAP.

1.2 Purpose

A CAP is required as part of the Site cleanup process under Chapter 173-340 Washington Administrative Code (WAC), MTCA Cleanup Regulations. The purpose of a CAP is to identify the proposed cleanup action and to provide an explanatory document for public review. In the context of this CAP, the purpose is to identify the proposed cleanup action to address remaining COCs at the Site, after past cleanup actions were completed. More specifically, this plan:

- Describes the Site;
- Summarizes current Site conditions after the completion of previous cleanup actions;
- Summarizes the cleanup action alternatives considered in the remedy selection process from the FS (Geosyntec 2023b);
- Describes the selected cleanup action and the rationale for selecting this alternative from the FS;
- Identifies Site-specific cleanup levels and points of compliance for each hazardous substance and medium of concern for the proposed cleanup action;

- Identifies applicable state and federal laws for the proposed cleanup action;
- Discusses compliance monitoring requirements; and
- Presents the schedule for implementing the CAP.

Ecology has made a preliminary determination that a cleanup conducted in conformance with this CAP will comply with the requirements for selection of a remedy under WAC 173-340-360.

1.3 Previous Studies

The following sections provide a summary of the environmental investigations and remedial actions conducted in association with the Site between 2007 and 2024. Further details of these investigations and actions are included in the 2023 FS (Geosyntec 2023b).

- 2007 – Off-site Investigation: Bee-Jay Scales Facility
- 2009 – Preliminary On-site Investigation
- 2011 – On-site Monitoring Well Installation and Monitoring (through 2021)
- 2012 – Off-site Downgradient Well Installations
- 2012 – Source Removal Excavation
- 2013 – Subsurface Drain Evaluation
- 2020 – RI Phase 1 and 2: Additional Borings
- 2021 – RI Phase 2.5: MW-6D and MW-7D Installation, On site Soil Vapor Headspace Screening, On-site Soil Suitability Testing, and Off-site Tier 1 Soil Vapor Intrusion Assessment
- 2022 – RI Phase 3: On-site Tier 2 Vapor Intrusion Investigation, Geophysical Survey and Soil Investigation
- 2023 – Feasibility Study
- 2024 – Post-Feasibility Study

During the 2007 Off-site Investigation at the Bee-Jay Scales facility, Stantec advanced a boring along the eastern property boundary of the Simplot Sunnyside Site to assess the extent of groundwater impacts associated with the Bee Jay Scales facility. Samples collected from this boring identified elevated concentrations of nitrate, sulfate, chloride, 1,2-dichloroethane, 1,2-dichloropropane, arsenic, benzene, Dinoseb herbicide, and ammonia in groundwater (HDR 2009). As a result of these detections, on October 1, 2008, Simplot received an "Early Notice Letter" from Ecology to investigate the presence of potentially hazardous chemicals within the subsurface at the Site.

As a response to the "Early Notice Letter," Simplot performed a Preliminary On-site Investigation on September 23 and 24, 2009. Using direct-push technology (DPT), 13 temporary borings (B01 through B13) were advanced, and soil and groundwater samples were collected from up to 12 feet below ground surface (bgs) (HDR 2009). Samples were analyzed for VOCs, chlorinated herbicides, Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), chloride, sulfate, nitrate, and ammonia. The samples identified the following groundwater constituents with screening level exceedances: benzene, bromodichloromethane, 1,2-dichloroethane, 1,2-dichloropropane, ethylbenzene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total xylenes, arsenic, barium, lead, 2,4-D, nitrate, sulfate, and chloride. Groundwater exceedances were present in all boring holes (HDR 2009).

In 2011, five on-site monitoring wells (MW-1 through MW-5) were installed with screens from 5 to 20 feet bgs. Two additional off-site monitoring wells (MW-6 and MW-7) were installed in 2012 with screened intervals of 6 to 22 feet bgs and 9 to 24 feet bgs, respectively. Multiple rounds of groundwater monitoring have been conducted on the Site wells since installation.

In December 2012, following the installation of the off-site monitoring wells, Simplot excavated approximately 155 cubic yards (20 feet by 22 feet and 9.5 feet deep) of soil from a former rinse area near the northeastern corner of the Site (Figure 3). Depth to groundwater at the time of excavation was approximately 9.5 feet bgs. Sampling results from this area of the Site indicated elevated concentrations of nitrate and ammonia. Excavated soil was stockpiled and removed from the Site. Confirmation samples were collected from the excavation pit sides and bottoms (eight wall samples, two bottom samples). Samples were analyzed for VOCs, chlorinated herbicides, nitrate, and ammonia, and concentrations were below screening levels. Monitoring well MW-5 was within the excavation footprint, was abandoned during excavation activities, and was later replaced as MW-5R (screened 10–20 feet bgs).[1]

In April 2013 HDR completed a subsurface drain study to assess whether shallow Site groundwater had the potential to enter four identified existing subsurface drainage systems (old under-drain system, irrigation district drain system, city stormwater drain system, and industrial wastewater drain system; HDR 2013). Groundwater samples were collected from drainpipes and manholes downgradient from the Site. Samples were analyzed for chloride, sulfate, total phosphorus, nitrate, and ammonia. Total phosphorus was the only exceedance present in the cross-gradient (north of Site) and downgradient (east of Site) storm drains.

Between January 2020 and May 2022, HDR conducted a multi-phase remedial investigation to assess subsurface contamination at the Site (HDR 2020, 2021, 2022, 2023). This investigation involved on-site and off-site sampling of soil, groundwater, and soil vapor, as well as soil suitability testing and vapor intrusion assessments. Initial borings in January 2020 and December 2020 revealed exceedances of various contaminants, including VOCs, gasoline-range organics (GRO), ethylene dibromide (EDB), and arsenic. In 2021, monitoring wells were installed, soil vapor screening indicated high VOC levels in certain areas, and soil suitability testing suggested limited efficacy of phytoremediation. A Tier 1 vapor intrusion assessment found 1,3-butadiene

[1] Ecology hosts a well construction map at: https://appswr.ecology.wa.gov/wellconstruction/map

exceeding screening levels, likely due to drilling activities. In May 2022, a Tier 2 vapor investigation revealed benzene exceedances in the warehouse air, likely from on-site products. In August 2022, a geophysical survey identified subsurface anomalies, including a small, isolated object southeast of the office structure and buried debris near the former container rinsing area. Exceedances of VOCs, GRO, diesel-range organic (DRO), herbicides, arsenic, cadmium, and nitrate-nitrite-nitrogen were also identified in soil.

In 2023, Geosyntec prepared a FS (Geosyntec 2023b) on behalf of Simplot to present an evaluation of potential remedial alternatives to address subsurface impacts remaining at the Site. The FS evaluated remedial alternatives to identify the preferred remedial cleanup action alternative. To address data gaps identified in the FS and further delineate the vertical and horizontal extent of COCs, groundwater and soil sampling was conducted in May 2024. Additionally, the results of the May 2024 sampling provided a basis for statistical analysis and development of site-specific background concentrations of metals and evaluation of locally occurring nitrate values. The preferred remedial cleanup action alternative and site-specific background concentrations are further discussed in this CAP.

2. SITE DESCRIPTION

General background information on the Site location and surroundings, Site history and current use, and geology are summarized below. Maps of the Site location, vicinity, and layout are provided in Figures 1 through 3.

2.1 Site History and Current Use

The Site is located at 300 South 1st Street in Sunnyside, Washington, and consists of three parcels within Yakima County (Parcel Nos. 22102523444, 22102523445, and 22102523446), encompassing approximately 2.7 acres, and is currently owned by Simplot. The Site is located in Yakima County, Washington, within the City of Sunnyside limits, and is zoned for light industrial use (City of Sunnyside zoning code M-1).[2] The Site is irregularly shaped and includes two buildings, a modular office and a warehouse, and a concrete containment structure used for storing chemical totes and tanks (Figure 3). The Site consists of mostly unpaved ground surface, except for a small, asphalt paved parking lot near the modular office structure.

In the early 1960s to 1986s, an agricultural distribution facility was operated by the former owners of the Bee-Jay Scales facility (Facility Site ID 504; Cleanup Site ID 3642) located at 116 North 1st Street, one block north of the Site (SECOR 2007). The Bee-Jay Scales facility is currently undergoing remediation, primarily for nitrate and ammonia.

Simplot has used the Site as an agricultural distribution facility since the early- to mid-1960s (HDR 2009). A historical review conducted by HDR identified general area land use as agricultural warehouses, lumber yards, coal storage, and railroad transportation dating back to the early 1900s.

2.2 Human Health and Environmental Concerns

An initial Conceptual Site Model (CSM) was developed based on the results of the samples (groundwater, soil, vadose zone soil vapor, and air) collected as a part of site investigations between 2007 and 2022 (HDR 2023). Indicator hazardous substances (IHSs) were identified in the HDR CSM, along with two primary release source areas and mechanisms of constituent release into the environment. The CSM also summarized the environmental pathways for exposed individuals and routes of entry to the body for each medium of exposure (soil, groundwater, vadose zone soil vapor, and air). The exposure pathway CSM table developed by HDR is included for reference in Appendix A.

Additional Site-specific considerations included aquatic and terrestrial receptors. During the development of the CSM, no aquatic or terrestrial ecological receptors were identified and no environmentally sensitive natural resources including wetlands, surface water bodies, forested natural areas, or habitat for threatened and endangered species were present on the Site or in the vicinity.

The potential attenuation of Site constituents was further assessed in the 2023 FS (Geosyntec 2023b). It was determined that physical processes of constituent mass transport within the saturated zone are likely diffusion (constituent mass moving from an area of greater concentration

[2] Yakima County hosts GIS maps at this website: https://yakimacounty.maps.arcgis.com/

to an area of lower concentration), advection (movement of dissolved constituents with flowing groundwater), and dispersion (constituent spreading longitudinally and transversely) toward deeper and downgradient groundwater due to groundwater flow toward the east and southeast.

Within the smear zone, constituents are likely to adsorb to soil material (decrease of constituent concentration in the aqueous phase) and/or re-dissolve into groundwater (increase of constituent concentration in the aqueous phase) during seasonal water table fluctuations.

Within the unsaturated (vadose) zone, volatilization of organic constituents from soil/groundwater into soil vapor is potentially occurring (constituent mass transfer to air).

Additional potential mass transport mechanisms may include constituent degradation or metals complexation (e.g., due to unstudied microbial and/or oxidation-reduction processes).

2.2.1 Source Areas and Constituent Release Mechanisms

Two source areas have been previously identified at the Site: an area with petroleum impacts in the north-northeastern portion of the Site, and an agricultural chemical release area primarily focused within the northeastern portion of the Site.

Details on the two source areas and mechanisms of constituent release are discussed in the sections below.

2.2.1.1 Source Area 1: Petroleum Impacts North-Northeast of Warehouse Building

Isoconcentration maps of petroleum constituents were developed by HDR and indicated that a petroleum release or releases to the subsurface may have previously occurred in the area to the north-northeast of the warehouse building. HDR identified Site activities associated with this area as former petroleum storage and/or dispensing, however no details on historical infrastructure (e.g., tanks) or operational years were available.

Associated IHSs were listed as VOCs, semi-volatile organic compounds (SVOCs), GRO, DRO, and metals. Previous investigations conducted by HDR identified constituents between 0 and 15 feet bgs within the subsurface. Environmental media determined to be impacted included soil and groundwater. The first groundwater encountered was reported between 8.5 and 10 feet bgs. The highest soil vapor photoionization detector (PID) readings were observed below the water table but above 15 feet bgs (bottom of boring depths). Additionally, HDR inferred that a smear zone is present within subsurface soils, caused by seasonal groundwater fluctuations. HDR reports only one constituent exceeded its soil vapor screening levels and the constituent's presence in vapor could have been the result of the drilling activities. PID readings from the Phase 3 of the RI are included in the cross-sections in Appendix B.

2.2.1.2 Source Area 2: Container Rinsing in Northeastern Corner of Property and Similar Areas on the Site

The Site was historically used as an agricultural product distribution facility. Agricultural chemical containers were reportedly stored and rinsed over unpaved surfaces at the Site. HDR identified a designated container rinsing area in the northeastern portion of the Site and stated that similar container rinsing activities likely occurred within other undesignated areas on the Site. It is suspected that discharge of rinse water from chemical containers to the ground surface resulted in

impacts to soil and groundwater. Associated IHSs were listed as herbicides, nitrate, ammonia, metals, VOCs, and SVOCs. As an interim remedial measure, soil in the known former rinse area was excavated in 2012.

Results from the Post-FS Investigation support both source areas identified by HDR. Cross-sections of the PID results from the Post-FS investigation and Phase 3 of the RI indicate elevated PID readings (>1,000 ppm) in shallow soil in the northwest corner of the Site and deeper soil in the northeastern area (Appendix B).

2.2.2 Exposure Receptors and Exposure Pathways

Exposure pathways are mechanisms by which humans and aquatic or terrestrial ecological receptors can become exposed to Site constituents. The exposure pathway CSM table developed by HDR in the 2023 RI report is discussed in the FS and included for reference as an attachment to this document (Appendix A).

2.2.2.1 Potential Receptors

Access to the Site is via locked gates with no public access. Previously, on-site personnel included primarily Simplot employees; the site is now inactive and unstaffed. Current and potential future human receptors could include the following:

- Simplot employees (current [not on Site full-time] and future)
- Other authorized (i.e., construction workers, contractors) and unauthorized (i.e., trespassers) Site visitors (current and future)
- Potential Off-site receptors (future - only if cleanup actions are not fully implemented)

2.2.2.2 Potential Exposure Pathways

Potential exposure routes through which potential receptors may be exposed to constituents through include:

- Direct (dermal) contact with constituent mass
- Ingestion of constituent mass
- Inhalation of constituent mass

Current Site employees/visitors may become exposed to constituent mass through direct contact with surface soils. There are currently no potable or irrigation wells present on-site; therefore, direct contact with groundwater is not a current exposure pathway. The Tier 2 on-site vapor intrusion investigation completed in 2022 indicated that inhalation of constituent mass is not a current exposure pathway. Although benzene concentrations in indoor air samples collected from the warehouse building exceeded Clean Up and Risk Calculation (CLARC) screening levels, the warehouse is not occupied for long periods of time and is often ventilated to ambient air during building occupancy.

Future Site employee/visitors may become exposed to constituents through direct contact with soil and groundwater during future excavation or Site construction activities. No potable wells are

planned to be installed at the Site in the future; therefore, ingestion of constituent mass in groundwater is not a future exposure pathway.

Current off-site residential exposure through direct contact with constituent mass is not a current pathway. Ingestion of constituent mass is additionally not a current pathway, as there are no known potable off-site wells within the observed groundwater plume. The Tier 1 off-site vapor intrusion investigation completed in 2021 determined that off-site inhalation of constituent mass is additionally not a current complete pathway.

Future off-site residential exposure may occur if impacted Site soils become airborne and migrate off-site, such as during future construction activities (potential for direct contact, ingestion and/or inhalation of constituent mass). Additionally, future off-site residential exposure through ingestion may be a future pathway if undocumented off-site potable water wells exist, or if new wells are installed within the shallow aquifer plume for extraction of drinking water. However, installation of new wells within the city limits is highly unlikely, as the city requires new buildings to connect to the municipal water supply.

Surface water dermal contact, ingestion, and inhalation were determined by HDR not to be potential exposure pathways based on current and anticipated future use conditions. The 2023 RI report also showed that ecological risk characterization and assessment were not necessary because of a lack of habitat at the site and lack of connection to other habitat(s).

2.2.2.3 Soil Exposure

2.2.2.4 Direct Contact Pathway

Due to the Site industrial land use designation, future exposure to impacted soils is possible, as construction or improvements may occur. CLARC cleanup levels for Method A Industrial Properties and Method B Direct Contact–Cancer were used, when applicable, to screen for cleanup scenarios. Based on MTCA cleanup level methodology, the more conservative cleanup value for the "Direct Contact" and "Industrial Properties" constituents will be used as the Cleanup Levels (CULs).

2.2.2.5 Soil to Groundwater Pathway

Groundwater elevations were observed to fluctuate seasonally and were recorded at 4 to 10 feet bgs. Based on groundwater concentrations of COCs, leaching into the groundwater has occurred, may continue during seasonal groundwater elevation changes, and appears to have resulted in a submerged smear-zone of product below the water surface. To provide protection from COCs in soil migrating into groundwater, the CLARC values for "Protectiveness of Groundwater–Saturated" were utilized as the proposed CULs.

2.2.2.6 Soil to Vapor Pathway

A soil vapor intrusion investigation was completed and determined that benzene was present in the on-site warehouse, however it is assumed that the source of benzene in the warehouse indoor air samples is a result of using benzene-containing products in the warehouse, and not from an external release resulting in vapor-intrusion. This is further confirmed with the results of the sub-slab samples indicating that the respective constituents were below screening levels. No other

constituents or locations on-site or off-site were confirmed for vapor intrusion; however, the CSM indicated that future on-site and off-site exposure could be possible, and as such, CULs are based on the requirements of WAC 173-340-708.

2.2.2.7 Groundwater Exposure

2.2.2.8 Direct Contact Pathway

The direct contact pathway for groundwater was determined to be complete for on-site activities if construction activities exposed workers to groundwater during excavation work. Although unlikely, the off-site direct contact pathway for groundwater was determined to be complete for exposure as groundwater may be extracted via undocumented shallow private wells. Based on these potentially complete pathways, Method A, Method B–Cancer, and Washington State and Federal groundwater cleanup levels were used.

2.2.2.9 Groundwater to Vapor Pathway

The Tier 1 vapor intrusion investigation determined that contaminated soil vapor in air is not present off-site. It is assumed that fine-grained Site soils have inhibited contaminated groundwater migration off-site and reduced the potential for a completed pathway. However, future migration of impacted groundwater may be possible, so considerations for mitigation were developed.

2.3 Cleanup Standards

2.3.1 Contaminants of Concern

COCs have been identified in both soil and groundwater (Table 1 and Table 2). The COCs include nitrates, select VOCs, heavy metals, herbicides, and petroleum-related contaminants that were reported at levels above CLARC cleanup levels.

Heavy metals, including arsenic, barium, cadmium, and selenium were found throughout the Site at levels that exceeded the CLARC values for protection of groundwater. Based on distribution and frequency of the elevated metal results, including confirmed elevated levels found upgradient and downgradient of the investigation area, it is assumed that these metals are consistent with background values, and not due to a release at the Site. Therefore, off-site soil and groundwater samples were collected to investigate background concentrations of these COCs and to establish Site-specific CULs as part of the cleanup action plan. Tables for off-site soil and groundwater results, along with the statistical analysis results, are included in the *Sunnyside Background Levels Technical Memorandum* (Appendix C).

2.3.2 Cleanup Levels

The CLARC Method A and B CULs were compared to applicable local, state, and federal requirements. As detailed in the Sunnyside Background Levels Technical Memorandum (Appendix C), the WAC 173-340-709 was also utilized as a basis to determine CULs for the COCs at the Site. A summary of draft CULs is provided in Table 1 and Table 2, below.

Table 1: Soil Cleanup Levels

Constituent Category	COC	CLARC Method and Pathway	CUL (mg/kg)
PAH - Petroleum Constituents	1-Methyl naphthalene	Method B - Protective of Saturated Groundwater*	0.5
	2-Methyl naphthalene	Method B - Protective of Saturated Groundwater*	0.5
	Gasoline Range Organics (GRO)	Method A - Unrestricted Land Use	30
	Naphthalene	Method B - Protective of Saturated Groundwater*	0.5
VOCs - Petroleum Constituents	1,2-Dichloroethane (EDC)	Method B - Protective of Saturated Groundwater*	0.005
	1,2,3-Trimethylbenzene	Method B - Protective of Saturated Groundwater	0.073
	1,2,4-Trimethylbenzene	Method B - Protective of Saturated Groundwater	0.072
	1,3,5-Trimethylbenzene	Method B - Protective of Saturated Groundwater	0.071
	Benzene	Method B - Protective of Saturated Groundwater*	0.005
	Cumene	Method B - Protective of Saturated Groundwater	0.79
	Ethylbenzene	Method B - Protective of Saturated Groundwater	0.34
	Methyl tert-butyl ether (MTBE)	Method B - Protective of Saturated Groundwater	0.0072
	Toluene	Method B - Protective of Saturated Groundwater	0.27
	Xylenes, Total	Method B - Protective of Saturated Groundwater	0.83
VOCs – Non-Petroleum Constituents	1,1,2-Trichloroethane	Method B - Protective of Saturated Groundwater*	0.005
	1,2,3-Trichlorobenzene	Method B - Protective of Saturated Groundwater*	0.013
	1,2,3-Trichloropropane	Method B - Protective of Saturated Groundwater*	0.005
	1,2,4-Trichlorobenzene	Method B - Protective of Saturated Groundwater	0.03
	1,2-Dichloropropane	Method B - Protective of Saturated Groundwater*	0.005
	Acetone	Method B - Protective of Saturated Groundwater	2.1
	Methyl ethyl ketone	Method B - Protective of Saturated Groundwater	1.4
	Methyl isobutyl ketone	Method B - Protective of Saturated Groundwater	0.19
	n-Butylbenzene	Method B - Protective of Saturated Groundwater	0.71
	n-Propylbenzene	Method B - Protective of Saturated Groundwater	0.88
	sec-Butylbenzene	Method B - Protective of Saturated Groundwater	1.3
	tert-Butylbenzene	Method B - Protective of Saturated Groundwater	1
	Tetrachloroethylene (PCE)	Method B - Protective of Saturated Groundwater*	0.005
Herbicides	2,4-Dichlorophenoxyacetic acid	Method B - Protective of Saturated Groundwater	0.022
	Dinoseb	Method B - Protective of Saturated Groundwater*	0.07
Metals	Arsenic	Natural Background	7
	Barium	Method B - Protective of Saturated Groundwater; adjusted for background study**	162
	Cadmium	Method B - Protective of Saturated Groundwater*	0.16
	Iron	Natural Background	51,500
	Manganese	Natural Background	1,100
	Selenium	Natural Background	0.78

Notes:
* CUL adjusted for laboratory Practical Quantitation Limit (PQL)
** CUL calculated based on background levels. See Geosyntec 2024 - *Sunnyside Post FS Sampling Technical Memorandum.*
mg/kg = milligrams per kilogram

Table 2: Groundwater Cleanup Levels

Constituent Category	COC	CLARC Method and Pathway	CUL (µg/L)
PAHs – Petroleum Constituents	1-Methyl naphthalene	Method B - Cancer	0.858
	Diesel Range Organics (DRO)	Method A - Unrestricted Land Use	500
	Gasoline Range Organics (GRO)	Method A - Unrestricted Land Use	800
	Naphthalene	Method A - Unrestricted Land Use	160
	Residual Range Organics (RRO)	Method A - Unrestricted Land Use	500
VOCs – Petroleum Constituents	1,2-Dichloroethane (EDC)	Method A - Unrestricted Land Use	5
	Bromodichloromethane	Federal MCL (adjusted for cancer risk)	7.06
	Xylenes, Total	Method B	1,600
	Benzene	Method A - Unrestricted Land Use	5
	Ethylbenzene	Method A - Unrestricted Land Use	700
	Ethylene dibromide (EDB)	Method B - Cancer*	0.5
	1,1,2,2-Tetrachloroethane	Method B – Cancer*	0.5
VOCs – Non-Petroleum Constituents	1,1,2-Trichloroethane	Federal MCL	3
	1,2,3-Trichloropropane	Method B - Cancer*	1
	1,2-Dichloropropane	Federal MCL	5
Herbicides	2-methyl-4-chlorophenoxy-2-propionic acid (MCPP)	Method B - Non-Cancer	16
Metals	Arsenic	Method A - Unrestricted Land Use**	6
	Cadmium (potable groundwater & surface water)	Federal MCL	5
	Chromium, Total	Federal MCL	100
	Lead	Federal MCL	15
Nitrates		Federal MCL**	10,000
		Ecology-Approved Remediation Level***	15,000

Notes:
1) Constituents shaded in gray indicate unique constituents. Unique constituents did not result in exceedances in soil, only groundwater.
* CUL adjusted for laboratory PQL
** CUL calculated based on background levels. See Geosyntec 2024 - *Sunnyside Post FS Sampling Technical Memorandum.*
*** Ecology identifies a cleanup level (CUL) of 10,000 µg/L for nitrate in groundwater; however, a site-specific remediation level of 15,000 µg/L has been approved for use as the point of compliance.
MCL = Maximum Contaminant Level
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

3. CLEANUP ACTION ALTERNATIVES AND ANALYSIS

In the 2023 FS (Geosyntec 2023b), six cleanup action alternatives were evaluated to address remaining COCs. The technologies evaluated in the FS include the following:

- Alternative 1: Soil Mixing, ISCO, and PRB
- Alternative 2: Excavation and Disposal, ISCO, and PRB
- Alternative 3: Excavation and Disposal, ISCO of Impacted Off-site Groundwater, PRB, and Monitored Natural Attenuation (MNA)
- Alternative 4: Multi-Phase Extraction and Treatment
- Alternative 5: Pavement Cap, ISCO of Impacted Off-site Groundwater, PRB, and MNA
- Alternative 6: No Action

The above six remedial alternatives were screened against Ecology's seven evaluation and selection criteria, as presented in WAC 173-340-360 as well as considerations included in WAC 173-340-380, to select the most advantageous approach. These alternatives were evaluated against criteria including protection of human health and the environment, permanence, effectiveness over the long-term, management of short-term risks, implementability, public acceptance, impacts on overburdened communities, and cost. Further details regarding evaluation criteria are included in the FS (Geosyntec 2023b).

A review of the State of Washington's Office of Financial Management mapping tool indicates that the city of Sunnyside is considered an "Overburdened Community", and as such consideration for the implementation of the cleanup action elicits additional importance for the remediation of the Site. Under the State Environmental Policy Act (SEPA), an environmental checklist was prepared for the selected remedial alternative to further assess potential environmental impacts of the proposed remedy. The draft SEPA Environmental Checklist is included in Appendix D.

The FS recommended *Alternative 1: Soil Mixing, In-Situ Chemical Oxidation, and Permeable Reactive Barrier* as the cleanup action alternative for implementation at the Site. Alternative 1 was determined to provide the highest level of protectiveness compared to the other alternatives evaluated for on-site and off-site receptors by reducing constituents to target cleanup levels in groundwater and on-site soils. As described in the FS, reduction of constituents will be accomplished by sub-surface injection of an oxidant selected specifically for the Site. Soil mixing of the oxidant will also be used where constituents are found to be above the target cleanup levels in the shallowest four feet of soil. Once the ISCO injections and soil mixing components of the alternative has been completed, a PRB will be installed along the eastern property line to capture potential remaining mobile constituents in groundwater before leaving the Site.

Alternative 1 achieves RAOs, complies with applicable, relevant, and appropriate requirements (ARARs), uses remediation industry standard technologies, and is easily implemented. The key components of Alternative 1 include:

- Metals sampling investigation of upgradient soil and groundwater to establish Site-specific background and target cleanup levels
- Bench-scale testing of groundwater, soil, and oxidants
- Engineering design, construction management, and health and safety planning
- Pre-implementation baseline sampling of soil and groundwater from compliance and performance monitoring wells associated with the Site
- Soil mixing
- In-situ chemical oxidation injection
- Installation of a PRB
- Post-implementation sampling and monitoring
- Project closeout report

As discussed in Section 2.3, Site-specific background and target cleanup levels have been developed. Bench-scale testing of groundwater, soil, and oxidants was also completed during the Post-FS Investigation. Results of the bench-scale testing have been included in Section 4 and the associated report is included in Appendix E.

4. DESCRIPTION OF SELECTED REMEDY

4.1 Site Description

This CAP addresses areas where COCs in shallow soil and groundwater remain above their respective CULs. The approximate treatment area boundary is shown in Figure 4.

4.2 Description of the Cleanup Action

The chosen Site cleanup action is soil mixing, in-situ chemical oxidation, and installation of a PRB. This cleanup action provides the highest level of protectiveness compared to the other alternatives evaluated for on-site and off-site receptors by reducing constituents to CULs in groundwater and on-site soils. Reduction of constituents will be accomplished by sub-surface injection of a sodium persulfate-based oxidant selected specifically for the Site. Bench testing was completed by third-party and determined sodium persulfate was the most appropriate oxidant solution for the Site. The completed bench testing report is included as Appendix E. Soil mixing of the oxidant will also be used where constituents are found to be above the CULs in the shallowest four feet of soil. Once the ISCO injections component of the alternative has been completed, a PRB will be installed along the eastern property line to capture potential remaining mobile constituents in groundwater before leaving the Site.

4.3 Cleanup Standards and Point of Compliance

The cleanup standards to be used for the CAP are the Site CULs (Section 2.3.2; Table 1 and Table 2). The point of compliance for this remedy is impacted soil and groundwater.

4.4 Applicable, Relevant, and Appropriate Requirements (ARARs)

Under WAC 173-340-710, MTCA requires that cleanup actions comply with all legally applicable local, state, and federal laws, and requirements identified by Ecology to be ARARs.

“Relevant and appropriate” requirements include those cleanup standards, standards of control, and other human health and environmental requirements, criteria, or limitations established under state or federal law that, while not legally applicable to the hazardous substance, cleanup action, location, or other circumstance, address problems or situations sufficiently similar to those encountered that their use is well suited to the particular Site.

As part of the cleanup standards determination, the CLARC Method A and B CULs were compared to applicable local, state, and federal requirements. The WAC 173-340-709 was utilized as a basis to determine CULs for the COCs at the Site. The proposed cleanup action is expected to comply with cleanup standards and applicable laws and regulations.

4.5 Impacts to Vulnerable Populations and Overburdened Communities

In developing the cleanup action for the Sunnyside Soil Builders Site, the project team evaluated whether the selected remedy could disproportionately affect vulnerable populations or overburdened communities. This evaluation considered the Site’s historical use, surrounding community characteristics, potential exposure pathways, and the nature of the proposed cleanup technologies.

Because the Site is zoned and operated for industrial use, and because the selected technologies (ISCO, soil mixing, and installation of a PRB) occur primarily below ground, the potential for community disturbance is low. ISCO and soil mixing will take place entirely within Site boundaries, while the PRB will be installed along the eastern property line to prevent off-site migration of remaining mobile groundwater constituents. These measures are specifically designed to reduce potential impacts to nearby receptors, including any vulnerable or overburdened populations downgradient of the Site.

The remedy does not involve transporting contaminated soil off-site, avoiding impacts commonly associated with heavy-haul operations such as increased diesel emissions, truck traffic, roadway noise, and short-term air-quality degradation. By eliminating off-site soil disposal, the cleanup approach minimizes community-level burdens related to air pollution, roadway safety, and traffic congestion.

As part of the evaluation, the project team also reviewed publicly available data on vulnerable populations and overburdened communities in Washington, including the Washington Environmental Health Disparities (EHD) Map (Washington State Department of Health 2002). These resources highlight several factors that contribute to cumulative community burdens in Sunnyside, Washington such as high poverty rates, comparatively poorer regional air quality, and proximity to Risk Management Plan (RMP) Facilities indicating residents face elevated risk of toxic releases, chemical accidents, and associated health impacts.

While these broader regional conditions indicate elevated community vulnerability, the selected cleanup approach at the Sunnyside Soil Builders Site avoids creating new disproportionate impacts. The remedy relies on subsurface treatment technologies, does not generate off-site soil disposal needs, and therefore does not add traffic, emissions, noise, or other stressors commonly associated with cleanup activities. By keeping treatment activities on-site, reducing off-site migration potential, and minimizing above-ground disturbance, the cleanup action aligns with environmental-justice principles and avoids adding to existing burdens experienced by communities in Sunnyside, Washington and the Yakima Valley.

No disproportionate impacts were identified during remedy evaluation. Nonetheless, consistent with environmental-justice best practices, the project team, including Ecology, will maintain open communication with local stakeholders throughout implementation. Intrusive activities will be scheduled to minimize nuisance impacts such as noise, dust, and temporary access limitations. These measures support equitable protection of public health and environmental quality for all community members within the City of Sunnyside.

4.6 Restoration Timeframe

As required by WAC 173-340-360 (2.b.ii), a cleanup shall provide for a reasonable restoration time frame by considering the following factors (WAC 173-340-360(4.b)):

1. Potential risks posed
2. Practicability of achieving shorter restorations time frame
3. Current Site uses
4. Potential future Site uses

5. Availability of alternative water supplies
6. Effectiveness and reliability of institutional controls
7. Ability to control and monitor migration of constituents
8. Toxicity of the hazardous substances
9. Natural processes that reduce concentrations of the hazardous substances

The proposed cleanup takes into consideration the above criteria and is the remedial alternative most likely to remediate groundwater within a reasonable time frame while reducing risks.

Assuming continuous operations, the proposed soil mixing remedy, ISCO remedy, and installation of the PRB are expected to take approximately three (3) years followed by post-remedy compliance monitoring (Section 4.6).

4.7 Compliance Monitoring

Compliance monitoring will be conducted in accordance with WAC 173-340-410, which addresses three types of compliance monitoring:

- **Protection monitoring:** Confirms that human health and the environment are adequately protected.
  - Protection monitoring will be conducted during the implementation of the cleanup action to ensure that personnel on-site during the cleanup activities are safe. Additionally, protection monitoring will be used to ensure that on and off-site receptors, including potentially overburdened communities located in the vicinity of the project, are protected during and after the implementation of the cleanup action.
- **Performance monitoring:** Confirms the cleanup action has attained cleanup standards.
  - Monitoring of new performance wells installed before and during cleanup action will be used to confirm that target cleanup standards for impacted groundwater have been met through the implementation of the selected cleanup action. Performance criteria include, but are not limited to, reduction in VOC (including hydrocarbons), pesticide, and non-background metals concentrations in groundwater.
- **Confirmation monitoring:** Confirms the long-term effectiveness of the cleanup action.
  - After performance monitoring results are received to verify that CULs have been achieved, confirmation monitoring of groundwater will be conducted at the monitoring and compliance wells.

Following completion of the soil mixing and ISCO remedies, compliance monitoring will include semiannual groundwater monitoring of five existing wells and encompass the following:

- monitoring depth to groundwater and total depth of the well; and

- collecting groundwater samples for the following:
  - field parameters;
  - general chemistry parameters; and
  - constituents of concern.

Once COCs reach asymptotic conditions, the remedial approach will transition to MNA. As part of the MNA remedy, groundwater monitoring will be conducted annually for an assumed three years using the five existing monitoring wells.

Annual groundwater monitoring reports will be prepared to demonstrate plume stability and remedial progress toward the reduction of Site COCs to concentrations below the CULs. These reports will include an annual assessment of groundwater gradients, COC distribution, COC trends over time, and a discussion of other evidence of successful remedy performance (e.g., operational up time and evidence of ongoing natural source zone depletion [NSZD] and MNA).

In addition to an annual assessment of remedy performance, groundwater analytical results will be compared to time-bound remedial performance metrics less frequently (e.g., every 3 years). These functional metrics are a supplement to, and do not supersede, the long-term remedial objectives. Instead, functional metrics are intended to demonstrate progress toward long-term remedial objectives and should be specific, measurable, attainable, relevant, and time-bound. Because the functional metrics are time-bound, they have relatively short timeframes to allow for progress toward long-term objectives to be evaluated. As part of this approach, remedies are evaluated against the functional objectives and can be optimized or modified if objectives are not being met. The performance metrics and assessment frequency will be established during the remedial design process.

4.8 Schedule for Implementation

The following table outlines the proposed schedule for implementation of the selected remedies.

Table 3: Schedule for Implementation

Period after CAP Finalization	**Task**
Summer 2026 – Fall 2026	Submit Full-Scale Engineering Design for Ecology approval
Cleanup Action Implementation – Post CAP Finalization and Approval	**Task**
Winter 2026	Begin permitting process and request bids from subcontractors and vendors
Winter 2026 – Spring 2027	Accept bids and schedule remediation contractor
Spring 2027 – Summer 2027	Install and Sample Performance Monitoring Wells
	Complete ISCO Injections
	Install PRB
Fall 2027 – Winter 2027	3 and 6-Month Post Injection Performance Monitoring Well Sample Collection and Evaluation
Spring 2028	Evaluate Cleanup Action and Post Remedy Review
Summer 2028 – Fall 2028	Second ISCO Injection if Performance Monitoring Results Evaluation Indicates Additional Injection is Warranted

4.9 Institutional Controls

According to WAC 173-340-440, ICs are "measures undertaken to limit or prohibit activities that may interfere with the integrity of an interim action or cleanup action or that may result in exposure to hazardous substances at a Site." Proposed ICs include soil and groundwater use restrictions. Nearing project closure, the ICs may be implemented to provide ongoing protection of human health and the environment. Future on-Site land use may be limited to commercial/industrial use, groundwater use would be restricted, and a Site Management Plan may be implemented to ensure the effectiveness of ICs and to outline procedures for notification and response actions in the event of subsurface work, such as trenching.

4.10 Public Participation

Ecology will conduct a public notice and review period for the FS and CAP documents before making a final decision. Ecology will review any public comments received during the prescribed comment period and make a final ruling on the acceptability of the proposed cleanup action. A Final CAP will be completed, and design of the cleanup action will be initiated and implemented based on the proposed schedule in Section 4.7.

5. REFERENCES

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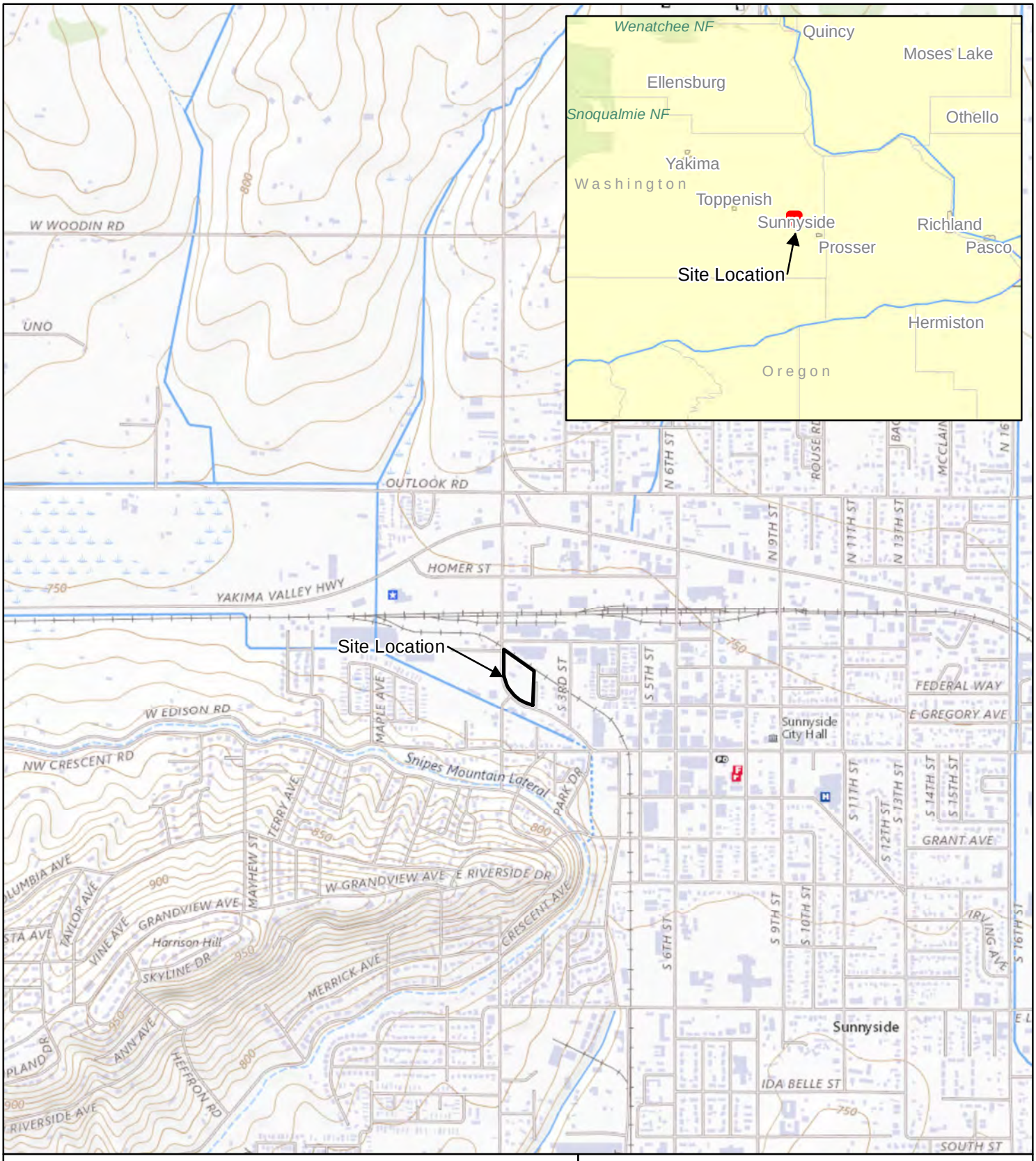
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Washington State Department of Health. 2022. *Washington Environmental Health Disparities Map -Version 2.0*. July 28. http:/www.doh.wa.gov/EHDmap.

FIGURES



Legend

Project Area

N

0 500 1,000 2,000 Feet

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

Site Location Map

South 300 1st Street
Sunnyside, Washington

Geosyntec consultants

PNB0113-01 | August 2024

Figure 1

P:\CAD_GIS\Projects\PNB0100-02_Sunnyside\MXDs\Figure 1 Site Location Map.mxd 10/5/2023 8:55:27 AM



Legend

Project Area

N

0 37.5 75 150
Feet

Site Vicinity Map

South 300 1st Street
Sunnyside, Washington

Geosyntec consultants

Figure 2

PNB0113-01 | August 2024

P:\CAD_GIS\Projects\PNB0100-02_Sunnyside\MXDs\Figure 2 Site Vicinity Map.mxd 10/5/2023 8:54:22 AM



Legend

- Project
- Location of Former Rinse Area Excavation

N

0 37.5 75 150 Feet

Site Layout Map

South 300 1st Street
Sunnyside, Washington

Geosyntec consultants

PNB0113-01	August 2024

Figure 3

P:\CAD_GIS\Projects\PNB0100-02_Sunnyside\MXDs\Figure 3 Site Layout Map.mxd 10/12/2023 9:20:53 AM



Legend

- Project Area
- Proposed Area of Onsite ISCO Injection
- Proposed Area of Offsite ISCO Injection
- Proposed Area of Soil Mixing
- Permeable Reactive Barrier

N

0 37.5 75 150 Feet

Alternative 1 Conceptual Site Layout

South 300 1st Street
Sunnyside, Washington

Geosyntec consultants

PNB0113-01 | August 2024

Figure 4

P:\CAD_GIS\Projects\PNB0100-02_Sunnyside\MXDs\Revisions100623\Figure 4 Alternative 1 Conceptual Site Layout.mxd 10/6/2023 4:36:04 AM

APPENDIX A
Exposure Pathway CSM Table

Table 4: Conceptual Site Model (HDR 2023)

Primary Source	Indicator Hazardous Substances	Primary Source Release Mechanism	Secondary Source	Secondary Source Release Mechanism	Pathway	Potential Exposure Routes	On-site Exposure Pathway Complete?		Off-site Exposure Pathway Complete?	
							Current	Future	Current	Future
Former petroleum storage and/or dispensing	VOCs, SVOCs, petroleum constituents (GRO, DRO), metals	Unknown (potential spill(s) and/or unknown AST or UST)	Subsurface soil	Infiltration/ leaching	Groundwater	Ingestion	No	Yes	Yes[1]	Yes
						Inhalation	No	Yes	Yes	Yes
						Dermal contact	No	Yes	Yes	Yes
				Soil disturbance (unpaved areas/construction)	Subsurface soil	Ingestion	No	Yes	No	Yes
						Inhalation	No	Yes	No	Yes
						Dermal contact	No	Yes	No	Yes
				Volatile emission	Volatilization/ vapor intrusion	Inhalation	No[3]	No[3]	No	Yes
Former rinse area (northeast corner of property), other similar areas	Herbicides, nitrate-N, ammonia, metals, VOCs, SVOCs	Discharge of rinse water from chemical containers to ground surface	Surface soil	Infiltration/ leaching	Groundwater	Ingestion	No	Yes	Yes[1]	Yes
						Inhalation	No	Yes	Yes	Yes
						Dermal contact	No	Yes	Yes	Yes
				Soil disturbance (unpaved areas/construction)	Surface soil	Ingestion	Yes	Yes	No	Yes
						Inhalation	Yes	Yes	No	Yes
						Dermal contact	Yes	Yes	No	Yes
				Volatile emission	Volatilization/ vapor intrusion	Inhalation	No	Yes	No	Yes
Contaminated groundwater	VOCs, SVOCs, metals, petroleum constituents (GRO, DRO)	Dissolved constituents migrating deeper and downgradient	Adsorbed constituents to soil in saturated zone	Further dissolution/ desorption	Groundwater	Ingestion	No	Yes	Yes[1]	Yes
						Inhalation	No	Yes	Yes	Yes
						Dermal contact	No	Yes	Yes	Yes
				Discharge to surface water	Irrigation and drainage system[2]	Ingestion	No	No	No	No
						Inhalation	No	No	No	No
						Dermal contact	No	No	No	No
				Volatile emission	Volatilization/ vapor intrusion	Inhalation	Yes	Yes	No	Yes

Notes:

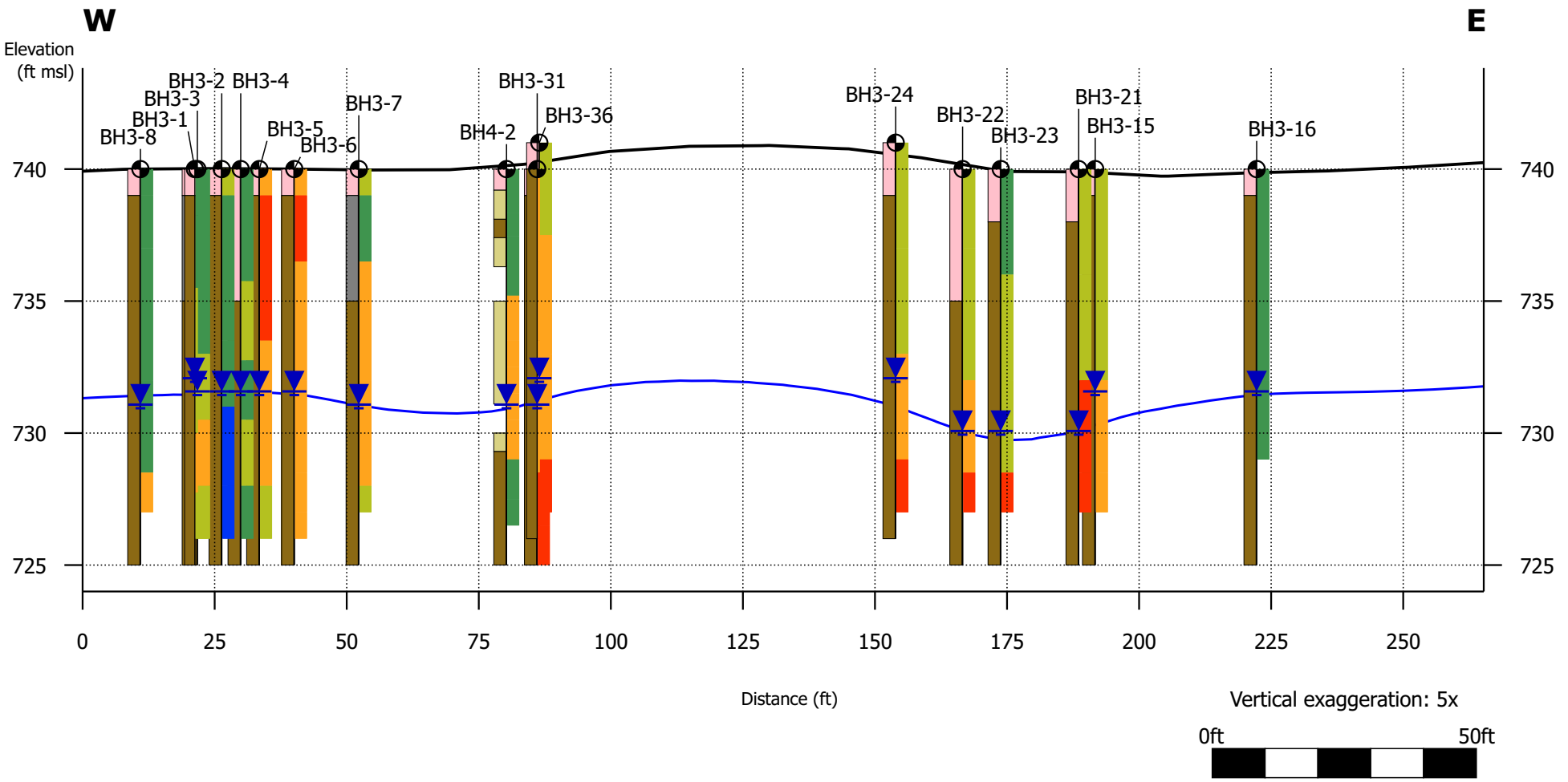
[1] The current pathway is complete only if undocumented, private potable wells exist. The City of Sunnyside's only source of drinking water is groundwater, but it is extracted from deep wells 0.5 miles from the site and from a deeper aquifer.

[2] See HDR April 2013 drainage study (HDR 2013).

[3] Revised based on review of sub-slab sample results that indicated sub-slab vapors were below screening levels. Indoor air samples indicated elevated levels of benzene that are assumed to be from benzene-containing products used within the warehouse, and not from an external release resulting in vapor intrusion.

AST = aboveground storage tank

APPENDIX B
Generalized Cross-Sections



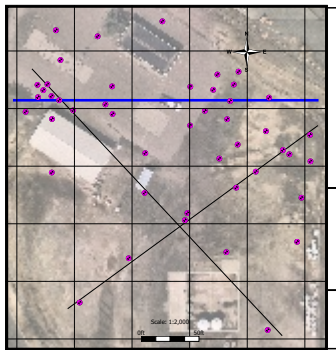
Legend

PID_Results
- ≤ 1
- ≤ 10
- ≤ 100
- ≤ 1000
- > 1000

Lithology
- Clay
- Silt
- Sand
- Fill

Measured_Water_Level
- Measured_Water_Level

Surfaces
- Topography
- Water_Level_Gauging



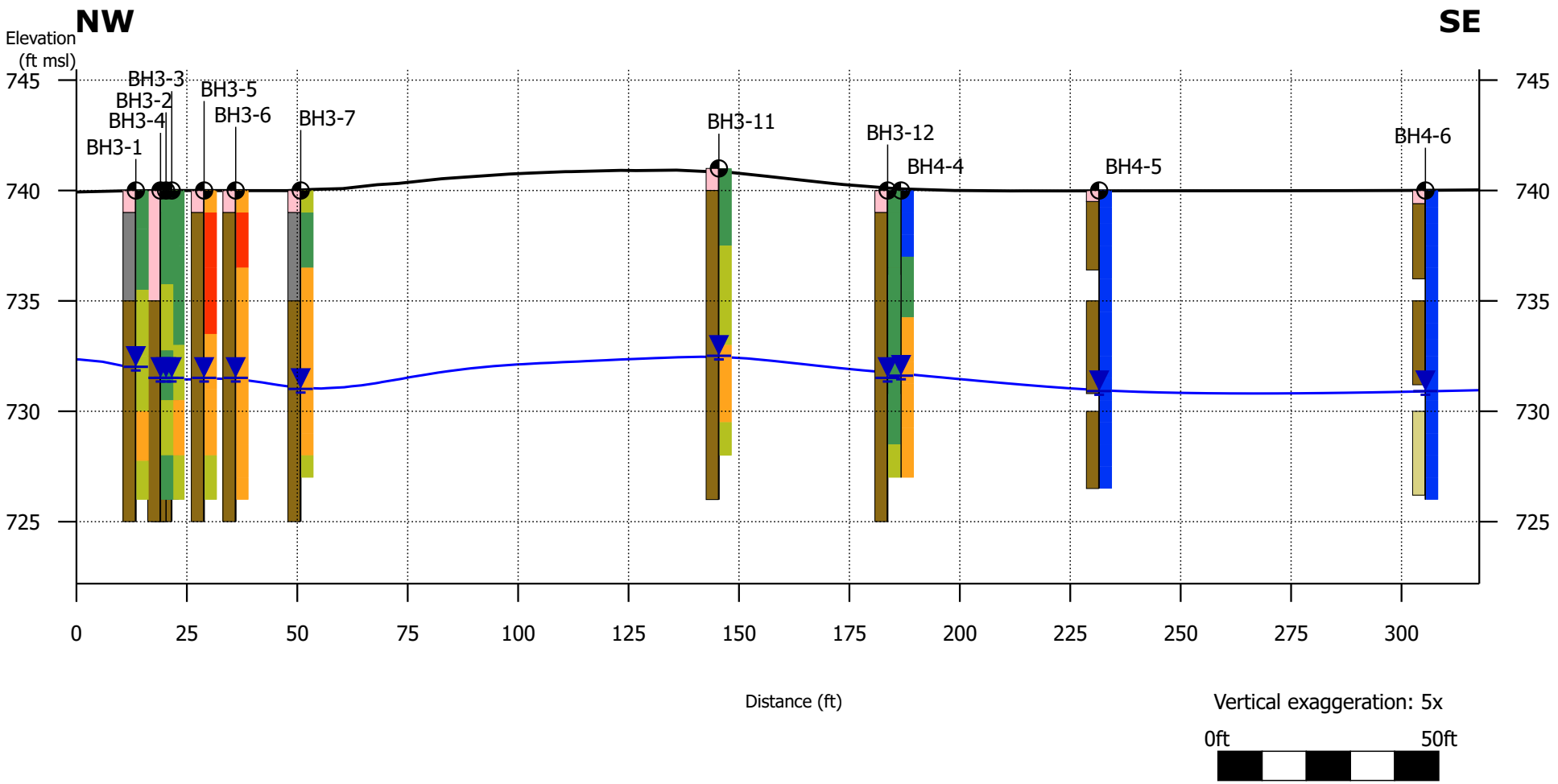
Cross Section A-A'
MIP Results

Simplot
Sunnyside, WA

Geosyntec consultants

Santa Barbara | July 2024

Fig XX



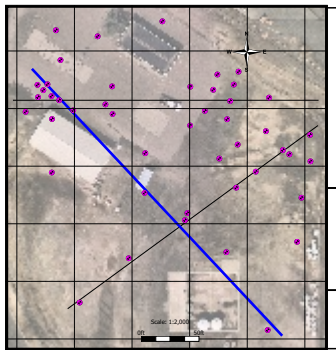
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PID_Results
- ≤ 1
- ≤ 10
- ≤ 100
- ≤ 1000
- > 1000

Lithology
- Clay
- Silt
- Sand
- Fill

Measured_Water_Level
- Measured_Water_Level

Surfaces
- Topography
- Water_Level_Gauging



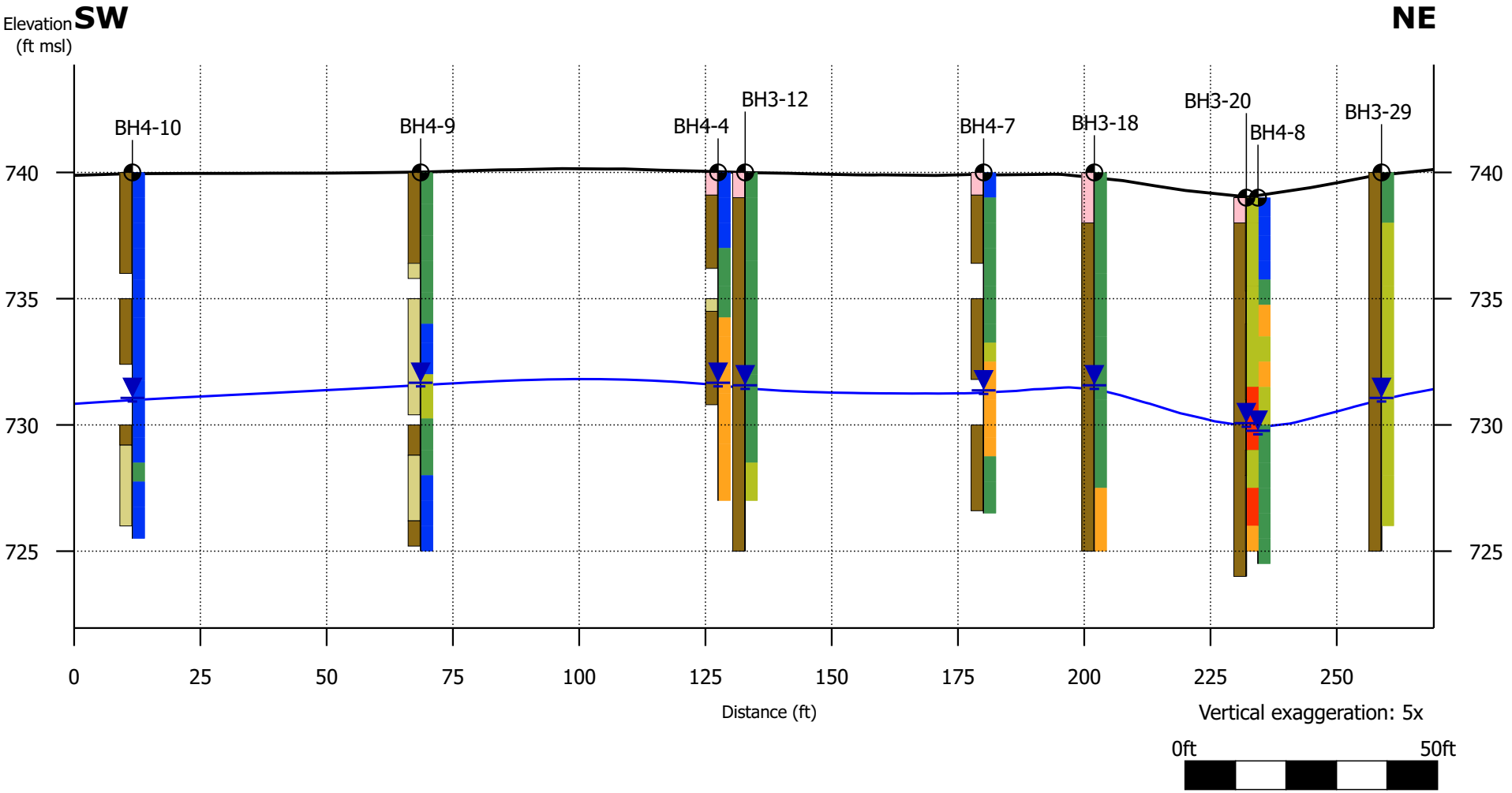
Cross Section B-B'
MIP Results

Simplot
Sunnyside, WA

Geosyntec consultants

Santa Barbara | July 2024

Fig XX



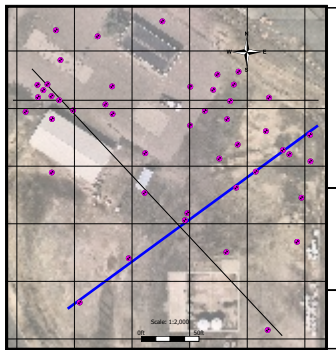
Legend

PID_Results
- ≤ 1
- ≤ 10
- ≤ 100
- ≤ 1000
- > 1000

Lithology
- Clay
- Silt
- Sand
- Fill

Measured_Water_Level
- Measured_Water_Level

Surfaces
- Topography
- Water_Level_Gauging



Cross Section C-C'
MIP Results

Simplot
Sunnyside, WA

Geosyntec consultants

Santa Barbara | July 2024

Fig XX

APPENDIX C
Sunnyside Background Levels Technical Memorandum – Pending Ecology Review

DRAFT - Pending Ecology Review

Geosyntec consultants

1120 S. Rackham Way, Suite 300
Meridian, Idaho 83642
www.geosyntec.com

August 15, 2024

Ms. Rachel Caron
Washington State Department of Ecology
Toxics Cleanup Program
Central Regional Office
Rachel.Caron@ecy.wa.gov

VIA ELECTRONIC MAIL

Subject: Sunnyside Background Levels Technical Memorandum
Simplot Grower Solutions – Sunnyside
300 South 1st Street, Sunnyside, Washington
Facility Site ID: 76742139

Dear Ms. Caron:

On behalf of J.R. Simplot (Simplot), Geosyntec Consultants, Inc. (Geosyntec) has prepared this *Technical Memorandum* (Memo) for the Simplot Grower Solutions (SGS) – Sunnyside facility (Site) located at 300 South 1st Street, Sunnyside, Washington.

This Memo presents the results of the upgradient, off-site groundwater and soil field sampling conducted from 6 May to 10 May 2024 and statistical analysis of the data used to determine the area-specific target remediation levels (TRL) for the Site as a part of the Draft Cleanup Action Plan developed by Simplot and Geosyntec.

The scope of work included the advancement of boreholes and analytical sampling of soil and groundwater at locations upgradient of the Site, including the Milne property located northwest of the Site **(Figure 1)**. The analytical results were used to develop area-specific background levels for contaminants of concern (COCs) to use as TRL for the Site.

1. SITE BACKGROUND

The Simplot owned SGS property consists of 2.7 acres and contains a modular office building, maintenance garage, and concrete containment pad. The Site is mainly unpaved, with gravel and dirt surfaces. Multiple investigations have been completed at the Site beginning in 2007, with the third phase Remedial Investigation (RI) having been completed in 2023. The investigations have determined that COCs were found to include nitrates and ammonia, volatile organic compounds (VOCs), heavy metals, herbicides, and petroleum-related contaminants that were reported at levels above Model Toxics Control Act (MTCA) cleanup levels.

A conceptual site model was developed and indicates that exposure pathways for groundwater, subsurface soil, and vapor intrusion are mostly complete for future scenarios. Three primary sources for contamination were identified and include the former petroleum storage and/or dispensing, the former rinse area, and contaminated groundwater from dissolved contaminants migrating through subsurface soil.

It is important to note that heavy metals, including arsenic, barium, cadmium, and selenium were found throughout the Site at levels that exceeded the Clean Up and Risk Calculation (CLARC) values for protection of groundwater. Based on distribution and frequency of the elevated metal results, including confirmed elevated levels found upgradient and downgradient of the investigation area, it is assumed that these metals are consistent with background values, and not due to a release at the Site. Therefore, off-site soil and groundwater samples were collected to investigate background concentrations of these COCs and to establish Site-specific target remediation levels (TRLs) as part of the cleanup action plan.

The WAC 173-340-709 was utilized as a basis to determine TRLs for the COCs at the Site. This Technical Memorandum includes the tables for off-site soil and groundwater results, along with the statistical analysis results.

2. INVESTIGATION METHODOLOGY

Field activities were completed using a truck mounted Geoprobe direct-push drilling rig to collect soil and install temporary monitoring wells for grab groundwater sampling. Following soil and groundwater sampling, the temporary wells were extracted, and the boreholes were backfilled and sealed with bentonite chips. Investigation derived waste (IDW) was stored on-site in 55-gallon IDW drums. Disposal of the IDW was managed by Geosyntec personnel.

2.1 SOIL SAMPLING

Soil cores were logged by visual-manual methods using the United Soil Classification System. An organic vapor analyzer equipped with a photoionization detector (PID) was used to detect potential contaminant impacts to soil. Soil sample depths were chosen based on PID readings and evidence of impacts based on visual indicators, such as unnatural staining.

One soil sample was collected from each of the 10 off-site boring locations from 6 to 11 feet below ground surface. Soil samples were collected in laboratory-supplied containers, placed into a cooler with ice, shipped under chain-of-custody to ALS Environmental in Everett, Washington, and analyzed for arsenic, barium, cadmium, iron, manganese, and selenium, (by United States Environmental Protection Agency [EPA] Method 6020 or equivalent).

2.3 GRAB GROUNDWATER SAMPLING

Off-Site grab groundwater samples were collected from 10 temporary monitoring wells installed in soil borings. Temporary monitoring wells were constructed of one-inch schedule 40 polyvinylchloride (PVC) casing and 5 ft of 10-slot (or 0.01-inch slotted) PVC screen, with flush-threaded joints and a bottom cap. The total depth of the wells was set at approximately 15 ft bgs.

Prior to groundwater sampling, groundwater levels were measured relative to ground surface using an electronic depth to water meter and recorded on field data collection forms.

Grab groundwater samples were field analyzed for pH, dissolved oxygen, turbidity, and oxidation-reduction potential using a handheld field meter. Samples were placed in laboratory-supplied containers, placed into a cooler with ice, shipped under chain-of-custody to ALS Environmental in Everett, Washington. Off-site groundwater samples were analyzed for nitrate (by EPA Method 300.0), arsenic, cadmium, chromium, and lead (by EPA Method 200.8 or equivalent).

3. ANALYTICAL RESULTS

3.1 SOIL RESULTS

The off-site soil analytical results for arsenic, barium, cadmium, iron, manganese, and selenium are provided in **Table 1**. These results are compared to the MTCA Soil Method A Unrestricted Land Use Cleanup Level for each metal listed above. The analytical laboratory reports are provided in **Attachment A**.

3.2 GROUNDWATER RESULTS

The Off-Site groundwater analytical results for nitrates, arsenic, cadmium, chromium, and lead are provided in **Table 2**. These results are compared to MTCA Groundwater Method A Cleanup Level for metals. There is no MTCA Groundwater Method A Cleanup Level for nitrates. The analytical laboratory reports are provided in **Attachment A**.

4. BACKGROUND DATA ANALYSIS & DEVELOPMENT OF TARGET REMEDIATION LEVELS

The following section summarizes the data analysis conducted in order to create area-specific background levels for COCs in soil and groundwater to use as TRLs.

4.1 DATA ANALYSIS

The average of each of the 10 soil and groundwater sample results was calculated and compared to the MTCA Soil and Groundwater Method A Cleanup Levels, respectively. If the average concentration for each analyte in soil and groundwater was found to be below the MTCA cleanup levels, then the MTCA Method A Cleanup Level was considered as the cleanup level for the respective analyte in that media. If the average concentration was above the MTCA Method A Cleanup Level, then further statistical analysis was conducted to determine the TRLs.

Quantile-Quantile (Q-Q) plots were created with the datasets for barium, iron, and manganese in soil and for nitrates, arsenic, and lead in groundwater. The plots were created to understand how the data was distributed (e.g. normally or lognormally). Q-Q plots are probability plots that are used to compare distributions by comparing quantiles. Q-Q plots were created with the data, comparing the distribution of the data within each quantile relative to the theoretical distribution of the data in each quantile. When preparing the plots for barium and manganese in soil, the observed and theoretical quantiles are similar when lognormally distributed. However, when plotting the iron in soil data the observed and theoretical quantiles are similar when the normally distributed. When preparing the plots for nitrates, arsenic, and lead in groundwater, the observed and theoretical quantiles are similar when lognormally distributed.

Arsenic and barium in soil was not plotted as the average concentrations were below the MTCA Method A Cleanup Level. Selenium in soil could not be plotted as the concentrations were below the laboratory detection limit. Chromium in groundwater was not plotted as the average concentration was below the MTCA Method A Cleanup Level. Cadmium in groundwater could not be plotted as the majority of the reported analytical values were below the laboratory detection limit.

The Q-Q plots for all analytes are shown in **Attachment B**.

4.2 CALCULATION OF TARGET REMEDIATION LEVELS

As stated in WAC 173-340-200, "'Area background' means the concentrations of hazardous substances that are consistently present in the environment in the vicinity of a site ..." The method

for calculating the area background is dependent on how the data is distributed (Section 4.1). As laid out in WAC Section 173-340-709, for datasets that are lognormally distributed, the area background can be calculated as the lower of the true upper 90th percentile and four times the true 50th percentile. For datasets that are normally distributed, the area background can be calculated as the lower of the true upper 80th percentile and four times the true 50th percentile. Upper confidence limit calculations were conducted using python 3.11.5 (pandas, scipy, and statsmodels libraries), which are included in **Attachment B**.

4.2.1 Arsenic Target Remediation Level

As outlined above, the off-site dataset for arsenic concentrations in groundwater is lognormally distributed, which means the corresponding applicable area background can be calculated as the lower of the 90% UCL or four times the true 50th percentile. The 90% UCL for arsenic in groundwater is 120 micrograms per liter (µg/L) and four times the true 50th percentile is 310 µg/L. Since the 90% UCL is lower, 120 µg/L represents the area background of arsenic and the proposed area-specific TRL for the Site.

4.2.2 Barium Target Remediation Level

Similar to the analysis performed on the arsenic data, the barium soil concentrations were analyzed using python. Given that the data for barium concentrations are also lognormally distributed, the applicable area background is calculated similar to arsenic data. The 90% UCL for barium is 162 milligrams per kilogram (mg/kg) and four times the true 50th percentile is 600 mg/kg. Since the 90% UCL is lower, 162 mg/kg represents the proposed area-specific TRL for the Site.

4.2.3 Iron Target Remediation Level

The iron concentrations in soil were normally distributed, which means that the corresponding area background is set at the lower of the 80% UCL or four times the true 50th percentile. The resulting values for the 80% UCL and four times the true 50th percentile are 30,200 mg/kg and 116,000 mg/kg, respectively. Given that the 80% UCL is lower than four times the true 50th percentile, the area-specific background TRL for iron is 30,200 mg/kg.

4.2.4 Manganese Target Remediation Level

The dataset for manganese concentrations in soil are lognormally distributed. The 90% UCL for manganese is 560 mg/kg and four times the true 50th percentile is 2,000 mg/kg. Since the 90% UCL is lower, 560 mg/kg represents the proposed area-specific TRL for the Site.

4.2.5 Lead Target Remediation Level

The lead concentrations in groundwater are lognormally distributed. The 90% UCL for lead is 51 mg/L and four times the true 50th percentile is 74 mg/L. Since the 90% UCL is lower, 51 mg/L represents the proposed area-specific TRL for the Site.

4.2.6 Nitrate Target Remediation Level

Similar to the other analysis, the data for nitrate in groundwater was lognormally distributed, the 90% UCL for nitrate is 14 milligrams per liter (mg/L) and four times the true 50th percentile is 30 mg/L. Since the 90% UCL is lower, 14 mg/L represents the area background of nitrate and the proposed area-specific TRL for the Site.

The TRLs for each analyte in soil are presented in **Table 1** and in groundwater are presented in **Table 2**.

5. CONCLUSIONS

An investigation into the area background levels of COCs in soil and groundwater were performed to evaluate area-specific background level use as TRLs. The data set for these COCs were developed using a combination of off-site soil and grab-groundwater samples from a total of 10 locations. The soil analyte dataset was evaluated to be either lognormally or normally distributed, while the groundwater analyte dataset was evaluated to be lognormally distributed. Based on these distributions and as stated in WAC 173-340-709, the applicable area background corresponds to the 80% UCL for iron in soil and 90% UCL for arsenic (groundwater), barium (soil), manganese (soil), lead (groundwater), and nitrate (groundwater).

Based on these results, Geosyntec recommends TRLs to be selected as representative of background conditions and thus the analytical results should be compared to area-specific TRLs and to Washington Department of Ecology (Ecology) regulatory MTCA Soil Protective of Groundwater – Saturated clean up levels for arsenic in soil, cadmium in soil and groundwater, and chromium in groundwater.

6. CLOSING

The next steps of the TRLs will be to further develop the proposed alternatives to fully evaluate and select the most appropriate and best-suited solution for remediation. If there are any questions regarding the proposed cleanup alternatives, please contact Rachel Roskelley at Rachel.Roskelley@Simplot.com.

Sincerely,
Geosyntec Consultants

David Allison, P.E. Senior Engineer	Priyamvada Sharma, Ph.D. Professional

Attachments

Figure 1 – Sample Location Map

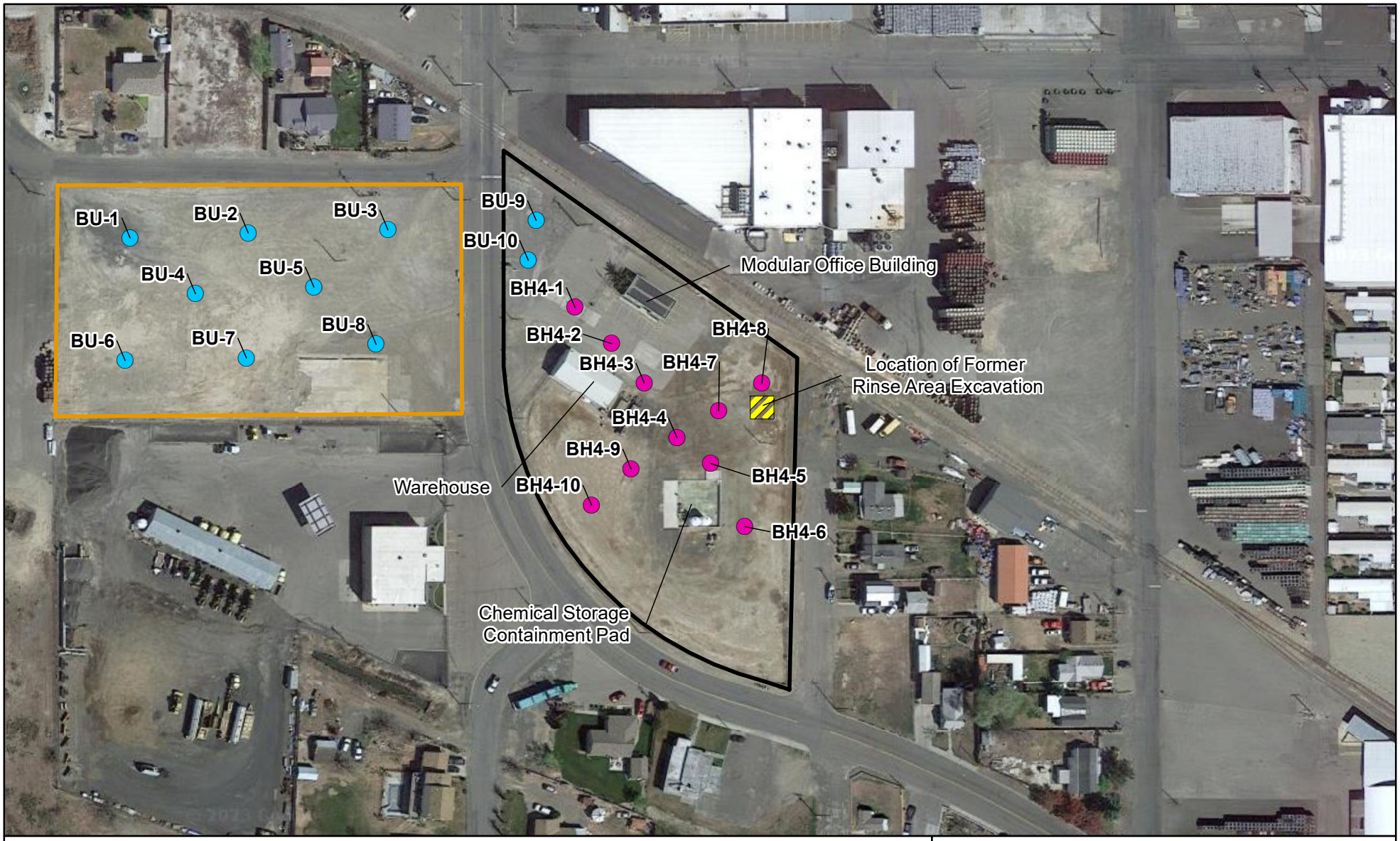
Table 1 – Off-Site Analytical Soil Results and Target Remediation Levels

Table 2 - Off-Site Analytical Groundwater Results and Target Remediation Levels

Attachment A – Laboratory Reports

Attachment B – Data Analytical Results

APPENDIX C
FIGURE



Legend

- On-site Soil Boring
- Background Up-gradient Soil Boring
- Background Area
- Project Area
- Location of Former Rinse Area Excavation

N

0 37.5 75 150 Feet

Sample Location Map

South 300 1st Street
Sunnyside, Washington

Geosyntec consultants

PNB0113 | August 2024

Figure 1

P:\CAD_GIS\Projects\PNB0100-02_Sunnyside\MXDs\Figure 1 Sample Location Map.mxd 4/26/2024 10:27:25 AM

APPENDIX C
TABLES

Table 1 - Off-Site Analytical Soil Results and Target Remediation Levels
Simplot Grower Solutions
Sunnyside, Washington

Soil Sample Location	Date Sampled	Arsenic (EPA-6020)	Barium (EPA-6020)	Cadmium (EPA-6020)	Iron (EPA-6020)	Manganese (EPA-6020)	Selenium (EPA-6020)
		Results (mg/kg)					
BU-1 (SB-BU1-7)	5/10/2024	**6.5**	**140**	**0.17**	**26000**	**440**	<1.0
BU-2 (SB-BU2-6)	5/10/2024	**6.5**	**160**	**0.18**	**31000**	**500**	<1.0
BU-3 (SB-BU3-8)	5/10/2024	**7.4**	**150**	**0.18**	**29000**	**460**	<1.0
BU-4 (SB-BU4-7)	5/10/2024	**6.4**	**160**	**0.17**	**26000**	**460**	<1.0
BU-5 (SB-BU5-6)	5/10/2024	**6.7**	**150**	**0.15**	**31000**	**560**	<1.0
BU-6 (SB-BU6-7)	5/10/2024	**5.2**	**140**	**0.13**	**27000**	**530**	<1.0
BU-7 (SB-BU7-7)	5/10/2024	**5.4**	**130**	**0.14**	**26000**	**500**	<1.0
BU-8 (SB-BU8-7)	5/6/2024	**6.4**	**150**	**0.15**	**30000**	**560**	<1.0
BU-9 (SB-BU9-11)	5/6/2024	**8.3**	**130**	**0.12**	**29000**	**470**	<1.0
BU-10 (SB-BU10-7)	5/6/2024	**7.8**	**180**	**0.20**	**29000**	**530**	<1.0
Average of 10 samples		6.7	149	0.16	28400	501	NA
MTCA Soil Method A Unrestricted Land Use Cleanup Level		20	83	2	7.6	3.3	0.26
Target Remediation Level		*20*	162	*2*	30200	560	*0.26*

Notes:

< = Sample not detected at the shown method reporting limit

Bold = analyte detected

Italicize = Target Remediation Level was not calculated as the average concentration of that analyte was below the MTCA Soil Method A Unrestricted Land Use Cleanup Level. Therefore, Target Remediation Level for arsenic, cadmium, and selenium is MTCA Soil Method A Unrestricted Land Use Cleanup Level

mg/kg = milligrams per kilogram

Table 2 - Off-Site Analytical Groundwater Results and Target Remediation Levels
Simplot Grower Solutions
Sunnyside, Washington

Temporary Monitoring Well Location	Date Sampled	Nitrates[1] (EPA-300.0)	Arsenic (EPA-200.8)	Cadmium (EPA-200.8)	Chromium (EPA-200.8)	Lead (EPA-200.8)
		Results (mg/L)	Results (µg/L)			
BU-1	5/9/2024	**7.7**	**210**	<1.0	**11**	**13**
BU-2	5/9/2024	**3.9**	**110**	**1.2**	**81**	**81**
BU-3	5/9/2024	**31**	**28**	<1.0	**20**	**16**
BU-4	5/9/2024	**0.76**	**99**	<1.0	**34**	**48**
BU-5	5/9/2024	**2.2**	**92**	<1.0	**37**	**35**
BU-6	5/9/2024	**1.3**	**84**	<1.0	**28**	**30**
BU-7	5/9/2024	**8.3**	**23**	<1.0	**7**	**5.3**
BU-8	5/6/2024	**7.3**	**43**	<1.0	**10**	**7.6**
BU-9	5/6/2024	**11**	**71**	<1.0	**24**	**21**
BU-10	5/6/2024	**13**	**53**	<1.0	**13**	**8**
Average of 10 samples		8.6	81	NA	27	26
MTCA Groundwater Method A Cleanup Level		-	5	5	50	15
Target Remediation Level		15	120	*5*	*50*	51

Notes:

< = Sample not detected at the shown method reporting limit

Bold = analyte detected

Italicize = Target Remediation Level was not calculated as the average concentration of that analyte was below the MTCA Groundwater Method A Cleanup Level. Therefore, Target Remediation Level for Cadmium and Chromium is MTCA Groundwater Method A Cleanup Level

- = No MTCA Groundwater Method A Cleanup Level

mg/L = milligrams per liter

µg/L = micrograms per liter

Nitrates[1] = HT07 - Sample holding time expired prior to sample receipt. Results should be considered estimated.

NA = Not applicable

APPENDIX C
ATTACHMENT A

August 9, 2024

Mr. David Allison
Geosyntec Consultants
520 Pike St, Suite 2600
Seattle, WA 98101

Dear Mr. Allison ,

On May 13th, 20 samples were received by our laboratory and assigned our laboratory project number EV24050103. The project was identified as your PNB0112 Sunnyside Post - FS Sampling . The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-01
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 12:30:00 PM
CLIENT SAMPLE ID	GW-BU-9	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**11 HT07**	1.5	10	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**71**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**24**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**21**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-02
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 1:50:00 PM
CLIENT SAMPLE ID	GW-BU-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**13 HT07**	1.5	10	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**53**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**13**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**7.6**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-03
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 3:20:00 PM
CLIENT SAMPLE ID	GW-BU-8	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**7.3 HT07**	0.76	5	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**43**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**10**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**7.6**	1.0	1	UG/L	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-04
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 1:00:00 PM
CLIENT SAMPLE ID	SB-BU9-11	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**8.3**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**130**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.12**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**29000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**470**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-05
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 2:00:00 PM
CLIENT SAMPLE ID	SB-BU10-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**7.8**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**180**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.20**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**29000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**530**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-06
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/6/2024 4:05:00 PM
CLIENT SAMPLE ID	SB-BU8-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**6.4**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**150**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.15**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**30000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**560**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-07
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 8:50:00 AM
CLIENT SAMPLE ID	GW-BU-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**31 HT07**	3.8	25	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**28**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**20**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**16**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-08
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 9:45:00 AM
CLIENT SAMPLE ID	GW-BU-5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**2.2 HT07**	0.15	1	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**92**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**37**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**35**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-09
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 10:40:00 AM
CLIENT SAMPLE ID	GW-BU-2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**3.9 HT07**	0.15	1	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**110**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	**1.2**	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**81**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**81**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-10
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 11:30:00 AM
CLIENT SAMPLE ID	GW-BU-1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**7.7 HT07**	0.76	5	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**210**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**11**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**13**	1.0	1	UG/L	05/16/2024	EBS

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-11
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 1:10:00 PM
CLIENT SAMPLE ID	GW-BU-6	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**1.3 HT07**	0.15	1	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**84**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**28**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**30**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-12
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 2:00:00 PM
CLIENT SAMPLE ID	GW-BU-4	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**0.76 HT07**	0.15	1	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**99**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**34**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**48**	1.0	1	UG/L	05/16/2024	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.
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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-13
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/9/2024 3:20:00 PM
CLIENT SAMPLE ID	GW-BU-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	**8.3 HT07**	0.76	5	MG/L	05/14/2024	RAL
Arsenic	EPA-200.8	**23**	1.0	1	UG/L	05/16/2024	EBS
Cadmium	EPA-200.8	U	1.0	1	UG/L	05/16/2024	EBS
Chromium	EPA-200.8	**7.0**	2.0	1	UG/L	05/16/2024	EBS
Lead	EPA-200.8	**5.3**	1.0	1	UG/L	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-14
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 9:00:00 AM
CLIENT SAMPLE ID	SB-BU5-6	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**6.7**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**150**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.15**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**31000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**560**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-15
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 10:40:00 AM
CLIENT SAMPLE ID	SB-BU7-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**5.4**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**130**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.14**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**26000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**500**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-16
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 11:30:00 AM
CLIENT SAMPLE ID	SB-BU6-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**5.2**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**140**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.13**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**27000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**530**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-17
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 12:30:00 PM
CLIENT SAMPLE ID	SB-BU1-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**6.5**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**140**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.17**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**26000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**440**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-18
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 1:10:00 PM
CLIENT SAMPLE ID	SB-BU4-7	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**6.4**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**160**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.17**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**26000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**460**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-19
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 3:20:00 PM
CLIENT SAMPLE ID	SB-BU3-8	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**7.4**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**150**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.18**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**29000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**460**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE: ALS JOB#: ALS SAMPLE#:	8/9/2024 EV24050103 EV24050103-20
CLIENT CONTACT:	David Allison	DATE RECEIVED:	05/13/2024
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling	COLLECTION DATE:	5/10/2024 2:20:00 PM
CLIENT SAMPLE ID	SB-BU2-6	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	**6.5**	0.20	1	MG/KG	05/16/2024	EBS
Barium	EPA-6020	**160**	0.10	1	MG/KG	05/16/2024	EBS
Cadmium	EPA-6020	**0.18**	0.10	1	MG/KG	05/16/2024	EBS
Iron	EPA-6020	**31000**	10	1	MG/KG	05/16/2024	EBS
Manganese	EPA-6020	**500**	0.20	1	MG/KG	05/16/2024	EBS
Selenium	EPA-6020	U	1.0	1	MG/KG	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geosyntec Consultants 520 Pike St, Suite 2600 Seattle, WA 98101	DATE:	8/9/2024
		ALS SDG#:	EV24050103
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	David Allison		
CLIENT PROJECT:	PNB0112 Sunnyside Post - FS Sampling		

LABORATORY BLANK RESULTS

MBLK-R466886 - Batch R466886 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	U	MG/L	0.15	05/14/2024	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-051424S2 - Batch 212088 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	05/16/2024	EBS
Barium	EPA-6020	U	MG/KG	0.12	05/16/2024	EBS
Cadmium	EPA-6020	U	MG/KG	0.10	05/16/2024	EBS
Iron	EPA-6020	U	MG/KG	62	05/16/2024	EBS
Manganese	EPA-6020	U	MG/KG	0.32	05/16/2024	EBS
Selenium	EPA-6020	U	MG/KG	1.0	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-051524W - Batch 212154 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	UG/L	1.0	05/16/2024	EBS
Cadmium	EPA-200.8	U	UG/L	1.0	05/16/2024	EBS
Chromium	EPA-200.8	U	UG/L	2.0	05/16/2024	EBS
Lead	EPA-200.8	U	UG/L	1.0	05/16/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT: Geosyntec Consultants
520 Pike St, Suite 2600
Seattle, WA 98101

DATE: 8/9/2024
ALS SDG#: EV24050103
WDOE ACCREDITATION: C601

CLIENT CONTACT: David Allison
CLIENT PROJECT: PNB0112 Sunnyside Post - FS Sampling

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R466886 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Nitrate - BS	EPA-300.0	**105**			80	120	05/14/2024	RAL
Nitrate - BSD	EPA-300.0	**105**	**0**		80	120	05/14/2024	RAL

ALS Test Batch ID: 212088 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-6020	**98.0**			80	120	05/16/2024	EBS
Arsenic - BSD	EPA-6020	**97.1**	**1**		80	120	05/16/2024	EBS
Barium - BS	EPA-6020	**97.8**			80	120	05/16/2024	EBS
Barium - BSD	EPA-6020	**94.6**	**3**		80	120	05/16/2024	EBS
Cadmium - BS	EPA-6020	**100**			80	120	05/16/2024	EBS
Cadmium - BSD	EPA-6020	**100**	**0**		80	120	05/16/2024	EBS
Iron - BS	EPA-6020	**98.4**			80	120	05/16/2024	EBS
Iron - BSD	EPA-6020	**97.3**	**1**		80	120	05/16/2024	EBS
Manganese - BS	EPA-6020	**95.8**			80	120	05/16/2024	EBS
Manganese - BSD	EPA-6020	**95.1**	**1**		80	120	05/16/2024	EBS
Selenium - BS	EPA-6020	**98.8**			80	120	05/16/2024	EBS
Selenium - BSD	EPA-6020	**97.3**	**2**		80	120	05/16/2024	EBS

ALS Test Batch ID: 212154 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	EPA-200.8	**99.7**			89.1	110	05/16/2024	EBS
Arsenic - BSD	EPA-200.8	**99.3**	**0**		89.1	110	05/16/2024	EBS
Cadmium - BS	EPA-200.8	**99.0**			89.4	110	05/16/2024	EBS
Cadmium - BSD	EPA-200.8	**99.3**	**0**		89.4	110	05/16/2024	EBS
Chromium - BS	EPA-200.8	**95.6**			88.3	110.2	05/16/2024	EBS
Chromium - BSD	EPA-200.8	**95.2**	**0**		88.3	110.2	05/16/2024	EBS
Lead - BS	EPA-200.8	**96.7**			87.5	107	05/16/2024	EBS
Lead - BSD	EPA-200.8	**96.4**	**0**		87.5	107	05/16/2024	EBS

APPROVED BY



Rob Greer
Laboratory Director

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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV24050103

Date 5/6/24 Page 1 Of 3

PROJECT ID: PNB0112 Sunnyside Pest-PS Sampling
REPORT TO COMPANY: Geosyntec
PROJECT MANAGER: David Allison
ADDRESS: 520 Pike St #2600
Seattle, WA 98101
PHONE: P.O. #:
E-MAIL: david.allison@geosyntec.com
INVOICE TO COMPANY: Geosyntec
ATTENTION: David Allison
ADDRESS:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	BTEX by EPA 8260	MTBE by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	OTHER (Specify)								NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
																								Arsenic, Cadmium, Chromium, Lead						Nitrates	Metals: Arsenic, Barium, Cadmium, Iron, Manganese, Selenium								
1. GW-BU-9	5/6/24	12:30	GW	1																				X						X								
2. GW-BU-10		13:50	GW	2																				X						X								
3. GW-BU-8		15:20	GW	3																				X						X								
4. SB-BU9-11		13:00	S	4																											X							
5. SB-BU10-7		14:00	S	5																											X							
6. SB-BU8-7		16:05	S	6																											X							
7.																																						
8.																																						
9. JBT 5/6/24											JBT				5/6/24																							
10.																																						

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Jobe Traymich, Geosyntec, 5/11/24, 17:15
   Received By: Mckenzie Elliott, Geosyntec, 5/11/24, 17:15
2. Relinquished By: Mckenzie Elliott, GSC, 5-13-24 1330
   Received By: CHASE 5/13/24 1330

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV2405103

Date 5/9/24 Page 2 Of 3

PROJECT ID: PNB0112 Sunnyside Post-FS Sampling
REPORT TO COMPANY: Geosyntec
PROJECT MANAGER: David Allison
ADDRESS: 520 Pike St #2600
Seattle, WA 98101
PHONE: P.O. #:
E-MAIL: david.allison@geosyntec.com
INVOICE TO COMPANY: Geosyntec
ATTENTION: David Allison
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. GW-BU-3	5/9/24	8:50	GW	7
2. GW-BU-5		9:45		8
3. GW-BU-2		10:40		9
4. GW-BU-1		11:30		10
5. GW-BU-6		13:10		11
6. GW-BU-4		14:00		12
7. GW-BU-7		15:20		13
8.				
9. JBT 5/9/24				
10.				

ANALYSIS REQUESTED

NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	BTEX by EPA 8260	MTBE by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs
																			Arsenic, Cadmium, Chromium, Lead					
																			X					
																			X					
																			X					
																			X					
																			X					
																			X					
																			X					
																			X					
								JBT 5/9/24																

OTHER (Specify)								NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
Nitrates									
X									
X									
X									
X									
X									
X									
X									
X									

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Jobe Traynick, Geosyntec, 5/11/24, 17:15
   Received By: Mckenzie Elliott, Geosyntec, 5/11/24 17:15
2. Relinquished By: Mckenzie Elliott, GSC, 5-13-24 1330
   Received By: CRAUSE 5/13/24 1330

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: [10] Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify: _____

*Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV2405010 3

Date 5/10/24 Page 3 Of 3

PROJECT ID: Post-FS Sampling (Sunnyside) PNB0112
REPORT TO COMPANY: Geosyntec
PROJECT MANAGER: David Allison
ADDRESS: 520 Pike St #2600
Seattle, WA, 98101
PHONE: P.O. #:
E-MAIL: david.allison@geosyntec.com
INVOICE TO COMPANY: ~~Dar~~ Geosyntec
ATTENTION: David Allison
ADDRESS:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	BTEX by EPA 8260	MTBE by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify) Arsenic, Barium, Cadmium, Chromium, Iron, Manganese, Selenium	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. SB-BU5-6	5/10/24	9:00	S	~~13~~ 14																				X								
2. SB-BU7-7		10:40		~~14~~ 15																				X								
3. SB-BU6-7		11:30		~~15~~ 16																				X								
4. SB-BU1-7		12:30		~~16~~ 17																				X								
5. SB-BU4-7		13:10		~~17~~ 18																				X								
6. SB-BU3-8		15:20		~~18~~ 19																				X								
7. SB-BU2-6		14:20		~~19~~ 20																				X								
8.																																
9.																																
10. JBT 5/10/24										JBT 5/10/24																						

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: JakeTraynick, Geosyntec, ~~5/10/24~~ JBT 5/10/24 5/11/24, 17:15
   Received By: MacKenzie Elliott, Geosyntec, 5/11/24 17:15
2. Relinquished By: MacKenzie Elliott, GSC, 5-13-24 1330
   Received By: CLIENT 5/13/24 1330

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: [10] Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: [5] Standard | 3 | 1 | SAME DAY

OTHER:
Specify: _____

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Geosyntec ALS Job#: EN2405010 3

Project: PN30112 Sunnyside Pest-FS Sampling

Login Date: 5/13/24 Login Time: 1330 Login By: CE

Type of Shipping Container: Cooler X Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered X ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? ___ Where? ___ Custody seal date: ___ Seal name: ___	___	___	X
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	X	___	___
Did all bottles have labels?	X	___	___
Did all bottle labels and tags agree with Chain of Custody?	X	___	___
Were samples received within hold time?	___	X	___
Did all bottles arrive in good condition (unbroken, etc.)?	___	X	___
Was sufficient amount of sample sent for the tests indicated?	X	___	___
Was correct preservation added to samples?	X	___	___
Subcontract test containers added to Subcontract Bin?	___	___	X
Wetchem test containers marked with required Tests?	___	___	X
Short hold time test containers delivered to analysts?	X	___	___
Were VOA vials checked for absence of air bubbles? Bubbles present in sample #: ___	___	___	X
5035A kits received? # Low Kits: ___ # High Kits: ___	___	___	X
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 4.9°C / 5.3°C On ice?	Y	___	___

Explain any discrepancies:

Soil sample 19 received broken jar. Water samples 1-3, 7-13 Nitrates out of hold.

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

APPENDIX C
ATTACHMENT B

Barium (EPA-6020) (Soil)

General Statistics:

"Mean": 149
"Median" (True 50th Percentile): 150
“Four Times True 50th Percentile”: 600
"Standard Deviation": 14.5
"Max": 180
"Min": 130
"True Upper 80th Percentile": 160
"True Upper 90th Percentile": 162

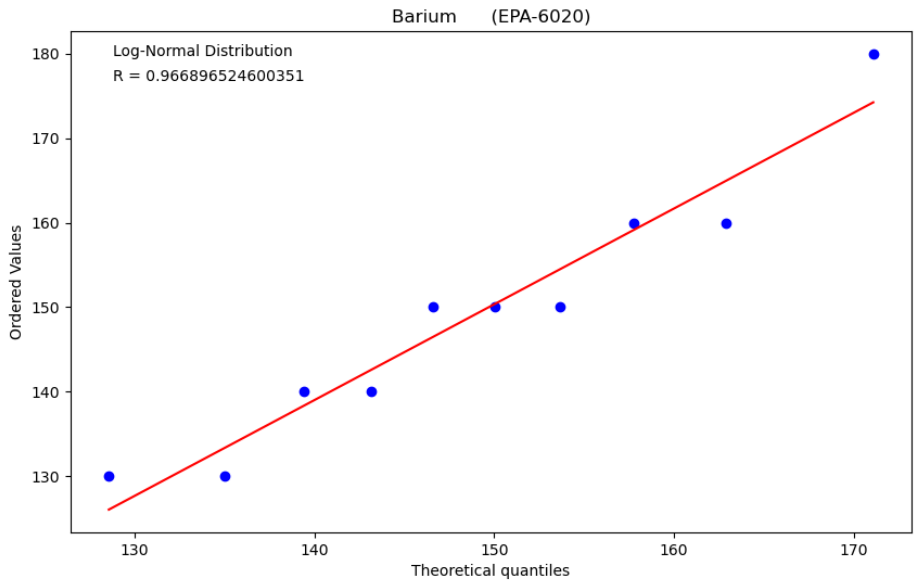
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.961
"Shapiro Wilk Test Statistic": 0.929
"Approximate Shapiro Wilk P Value": 0.441
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.174
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.967
"Shapiro Wilk Test Statistic": 0.94
"Approximate Shapiro Wilk P Value": 0.552
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.155
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Log-Normal
Background Level (taken as true upper 90th percentile): 162 mg/kg



Iron (EPA 6020) (Soil)

General Statistics:

"Mean": 28400
"Median" (True 50th Percentile): 29000
“Four Times True 50th Percentile”: 116000
"Standard Deviation": 1908
"Max": 31000
"Min": 26000
"True Upper 80th Percentile": 30200
"True Upper 90th Percentile": 31000

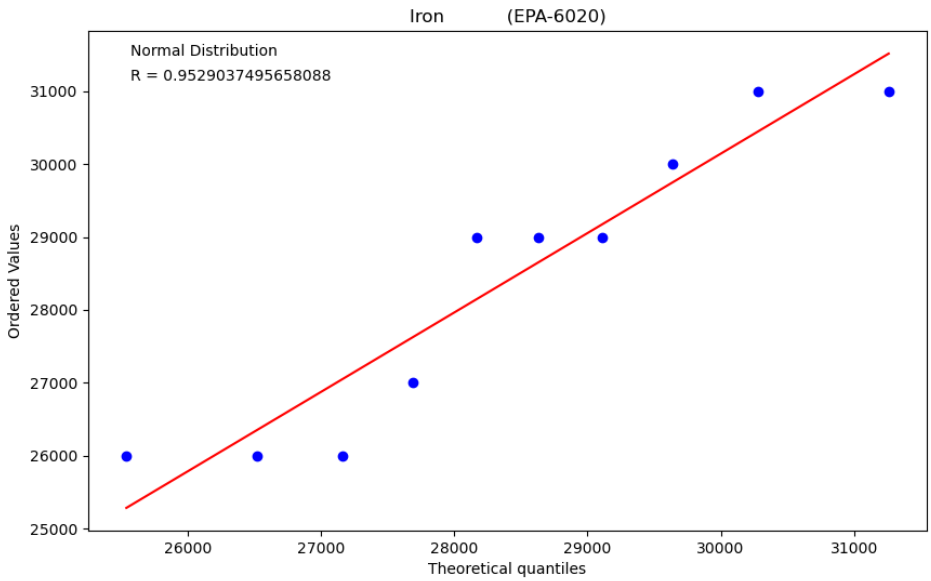
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.953
"Shapiro Wilk Test Statistic": 0.867
"Approximate Shapiro Wilk P Value": 0.0912
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.217
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.953
"Shapiro Wilk Test Statistic": 0.863
"Approximate Shapiro Wilk P Value": 0.0818
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.228
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Normal
Background Level (taken as true upper 80th percentile): 30200 mg/kg



Manganese (EPA 6020) (Soil)

General Statistics:

"Mean": 501
"Median" (True 50th Percentile): 500
“Four Times True 50th Percentile”: 2000
"Standard Deviation": 41
"Max": 560
"Min": 440
"True Upper 80th Percentile": 536
"True Upper 90th Percentile": 560

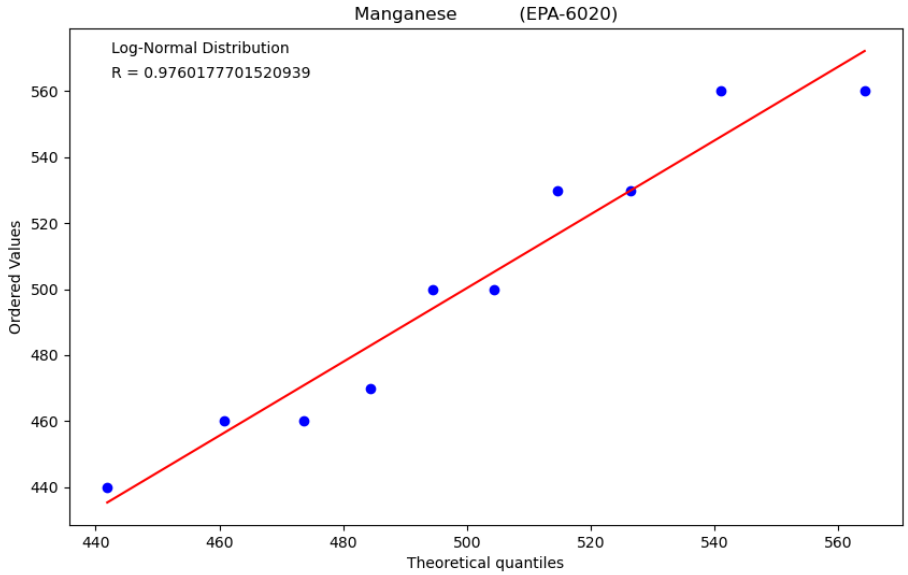
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.976
"Shapiro Wilk Test Statistic": 0.923
"Approximate Shapiro Wilk P Value": 0.382
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.164
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.976
"Shapiro Wilk Test Statistic": 0.926
"Approximate Shapiro Wilk P Value": 0.408
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.159
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Log-Normal
Background Level (taken as true upper 90th percentile): 560 mg/kg



Nitrates (EPA-300.0) (Groundwater)

General Statistics:

"Mean": 8.65
"Median" (True 50th Percentile): 7.5
"Four Times True 50th Percentile": 30
"Standard Deviation": 8.41
"Max": 31.0
"Min": 0.8
"True Upper 80th Percentile": 11.4
"True Upper 90th Percentile": 14.8

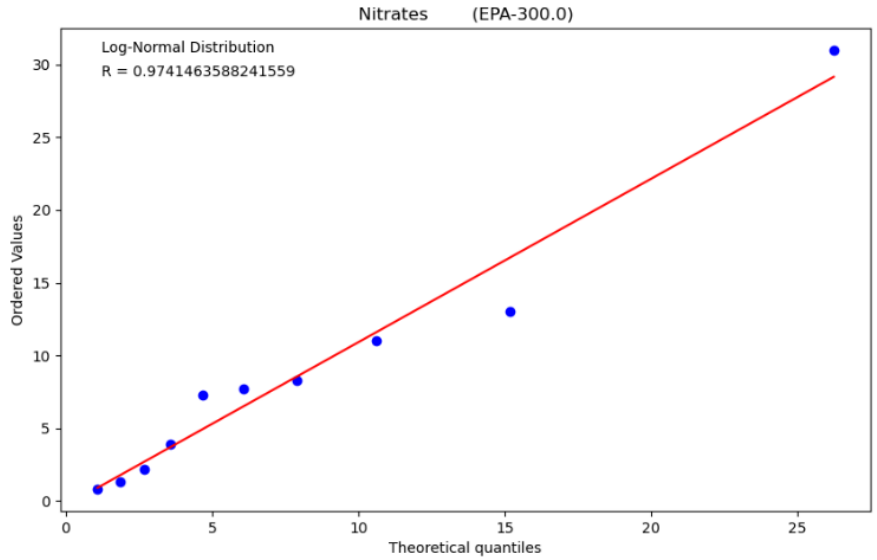
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.873
"Shapiro Wilk Test Statistic": 0.789
"Approximate Shapiro Wilk P Value": 0.0108
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.216
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.974
"Shapiro Wilk Test Statistic": 0.96
"Approximate Shapiro Wilk P Value": 0.78
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.211
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Log-Normal
Background Level (taken as true upper 90th percentile): 15 mg/L



Arsenic (EPA-200.8) (Groundwater)

General Statistics:

"Mean": 81.3
"Median" (True 50th Percentile): 77.5
“Four times true 50th Percentile”: 310
"Standard Deviation": 51.4
"Max": 210
"Min": 23
"True Upper 80th Percentile": 101.2
"True Upper 90th Percentile": 120

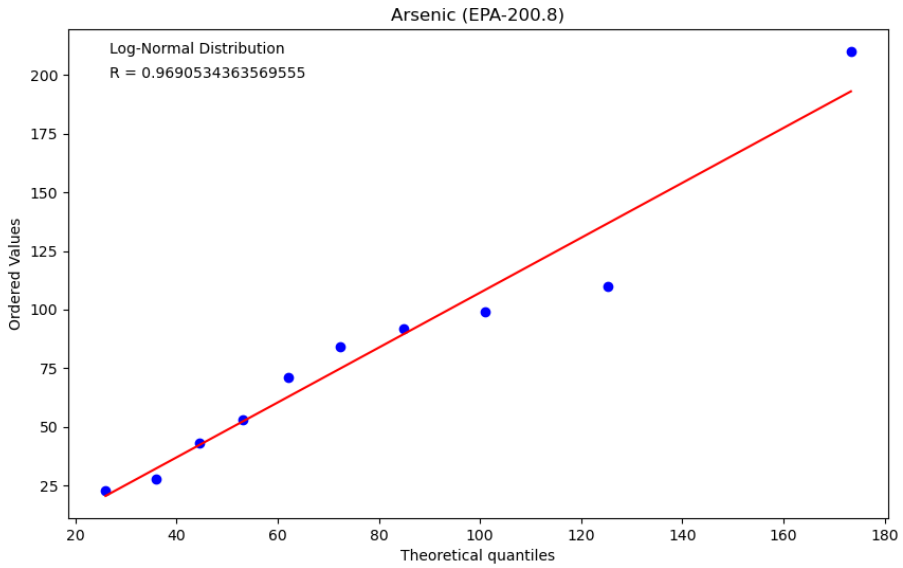
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.92
"Shapiro Wilk Test Statistic": 0.869
"Approximate Shapiro Wilk P Value": 0.0975
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.198
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.969
"Shapiro Wilk Test Statistic": 0.969
"Approximate Shapiro Wilk P Value": 0.88
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.134
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Log-Normal
Background Level (taken as true upper 90th percentile): 120 µg/L



Lead (EPA-200.8) (Groundwater)

General Statistics:

"Mean": 26.45
"Median" (True 50th Percentile): 18.5
“Four Times True 50th Percentile”: 74
"Standard Deviation": 22.4
"Max": 81.0
"Min": 5.3
"True Upper 80th Percentile": 37.6
"True Upper 90th Percentile": 51.3

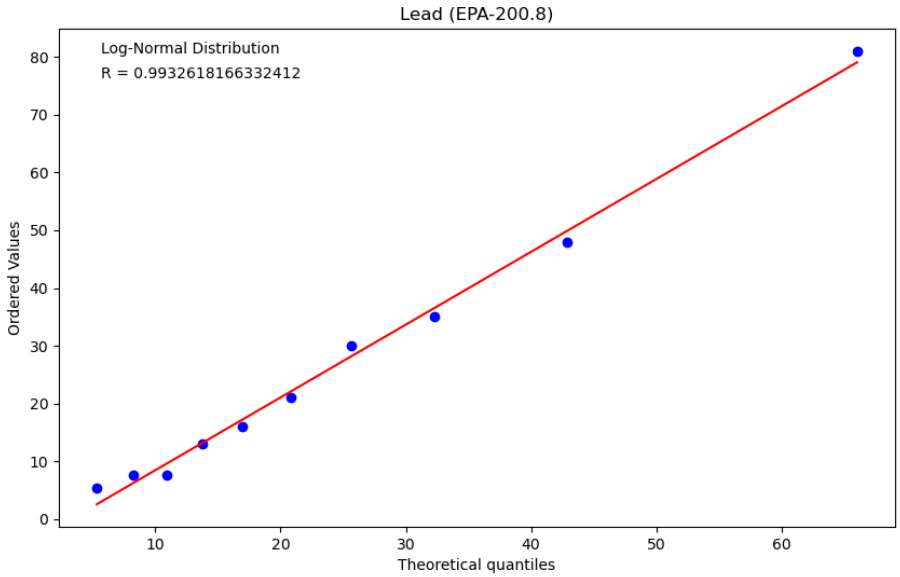
Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.912
"Shapiro Wilk Test Statistic": 0.841
"Approximate Shapiro Wilk P Value": 0.0458
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.191
"Lilliefors Critical (0.05) Value": 0.409

Log-Normal Distribution Goodness-of-Fit:

"Correlation Coefficient R": 0.993
"Shapiro Wilk Test Statistic": 0.97
"Approximate Shapiro Wilk P Value": 0.887
"Shapiro Wilk Critical (0.05) Value": 0.978
"Lilliefors Test Statistic": 0.147
"Lilliefors Critical (0.05) Value": 0.409

Best Fit: Log-Normal
Background Level (taken as true upper 90th percentile): 51 µg/L



APPENDIX D
Draft SEPA Environmental Checklist

SEPA[1] Environmental Checklist

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

[1] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance

A. Background

Find help answering background questions[2]

1. **Name of proposed project, if applicable:**

   Simplot Soil Builders Remedial Action
   Facility Site ID: 76742139
   Cleanup Site ID: 2558

2. **Name of applicant:**

   J.R. Simplot Company (Simplot)

3. **Address and phone number of applicant and contact person:**

   Jeff Hamilton
   (208) 530-5143

   J. R. Simplot Company
   1130 Hwy 30 W
   Pocatello, Idaho 83204

4. **Date checklist prepared:**

   April 30, 2026

5. **Agency requesting checklist:**

   Department of Ecology

6. **Proposed timing of schedule (including phasing, if applicable):**

   - Implementation of Remedial Action: In-Situ Chemical Oxidation – Spring 2027
   - Post-Action Sampling – Summer/Fall 2027
   - Evaluation of Cleanup Action Effectiveness – Winter 2027

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

   No.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

   The following sections provide a summary of the environmental investigations and remedial actions conducted in association with the site between 2007 and 2024.

   - 2007 – Off-site Investigation: Bee-Jay Scales Facility
   - 2009 – Preliminary On-site Investigation
   - 2011 – On-site Monitoring Well Installation and Monitoring (through 2021)

[2] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background

- 2012 – Off-site Downgradient Well Installations
- 2012 – Source Removal Excavation
- 2013 – Subsurface Drain Evaluation
- 2020 – RI Phase 1 and 2: Additional Borings
- 2021 – RI Phase 2.5: MW-6D and MW-7D Installation, On site Soil Vapor Headspace Screening, On-site Soil Suitability Testing, and Off-site Tier 1 Soil Vapor Intrusion Assessment
- 2022 – RI Phase 3: On-site Tier 2 Vapor Intrusion Investigation, Geophysical Survey and Soil Investigation
- 2023 – Feasibility Study
- 2024 – Post-Feasibility Study
- 2024 – Draft Cleanup Action Plan
- 2025 – ISCO Injection Evaluation Field Study

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Not applicable

10. List any government approvals or permits that will be needed for your proposal, if known.

A Feasibility Study and Cleanup Action Plan have been concurrently developed and submitted to Department of Ecology with this SEPA Checklist.

A Grading Permit may be required by the City of Sunnyside with applicability determined based on the final cleanup action design scope.

Underground Injection Control Program Registration

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The property consists of approximately 2.7 acres and contains a modular office building, maintenance garage, and concrete containment pad. The site is mainly unpaved, with gravel and dirt surfaces. Previous environmental investigations have determined that the property contains subsurface contaminants at levels above Models Toxic Control Act (MTCA) cleanup levels. This proposal is for remedial action to address existing subsurface contamination, which includes in-situ chemical oxidation through soil amendment (excavation and mixing) and new monitoring wells, installation of a permeable reactive barrier (PRB), and monitored natural attenuation.

•Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section,

township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Site Address: 300 South 1st Street in Sunnyside, Washington

Township: 10

Range: 22

Section: 25

QTR/QTR: NW 1/4

Yakima County Parcel Nos.: 22102523444, 22102523445, and 22102523446

B. Environmental Elements

1. Earth

Find help answering earth questions[3]

a. General description of the site:

The property consists of approximately 2.7 acres and contains a modular office building, maintenance garage, and concrete containment pad. The site is mainly unpaved, with gravel and dirt surfaces.

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

b. What is the steepest slope on the site (approximate percent slope)?

The site has flat slopes across all parcels ranging from 0 to 2 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Soil survey map from United Stated Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) defines the proposed project area as 83.5 percent Outlook fine sandy loam and 16.5 percent Clemen very fine sandy loam with 0 to 2 percent slopes. Disturbances will be contained within the site footprint, within existing disturbed area.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

[3] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth

Based on geologic hazards from the Yakima County Planning Department, there are no identified geologic hazards. Additionally, a ground penetrating radar survey was conducted during the remedial investigation phase of the project and did not indicate any shallow (0-15 feet bgs) subsurface anomalies at the site.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The Project includes mixing an oxidant into the identified areas of vadose zone soils from ground surface to approximately four feet below ground surface, In-situ Chemical Oxidation (ISCO) of saturated soils and groundwater via injection, and installation of a permeable reactive barrier (PRB) to contain remaining constituents on-site. No cut or fill will be required for the Project. A total of 2,600 cubic yards may be disturbed during soil conditioning.

The total area of the proposed Project is less than the total site property area of 2.7 acres. The project will include disturbance to the soils for shallow soil mixing, ISCO, and installation of the PRB, but the proposed activity will not remove soils from the site.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

During soil mixing/amendment, oxidants will be added to the shallowest four feet of soil where constituents are found to be above the target cleanup levels. Disturbance of shallow soils may temporarily influence surface erosion, but any effects will be temporary and controlled and contained on-site through the implementation of best management practices (BMPs) for mitigation of surficial erosion, which are identified in Section 1h.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The site includes about 0.2 acres, or 7 percent, of impervious surface for buildings. There will be no substantive change in impervious surface after project construction.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Prior to implementation of the soil mixing and ISCO injection activities, BMPs will be implemented to prevent erosion, which may include silt fence, fiber rolls, storm drain inlet protection, or other controls, as needed. Construction is planned to occur during the dry season, and all stormwater will be contained and managed on-site and discharged through infiltration BMPs.

2. Air

Find help answering air questions[4]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

All emissions will be temporary and constrained to the construction period for the cleanup activities, which is expected to last for approximately two months. During this period, vehicle and equipment exhaust and dust particle emissions may occur in the ambient air from operation of heavy equipment and mixing of soils. Note that the soil amendment is non-volatile and does not pose a concern for particulate release during storage and will be in liquid form during usage and will not be released into the air. Long term implementation of the Project will not have significant impact to air emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Soil amendment will be in liquid form and mixed with site soils during project implementation, which will prevent fugitive dust generation during excavation. All vehicle and equipment idling time will be minimized to reduce vehicle emissions.

3. Water

Find help answering water questions[5]

a. Surface:

Find help answering surface water questions[6]

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

None

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

[4] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air
[5] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water
[6] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water

None

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

   None

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

   None

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

   No

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   No

b. Ground:

Find help answering ground water questions[7]

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   Water will not be withdrawn for water supply. The proposed project is being undertaken to improve groundwater quality.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   The Project includes the injection of a dissolved oxidant to site groundwater to improve existing groundwater quality, which will be coordinated with and approved by the Department of Ecology. The In-Situ Chemical Oxidation (ISCO) method includes introduction of a dissolved oxidant (e.g., ozone, Fenton's reagent, potassium permanganate, or sodium persulfate into the subsurface soil (and shallow groundwater, where present) to react with and break down existing contaminants as detailed in the Geosyntec 2023 Feasibility Study submitted to Department of Ecology for Simplot Soilbuilders in Sunnyside, Washington. The specific chemical, recommended dosing, and number of required injection wells for ISCO will be

[7] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater

determined based on laboratory testing and field observations made during the cleanup action implementation. The Quantity of the dissolved oxidant will be determined based on testing of the pore space and the observed radius of influence of the subsurface strata.

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   All stormwater will be managed through construction BMPs (see Section 1e and 1h) and retained/infiltrated on-site.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

   No.

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

   None.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

All stormwater will be contained and managed on-site. Stormwater management BMPs will be implemented and include a combination of silt fence, fiber rolls, storm drain inlet protection, and/or other controls, as needed (see Sections 1e and 1h).

4. Plants

Find help answering plants questions

a. Check the types of vegetation found on the site:

☐ **deciduous tree: alder, maple, aspen, other**

☐ **evergreen tree: fir, cedar, pine, other**

☐ **shrubs**

☐ **grass**

☐ **pasture**

☐ **crop or grain**

☐ **orchards, vineyards, or other permanent crops.**

☐ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**

☐ **water plants: water lily, eelgrass, milfoil, other**

☒ **other types of vegetation:** A single Juniper Tree is located near the front of the property, outside of the work area.

b. What kind and amount of vegetation will be removed or altered?

None

c. List threatened and endangered species known to be on or near the site.

None. Washington State Fish & Wildlife (https://geodataservices.wdfw.wa.gov/hp/phs/)

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

None

e. List all noxious weeds and invasive species known to be on or near the site.

None known on-site.

5. Animals

Find help answering animal questions[8]

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

- **Birds: hawk, heron, eagle, songbirds**
- **Mammals: deer, bear, elk, beaver, other:** Deer are listed for the greater regional area, although not observed near the site within city limits.
- **Fish: bass, salmon, trout, herring, shellfish**

b. List any threatened and endangered species known to be on or near the site.

The Washington Dept. of Fish & Wildlife Priority Habitats and Species Maps (httos://eeodataservices.wdfw.wa.sovlhp/phs/) do not identify terrestrial species near the site.

c. Is the site part of a migration route? If so, explain.

None

d. Proposed measures to preserve or enhance wildlife, if any.

None

e. List any invasive animal species known to be on or near the site.

None

[8] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals

6. Energy and natural resources

Find help answering energy and natural resource questions[9]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Vehicle fuel will be used for the heavy excavation equipment including, but not limited to, personnel vehicles, excavators, drilling platforms. Electrical energy will be used to power mixing and injection pumps, and miscellaneous equipment including lighting and hand tools.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

None

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

None

7. Environmental health

Health Find help with answering environmental health questions[10]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

This Project is to remediate existing environmental contamination through subsurface injection and mixing of oxidizing materials in the soil and groundwater. Handling of the chemicals will be within a clearly marked safety zone and will be conducted only by trained personnel. Exposure to chemicals will be limited to on-site workers.

1. Describe any known or possible contamination at the site from present or past uses.

The site was historically used as an agricultural product distribution facility. Two source areas for groundwater and soil contamination have been previously identified at the site: an area with petroleum impacts in the north-northeastern portion of the site, and an agricultural chemical release area primarily focused within the northeastern portion of the site.

Source Area 1: Petroleum Impacts North-Northeast of Warehouse Building

Previous studies indicated petroleum releases to the subsurface associated with former petroleum storage and/or dispensing, however no details on historical

[9] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou
[10] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health

infrastructure or operational years were available. Associated indicator hazardous substances (IHSs) were listed as VOCs, semi-volatile organic compounds (SVOCs), GRO, DRO, and metals.

Source Area 2: Container Rinsing in Northeastern Corner of Property and Similar Areas on the site

Agricultural chemical containers were reportedly stored and rinsed over unpaved surfaces at the site. Discharge of rinse water from chemical containers to the ground surface resulted in impacts to soil and groundwater. Associated IHSs were listed as herbicides, nitrate, ammonia, metals, VOCs, and SVOCs.

Multiple investigations have been completed at the site beginning in 2007, with the third phase Remedial Investigation (RI) having been completed in 2023. The investigations have determined that contaminants were found to include nitrates and ammonia, volatile organic compounds (VOCs), heavy metals, herbicides, and petroleum-related contaminants that were reported at levels above Models Toxic Control Act (MTCA) cleanup levels.

It is important to note that heavy metals, including arsenic, barium, cadmium, and selenium were found throughout the site at levels that exceeded the Clean Up and Risk Calculation (CLARC) values for protection of groundwater. Based on distribution and frequency of the elevated metal results, including confirmed elevated levels found upgradient and downgradient of the investigation area, it is assumed that these metals are consistent with background values, and not due to a release at the site.

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

The existing activities at the site do not introduce any hazardous chemicals/conditions. Historical activity at the site has informed the project development and design

The project has been designed with site-specific remedial action objectives based on MTCA and compliance with applicable sections of the Washington Administrative Code (WAC).

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

An oxidizer will be handled and used on-site during implementation/construction as a treatment method to improve groundwater quality. This oxidizer will be safely handled and stored in accordance with H&S Plan. The oxidizer will be stored within the existing security fence that encompasses the site, prohibiting public access and exposure.

4. **Describe special emergency services that might be required.**

   None required. A site-specific health and safety plan will include contact information for emergency response agencies and the location of the nearest health care facilities. No special emergency services will be required as part of the implementation activities.

5. **Proposed measures to reduce or control environmental health hazards, if any.**

   The cleanup action implementation is designed to reduce and control existing identified environmental health hazards at the site and is being conducted with approval from the Department of Ecology. Post construction environmental monitoring will evaluate efficacy of contaminant removal and the reduction of environmental health hazards.

b. Noise

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

   The project is located adjacent to an arterial street/thoroughfare and within an industrial and commercial area of Sunnyside, Washington, so traffic and general ambient urban noise will be present.

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

   Heavy equipment used for excavation, installation of monitoring wells, and injection of the oxidant will be used for the project which will be a source of noise on a short-term basis.

3. **Proposed measures to reduce or control noise impacts, if any:**

   Noise levels for this Project will not exceed prescribed levels under Chapter 173-60 WAC. To limit noise during construction, activity will be limited to specific hours (seven a.m. to seven p.m., daylight hours, weekday only) to reduce noise impacts.

8. Land and shoreline use

Find help answering land and shoreline use questions[11]

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

   The site is currently used as an office and minimal storage. Neighboring properties include manufacturing, single residential homes, and professional services lots. The proposal will not change the land use on nearby or adjacent properties.

[11] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

None

1. **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

   None

c. Describe any structures on the site.

The site currently contains a modular office building, maintenance garage, and concrete containment pad.

d. Will any structures be demolished? If so, what?

Potentially, but not yet determined.

e. What is the current zoning classification of the site?

Yakima County zoning assigns 22102523446 as Land Use Code 51 Wholesale Trade and 22102523444 and 22102523445 as Land Use Code 46 Automobile Parking.

f. What is the current comprehensive plan designation of the site?

The site parcels are zoned M1 – light industrial. The Yakima County Horizon 2040 Comprehensive Plan does not propose any changes to the designation of the site.

g. If applicable, what is the current shoreline master program designation of the site?

NA

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

None

i. Approximately how many people would reside or work in the completed project?

The site is currently not in use and there are no plans for site redevelopment in the near-term. Potential future use may include roughly 1-3 people utilizing the office at the site.

j. Approximately how many people would the completed project displace?

None

k. Proposed measures to avoid or reduce displacement impacts, if any.

None

l. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.**

None

m. **Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**

None

9. Housing

Find help answering housing questions[12]

a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None

b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None

c. **Proposed measures to reduce or control housing impacts, if any:**

None

10. Aesthetics

Find help answering aesthetics questions[13]

a. **What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

No new structures will be constructed for the proposed project.

b. **What views in the immediate vicinity would be altered or obstructed?**

Construction and excavation equipment may alter views in the immediate vicinity, but alterations would be temporary in nature.

c. **Proposed measures to reduce or control aesthetic impacts, if any:**

None, since aesthetic impacts are considered temporary and will return to pre-existing conditions following construction.

[12] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing
[13] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics

11. Light and glare

Find help answering light and glare questions[14]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None, since construction and activities will take place during the daylight hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

None.

c. What existing off-site sources of light or glare may affect your proposal?

None

d. Proposed measures to reduce or control light and glare impacts, if any:

Not applicable.

12. Recreation

Find help answering recreation questions

a. What designated and informal recreational opportunities are in the immediate vicinity?

Given the urban proximity of the project site, city parks including Centennial Square and Denny-Blaine Park as well as recreational opportunities at Sunnyside Community Pool and Central Park Skatepark are within a 0.5-mile radius from the proposed project site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

None

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Proposed measures to reduce and control impacts to noise and air will be followed to reduce the impact of the construction on neighboring recreation activities. These include dust emissions control for the temporary impacts.

[14] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare

13. Historic and cultural preservation

Find help answering historic and cultural preservation questions[15]

a. **Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

   None

b. **Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

   None

c. **Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

   Review of Washington State Department of Archaeology and Historic Preservation (DAHP) WISAARD online database identified two project areas overlapping the Proposed Project. The two overlapping projects were large scale projects and do not have any specific reference to the proposed project site, and no other potential impacts or risks were identified on DAHP WISAARD.

d. **Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

   Not applicable.

14. Transportation

Find help with answering transportation questions[16]

a. **Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.**

   The proposed project site is located in Sunnyside, WA at the intersection of S 1st street and Zillah Ave. No changes to access to the site will be necessary and the existing access to the site through 2nd street will be utilized.

[15] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p
[16] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The nearest transit location is the 200 Bus station at Sunnyside Neighborhood Health roughly 0.6 miles away from the site.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

None

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Rail lines are located off-site and adjacent to the northern property line, outside of the site security fence. Rail line activities will not be impacted by the project, as all work will be completed on-site and not on railroad property.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

During the cleanup action implementation activities, vehicular trips will include mobilization of equipment to the site, as well as daily personnel ingress/egress trips. Daily trips will be completed using personal vehicles and may be completed seven-days per week during the peak of activities. The estimated duration of the implementation activities is approximately two months.

The completed project will generate little to no vehicular trips per day outside of the occasional single trip for post--construction environmental sampling, which is anticipated for 3 years after construction.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

None

g. Proposed measures to reduce or control transportation impacts, if any:

None

15. Public services

Find help answering public service questions[17]

[17] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services

a. **Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.**

None, no change to population in the Project area.

b. **Proposed measures to reduce or control direct impacts on public services, if any.**

None

16. Utilities

Find help answering utilities questions[18]

a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:**

City of Sunnyside provided water and sewer, Pacific Power for electricity, and Cascade Natural Gas.

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

Existing utility service to the site facilities from City of Sunnyside, Pacific Power, and Cascade Natural Gas will be used as needed for any construction equipment needs and operation of pumps for the groundwater remediation system. The majority of equipment will be for project construction and powered by fuel from other sources.

C.Signature

Find help about who should sign[19]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

X _____

Type name of signee:

Position and agency/organization:

[18] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities

[19] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature

Date submitted:

D.Supplemental sheet for nonproject actions

Find help for the nonproject actions worksheet[20]

Do not use this section for project actions.

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. **How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?**

    - **Proposed measures to avoid or reduce such increases are:**

2. **How would the proposal be likely to affect plants, animals, fish, or marine life?**

    - **Proposed measures to protect or conserve plants, animals, fish, or marine life are:**

3. **How would the proposal be likely to deplete energy or natural resources?**

    - **Proposed measures to protect or conserve energy and natural resources are:**

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

    - **Proposed measures to protect such resources or to avoid or reduce impacts are:**

5. **How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

[20] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-d-non-project-actions

- **Proposed measures to avoid or reduce shoreline and land use impacts are:**

6. **How would the proposal be likely to increase demands on transportation or public services and utilities?**

   - **Proposed measures to reduce or respond to such demand(s) are:**

7. **Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

APPENDIX E
ISCO Bench-Scale Testing Report

September 17, 2024

David Allison
Geosyntec Consultants, Inc.
1120 S. Rackham Way, Ste 300
Meridian, ID 83642

RE: Final Report of Findings "Bench-scale Evaluation of Activated Persulfate for Destruction of COCs in Soil and Groundwater"
Client Project Name: Simplot Sunnyside
PRIMA Project Name: Geosyntec - Simplot

Dear Mr. Allison:

Enclosed is the final Report of Findings entitled "Bench-scale Evaluation of Activated Persulfate for Destruction of COCs in Soil and Groundwater" that describes bench testing conducted on soil and groundwater from the Simplot site located in Sunnyside, Washington. I can be reached at cschreier@primaenvironmental.com or 916-939-7300, if you have any questions. Thank you for the opportunity to be of service.

Sincerely,
PRIMA Environmental, Inc.

Cindy G. Schreier, Ph.D.
President and Chief Scientist

Report of Findings

Bench-Scale Evaluation of Activated Persulfate for Removal of COCs from Soil and Groundwater

Simplot Sunnyside Site
Sunnyside, Washington

September 17, 2024

Submitted to
David Allison
Geosyntec Consultants, Inc.
1120 S. Rackham Way, Ste 300
Meridian, ID 83642

Submitted by

5070 Robert J Mathews Parkway, Suite 300
El Dorado Hills, CA 95762

Cindy G. Schreier, Ph.D., President

September 17, 2024
Date

EXECUTIVE SUMMARY

Bench-scale treatability testing was conducted on soil and groundwater from the Simplot Sunnyside site located in Sunnyside, Washington to evaluate the ability of oxidation using activated persulfate to remove chemicals of concern (COCs). The COCs at this site were gasoline range petroleum hydrocarbons (TPH-g), extractable petroleum hydrocarbons (TPH-e), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and chlorinated herbicides. Two forms of activated persulfate were studied: hydrogen peroxide activated persulfate (AP-HP) and alkaline activated persulfate (AP-pH). In addition to evaluating the ability of each oxidant to remove COCs, testing measured soil oxidant demand, and assessed the buffering ability of soil and effect of each treatment secondary water quality parameters including formation of hexavalent chromium.

Laboratory testing demonstrated that both AP-HP ad AP-pH could reduce concentrations of some COCs, but AP-pH was much more effective. AP-HP reduced aqueous concentrations of TPH, chlorinated herbicides, and VOCs, but soil concentrations were typically similar to or greater than Time 0 concentrations and TPH-g was volatilized. Thus, despite excellent removal of most COCs from the water, overall, treatment with AP-HP reduced the total mass naphthalene by 94-95%, VOCs by 85-95%, 2,4-D by 90%, Dinoseb by over 48%, and total C12-C40 hydrocarbons by 67-75%, but did not affect the total mass of TPH-g or PAHs. All of the AP-HP was consumed by Day 29, indicating that no further oxidation could occur, though aerobic biodegradation hydrocarbons could potentially occur since decomposition of HP produced oxygen gas. In contrast, AP-pH reduced the total mass of most COCs, with greater reductions seen in the high dose (20 g/L SP) AP-pH test compared to the low dose (5 g/L SP) AP-pH test. By Day 29, the low dose test removed 23% of the TPH-g, 56% of total C12-C40 hydrocarbons, 78% naphthalene, 72% total VOCs, over 76% 2,4-D, and 46-54% of Dinoseb. The high dose test removed 38-59% of TPH-g, 75% of total C12-C40 hydrocarbons, 97% naphthalene, 94% total VOCs, over 77% 2,4-D, and over 91% of Dinoseb. PAHs were not removed. At least 60% of the SP initially added was still present and pH was elevated, indicating that additional oxidation of COCs by AP-pH could occur given a longer reaction time.

Treatment with AP-HP decreased pH to under 3 by Day 7 in the high dose test due to decomposition of AP-HP, but the pH re-bounded to 5.2 by Day 29 due to the buffering

ability of the soil. Buffering tests indicate that soil can buffer at least 100 mmol H+/kg soil – that is, 1 kg of soil can neutralize the acid generated by at least 12 g SP. Treatment with AP-HP generated up to be 19.9 μg/L Cr(VI), and mobilized arsenic, barium, cadmium, and selenium, though concentrations were typically 2 to 3 times the Time 0 concentration. The concentration of sulfate increased to up to 10,000 mg/L due to decomposition of AP-HP.

Treatment with AP-pH increased pH due to the nature of the activator. However, pH should return to near-neutral as the SP decomposes. AP-pH generated up to 50 mg/L Cr(VI) and mobilized up to 438 mg/L arsenic and up to 28.2 mg/L selenium . Arsenic is expected to attenuate once pH returns to near-neutral. The ability of Cr(VI) and selenium to attenuate was not assessed in this study.

AP-HP does not persist, while AP-pH does. In the SOD/persistence tests, HP was completely consumed within 2 days, although SP was still present at 21 days, yielding a 21-day SP SOD of 3.5 g SP/kg soil when the initial SP concentration was 10 g SP/L and 8 g SP/kg soil when the initial SP concentration was 30 g SP/L However, in the COC Removal tests, most SP and HP added were consumed within 7 days. In contrast, the 21-day SOD was 3.9 g SP/kg soil when the initial SP concentration was 10 g/L and 14 g SP/kg soil when the initial SP concentration was 30 g/L and 60% of the SP initially added was still present by Day 29 in the COC Removal tests

Based on the results of this study, PRIMA recommends that AP-pH be considered for use at this site. AP-pH was more effective at removing total mass of COCs and persisted for at least 29 days. The amount of SP would be sufficient to meet the demand due to COCs and the soil oxidant demand, and should yield a groundwater concentration between 5 and 20 g/L. Cr(VI) may be generated and metals (especially arsenic) may be mobilized, so these parameters should be monitored if Ap-pH is implemented at this site.

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ACRONYMS and ABBREVIATIONS

AP-HP	hydrogen peroxide activated persulfate
AP-pH	alkaline activated persulfate
COCs	chemicals of concern
Cr(VI)	hexavalent chromium
g	grams
HP	hydrogen peroxide
kg	kilograms
L	liters
mg	milligrams
mL	milliliters
mmol	millimoles
mV	millivolts
µg	micrograms
ORP	oxidation reduction potential
PAHs	polycyclic aromatic hydrocarbons
SOD	soil oxidant demand
SP	sodium persulfate
TOC	total organic carbon
TPH-e	extractable range petroleum hydrocarbons
TPH-g	gasoline range petroleum hydrocarbons
VOCs	volatile organic compounds

CHEMICAL FORMULAE

C_8H_{18}	n-octane (surrogate for TPH-g)
$C_{16}H_{36}$	n-hexadecane (surrogate for TPH-e)
$C_{10}H_8$	naphthalene
$C_{10}H_{12}N_2O_5$	Dinoseb
$C_8H_6Cl_2O_3$	2,4-D
$C_{10}H_{11}ClO_3$	MCPP
Cl^-	chloride
CO_2	carbon dioxide
H^+	acid/proton
H_2O	water
NaOH	sodium hydroxide
NO_3^-	nitrate
OH^-	hydroxide ion
$Na_2S_2O_8$	sodium persulfate
SO_4^{2-}	sulfate

1.0 INTRODUCTION

Bench-scale treatability testing was conducted on soil and groundwater from the Simplot Sunnyside site located in Sunnyside, Washington to evaluate oxidation of chemicals of concern (COCs) using activated persulfate. The COCs at this site were gasoline range petroleum hydrocarbons (TPH-g), extractable petroleum hydrocarbons (TPH-e), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and chlorinated herbicides such as Dinoseb, 2,4-Dichlorophenoxyacetic acid (2,4-D), and methylchlorophenoxypropionic acid (MCPP). Two forms of activated persulfate were studied: hydrogen peroxide activated persulfate (AP-HP) and alkaline activated persulfate (AP-pH). In addition to evaluating the ability of each oxidant to remove COCs, testing measured soil oxidant demand, and assessed the buffering ability of soil and effect of each treatment secondary water quality parameters including formation of hexavalent chromium.

1.1 Technology Background

Activated SP is an established technology for the oxidation of a wide range of organic compounds, including many site COCs. SP alone is a strong oxidant, but activation generates the persulfate radical, which is a stronger oxidant than SP. Common activators include high pH (pH greater than 11), ferrous iron, chelated iron, hydrogen peroxide (HP), as well as proprietary compounds or mixtures. **Equations 1-6** show theoretical reactions for conversion of select COCs (TPH-g, TPH-d, naphthalene, Dinoseb, 2,4-D, and MCPP) to carbon dioxide, water, chloride, and nitrate by SP ($Na_2S_2O_8$). (n-Octane and n-hexadecane are surrogates for TPH-g, and TPH-e, respectively because TPH-g and TPH-e are complex mixtures of compounds.) The stoichiometric SP requirements based on these reactions are given in **Table 1** and are assumed to apply to both unactivated persulfate and activated persulfate. In practice, a greater-than-stoichiometric dose of SP will usually be required because SP is a non-selective oxidant that will react with natural organic matter and other non-target compounds and may naturally decompose.

$$25Na_2S_2O_8 + \underset{\textit{n-octane}}{C_8H_{18}} + 16H_2O \rightarrow 8CO_2 + 50SO_4^{2-} + 50H^+ + 50Na^+ \qquad \text{Eqn. 1}$$

$$49Na_2S_2O_8 + \underset{\textit{hexadecane}}{C_{16}H_{36}} + 32H_2O \rightarrow 16CO_2 + 98SO_4^{2-} + 98H^+ + 98Na^+ \qquad \text{Eqn. 2}$$

$$24Na_2S_2O_8 + \underset{naphthalene}{C_{10}H_8} + 20H_2O \rightarrow 10CO_2 + 48SO_4^{2-} + 48H^+ + 48Na^+ \quad \text{Eqn. 3}$$

$$26Na_2S_2O_8 + \underset{Dinoseb}{C_{10}H_{12}N_2O_5} + 21H_2O \rightarrow 10CO_2 + 2NO_3^- + 52SO_4^{2-} + 54H^+ + 52Na^+ \quad \text{Eqn. 4}$$

$$15Na_2S_2O_8 + \underset{2,4\text{-}D}{C_8H_6Cl_2O_3} + 13H_2O \rightarrow 8CO_2 + 2Cl^- + 30SO_4^{2-} + 32H^+ + 30Na^+ \quad \text{Eqn. 5}$$

$$22Na_2S_2O_8 + \underset{MCPP}{C_{10}H_{11}ClO_3} + 17H_2O \rightarrow 10CO_2 + Cl^- + 44SO_4^{2-} + 45H^+ + 44Na^+ \quad \text{Eqn. 6}$$

Persulfate decomposes to generate sulfuric acid. The change in sulfate concentration and the effect on pH will depend upon the amount of persulfate used, the rate at which it decomposes, the presence of cations that can precipitate sulfate, and the buffering ability of site soil and groundwater. Other potential secondary effects include oxidation of soil-bound chromium to water soluble hexavalent chromium [Cr(VI)], and mobilization of metals due to changes in pH. The magnitude, duration, and significance of any such changes are site specific.

Table 1. Theoretical Stoichiometric Dose Requirements.

COC	g SP /g COC
n-Octane (surrogate for TPH-g)	52
Hexadecane (surrogate for TPH-e)	52
Naphthalene (example PAH)	45
6-sec-butyl-2,4-dinitrophenol (Dinoseb)	26
2,4-Dichlorophenoxyacetic acid (2,4-D)	16
methylchlorophenoxypropionic acid (MCPP)	24

1.2 Study Objectives

Batch tests were conducted on soil and water to evaluate AP-HP and AP-pH. Specific goals were:

- Measure the soil oxidant demand/persistence for AP-HP ad AP-pH
- Measure the amount of sodium hydroxide (NaOH) needed to increase pH of soil and of water to 11
- Assess long-term buffering of soil
- Assess COC destruction by AP-HP ad AP-pH
- Evaluate the effect of each treatment on secondary water quality parameters.

The specific tests conducted to achieve these goals are described in **Section 2.0** of this report. Results and Summary/Conclusions are presented in **Sections 3.0 and 4.0**, respectively.

2.0 MATERIALS and METHODS

2.1 Materials

Hydrogen peroxide, HP. 35% HP was used in this study. Stock solutions were prepared as needed by dissolving the appropriate amount of solid material in deionized (DI) water.

Sodium hydroxide, NaOH. Reagent grade NaOH was used in this study. Stock solutions were prepared as needed by dissolving the appropriate amount of solid material in DI water.

Sodium persulfate. Klozur® SP brand SP was obtained from Evonik (www.peroxychem.com). Stock solutions were prepared as needed by dissolving the appropriate amount of solid material in DI water.

2.2 Preparation and Characterization of Soil and Groundwater

Two soil samples (Soil Oxidant Demand Test and Reagent Bench Test) were received on May 9, 2024. Soil Oxidant Demand Test soil (hereafter referred to as "Clean Soil") was homogenized, then used for the soil oxidant demand tests (**Section 2.7**); no other analyses were performed on this soil. The Reagent Bench Test soil (hereafter referred to as "Impacted Soil") was used for all other tests. Prior to use, it was sieved to remove particles greater than 4 mesh (3/16 inches), then homogenized. Homogenized Impacted soil was analyzed for TPH-g, TPH-e, VOCs, PAHs, chlorinated herbicides, Cr(VI), metals (arsenic, cadmium, chromium, selenium), total organic carbon (TOC), and total solids using the laboratories and methods described in **Section 2.7**.

One groundwater sample consisting of multiple 1-liter amber glass bottles was received on May 9, 2024. Prior to use, the water homogenized by pumping chilled water from each bottle into a large Tedlar bag, mixing, then pumping the water back into the amber bottles. The homogenized groundwater was analyzed for TPH-g, TPH-e, VOCs, PAHs, chlorinated herbicides, alkalinity, Cr(VI), dissolved metals (arsenic, cadmium, chromium, selenium), oxidation reduction potential (ORP), pH, and sulfate using the laboratories and methods described in **Section 2.7.**

2.3 Initial NaOH Buffering

The amount of sodium hydroxide (NaOH) needed to increase and maintain the pH of soil and of groundwater at about 11 for 1 hour was determined. This information can be used, in part, to determine the amount of NaOH needed to activate AP-pH.

2.4 Soil Oxidant Demand / Persistence

The SOD/oxidant persistence was measured for both AP-HP and AP-pH. For each oxidant, two series of four reactors containing 60 grams (g) soil and 60 milliliters (mL) of either AP-HP solution or AP-pH solution were prepared such that the initial SP concentration was 10 g/Lin one series and 30 g/L in the other series. For the AP-HP tests, the amount of HP was a 5:1 mole ratio of HP:SP. For the AP-pH tests, the amount of NaOH used was a 2:1 mole ratio of NaOH:SP. Reactors were shaken continuously. One replicate from each series was destructively sampled at 2, 4, 7 and 21 days and the water analyzed for residual SP per **Section 2.7**. SOD was calculated as described in **Section 2.8.2**.

2.5 COC Removal / Secondary Effects

Batch tests were conducted to evaluate the ability of AP-HP and AP-pH to destroy COCs and assess the effect of treatment on secondary water quality. At the request of Geosyntec, individual reactors for the COC Removal test were spiked with a methanolic solution of Dinoseb, 2,4-D, MCPP, and naphthalene because chlorinated pesticides were not detected in either soil or groundwater and the naphthalene concentration was lower than expected (see **Sections 2.2** and **3.1**).

2.5.1 Spiking

Sixteen (16) reactors containing 600 g impacted soil and 1,640 mL groundwater were prepared then spiked with 1.6 mL of a concentrated solution of Dinoseb, 2,4-D, MCPP, and naphthalene in methanol. The reactors were capped, then stored in a refrigerator overnight in order to facilitate equilibration of the pesticides between soil and water while minimizing the potential for aerobic biodegradation. The target concentration of Dinoseb and 2,4-D was 33 micrograms (μg)/L water [100 μg/kilogram (kg soil)], while the target concentration of MCPP was100 μg/L, and the target concentration of

naphthalene was 1,000 µg/L; the concentrations were based on historic concentrations at the site.

2.5.2 COC Removal

After equilibrating overnight, reactors were removed from the refrigerator and 160 mL total of SP stock solution, HP stock solution, NaOH stock solution and DI water were added to each reactor as appropriate to give the initial conditions shown in **Table 2.** Dosing for SP was based on the results of the SOD test (**Section 2.3**), the concentration of COCs in groundwater and soil (**Section 3.1**) and the stoichiometry of **Equations 1-6.** Reactors containing HP were connected to Tedlar bags to collect off-gases. At the times specified in the table, reactors were destructively sampled and the soil and water each analyzed for TPH-g, TPH-e, VOCs, PAHs, and chlorinated pesticides. Water was also analyzed for dissolved metals (arsenic, barium, cadmium, chromium, selenium), ORP, pH, residual HP, residual SP, and sulfate. Off-gases were analyzed for TPH-g and VOCs. Note: PAHs, VOCs, and chlorinated pesticides were not measured at Day 29 in the AP-HP tests because the amount of oxidant remaining at Day 7 was negligible; TPH was measured because the added oxygen could potentially promote aerobic biodegradation.

Table 2. Initial Conditions for COC Removal Tests.

Test	Number of Replicates	Treatment	Estimated off-gas*	Sample Time
			L	days
Time 0	1	None	0	0
Process Control	3	None	0	7, 28
AP-HP Low	3	5 g/L SP, 3.6 g/L HP	2.3	7, 28
AP-HP High	3	20 g/L SP, 14.3 g/L HP	9.1	7, 28
AP-pH Low	3	5 g/L SP, pH > 11	0	7, 28
AP-pH High	3	20 g/L SP, pH > 11	0	7, 28

* Approximate volume of gas generated by decoposition of HP.

2.6 Long-term Soil Buffering

Soil buffering curves were generated to estimate the amount of acid (generated by decomposition of AP-HP) and base (used to activated AP-pH) that can be neutralized by

soil over the long-term. Soil and either dilute sulfuric acid or dilute sodium hydroxide were combined in a 1:1 soil to liquid ratio and the pH measured periodically for 14 days.

2.7 Analytical Methods

The methods for each analysis and the laboratory that performed the analyses are summarized in **Table 3**. All subcontracted samples were collected in appropriately preserved containers and shipped on ice under chain of custody via overnight delivery to the analytical laboratory. Soil and water were separated by allowing water to settle overnight, then siphoning as much water as possible directly into sample containers. Samples for Cr(VI) and dissolved metals were filtered by PRIMA through a 0.45 micron polyethersulfone (PES) filter. Soil was centrifuged to remove excess water before being homogenized and placed in a sample container with minimal headspace.

Table 3. Analytical Methods.

Analyte	Method	Laboratory*
Alkalinity	SM2320B	Pace
Cr(VI)	SW7199/EPA218.6	McCampbell
Chlorinated Pesticides	EPA 8151	PRIMA
Hydrogen Peroxide	CeSO4 titration	PRIMA
Metals	EPA 6010	Pace
ORP	Probe	PRIMA
PAHs	Epa 8270C-SIM	Pace
pH	Probe	PRIMA
Sodium Persulfate	CeSO4/FAS/titration	PRIMA
Sulfate	Hach**	PRIMA
TPH (off-gases)	TO-3	Eurofins
TPH (soil, water)	EPA 8015	Pace
VOCs (off-gases)	TO-15	Eurofins
VOCs (soil, water)	EPA 8260B / TO-15	Pace

* Eurofins (Folsom, CA), McCampbell Analytical (Pittsburg, CA), Pace Analytical (Mt. Juliet, TN)

** Hach DR2800 spectrophotometer and appropriate Hach test reagents.

2.8 Calculations

2.8.1 Theoretical Oxidant Demand due to COCs

The theoretical amount of oxidant needed to convert a COC to carbon dioxide, water and chloride is the concentration of the COC in the matrix (soil or water, see **Section 3.1**) times the stochiometric requirement **(Table 1)**. The total theoretical demand is the sum of the individual COC demands, as shown in **Equation 7**.

$$OD_{COCs} = \sum_{1}^{i} COC_i \; x \; SR_i$$

Eqn. 7

where

- OD_{COCs} is total theoretical oxidant demand due to COCs, in g/kg for soil or g/L for water
- $[COC]_i$ is concentration of *i*th COC in matrix, in g/kg for soil or g/L for water
- SR_i is the stoichiometric oxidant requirement (g oxidant / g COC) of the *i*th COC based on theoretical equations for conversion of the COC to CO_2.

2.8.2 SOD

SOD was calculated according to **Equation 8**.

$$SOD = ([Ox]_{init} - [Ox]_t) \times (V/M)$$

Eqn. 8

where

- SOD is soil oxidant demand, in g (or mg) oxidant/kg soil
- $[Ox]_{init}$ is the initial concentration of oxidant, in g (or mg) oxidant/L
- $[Ox]_t$ is the concentration of oxidant at time, t, in g (or mg) oxidant/L
- V is total volume of the aqueous phase, in L
- M is mass of soil, in kg

2.8.4 Percent Removed/Destroyed

For the COC Removal tests, the percent remaining, volatilized, and destroyed were calculated by comparing the mass of each COC in the test reactor to the mass in the Time 0 reactor according to **Equations 9-12**. Concentrations in soil are on a dry weight basis. If off-gases were not generated, then the percent volatilized is taken as 0.

$$\text{Percent Remaining in Water} = 100 \times (C_{aq}V_{aq})/(C_{aq,T0}V_{aq}+C_{s,T0}M_s) \quad \text{Eqn. 9}$$

$$\text{Percent Remaining in Soil} = 100 \times (C_sM_s)/(C_{aq,T0}V_{aq},+C_{s,T0}M_s), \quad \text{Eqn. 10}$$

$$\text{Percent Volatilized} = 100 \times (C_{\text{off-gas}}\ V_{\text{off-gas}})/(C_{aq,T0}V_{aq},+C_{s,T0}M_s), \quad \text{Eqn. 11}$$

$$\text{Percent Destroyed} = 100 - (\%\ \text{Remaining in Water} + \%\ \text{Remaining in Soil} + \%\ \text{Volatilized}) \quad \text{Eqn. 12}$$

where

- C_{aq} is the aqueous concentration (µg/L) in the control or test,
- $C_{aq,T0}$ is the aqueous concentration (µg/L) in the Time 0 sample on a dry basis
- C_s is the soil concentration (mg/kg) in the control or test
- $C_{s,T0}$ is the soil concentration (mg/kg) at Time 0
- $C_{\text{off-gas}}$ is the off-gas concentration (mg/L) in the AP-SHP or SHP test,
- V_{aq} is the aqueous volume of the control or test
- $V_{\text{off-gas}}$ is the volume (L) of the off-gas, and
- M_s is the mass (kg) of the soil in the control or test on a dry basis

3.0 RESULTS and DISCUSSION

Tables in this section contain data from subcontracted analytical laboratories. Complete analytical reports are provided in ***Appendix B****.*

3.1 Untreated Soil and Groundwater

The concentrations of COCs and secondary parameters in untreated soil and groundwater are shown in **Table 4**. The primary COC detected was TPH. Soil contained 11.7 mg/kg-dry TPH-g and 23.8 mg/kg TPH-e, while groundwater contained 2,530 µg/L TPH-g and 2,905 µg/L TPH-e. In contrast, the concentration of total VOCs was 0.242 mg/kg and 397 µg/L in water; total PAHs was 0.096 mg/kg in soil and 30.6 µg/L in groundwater, and chlorinated herbicides were not detected in either matrix. Groundwater alkalinity was 762 mg $CaCO_3$/L, ORP was 214 millivolts (mV) indicating oxidizing conditions, pH was near neutral, and sulfate was 740 mg/L. TOC in soil was 3,900 mg/kg, which is relatively low.

The theoretical oxidant demand due to COCs was 1.7 g SP/kg soil for soil and 0.26 g SP/L water for groundwater.

3.2 SOD/Persistence

The amounts of SP and HP remaining and consumed in the AP-HP SOD / persistence test are shown in **Figures 1** and **2.** The amount of SP remaining and consumed in the AP-pH test is shown in **Figure 3.** For AP-HP, the 21-day SP SOD was 3.5 g SP/kg soil was when the initial SP concentration was 10 g SP/L and 8 g SP/kg soil when the initial SP concentration was 30 g SP/L. HP was completely consumed within 2 days regardless of initial SP concentration. For AP-pH, the 21-day SOD was 3.9 g SP/kg soil when the initial SP concentration was 10 g/L and 14 g SP/kg soil when the initial SP concentration was 30 g/L. Increased SOD with higher initial concentration of oxidant is a common phenomenon.

3.3 COC Removal / Secondary Parameters

The concentrations of COCs in treated soil and water are shown in **Tables 5** and **6**, respectively; note that naphthalene was measured via both EPA 8260 and EPA 8270 and

is therefore include as both a PAH and a VOC. The concentrations of TPH-g and VOCs in off-gases from the AP-HP tests are shown in **Table 7**. The mass balance is given in **Table 8**.

3.3.1 COC Removal by AP-HP

AP-HP reduced aqueous concentrations of TPH, chlorinated herbicides, and VOCs. TPH-g decreased from 2,330 µg/L at Time 0 to 284 µg/L in the low dose test and to 116 µg/L in the high dose test by Day 7. TPH-g was not detected at Day 29, though reporting limits were elevated compared to Day 7. Total C12-C40 hydrocarbons decreased from 4,361 µg/L at Time 0 to 435 µg/L in the low dose test and to 64.5 µg/L in the high dose test by Day 7, though concentrations increased by Day 29 due to rebound (AP-HP was almost completely consumed by Day 7 – see **Section 3.3.4**). Chlorinated herbicides were completely removed in the high dose test by Day 7, while the low dose test completely removed 2,4-D and Dicamba and reduced Dinoseb from 29.8 µg/L at Time 0 to 13.2 µg/L. Total VOCs decreased from 450 µg/L at Time 0 to 31.3 µg/L in the low dose test and to 3.44 µg/L in the high dose test by Day 7. Similar losses were seen in the Process Controls, presumably due to aerobic biodegradation of naphthalene (the primary VOC), but biodegradation in the AP-HP tests was unlikely due to the strong oxidizing nature of AP-HP and the low pH (less than 6) in the test reactors (**Section 3.3.4**). PAH concentrations in water increased in the low dose AP-HP tests compared to Time 0, but PAHs were not detected in the high dose test. The apparent increase may be due to poor recovery of naphthalene in the Time 0 reactor. (Although naphthalene was not detected in the Time 0 reactor by the PAH analysis method, it was detected as a VOC. The reason for the discrepancy between the two analytical methods is unknown, but the Time 0 concentration as a VOC is similar to the expected concentration due to spiking – see **Section 2.3** – and is therefore assumed to be correct. The lack of naphthalene in the Process Controls could be due to aerobic biodegradation.)

The effect of AP-HP on soil concentrations was inconsistent. Concentrations of most COCs in the AP-HP tests were similar to or greater than Time 0 concentrations. The exception was TPH-g, which decreased from 5.27 mg/kg-dry at Time 0 to 4.28 mg/kg in the low dose test and 2.33 mg/kg in the high dose test by Day 29. Increases in soil are presumably due to uneven distribution of COCs in soil, despite efforts to homogenize soil prior to testing. Chlorinated herbicides were not detected in any soil sample.

Treatment with AP-HP volatilized TPH-g and some VOCs, though no target VOCs. In the low dose test, 3,000 to 4,300 mg/L TPH-g was detected in off-gases from the low dose test, which accounts for 86-233% of the TPH-g initially present in the reactor. In the high dose test, the TPH-g concentration in the off-gases ranged from 1,600 to 1,700 mg/L, accounting for 220-390% of the TPH-g initially present. Greater than 100% of the TPH may have been volatized some heavier weight hydrocarbons were partially oxidized, breaking them into smaller, more volatile compounds.

Overall, treatment with AP-HP reduced the mass of some COCs. By Day 7, 94-95% of naphthalene, 85-95% of total VOCs, over 90% 2,4-D and over 48% of Dinsoseb were removed. By Day 29, 67-75% of total C12-C40 hydrocarbons were removed. TPH-g and PAHs were not removed. By Day 7, no SP remained in the low dose AP-HP (5 g/L SP, 3.6 g/L HP) test and only 0.3 g/L SP remained in the high dose (20 g/L SP, 14 g/L HP) test. No SP or HP was present by Day 29. Therefore, not further oxidation by AP-HP can occur, though some TPH could potentially aerobically biodegrade due to the oxygen generated by decomposition of HP.

3.3.2 COC Removal by AP-pH

AP-pH reduced aqueous concentrations of TPH, chlorinated herbicides, and VOCs, but not PAHs. TPH-g decreased to 1,590 µg/L in the low dose test and to 769 µg/L in the high dose test by Day 7 with further decreases (to 999 µg/L in the low dose test and to less than 760 mg/L in the high dose AP-pH test) by Day 29. Total C12-C40 hydrocarbons decreased to 2,303 µg/L in the low dose test and to 1,402 µg/L in the high dose test by Day 7. Additional removal occurred in the by Day 29 (to 2,000 µg/L in the low dose test and to 307 µg/L in the high dose test). The high dose AP-pH completely removed chlorinated herbicides within 29 days, while the low dose test reduced 2,4-D from 30.3 µg/L at Time 0 to 10.6 µg/L by Day 29 and Dinoseb to 13.8 µg/L. Total VOCs were not affected by Day 7 in the low dose test but decreased to 88.9 mg/L by Day 29, while the high dose test decreased to 85.8 mg/L at Day 7 and to 22.2 mg/L by Day 29. The Day 7 removal was much less than was observed in the Process Controls. This is most likely because the strong oxidizing nature and high pH of AP-pH inhibited biodegradation, which was the presumed mechanism of removal in the Process Controls. PAHs concentrations in water increased compared to Time 0, possibly due to poor recovery of naphthalene (measured using EPA 8270) in the Time 0 reactor as described in **Section 3.3.1**.

The effect of treatment on soil concentrations was inconsistent. Concentrations of TPH-g, total C12-C40 hydrocarbons, VOCs, and PAHs were often similar to or greater than concentrations at Time 0. This is presumably due to uneven distribution of COCs in soil, despite efforts to homogenize soil prior to testing. Chlorinated herbicides were not detected in any soil sample.

Overall, treatment with AP-pH reduced the mass of most COCs, with greater reductions seen in the high dose test. By Day 29, treatment with a low dose of AP-pH (5 g/L SP) removed 23% of the TPH-g initially present in the reactor, 56% of total C12-C40 hydrocarbons, 78% naphthalene (as measured via EPA 8260), 72% total VOCs, over 76% 2,4-D, and 46-54% of Dinoseb. The high dose (20 g/L SP) removed 38-59% of TPH-g, 75% of total C12-C40 hydrocarbons, 97% naphthalene (as measured via EPA 8260), 94% total VOCs, over 77% 2,4-D, and over 91% of Dinoseb. PAHs were not removed. At least 60% of the SP initially added was still present at Day 29 and pH was elevated, indicating that additional oxidation of COCs by AP-pH could occur given a longer reaction time.

3.3.3 Non-Target VOCs

A few non target VOCs were detected sporadically as shown in **Table 9**. "Non-target VOCs" are defined as COCs not present in untreated soil or groundwater (**Table 4**). The concentrations of most non-target VOC were low – less than 10 μg/L. The primary exception was acetone, which was not detected at Time 0 or in the controls, but ranged from 63 to 378 μg/L in the activated persulfate tests. Acetone is a common by-product of oxidation. It is susceptible to oxidation as well biodegradation.

3.3.4 Secondary Effects

Secondary effects of treatment are shown in **Table 10**.

Treatment with AP-HP affected several water quality parameters including dissolved metals, pH, and sulfate. AP-HP mobilized arsenic, barium, cadmium, chromium, and selenium. Dissolved chromium increased from less than 1.4 μg/L to up to 19.9 μg/L chromium, with no consistent trend over time. The dissolved chromium was probably present as Cr(VI) due to the oxidizing nature of AP-HP and the limited solubility of

trivalent chromium at pH greater than 5. (Cr(VI) was measured directly, but the reporting limit was often greater than the concentration of dissolved chromium.) Dissolved arsenic increased from 9.94 µg/L to up to 152 µg/L by Day 7, then decreased to 18 µg/L or less by Day 29. Selenium and barium increased over time: selenium increased from 10.4 µg/L at Time 0 to up to 38.8 µg/L, while barium increased from 58.3 µg/L to up to 142 µg/L. Cadmium was not affected in the low dose test, but increased in the AP-HP high dose test – from 1.47 µg/L at Time 0 to up to 8.42 µg/L by Day 29. AP-HP decreased pH and increased sulfate due to decomposition of AP-HP. pH initially decreased from 7.39 at Time 0 to 5.91 in the low dose test and to 2.54 in the high dose test by Day 7, but rebounded to 6.22 in the low dose test and to 5.29 in the high dose test by Day 29 due to the buffering ability of site soil. Sulfate increased from 700 mg/L at time 0 to up to 3,600 mg/L in the low dose test and 10,000 mg/L in the high dose test by Day 29. Most of the AP-HP was consumed by Day 7, indicating that this oxidant is not persistent. SP was completely consumed in the low dose test and only 0.3 g/L SP remaining in the high dose test by Day 7, while HP was 0.47 g/L in the low dose test and 0.67 g/L in the high dose test. Neither SP nor HP was present by Day 29.

Treatment with AP-pH affected several water quality parameters including Cr(VI), dissolved metals (arsenic, chromium, selenium), pH, and sulfate. AP-pH mobilized up to 438 mg/L arsenic due to the high pH of AP-pH. This arsenic is expected to precipitate once SP is consumed and the pH returns to pre-treatment levels. Dissolved chromium increased to up to 41.8 µg/L; the concentrations are similar to the concentrations of Cr(VI), indicating that the dissolved chromium is Cr(VI). Selenium increased to up to 28.2 µg/L, with no clear trend over time. Sulfate increased due to decomposition of AP-pH, reaching 1,750 mg/L in the low dose test and 6,600 mg/L in the high dose test by Day 29. pH was above 10.9 throughout the test, as necessary for activation of SP in addition, about 60% of the SP initially added was still present by Day 29, indicating that AP-pH is persistent and that additional COC removal could potentially occur given a longer reaction time.

3.3.5 Observations

The reactors sampled at Day 29 are shown in **Figure 4**. All water was somewhat cloudy at the time of sampling, which could potentially bias some COC results (especially PAHs) high. Water from the AP-pH tests was dark yellow to orange, while the water from the other reactors was pale yellow.

Treatment with AP-HP rapidly generated off-gases due to decomposition of HP to oxygen. The low dose Ap-HP test generated about 3.6 L of off-gases (2 L gas per L AP-HP solution), while the high dose test generated about 15 L (8 L gas per L of AP-HP solution). Most of the gas was produce within a 1-2 hours of tests set-up. The rapid formation of gas can potentially strip COCs (moving volatile compounds into soil gas), limit the radius of influence of AP-HP, and possibly require management of the gases, depending up the volume that would be generated.

3.4 Soil and Groundwater Buffering

3.4.1 Initial NaOH Buffering Requirement

The amount of NaOH needed to increase soil and groundwater pH to 11 for 1 hour is shown in **Table 11**. For soil, 9.6 mL of 25% NaOH/kg soil were required, while 3.3 mL 25% NaOH/L water was needed for groundwater. This information should be used when considering alkaline activated persulfate (which requires elevated pH) to determine if NaOH in excess of the usual 2:1 mole ratio of NaOH to SP is needed to ensure pH remains above 11 for an extended period. If soil and groundwater buffer strongly, NaOH may be neutralized quickly, thereby decreasing the pH below the level needed to activate SP.

3.4.2 Long-term Soil buffering

Soil buffering curves are presented in **Figures 5** and **6** for acid and base, respectively. Soil exhibited strongly buffered acid, and moderately buffered base. Site soil neutralized 100 millimoles (mmol) H+/kg soil within minutes, increasing pH from 1.6 to 6.2 within about 30 minutes and to 7.1 by 14 days. Soil also neutralized 10 mmol OH-/kg, decreasing pH from 11.9 to 9.0 within 1 day and to 8.5 within 14 days. When exposed to 100 mmol OH-/kg soil, soil decreased pH from 12.8 to 11.2 within 14 days. These results imply that 1 kg of soil can neutralize the acid generated by at least 12 g SP (assumes SP decomposes to generate 2 moles H^+/mole SP). The results also indicate that if AP-pH is to be implemented, the amount of NaOH used to adjust pH should be greater than 10 mmoles OH-/kg soil (1.3 mL 25% NaOH/kg) to ensure that pH remains elevated and the SP activated.

Table 4. COCs and Secondary Parameters in Untreated Soil and Water.

Analyte	Units	Soil	Groundwater
TPH			
TPH-g, C5-C12	mg/kg-dry or µg/L	11.7	2530
C12-C22 Hydrocarbons	mg/kg-dry or µg/L	3.61	1880
C22-C32 Hydrocarbons	mg/kg-dry or µg/L	8.87	871
C32-C40 Hydrocarbons	mg/kg-dry or µg/L	11.3	154
Total TPH-e (C12-C40)	mg/kg-dry or µg/L	23.8	2905
VOCs			
Benzene	mg/kg-dry or µg/L	0.00457	56.6
n-butylbenzene	mg/kg-dry or µg/L	< 0.00857	9.29
sec-Butylbenzene	mg/kg-dry or µg/L	0.0170 J	3.40
Chlorobenzene	mg/kg-dry or µg/L	0.00209 J	< 0.117
1,2-Dichloroethane	mg/kg-dry or µg/L	< 0.00106	23.1
Ethylbenzene	mg/kg-dry or µg/L	< 0.00120	13.80
n-Hexane	mg/kg-dry or µg/L	n.m.	60.20
Isopropylbenzene	mg/kg-dry or µg/L	0.0158	10.90
p-Isopropyltoluene	mg/kg-dry or µg/L	0.0118	2.09
Naphthalene	mg/kg-dry or µg/L	0.130	52.3
n-Propylbenzene	mg/kg-dry or µg/L	0.0333	20.70
Toluene	mg/kg-dry or µg/L	0.0111	0.391 J
1,2,4-Trimethylbenzene	mg/kg-dry or µg/L	0.00609 J	81.6
1,2,3-Trimethylbenzene	mg/kg-dry or µg/L	0.00503 J	8.16
1,3,5-Trimethylbenzene	mg/kg-dry or µg/L	0.00555 J	44.7
Xylenes (total)	mg/kg-dry or µg/L	< 0.00144	9.6
Total VOCs	*ng/kg-dry or µg/l*	*0.242*	*397*
Chlorinated Acid Herbicides			
2,4-D	mg/kg-dry or µg/L	< 0.0178	< 0.547
Dalapon	mg/kg-dry or µg/L	< 0.0287	< 0.344
2,4-DB	mg/kg-dry or µg/L	< 0.0754	< 0.302
Dicamba	mg/kg-dry or µg/L	< 0.0399	< 0.245
Dichloroprop	mg/kg-dry or µg/L	< 0.0622	< 1.04
Dinoseb	mg/kg-dry or µg/L	< 0.0178	< 0.250
MCPA	mg/kg-dry or µg/L	< 1.13	< 13.1
MCPP	mg/kg-dry or µg/L	< 0.932	< 66.0
2,4,5-T	mg/kg-dry or µg/L	< 0.0216	< 0.258
2,4,5-TP (Silvex)	mg/kg-dry or µg/L	< 0.0272	< 0.335
Pentachlorophenol	mg/kg-dry or µg/L	n.m.	< 0.111

Table 4 - continued. COCs and Secondary Parameters in Untreated Soil and Water.

Analyte	Units	Soil	Groundwater
PAHs			
Acenaphthene	mg/kg-dry or µg/L	< 0.00275	0.0611
Fluorene	mg/kg-dry or µg/L	< 0.00270	0.0215 J
Naphthalene	mg/kg-dry or µg/L	0.04000	1.83
Phenanthrene	mg/kg-dry or µg/L	< 0.00304	0.0545
1-Methylnaphthalene	mg/kg-dry or µg/L	0.0492	28.6
2-Methylnaphthalene	mg/kg-dry or µg/L	0.00675 J	< 0.0674
Total PAHs	*mg/kg-dry or µg/L*	*0.0960*	*30.6*
*Metals**			
Arsenic	mg/kg-dry or µg/L	5.29	21
Barium	mg/kg-dry or µg/L	96.7	169
Cadmium	mg/kg-dry or µg/L	0.0352 J	< 0.479
Chromium	mg/kg-dry or µg/L	8.88	< 1.40
Selenium	mg/kg-dry or µg/L	0.500	< 7.35
Other Parameters			
Alkalinity	mg/L	*n.a.*	762
Cr(VI)	mg/kg or µg/L	< 0.20	< 0.80
ORP	mV	n.a.	214
pH	--	n.a.	7.31
Sulfate	mg/L	n.a.	740
TOC	mg/kg	3,900	n.m.
Total Solids	%	76	n.m.

* Total metals for soil, dissolved metals for water

n.a. = not applicable

n.m. = not mesured

Time, Days	SP Remaining, g/L Soln.		SP Consumed, g/kg Soil	
	Low Dose	High Dose	Low Dose	High Dose
0	10.0	29	0	0
2	7.5	23	2.5	6.0
4	8.0	23	2.0	6.0
7	7.4	23	2.6	6.0
21	6.5	21	3.5	8.0

Note: SP = sodium persulfate

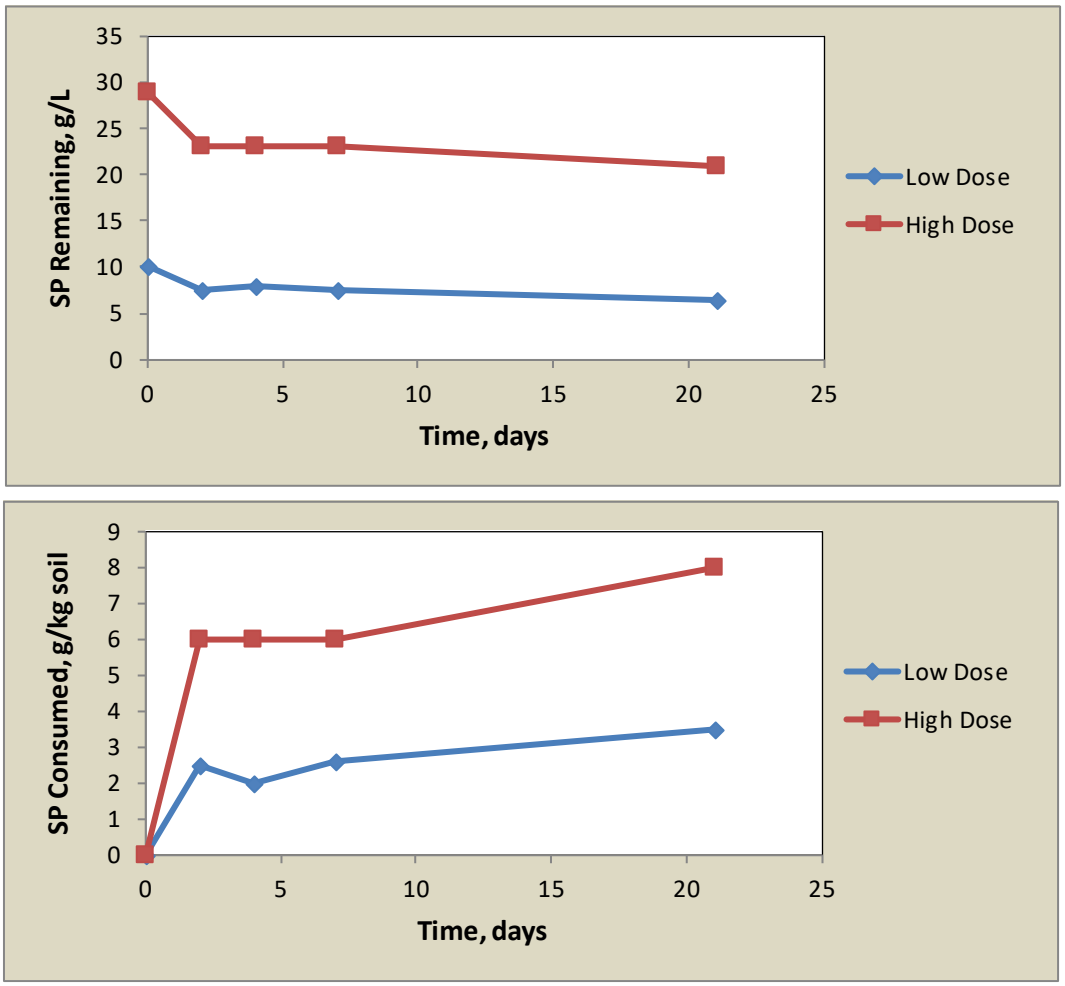


Figure 1. SP SOD/Persistence – AP-HP.

Time, Days	HP Remaining, g/L Soln.		HP Consumed, g/kg Soil	
	Low Dose	High Dose	Low Dose	High Dose
0	6.9	21	0	0
2	0	0	6.9	21
4	0	0	6.9	21
7	0	0	6.9	21
21	0	0	6.9	21

Note: HP = hydrogen peroxide

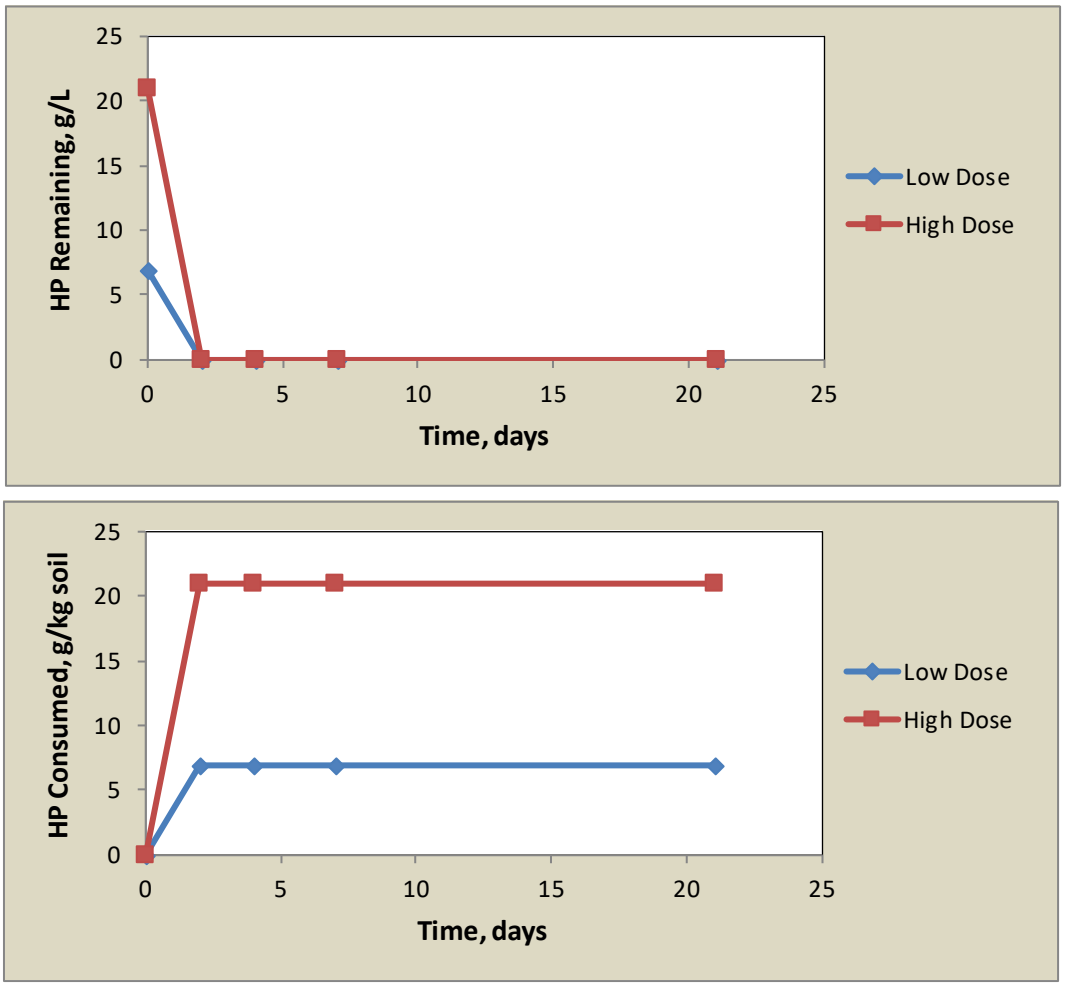


Figure 2. HP Persistence – AP-HP.

Time, Days	SP Remaining, g/L Soln.		SP Consumed, g/kg Soil	
	Low Dose	High Dose	Low Dose	High Dose
0	10.0	30	0	0
2	7.6	22	2.4	8.0
4	8.0	22	2.0	8.0
7	7.1	20	2.9	10
21	6.1	16	3.9	14

Note: SP = sodium persulfate

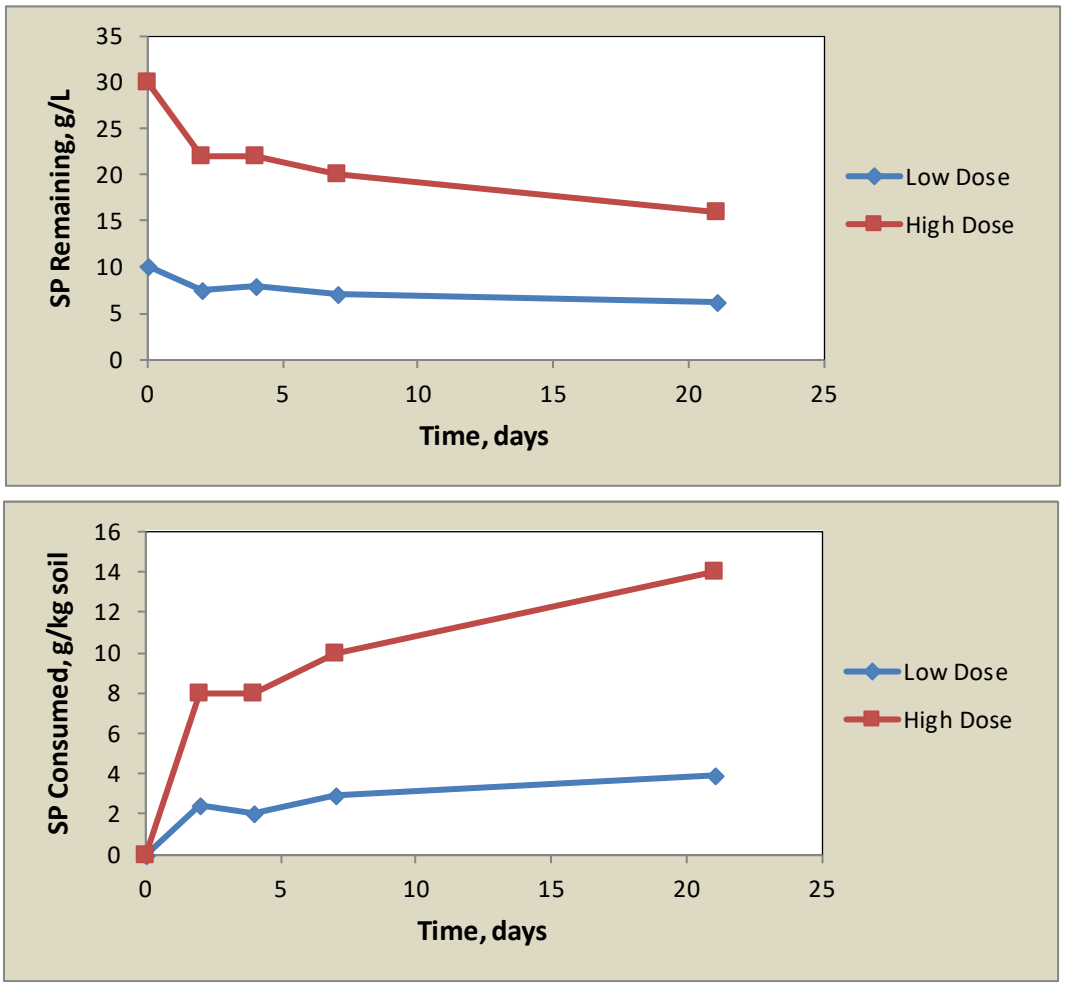


Figure 3. SP SOD/Persistence – AP-pH

Table 5. COC Removal Results – COC Concentrations in Water.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
TPH Water												
TPH-g, C5-C12	µg/L	2,330	1,010	1,280	284	< 760	116	< 760	1,590	999 J	769 J	< 760
C12-C22 Hydrocarbons	µg/L	2,830	2,380	1,930	388	1,050	< 33.0	255	1,920	1,400	1,070	187
C22-C32 Hydrocarbons	µg/L	1,050	961	864	< 33.0	220	< 33.0	36.2 J	273	426	196	52.5 J
C32-C40 Hydrocarbons	µg/L	481	265	292	46.5 J	106	64.5 J	71.0 J	110	174	136	67.0 J
Total C12-C40 hydrocabons	µg/L	4,361	3,606	3,086	435	1,376	64.5	362	2,303	2,000	1,402	307
Chlorinated Acid Herbicides in water												
2,4-D	µg/L	30.3	11.10	9.78	< 0.547	n.m.	< 0.547	n.m.	39.5 P	10.6	7.85	< 0.580
Dicamba	µg/L	1.51 J	< 0.247	1.36 J	< 0.245	n.m.	< 0.245	n.m.	< 0.267	< 0.247	< 0.267	< 0.260
Dinoseb	µg/L	29.8 J	22.20	< 0.250	13.2	n.m.	< 0.250	n.m.	26.3	13.8	4.8	< 0.265
MCCP	µg/L	< 67.3	< 66.7	< 66.0	< 66.0	n.m.	< 66.0	n.m.	< 71.9	< 66.7	< 71.9	< 70.0
PAHs in water												
Fluorene	µg/L	< 0.0169	0.0397 J	< 0.0338	< 0.0169	n.m.	< 0.0169	n.m.	0.0170 J	< 0.0169	< 0.0169	< 0.0169
Naphthalene	µg/L	< 0.0917	< 0.0917	16.0	42.2	n.m.	< 0.0917	n.m.	367	119	3.96	3.36
Phenanthrene	µg/L	0.0383 J	< 0.0180	0.0399 J	0.0205 J	n.m.	< 0.0180	n.m.	0.0437 J	0.0529	< 0.0180	< 0.0180
1-Methylnaphthalene	µg/L	< 0.687	< 0.0687	4.82	2.30	n.m.	< 0.0687	n.m.	15.3	6.97	3.32	1.05
2-Methylnaphthalene	µg/L	< 0.674	< 0.0674	0.82	0.329	n.m.	< 0.0674	n.m.	2.01	0.872	0.269	0.0169 J
Total PAHs	*µg/L*	*0.0383*	*0.0397*	*21.7*	*44.8*	*n.m.*	*0.0*	*n.m.*	*384*	*127*	*7.55*	*4.43*

Table 5-continued. COC Removal Results - COC Concentrations in Water.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Target VOCs in water												
Benzene	µg/L	1.24	1.15	< 0.941	< 0.0941	n.m.	< 0.0941	n.m.	0.900 J	< 0.941	1.75	3.05 J
n-butylbenzene	µg/L	< 0.157	< 0.157	1.97 J	< 0.157	n.m.	< 0.157	n.m.	3.74	1.96 J	1.12	< 1.57
sec-Butylbenzene	µg/L	2.62	0.766 J	2.52 J	< 0.125	n.m.	< 0.125	n.m.	1.52	< 1.25	0.486 J	< 1.25
1,2-Dichloroethane	µg/L	29.5	28.4	28.5	25.2	n.m.	3.44	n.m.	27.5	29.7	16.6	12.5
Ethylbenzene	µg/L	0.325 J	< 0.137	< 1.37	< 0.137	n.m.	< 0.137	n.m.	0.141 J	< 1.37	< 0.137	< 1.37
Isopropylbenzene	µg/L	3.30	0.986 J	3.37 J	< 0.105	n.m.	< 0.105	n.m.	2.28	3.06 J	0.674 J	< 1.05
p-Isopropyltoluene	µg/L	1.95	0.826 J	< 1.20	< 0.120	n.m.	< 0.120	n.m.	1.03	< 1.20	0.252 J	< 1.20
Naphthalene	µg/L	395	6.48	11.7 J	6.05	n.m.	< 1.00	n.m.	401	54.2	63	6.62 J
n-Propylbenzene	µg/L	6.57	1.44	1.90 J	< 0.0993	n.m.	< 0.0993	n.m.	3.36	< 0.993	0.903 J	< 0.993
Toluene	µg/L	3.03	1.06	< 2.78	< 0.278	n.m.	< 0.278	n.m.	1.31	< 2.78	0.465 J	< 2.78
1,2,4-Trimethylbenzene	µg/L	1.17	<0.481	< 3.22	< 0.322	n.m.	< 0.322	n.m.	0.526 J	< 3.22	< 0.322	< 3.22
1,2,3-Trimethylbenzene	µg/L	1.39	0.248 J	< 1.04	< 0.104	n.m.	< 0.104	n.m.	0.914 J	< 1.04	0.435 J	*< 1.04*
1,3,5-Trimethylbenzene	µg/L	2.77	0.257 J	< 1.04	< 0.104	n.m.	< 0.104	n.m.	1.28	< 1.04	0.134 J	< 1.04
Xylenes (total)	µg/L	1.45 J	< 0.174	< 1.74	< 0.174	n.m.	< 0.174	n.m.	0.837 J	< 1.74	< 0.174	< 1.74
Total Target VOCs	*µg/L*	*450*	*41.6*	*50.0*	*31.3*	*n.m.*	*3.44*	*n.m.*	*446*	*88.9*	*85.8*	*22.2*

J = estimated value

n.m = not measured

Table 6. COC Removal Results - COC Concentrations in Soil.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
TPH soil												
TPH-g, C5-C12	mg/kg-dry	5.27	2.34	5.43	4.48	4.28	1.77	2.33	3.97	7.22	3.76	5.87
C12-C22 Hydrocarbons	mg/kg-dry	1.69 J	3.35 J	1.10 J	5.78	1.40	2.02	1.69 J	2.72	1.21 J	3.46	1.20 J
C22-C32 Hydrocarbons	mg/kg-dry	1.91 J	3.23 J	< 1.70	10	< 1.74	2.43	2.06 J	3.82	< 1.80	4.38	< 1.81
C32-C40 Hydrocarbons	mg/kg-dry	< 1.77	3.51 J	< 1.70	12	< 1.74	2.93	< 1.80	5.29	< 1.80	5.12	2.75 J
Total C12-C40 hydrocabons	mg/kg-dry	3.60	10.1	1.10	27.8	1.40	7.38	3.75	11.8	1.2	13.0	3.95
Chlorinated Acid Herbicides soil												
2,4-D	mg/kg-dry	< 0.643	< 0.00912	< 0.00899	< 0.00911	n.m.	< 0.00928	n.m.	< 0.00944	< 0.00952	< 0.00953	< 0.00956
Dicamba	mg/kg-dry	< 0.143	< 0.0204	< 0.0201	< 0.0204	n.m.	< 0.0207	n.m.	< 0.0211	< 0.0213	< 0.0213	< 0.0214
Dinoseb	mg/kg-dry	< 0.0638	< 0.00905	< 0.00892	< 0.00905	n.m.	< 0.00921	n.m.	< 0.00938	< 0.00945	< 0.00946	< 0.00949
MCCP	μγ/κγ–δρψ	< 3.36	< 0.477	< 0.470	< 0.476	n.m.	< 0.485	n.m.	< 0.494	< 0.497	< 0.498	< 0.500
PAHs soil												
Acenaphthene	mg/kg-dry	< 0.00305	< 0.00271	< 0.00268	< 0.00271	n.m.	< 0.00276	n.m.	< 0.00281	< 0.00283	< 0.00284	< 0.00285
Fluorene	mg/kg-dry	< 0.00272	< 0.00266	< 0.00262	< 0.00266	n.m.	< 0.00271	n.m.	< 0.00276	< 0.00278	< 0.00278	< 0.00279
Naphthalene	mg/kg-dry	0.0165 J	0.0359	0.0224 J	0.0487	n.m.	0.0611	n.m.	0.258	0.102	0.0694	0.0314
Phenanthrene	mg/kg-dry	< 0.00307	< 0.00300	< 0.00296	< 0.0300	n.m.	0.00328 J	n.m.	< 0.00311	< 0.00313	< 0.00314	< 0.00314
1-Methylnaphthalene	mg/kg-dry	0.0169 J	0.0455	0.0294	0.0437	n.m.	0.0506	n.m.	0.0784	0.0347	0.0444	0.0249 J
2-Methylnaphthalene	mg/kg-dry	< 0.00567	0.00638 J	< 0.00547	0.00558 J	n.m.	0.00814 J	n.m.	0.0129 J	0.00580 J	0.00734 J	< 0.00581
Total PAHs	*mg/kg-dry*	*0.0334*	*0.0878*	*0.0518*	*0.0980*	*n.m.*	*0.123*	*n.m.*	*0.349*	*0.143*	*0.121*	*0.0563*

Table 6-continued. COC Removal Results - COC Concentrations in Soil.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
VOCs soil												
Benzene	mg/kg-dry	< 0.000774	< 0.000746	< 0.000729	< 0.000753	n.m.	< 0.000767	n.m.	< 0.000790	< 0.00799	< 0.000809	< 0.000805
n-butylbenzene	mg/kg-dry	0.0260	0.0337	0.0183 J	0.0424	n.m.	0.0394	n.m.	0.0766	0.0193 J	0.0452	< 0.00905
sec-Butylbenzene	mg/kg-dry	0.00792 J	000791 J	0.00473 J	0.00853 J	n.m.	0.0089 J	n.m.	0.0157 J	< 0.00493	0.0108 J	< 0.00496
1,2-Dichloroethane	mg/kg-dry	< 0.00108	< 0.00140	< 0.00101	< 0.00104	n.m.	< 0.00107	n.m.	< 0.00110	< 0.00111	< 0.00127	< 0.00112
Ethylbenzene	mg/kg-dry	< 0.00122	< 0.00118	< 0.00115	< 0.00119	n.m.	< 0.00121	n.m.	< 0.00125	< 0.00126	< 0.00127	< 0.00127
Isopropylbenzene	mg/kg-dry	< 0.000705	0.00384 J	0.00325 J	0.00588	n.m.	0.00679	n.m.	0.0113	0.00236 J	0.00519	< 0.000732
p-Isopropyltoluene	mg/kg-dry	0.00701 J	0.00583 J	< 0.00398	0.00568 J	n.m.	0.00588 J	n.m.	0.0112	< 0.00436	0.00636 J	< 0.00439
Naphthalene	mg/kg-dry	0.0225 B	0.0184 J	0.0308	0.0751	n.m.	0.0845	n.m.	0.327	0.141	0.0976	0.0257
n-Propylbenzene	mg/kg-dry	0.00414 J	0.00703 J	0.00528	0.0104	n.m.	0.012	n.m.	0.0213	0.00479	0.0106	0.00281 J
Toluene	mg/kg-dry	< 0.0216	< 0.00208	< 0.00203	< 0.00209	n.m.	< 0.00214	n.m.	< 0.00220	< 0.00222	< 0.00224	< 0.00224
1,2,4-Trimethylbenzene	mg/kg-dry	< 0.00262	0.00487 J	< 0.00253	0.00338 J	n.m.	0.00345 J	n.m.	0.00643 J	< 0.00270	0.00403 J	< 0.00272
1,2,3-Trimethylbenzene	mg/kg-dry	< 0.00262	*0.00292 J*	< 0.00247	*< 0.00255*	n.m.	*0.00276 J*	n.m.	0.00372 J	*< 0.00270*	0.00295 J	*< 0.00272*
1,3,5-Trimethylbenzene	mg/kg-dry	< 0.00332	< 0.00320	< 0.00247	< 0.00322	n.m.	< 0.00329	n.m.	0.00587 J	< 0.00342	< 0.00346	< 0.00345
Xylenes (total)	mg/kg-dry	< 0.00146	0.00511 J	< 0.00137	0.00354 J	n.m.	0.00304 J	n.m.	0.00355 J	< 0.00151	0.00329 J	< 0.00152
Total Target VOCs	*mg/kg-dry*	*0.068*	*0.090*	*0.062*	*0.155*	*n.m.*	*0.167*	*n.m.*	*0.483*	*0.167*	*0.180*	*0.0285*

J = estimated value

n.m. = not measured

Table 7. COC Removal Results: COCs in Off-gases.

Analyte	Units	AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)	
		Day 7	Day 29	Day 7	Day 29
TPH, Off-gases					
TPH-g	µg/L	4300	3000	1700	1600
VOCs, Off-gases					
Hexane	µg/L	64	n.m.	26	n.m.
Tetrahydrofuran	µg/L	< 0.180	n.m.	0.097	n.m.
Cyclohexane	µg/L	58	n.m.	19	n.m.
2,2,4-Trimethylpentane	µg/L	130	n.m.	50	n.m.
1,2-Dichloroethane	µg/L	0.80	n.m.	0.64	n.m.
Heptane	µg/L	5.3	n.m.	21	n.m.
Total VOCs	*µg/L*	*258*	n.m.	*117*	n.m.
Volume Gas	L	3.6	1.9	15	9.0

n.m. = not measured

Table 8. COC Removal Results: Mass Balance.

Analyte	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Percent of Total Remaining in Water (Relative to Time 0)										
TPH-g, C5-C12	28	35	7.7	< 21	3.2	< 21	43	27	21	< 21
Total C12-C40 hydrocabons	68	59	8	26	< 1.0	6.9	44	38	27	5.8
Naphthalene (via 8260*)	1.6	2.9	1.5	n.a.	< 0.25	n.a.	100	14	16	1.7
Total Target VOCs	8.9	11	6.7	n.a.	0.74	n.a.	95	19	18	4.7
2,4-D	37	32	< 1.8	n.a.	< 1.8	n.a.	130	35	26	< 1.9
Dicamba	< 16	90	< 16	n.a.	< 16	n.a.	< 18	< 16	< 18	< 17
Dinoseb	74	< 0.84	44	n.a.	< 0.84	n.a.	88	46	16	< 0.89
Naphthalene (via 8270**)	< 2.2	383	1,010	n.a.	< 2.2	n.a.	8,780	2,847	95	80
Total PAHs	0.47	255	528	n.a.	0.000	n.a.	4,522	1,493	89	52
Percent of Total Volatilized (Relative to Time 0)										
TPH-g, C5-C12	n.a.	n.a.	233	86	387	218	n.a.	n.a.	n.a.	n.a.

Table 8-continued. COC Removal Results: Mass Balance.

Analyte	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Percent of Total Remaining in Soil (Relative to Time 0)										
TPH-g, C5-C12	16	38	31	30	12	16	27	49.9	26	41
Total C12-C40 hydrocabons	48	5.3	133	7	35	18	57	5.8	62	19.0
Naphthalene (via 8260*)	1.2	1.9	4.7	n.a.	5.3	n.a.	21	8.9	6.2	1.6
Total Target VOCs	4.9	3.4	8.4	n.a.	9.0	n.a.	26	9.1	9.7	1.5
2,4-D	< 7.6	< 7.5	< 7.6	n.a.	< 7.8	n.a.	< 7.9	< 7.9	< 7.9	< 7.9
Dicamba	0-100	0-100	0-100	n.a.	0-100	n.a.	0-100	0-100	0-100	0-100
Dinoseb	< 7.7	< 7.6	< 7.7	n.a.	< 7.8	n.a.	< 8.0	< 8.0	< 8.0	< 8.1
Naphthalene (via 8270**)	218	136	295	n.a.	370	n.a.	1,564	618	421	190
Total PAHs	262	154	292	n.a.	367	n.a.	1,041	425	361	168

Table 8-continued. COC Removal Results: Mass Balance.

Analyte	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Percent of Removed From Reactor (Relative to Time 0)										
TPH-g, C5-C12	56	28	-171	-16	-302	-134	29	23	53	38-59
Total C12-C40 hydrocabons	-16.9	36	-42	67	84	75	-1	56	11	75
Naphthalene (via 8260*)	97	95	94	n.a.	95	n.a.	-21	78	78	97
Total Target VOCs	86	86	85	n.a.	90	n.a.	-22	72	72	94
2,4-D	55-63	60-68	> 91	n.a.	> 90	n.a.	> 74	> 76	> 74	> 75
Dicamba	0-100	0-100	0-100	n.a.	0-100	n.a.	0-100	0-100	0-100	0-100
Dinoseb	18-26	> 92	48-56	n.a.	> 92	n.a.	4-12	46-54	76-84	> 91
Naphthalene (via 8270**)	-118	-419	-1,205	n.a.	-270	n.a.	-10,244	-3,365	-415	-171
Total PAHs	-162	-309	-720	n.a.	-267	n.a.	-5,463	-1,818	-350	-120

n.a. = not applicable

* These values were calculated using naphthalene measured via EPA 8260.

** These values were calculated using naphthalene measured via EPA 8270.

Table 9. COC Removal Results: Non-target VOCs.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Non-Target VOCs in water												
Acetone	µg/L	< 11.3	< 11.3	< 113	172	n.m.	378	n.m.	107	191 J	63	< 113
1,2-Dichlorpropane	µg/L	1.20	1.05	< 1.49	0.770 J	n.m.	< 0.149	n.m.	0.981 J	< 1.49	0.494 J	< 1.49
2-Butanone (MEK)	µg/L	40.5	29.7	< 11.9	58.1	n.m.	2.93 J	n.m.	43.1	40.5 J	< 1.19	< 11.9
Methylene chloride	µg/L	1.18 J	< 0.430	4.40 J	0.727 J	n.m.	< 0.430	n.m.	< 0.430	< 4.30	< 0.430	< 4.30
4-Methyl-2-pentanone (MIBK)	µg/L	< 0.478	6.34 J	16.1 J	9.50 J	n.m.	< 0.478	n.m.	6.13 J	8.32 J	3.22 J	4.86 J
Tetrachloroethene	µg/L	< 0.300	< 0.300	< 3.00	< 0.300	n.m.	< 0.300	n.m.	1.51	< 3.00	< 0.300	< 3.00
Non-Target VOCs soil												
Acetone	mg/kg-dry	0.211	< 0.0583	< 0.0570	< 0.0588	n.m.	< 0.0600	n.m.	< 0.0618	0.0695 J	< 0.0632	0.122

J = estimated value

n.m.= not measured

Table 10. COC Removal Results: Secondary Parameters.

Analyte	Units	Time 0	Process Control		AP HP Low (5 g/L SP; 3.6 g/L HP)		AP HP High (20 g/L SP; 14 g/L HP)		AP pH Low (5 g/L SP; pH > 11)		AP pH High (20 g/L SP; pH > 11)	
			Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29	Day 7	Day 29
Dissolved Metals												
Arsenic	µg/L	9.94 J	9.70 J	16.60	152	18	14	< 4.40	22.2	174	438	381
Barium	µg/L	58.3	72.60	74.60	26.9	129	98.6	142	142	37	17.3	21.6
Cadmium	µg/L	1.47 J	0.642 J	< 0.479	< 0.479	0.962 J	2.45	8.42	1.03 J	< 0.479	< 0.479	< 0.479
Chromium	µg/L	< 1.40	< 1.40	2.46 J	23.5	9.49 J	11.9	19.9	9.44 J	35.7	35.6	41.8
Selenium	µg/L	10.4	8.91 J	< 7.35	11.9	19.5	24.8	38.8	23.6	12.5	28.6	28.2
Other Parameters												
Color, water	--	cloudy white	slightly cloudy white	slightly cloudy white	cloudy, slightly yellow	clear, colorless	cloudy yellow	cloudy light yellow	very cloudy orange	cloudy dark yellow	slightly cloudy orange	cloudy light yellow
Cr(VI)	µg/L	0.40	< 0.40	< 20	10	< 20	< 10	< 20	26	35	45	50
Hydrogen peroxide	g/L	n.a.	n.a.	n.a.	0.49	< 0.01	0.67	< 0.01	n.a.	n.a.	n.a.	n.a.
ORP	mV	198	194	-14.00	355	329	604	237	83	114	187	175
pH	--	7.39	7.15	7.26	5.91	6.22	2.54	5.29	11.5	10.9	12.6	12.2
Sodium Persulfate	g/L	n.a.	n.a.	n.a.	< 0.2	< 0.2	0.3	< 0.2	3.9	3.2	13	12
Sulfate	mg/L	700	740	700	3,400	3600	11,400	10,000	1,200	1,750	3,400	6,600
Total Solids	%	75.3	77.0	78	77.0	76.9	75.7	74	74.3	73.8	73.7	73.7

J = estimated value

n.a. = not applicable



Figure 4. COC Removal Test Prior to Sampling – Day 29. From left: Process Control, AP-pH Low, AP-pH High, AP-HP Low, AP-HP High.

Table 11. Initial NaOH Requirement.

Sample	NaOH Requirement			
	moles OH^-/kg	mL 25% NaOH/kg	moles OH^-/L	mL 25% NaOH/L
Soil	0.076	9.6		
Groundwater			0.026	3.3

Time (days)	0	0.02	1.0	1.9	4.0	6.9	13.9
None (DI Control)	-	8.3	8.0	8.0	7.8	7.8	7.7
100 mmol H+/kg soil (pH 1)	1.6	6.2	6.8	7.2	7.0	7.2	7.1
10 mmol H+/kg soil (pH 2)	2.2	7.2	7.4	7.4	7.7	7.4	7.4
1 mmol H+/kg soil (pH 3)	3.1	8.0	7.9	7.8	7.7	7.7	7.7

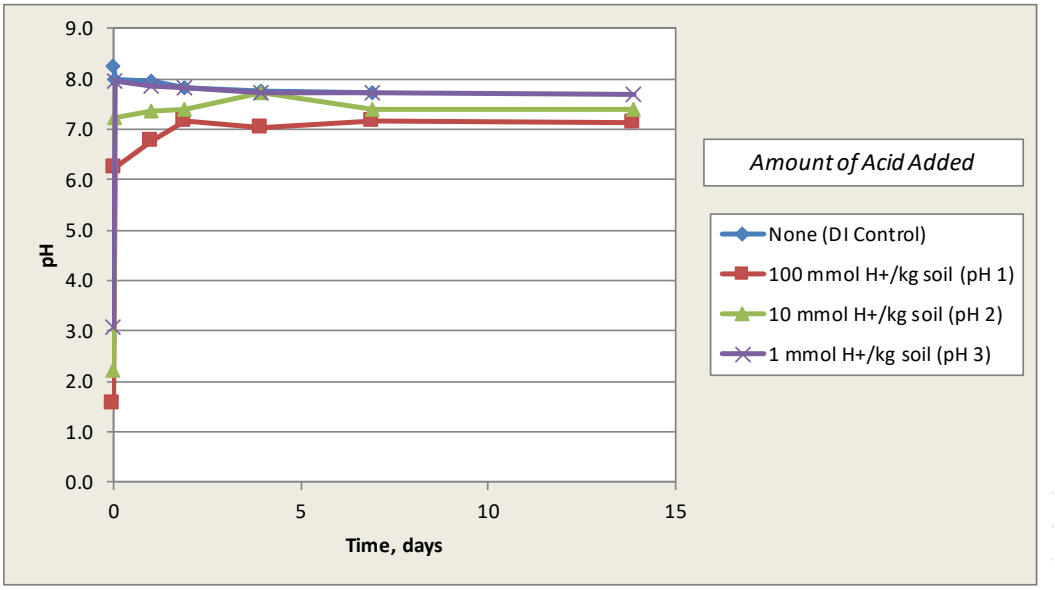


Figure 5. Buffering Curves – Acid.

Time (days)	0	0.02	1.0	1.9	4.0	6.9	13.9
None (DI Control)	-	8.3	8.0	8.0	7.8	7.8	7.7
1 mmol OH-/kg soil (pH 11)	10.9	8.3	8.1	8.1	7.9	7.9	7.8
10 mmol OH-/kg soil (pH 12)	11.9	9.5	9.0	9.0	8.7	8.7	8.5
100 mmol OH-/kg soil (pH 13)	12.8	11.9	11.5	11.5	11.3	11.3	11.2

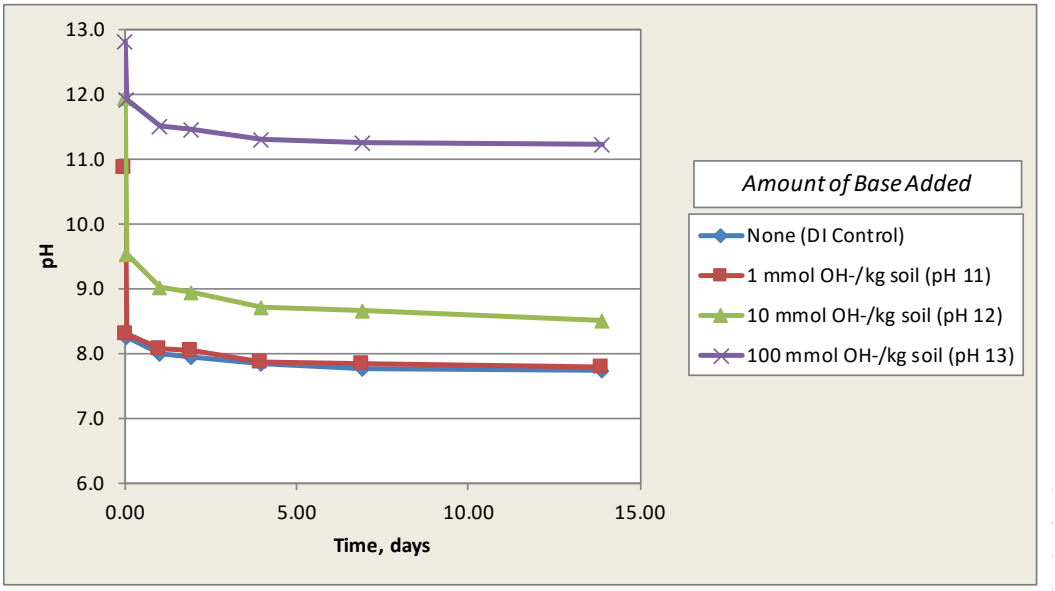


Figure 6. Buffering Curves – Base.

4.0 SUMMARY and CONCLUSIONS

Laboratory testing demonstrated that both AP-HP ad AP-pH could reduce concentrations of some COCs, but AP-pH was much more effective. AP-HP reduced aqueous concentrations of TPH, chlorinated herbicides, and VOCs, but soil concentrations were typically similar to or greater than Time 0 concentrations and TPH-g was volatilized. Thus, despite excellent removal of most COCs from the water, overall, treatment with AP-HP reduced the total mass naphthalene by 94-95%, VOCs by 85-95%, 2,4-D by 90%, Dinoseb by over 48%, and total C12-C40 hydrocarbons by 67-75%, but did not affect the total mass of TPH-g or PAHs. All of the AP-HP was consumed by Day 29, indicating that no further oxidation could occur, though aerobic biodegradation hydrocarbons could potentially occur since decomposition of HP produced oxygen gas. In contrast, AP-pH reduced the total mass of most COCs, with greater reductions seen in the high dose (20 g/L SP) AP-pH test compared to the low dose (5 g/L SP) AP-pH test. By Day 29, the low dose test removed 23% of the TPH-g, 56% of total C12-C40 hydrocarbons, 78% naphthalene, 72% total VOCs, over 76% 2,4-D, and 46-54% of Dinoseb. The high dose test removed 38-59% of TPH-g, 75% of total C12-C40 hydrocarbons, 97% naphthalene, 94% total VOCs, over 77% 2,4-D, and over 91% of Dinoseb. PAHs were not removed. At least 60% of the SP initially added was still present and pH was elevated, indicating that additional oxidation of COCs by AP-pH could occur given a longer reaction time.

Treatment with AP-HP decreased pH to under 3 by Day 7 in the high dose test due to decomposition of AP-HP, but the pH re-bounded to 5.2 by Day 29 due to the buffering ability of the soil. Buffering tests indicate that soil can buffer at least 100 mmol H+/kg soil – that is, 1 kg of soil can neutralize the acid generated by at least 12 g SP. Treatment with AP-HP generated up to be 19.9 μg/L Cr(VI), and mobilized arsenic, barium, cadmium, and selenium, though concentrations were typically 2 to 3 times the Time 0 concentration. The concentration of sulfate increased to up to 10,000 mg/L due to decomposition of AP-HP.

Treatment with AP-pH increased pH due to the nature of the activator. However, pH should return to near-neutral as the SP decomposes. AP-pH generated up to 50 mg/L Cr(VI) and mobilized up to 438 mg/L arsenic and up to 28.2 mg/L selenium . Arsenic is

expected to attenuate once pH returns to near-neutral. The ability of Cr(VI) and selenium to attenuate was not assessed in this study.

AP-HP does not persist, while AP-pH does. In the SOD/persistence tests, HP was completely consumed within 2 days, although SP was still present at 21 days, yielding a 21-day SP SOD of 3.5 g SP/kg soil when the initial SP concentration was 10 g SP/L and 8 g SP/kg soil when the initial SP concentration was 30 g SP/L However, in the COC Removal tests, most SP and HP added were consumed within 7 days. In contrast, the 21-day SOD was 3.9 g SP/kg soil when the initial SP concentration was 10 g/L and 14 g SP/kg soil when the initial SP concentration was 30 g/L and 60% of the SP initially added was still present by Day 29 in the COC Removal tests

Based on the results of this study, PRIMA recommends that AP-pH be considered for use at this site. AP-pH was more effective at removing total mass of COCs and persisted for at least 29 days. The amount of SP would be sufficient to meet the demand due to COCs and the soil oxidant demand, and should yield a groundwater concentration between 5 and 20 g/L. Cr(VI) may be generated and metals (especially arsenic) may be mobilized, so these parameters should be monitored if Ap-pH is implemented at this site.

APPENDIX A
(Chains of Custody)

5070 Robert J Mathews Parkway, Suite 300
El Dorado Hills, CA 95762
916-939-7300
www.primaenvironmental.com

Sample Receipt Summary

Date/Time: 5/09/24 @1100

Client/Company: GeoSyntec

Project: Simplot

	Yes	No	N/A
Custody seals intact?	☐	☐	☒
Chain of custody Present?	☒	☐	☐
If no, list number of samples and Sample ID			
Ice present?	☒	☐	☐
If no, what is temperature? ____			
Samples in good condition?	☐	☒	☐
If no, explain:			
4 broken 1 Liter groundwater samples rest fine			
Do sample IDs on containers match IDs on COC?	☐	☐	☒
If no, explain:			

Other Comments:

Soil and water samples collected from Simplot Sunnyside, Washinton.

Call Dave Allison with any questions 208-407-1440

david.allison@geosyntec.com

- 40 – 1 liter groundwater samples
- 21-feet of 1.5-inch soil core samples – Reagent Bench Test
- 4-feet of 1.5-inch soil core samples – Soil Oxidant Demand Test. Samples double long and bagged together.

recv'd
BNB 05/09/2024 1100

APPENDIX B
(Subcontracted Analytical Reports)

eurofins | Air Toxics

7/30/2024
Dr. Cindy Schreier
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills CA 95762

Project Name: Geo-Sim
Project #:
Workorder #: 2407403A

Dear Dr. Cindy Schreier

The following report includes the data for the above referenced project for sample(s) received on 7/17/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2407403A

Work Order Summary

CLIENT:	Dr. Cindy Schreier Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762	**BILL TO:**	Mr. Chris Brooks Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762
PHONE:	916-939-7300	**P.O. #**	
FAX:		**PROJECT #**	Geo-Sim
DATE RECEIVED:	07/17/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	07/30/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AP-HP-Low A	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
02A	AP-HP-High A	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
04A	CCV	Modified TO-15 (5&20 ppbv	NA	NA
05A	LCS	Modified TO-15 (5&20 ppbv	NA	NA
05AA	LCSD	Modified TO-15 (5&20 ppbv	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 07/30/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

LABORATORY NARRATIVE
EPA Method TO-15
Prima Environmental
Workorder# 2407403A

Two 1 Liter Tedlar Bag samples were received on July 17, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Dilution was performed on samples AP-HP-Low A and AP-HP-High A due to the presence of high level non-target species.

The Relative Percent Difference (RPD) of the LCS/LCSD exceeded acceptance limits for Ethanol and Methyl tert-butyl ether.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: AP-HP-Low A

Lab ID#: 2407403A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	62	18000	220	64000
Cyclohexane	62	17000	220	58000
2,2,4-Trimethylpentane	62	28000	290	130000
1,2-Dichloroethane	62	200	250	800
Heptane	62	13000	260	53000

Client Sample ID: AP-HP-High A

Lab ID#: 2407403A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	25	7500	88	26000
Tetrahydrofuran	25	33	74	97
Cyclohexane	25	5600	86	19000
2,2,4-Trimethylpentane	25	11000	120	50000
1,2-Dichloroethane	25	160	100	640
Heptane	25	5200	100	21000

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Client Sample ID: AP-HP-Low A

Lab ID#: 2407403A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14071915**	**Date of Collection: 7/17/24 3:00:00 PM**	
Dil. Factor:	**12.5**	**Date of Analysis: 7/19/24 03:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	62	Not Detected	310	Not Detected
Freon 114	62	Not Detected	440	Not Detected
Chloromethane	250	Not Detected	520	Not Detected
Vinyl Chloride	62	Not Detected	160	Not Detected
1,3-Butadiene	62	Not Detected	140	Not Detected
Bromomethane	250	Not Detected	970	Not Detected
Chloroethane	250	Not Detected	660	Not Detected
Freon 11	62	Not Detected	350	Not Detected
Ethanol	310	Not Detected	590	Not Detected
Freon 113	62	Not Detected	480	Not Detected
1,1-Dichloroethene	62	Not Detected	250	Not Detected
Acetone	250	Not Detected	590	Not Detected
2-Propanol	310	Not Detected	770	Not Detected
Carbon Disulfide	250	Not Detected	780	Not Detected
3-Chloropropene	250	Not Detected	780	Not Detected
Methylene Chloride	250	Not Detected	870	Not Detected
Methyl tert-butyl ether	62	Not Detected	220	Not Detected
trans-1,2-Dichloroethene	62	Not Detected	250	Not Detected
Hexane	62	18000	220	64000
1,1-Dichloroethane	62	Not Detected	250	Not Detected
2-Butanone (Methyl Ethyl Ketone)	250	Not Detected	740	Not Detected
cis-1,2-Dichloroethene	62	Not Detected	250	Not Detected
Tetrahydrofuran	62	Not Detected	180	Not Detected
Chloroform	62	Not Detected	300	Not Detected
1,1,1-Trichloroethane	62	Not Detected	340	Not Detected
Cyclohexane	62	17000	220	58000
Carbon Tetrachloride	62	Not Detected	390	Not Detected
2,2,4-Trimethylpentane	62	28000	290	130000
Benzene	62	Not Detected	200	Not Detected
1,2-Dichloroethane	62	200	250	800
Heptane	62	13000	260	53000
Trichloroethene	62	Not Detected	340	Not Detected
1,2-Dichloropropane	62	Not Detected	290	Not Detected
1,4-Dioxane	250	Not Detected	900	Not Detected
Bromodichloromethane	62	Not Detected	420	Not Detected
cis-1,3-Dichloropropene	62	Not Detected	280	Not Detected
4-Methyl-2-pentanone	250	Not Detected	1000	Not Detected
Toluene	62	Not Detected	240	Not Detected
trans-1,3-Dichloropropene	62	Not Detected	280	Not Detected
1,1,2-Trichloroethane	62	Not Detected	340	Not Detected
Tetrachloroethene	62	Not Detected	420	Not Detected
2-Hexanone	250	Not Detected	1000	Not Detected

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Client Sample ID: AP-HP-Low A

Lab ID#: 2407403A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14071915**	**Date of Collection: 7/17/24 3:00:00 PM**	
Dil. Factor:	**12.5**	**Date of Analysis: 7/19/24 03:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	62	Not Detected	530	Not Detected
1,2-Dibromoethane (EDB)	62	Not Detected	480	Not Detected
Chlorobenzene	62	Not Detected	290	Not Detected
Ethyl Benzene	62	Not Detected	270	Not Detected
m,p-Xylene	62	Not Detected	270	Not Detected
o-Xylene	62	Not Detected	270	Not Detected
Styrene	62	Not Detected	270	Not Detected
Bromoform	62	Not Detected	650	Not Detected
Cumene	62	Not Detected	310	Not Detected
1,1,2,2-Tetrachloroethane	62	Not Detected	430	Not Detected
Propylbenzene	62	Not Detected	310	Not Detected
4-Ethyltoluene	62	Not Detected	310	Not Detected
1,3,5-Trimethylbenzene	62	Not Detected	310	Not Detected
1,2,4-Trimethylbenzene	62	Not Detected	310	Not Detected
1,3-Dichlorobenzene	62	Not Detected	380	Not Detected
1,4-Dichlorobenzene	62	Not Detected	380	Not Detected
alpha-Chlorotoluene	62	Not Detected	320	Not Detected
1,2-Dichlorobenzene	62	Not Detected	380	Not Detected
1,2,4-Trichlorobenzene	250	Not Detected	1800	Not Detected
Hexachlorobutadiene	250	Not Detected	2700	Not Detected

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	116	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: AP-HP-High A

Lab ID#: 2407403A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14071914**	**Date of Collection: 7/17/24 3:05:00 PM**	
Dil. Factor:	**5.00**	**Date of Analysis: 7/19/24 03:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	25	Not Detected	120	Not Detected
Freon 114	25	Not Detected	170	Not Detected
Chloromethane	100	Not Detected	210	Not Detected
Vinyl Chloride	25	Not Detected	64	Not Detected
1,3-Butadiene	25	Not Detected	55	Not Detected
Bromomethane	100	Not Detected	390	Not Detected
Chloroethane	100	Not Detected	260	Not Detected
Freon 11	25	Not Detected	140	Not Detected
Ethanol	120	Not Detected	240	Not Detected
Freon 113	25	Not Detected	190	Not Detected
1,1-Dichloroethene	25	Not Detected	99	Not Detected
Acetone	100	Not Detected	240	Not Detected
2-Propanol	120	Not Detected	310	Not Detected
Carbon Disulfide	100	Not Detected	310	Not Detected
3-Chloropropene	100	Not Detected	310	Not Detected
Methylene Chloride	100	Not Detected	350	Not Detected
Methyl tert-butyl ether	25	Not Detected	90	Not Detected
trans-1,2-Dichloroethene	25	Not Detected	99	Not Detected
Hexane	25	7500	88	26000
1,1-Dichloroethane	25	Not Detected	100	Not Detected
2-Butanone (Methyl Ethyl Ketone)	100	Not Detected	290	Not Detected
cis-1,2-Dichloroethene	25	Not Detected	99	Not Detected
Tetrahydrofuran	25	33	74	97
Chloroform	25	Not Detected	120	Not Detected
1,1,1-Trichloroethane	25	Not Detected	140	Not Detected
Cyclohexane	25	5600	86	19000
Carbon Tetrachloride	25	Not Detected	160	Not Detected
2,2,4-Trimethylpentane	25	11000	120	50000
Benzene	25	Not Detected	80	Not Detected
1,2-Dichloroethane	25	160	100	640
Heptane	25	5200	100	21000
Trichloroethene	25	Not Detected	130	Not Detected
1,2-Dichloropropane	25	Not Detected	120	Not Detected
1,4-Dioxane	100	Not Detected	360	Not Detected
Bromodichloromethane	25	Not Detected	170	Not Detected
cis-1,3-Dichloropropene	25	Not Detected	110	Not Detected
4-Methyl-2-pentanone	100	Not Detected	410	Not Detected
Toluene	25	Not Detected	94	Not Detected
trans-1,3-Dichloropropene	25	Not Detected	110	Not Detected
1,1,2-Trichloroethane	25	Not Detected	140	Not Detected
Tetrachloroethene	25	Not Detected	170	Not Detected
2-Hexanone	100	Not Detected	410	Not Detected

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Client Sample ID: AP-HP-High A

Lab ID#: 2407403A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14071914**	**Date of Collection: 7/17/24 3:05:00 PM**	
Dil. Factor:	**5.00**	**Date of Analysis: 7/19/24 03:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	25	Not Detected	210	Not Detected
1,2-Dibromoethane (EDB)	25	Not Detected	190	Not Detected
Chlorobenzene	25	Not Detected	120	Not Detected
Ethyl Benzene	25	Not Detected	110	Not Detected
m,p-Xylene	25	Not Detected	110	Not Detected
o-Xylene	25	Not Detected	110	Not Detected
Styrene	25	Not Detected	110	Not Detected
Bromoform	25	Not Detected	260	Not Detected
Cumene	25	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	25	Not Detected	170	Not Detected
Propylbenzene	25	Not Detected	120	Not Detected
4-Ethyltoluene	25	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	25	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	25	Not Detected	120	Not Detected
1,3-Dichlorobenzene	25	Not Detected	150	Not Detected
1,4-Dichlorobenzene	25	Not Detected	150	Not Detected
alpha-Chlorotoluene	25	Not Detected	130	Not Detected
1,2-Dichlorobenzene	25	Not Detected	150	Not Detected
1,2,4-Trichlorobenzene	100	Not Detected	740	Not Detected
Hexachlorobutadiene	100	Not Detected	1100	Not Detected

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	117	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2407403A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14071907**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 10:54 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	25	Not Detected	47	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	25	Not Detected	61	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	20	Not Detected	82	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2407403A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14071907**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 10:54 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV

Lab ID#: 2407403A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14071903**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 08:55 AM**

Compound	%Recovery
Freon 12	95
Freon 114	94
Chloromethane	97
Vinyl Chloride	91
1,3-Butadiene	101
Bromomethane	116
Chloroethane	100
Freon 11	100
Ethanol	120
Freon 113	100
1,1-Dichloroethene	105
Acetone	111
2-Propanol	106
Carbon Disulfide	101
3-Chloropropene	104
Methylene Chloride	110
Methyl tert-butyl ether	92
trans-1,2-Dichloroethene	97
Hexane	106
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	99
cis-1,2-Dichloroethene	100
Tetrahydrofuran	112
Chloroform	98
1,1,1-Trichloroethane	97
Cyclohexane	100
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	108
Benzene	98
1,2-Dichloroethane	95
Heptane	101
Trichloroethene	96
1,2-Dichloropropane	102
1,4-Dioxane	100
Bromodichloromethane	92
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	97
Toluene	93
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	96
Tetrachloroethene	94
2-Hexanone	105

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Client Sample ID: CCV

Lab ID#: 2407403A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14071903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 08:55 AM**	

Compound	%Recovery
Dibromochloromethane	96
1,2-Dibromoethane (EDB)	97
Chlorobenzene	92
Ethyl Benzene	96
m,p-Xylene	96
o-Xylene	96
Styrene	99
Bromoform	97
Cumene	98
1,1,2,2-Tetrachloroethane	96
Propylbenzene	96
4-Ethyltoluene	95
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	97
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	97
alpha-Chlorotoluene	96
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	118
Hexachlorobutadiene	113

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 2407403A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14071904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 09:33 AM**	

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	90	70-130
Chloromethane	99	70-130
Vinyl Chloride	91	70-130
1,3-Butadiene	94	70-130
Bromomethane	106	70-130
Chloroethane	96	70-130
Freon 11	97	70-130
Ethanol	116	70-130
Freon 113	90	70-130
1,1-Dichloroethene	98	70-130
Acetone	109	70-130
2-Propanol	107	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	100	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	97	70-130
Hexane	103	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	113	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	94	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	93	70-130
1,2-Dichloroethane	94	70-130
Heptane	96	70-130
Trichloroethene	90	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	95	70-130
Bromodichloromethane	87	70-130
cis-1,3-Dichloropropene	93	70-130
4-Methyl-2-pentanone	90	70-130
Toluene	88	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	91	70-130
Tetrachloroethene	91	70-130
2-Hexanone	99	70-130

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Client Sample ID: LCS

Lab ID#: 2407403A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14071904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 09:33 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	91	70-130
1,2-Dibromoethane (EDB)	92	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	90	70-130
o-Xylene	92	70-130
Styrene	95	70-130
Bromoform	91	70-130
Cumene	93	70-130
1,1,2,2-Tetrachloroethane	93	70-130
Propylbenzene	95	70-130
4-Ethyltoluene	92	70-130
1,3,5-Trimethylbenzene	90	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	93	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	88	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	112	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 2407403A-05AA

EPA METHOD TO-15 GC/MS

File Name:	**14071905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 09:58 AM**	

Compound	%Recovery	Method Limits
Freon 12	89	70-130
Freon 114	98	70-130
Chloromethane	85	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	104	70-130
Bromomethane	90	70-130
Chloroethane	87	70-130
Freon 11	102	70-130
Ethanol	155 Q	70-130
Freon 113	101	70-130
1,1-Dichloroethene	101	70-130
Acetone	116	70-130
2-Propanol	114	70-130
Carbon Disulfide	105	70-130
3-Chloropropene	91	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	70	70-130
trans-1,2-Dichloroethene	99	70-130
Hexane	107	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	95	70-130
cis-1,2-Dichloroethene	99	70-130
Tetrahydrofuran	116	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	99	70-130
Carbon Tetrachloride	95	70-130
2,2,4-Trimethylpentane	108	70-130
Benzene	97	70-130
1,2-Dichloroethane	94	70-130
Heptane	98	70-130
Trichloroethene	91	70-130
1,2-Dichloropropane	98	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	89	70-130
cis-1,3-Dichloropropene	89	70-130
4-Methyl-2-pentanone	90	70-130
Toluene	89	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	92	70-130
Tetrachloroethene	90	70-130
2-Hexanone	99	70-130

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Client Sample ID: LCSD

Lab ID#: 2407403A-05AA

EPA METHOD TO-15 GC/MS

File Name:	**14071905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 09:58 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	91	70-130
1,2-Dibromoethane (EDB)	88	70-130
Chlorobenzene	91	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	90	70-130
o-Xylene	93	70-130
Styrene	96	70-130
Bromoform	90	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	93	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	90	70-130
1,3,5-Trimethylbenzene	92	70-130
1,2,4-Trimethylbenzene	92	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	90	70-130
alpha-Chlorotoluene	84	70-130
1,2-Dichlorobenzene	94	70-130
1,2,4-Trichlorobenzene	107	70-130
Hexachlorobutadiene	110	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

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Method : TO-15 (5&20 ppbv)

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	5.0
76-14-2	Freon 114	5.0
74-87-3	Chloromethane	20
75-01-4	Vinyl Chloride	5.0
106-99-0	1,3-Butadiene	5.0
74-83-9	Bromomethane	20
75-00-3	Chloroethane	20
75-69-4	Freon 11	5.0
64-17-5	Ethanol	25
76-13-1	Freon 113	5.0
75-35-4	1,1-Dichloroethene	5.0
67-64-1	Acetone	20
67-63-0	2-Propanol	25
75-15-0	Carbon Disulfide	20
107-05-1	3-Chloropropene	20
75-09-2	Methylene Chloride	20
1634-04-4	Methyl tert-butyl ether	5.0
156-60-5	trans-1,2-Dichloroethene	5.0
110-54-3	Hexane	5.0
75-34-3	1,1-Dichloroethane	5.0
78-93-3	2-Butanone (Methyl Ethyl Ketone)	20
156-59-2	cis-1,2-Dichloroethene	5.0
109-99-9	Tetrahydrofuran	5.0
67-66-3	Chloroform	5.0
71-55-6	1,1,1-Trichloroethane	5.0
110-82-7	Cyclohexane	5.0
56-23-5	Carbon Tetrachloride	5.0
540-84-1	2,2,4-Trimethylpentane	5.0
71-43-2	Benzene	5.0
107-06-2	1,2-Dichloroethane	5.0
142-82-5	Heptane	5.0
79-01-6	Trichloroethene	5.0
78-87-5	1,2-Dichloropropane	5.0
123-91-1	1,4-Dioxane	20
75-27-4	Bromodichloromethane	5.0
10061-01-5	cis-1,3-Dichloropropene	5.0
108-10-1	4-Methyl-2-pentanone	20
108-88-3	Toluene	5.0
10061-02-6	trans-1,3-Dichloropropene	5.0
79-00-5	1,1,2-Trichloroethane	5.0
127-18-4	Tetrachloroethene	5.0
591-78-6	2-Hexanone	20
124-48-1	Dibromochloromethane	5.0
106-93-4	1,2-Dibromoethane (EDB)	5.0

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Method : TO-15 (5&20 ppbv)

CAS Number	Compound	Rpt. Limit (ppbv)
108-90-7	Chlorobenzene	5.0
100-41-4	Ethyl Benzene	5.0
108-38-3	m,p-Xylene	5.0
95-47-6	o-Xylene	5.0
100-42-5	Styrene	5.0
75-25-2	Bromoform	5.0
98-82-8	Cumene	5.0
79-34-5	1,1,2,2-Tetrachloroethane	5.0
103-65-1	Propylbenzene	5.0
622-96-8	4-Ethyltoluene	5.0
108-67-8	1,3,5-Trimethylbenzene	5.0
95-63-6	1,2,4-Trimethylbenzene	5.0
541-73-1	1,3-Dichlorobenzene	5.0
106-46-7	1,4-Dichlorobenzene	5.0
100-44-7	alpha-Chlorotoluene	5.0
95-50-1	1,2-Dichlorobenzene	5.0
120-82-1	1,2,4-Trichlorobenzene	20
87-68-3	Hexachlorobutadiene	20

	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130

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Eurofins Air Toxics Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 2407403A

Client

Dr. Cindy Schreier
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills, CA 95762

Phone

916-939-7300

Fax

Sales Rep: MT

Date Promised: 07/31/24
Date Completed:
Date Received: 7/17/24
PO#:
Project#: Geo-Sim

Total $: $ 320.00
Logged By: NJ

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	AP-HP-Low A	Modified TO-15 (5&20 ppbv)	7/17/2024	Tedlar Bag	$160.00
02A	AP-HP-High A	Modified TO-15 (5&20 ppbv)	7/17/2024	Tedlar Bag	$160.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Tedlars/27958

BILL TO: Mr. Chris Brooks
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills, CA 95762

Analysis Code: TO-15 (5&20)

TERMS: NET 30

Reporting Method: TO-15 (5&20 ppbv)

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SAMPLE RECEIPT SUMMARY

WORKORDER 2407403B

Client

Dr. Cindy Schreier
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills, CA 95762

Phone

916-939-7300

Fax

Sales Rep: MT

Date Promised: 07/31/24
Date Completed:
Date Received: 7/17/24
PO#:
Project#: Geo-Sim

Total $: $ 170.00
Logged By: NJ

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	AP-HP-Low A	Modified TO-3	7/17/2024	Tedlar Bag	$85.00
02A	AP-HP-High A	Modified TO-3	7/17/2024	Tedlar Bag	$85.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Tedlars/27958

BILL TO: Mr. Chris Brooks
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills, CA 95762

Analysis Code: TO-3/12

TERMS: NET 30

Reporting Method: Modified TO-3 (Sh)-TPHg only

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Analysis Request /Canister Chain of Custody

For Laboratory Use Only
PID: _____ Workorder #: 2407403

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Click links below to view:
Canister Sampling Guide
Helium Shroud Video

Client: PRIMA Env PID:
Project Name: Geo-Sim
Project Manager: Cindy Schreier P.O.#
Sampler: Cindy Schreier
Site Name:

Special Instructions/Notes:
The primary component of the samples is oxygen.

Turnaround Time (Rush surcharges may apply)
10 day

Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Canister Vacuum/Pressure		Lab Use Only		Requested Analyses			
				Date	Time	Date	Time	Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N_2 / He	TO-15	Gasoline (TO-3)		
01A	AP-HP Low A			7/17/2024	15:00							x	x		
02A	AP-HP High A			7/17/2024	15:05							x	x		

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
PRIMA	7/17/24	1658	EAT	7/17/24	1658
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: HD | Custody Seals Intact? | Yes | No | None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

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Method : TO-15 (5&20 ppbv)

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	5.0
76-14-2	Freon 114	5.0
74-87-3	Chloromethane	20
75-01-4	Vinyl Chloride	5.0
106-99-0	1,3-Butadiene	5.0
74-83-9	Bromomethane	20
75-00-3	Chloroethane	20
75-69-4	Freon 11	5.0
64-17-5	Ethanol	25
76-13-1	Freon 113	5.0
75-35-4	1,1-Dichloroethene	5.0
67-64-1	Acetone	20
67-63-0	2-Propanol	25
75-15-0	Carbon Disulfide	20
107-05-1	3-Chloropropene	20
75-09-2	Methylene Chloride	20
1634-04-4	Methyl tert-butyl ether	5.0
156-60-5	trans-1,2-Dichloroethene	5.0
110-54-3	Hexane	5.0
75-34-3	1,1-Dichloroethane	5.0
78-93-3	2-Butanone (Methyl Ethyl Ketone)	20
156-59-2	cis-1,2-Dichloroethene	5.0
109-99-9	Tetrahydrofuran	5.0
67-66-3	Chloroform	5.0
71-55-6	1,1,1-Trichloroethane	5.0
110-82-7	Cyclohexane	5.0
56-23-5	Carbon Tetrachloride	5.0
540-84-1	2,2,4-Trimethylpentane	5.0
71-43-2	Benzene	5.0
107-06-2	1,2-Dichloroethane	5.0
142-82-5	Heptane	5.0
79-01-6	Trichloroethene	5.0
78-87-5	1,2-Dichloropropane	5.0
123-91-1	1,4-Dioxane	20
75-27-4	Bromodichloromethane	5.0
10061-01-5	cis-1,3-Dichloropropene	5.0
108-10-1	4-Methyl-2-pentanone	20
108-88-3	Toluene	5.0
10061-02-6	trans-1,3-Dichloropropene	5.0
79-00-5	1,1,2-Trichloroethane	5.0

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Method : TO-15 (5&20 ppbv)

CAS Number	Compound	Rpt. Limit (ppbv)
127-18-4	Tetrachloroethene	5.0
591-78-6	2-Hexanone	20
124-48-1	Dibromochloromethane	5.0
106-93-4	1,2-Dibromoethane (EDB)	5.0
108-90-7	Chlorobenzene	5.0
100-41-4	Ethyl Benzene	5.0
108-38-3	m,p-Xylene	5.0
95-47-6	o-Xylene	5.0
100-42-5	Styrene	5.0
75-25-2	Bromoform	5.0
98-82-8	Cumene	5.0
79-34-5	1,1,2,2-Tetrachloroethane	5.0
103-65-1	Propylbenzene	5.0
622-96-8	4-Ethyltoluene	5.0
108-67-8	1,3,5-Trimethylbenzene	5.0
95-63-6	1,2,4-Trimethylbenzene	5.0
541-73-1	1,3-Dichlorobenzene	5.0
106-46-7	1,4-Dichlorobenzene	5.0
100-44-7	alpha-Chlorotoluene	5.0
95-50-1	1,2-Dichlorobenzene	5.0
120-82-1	1,2,4-Trichlorobenzene	20
87-68-3	Hexachlorobutadiene	20

CAS Number	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130

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Method : Modified TO-3 (Sh)-TPHg only

CAS Number	Compound	Rpt. Limit (ppmv)
9999-9999-208	TPH (Gasoline Range)	0.025

CAS Number	Surrogate	Method Limits
462-06-602	Fluorobenzene (FID)	75-150

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7/31/2024
Dr. Cindy Schreier
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills CA 95762

Project Name: Geo-Sim
Project #:
Workorder #: 2407403B

Dear Dr. Cindy Schreier

The following report includes the data for the above referenced project for sample(s) received on 7/17/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

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WORK ORDER #: 2407403B

Work Order Summary

CLIENT:	Dr. Cindy Schreier Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762	**BILL TO:**	Mr. Chris Brooks Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762
PHONE:	916-939-7300	**P.O. #**	
FAX:		**PROJECT #**	Geo-Sim
DATE RECEIVED:	07/17/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	07/31/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AP-HP-Low A	Modified TO-3	Tedlar Bag	Tedlar Bag
02A	AP-HP-High A	Modified TO-3	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified TO-3	NA	NA
04A	CCV	Modified TO-3	NA	NA
05A	LCS	Modified TO-3	NA	NA
05AA	LCSD	Modified TO-3	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 07/31/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

LABORATORY NARRATIVE
Modified TO-3
Prima Environmental
Workorder# 2407403B

Two 1 Liter Tedlar Bag samples were received on July 17, 2024. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with flame ionization detection. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-3***	***ATL Modifications***
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch </= 20 samples.
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation DL = A+3.3S, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.

S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: AP-HP-Low A

Lab ID#: 2407403B-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	2.5	10	1000	4300

Client Sample ID: AP-HP-High A

Lab ID#: 2407403B-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.7	6.8	410	1700

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Client Sample ID: AP-HP-Low A

Lab ID#: 2407403B-01A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071916**	**Date of Collection: 7/17/24 3:00:00 PM**	
Dil. Factor:	**100**	**Date of Analysis: 7/19/24 10:51 AM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	2.5	10	1000	4300

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	114	75-150

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Client Sample ID: AP-HP-High A

Lab ID#: 2407403B-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071917**	**Date of Collection: 7/17/24 3:05:00 PM**	
Dil. Factor:	**66.7**	**Date of Analysis: 7/19/24 11:35 AM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.7	6.8	410	1700

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	107	75-150

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Client Sample ID: Lab Blank

Lab ID#: 2407403B-03A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/18/24 06:40 PM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	78	75-150

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Client Sample ID: CCV

Lab ID#: 2407403B-04A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/18/24 05:09 PM**	

Compound	**%Recovery**
TPH (Gasoline Range)	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Fluorobenzene (FID)	85	75-150

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Client Sample ID: LCS

Lab ID#: 2407403B-05A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/18/24 05:51 PM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	116	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	104	75-150

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2407403B-05AA

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d071919**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/24 12:58 PM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	117	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	104	75-150

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Method : Modified TO-3 (Sh)-TPHg only

CAS Number	Compound	Rpt. Limit (ppmv)
9999-9999-208	TPH (Gasoline Range)	0.025

	Surrogate	Method Limits
462-06-602	Fluorobenzene (FID)	75-150

eurofins | Air Toxics

8/22/2024
Dr. Cindy Schreier
Prima Environmental
5070 Robert J Mathews Parkway
Suite 300
El Dorado Hills CA 95762

Project Name: Geo-Sim
Project #:
Workorder #: 2408205

Dear Dr. Cindy Schreier

The following report includes the data for the above referenced project for sample(s) received on 8/8/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2408205

Work Order Summary

CLIENT:	Dr. Cindy Schreier Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762	**BILL TO:**	Mr. Chris Brooks Prima Environmental 5070 Robert J Mathews Parkway Suite 300 El Dorado Hills, CA 95762
PHONE:	916-939-7300	**P.O. #**	
FAX:		**PROJECT #**	Geo-Sim
DATE RECEIVED:	08/08/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	08/22/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AP-HP Low B	Modified TO-3	Tedlar Bag	Tedlar Bag
02A	AP-HP High B	Modified TO-3	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified TO-3	NA	NA
04A	CCV	Modified TO-3	NA	NA
05A	LCS	Modified TO-3	NA	NA
05AA	LCSD	Modified TO-3	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 08/22/24

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2703122, NH NELAP–209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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LABORATORY NARRATIVE
Modified TO-3
Prima Environmental
Workorder# 2408205

Two 1 Liter Tedlar Bag samples were received on August 08, 2024. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with flame ionization detection. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-3***	***ATL Modifications***
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch </= 20 samples.
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation DL = A+3.3S, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The recovery of surrogate Fluorobenzene in sample AP-HP Low B was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.

E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: AP-HP Low B

Lab ID#: 2408205-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.0	4.1	730	3000

Client Sample ID: AP-HP High B

Lab ID#: 2408205-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.7	6.8	380	1600

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Client Sample ID: AP-HP Low B

Lab ID#: 2408205-01A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080909**	**Date of Collection: 8/8/24 4:45:00 PM**	
Dil. Factor:	**40.0**	**Date of Analysis: 8/9/24 04:07 PM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.0	4.1	730	3000

Q = Exceeds Quality Control limits, due to matrix effects. Matrix effects confirmed by re-analysis.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	154 Q	75-150

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Client Sample ID: AP-HP High B

Lab ID#: 2408205-02A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080911**	**Date of Collection: 8/8/24 4:45:00 PM**	
Dil. Factor:	**66.7**	**Date of Analysis: 8/9/24 05:38 PM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	1.7	6.8	380	1600

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	115	75-150

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Client Sample ID: Lab Blank

Lab ID#: 2408205-03A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/9/24 11:42 AM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	84	54-135

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Client Sample ID: CCV

Lab ID#: 2408205-04A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080901**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/9/24 09:29 AM**	

Compound	%Recovery
TPH (Gasoline Range)	110

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-150

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Client Sample ID: LCS

Lab ID#: 2408205-05A

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/9/24 10:29 AM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	117	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	113	75-150

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Client Sample ID: LCSD

Lab ID#: 2408205-05AA

MODIFIED EPA METHOD TO-3 GC/FID

File Name:	**d080903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/9/24 11:04 AM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	118	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	110	75-150

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Method : Modified TO-3 (Sh)-TPHg only

CAS Number	Compound	Rpt. Limit (ppmv)
9999-9999-208	TPH (Gasoline Range)	0.025

	Surrogate	Method Limits
462-06-602	Fluorobenzene (FID)	75-150

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Analytical Report

WorkOrder: 2405F87

Report Created for: Prima Environmental

5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762

Project Contact: Cindy Schreier
Project P.O.:
Project: Geosyntec-Simplot

Project Location:
Project Received: 05/22/2024

Analytical Report reviewed & approved for release on 06/04/2024 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2405F87

Project: Geosyntec-Simplot

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CCV	Continuing Calibration Verification.
CCV REC (%)	% recovery of Continuing Calibration Verification.
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LCS2	Second LCS for the batch. Spike level is lower than that for the first LCS; applicable to method 1633.
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit [1]
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit [2]
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SNR	Surrogate is diluted out of the calibration range
SPK Val	Spike Value

[1] MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016. Values are based upon our default extraction volume/amount and are subject to change.

[2] RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.) Values are based upon our default extraction volume/amount and are subject to change.

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2405F87

Project: Geosyntec-Simplot

SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TNTC	“Too Numerous to Count;” greater than 250 colonies observed on the plate.
TZA	TimeZone Net Adjustment for sample collected outside of MAI's Coordinated Universal Time (UTC). (Adjustment for Daylight Saving is not accounted.)
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

a14	Reporting limit raised due to the physical nature of the sample.

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Received:	05/22/2024 9:42	**Extraction Method:**	E218.6
Date Prepared:	05/28/2024	**Analytical Method:**	E218.6
Project:	Geosyntec-Simplot	**Unit:**	µg/L

Hexavalent chromium by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim Unt GW	2405F87-002A	Water	05/21/2024 10:50	IC2 24052808.CHW	294465

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.80	4	05/28/2024 15:04

Analyst(s): ND

Analytical Comments: a14

CA ELAP 1644

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Received:	05/22/2024 9:42	**Extraction Method:**	SW3060A
Date Prepared:	05/23/2024	**Analytical Method:**	SW7199
Project:	Geosyntec-Simplot	**Unit:**	mg/Kg

Hexavalent chromium by Alkaline Digestion and IC Analysis

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim Unt SO	2405F87-001A	Soil	05/20/2024 12:45	IC2 24052443.CHW	294353

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.20	1	05/24/2024 07:06

Analyst(s): ND

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Received:	05/22/2024 9:42	**Extraction Method:**	SW9060A
Date Prepared:	05/31/2024	**Analytical Method:**	SW9060A
Project:	Geosyntec-Simplot	**Unit:**	mg/kg

Total Organic Carbon (TOC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim Unt SO	2405F87-001A	Soil	05/20/2024 12:45	WC_CNS F060324-1_240604_	294822

Analytes	Result	RL	DF	Date Analyzed
Total Organic Carbon	**3900**	200	1	06/03/2024 18:30

Analyst(s): CBI

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Received:	05/22/2024 9:42	**Extraction Method:**	SW9060A
Date Prepared:	05/31/2024	**Analytical Method:**	SW9060A
Project:	Geosyntec-Simplot	**Unit:**	mg/kg

Total Organic Carbon (TOC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim Unt SO	2405F87-001A	Soil	05/20/2024 12:45	WC_CNS F060324-1_240604_	294822

Analytes	Result	RL	DF	Date Analyzed
Total Organic Carbon	**3900**	200	1	06/03/2024 18:30

Analyst(s): CBI

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Quality Control Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Prepared:	05/24/2024	**BatchID:**	294465
Date Analyzed:	05/24/2024	**Extraction Method:**	E218.6
Instrument:	IC2	**Analytical Method:**	E218.6
Matrix:	Water	**Unit:**	µg/L
Project:	Geosyntec-Simplot	**Sample ID:**	MB/LCS/LCSD-294465

QC Summary Report for E218.6

Analyte	MB Result	MDL	RL			
Hexavalent chromium	ND	0.062	0.20	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Hexavalent chromium	0.95	0.94	1	95	94	90-110	1.59	10

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Quality Control Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Prepared:	05/23/2024	**BatchID:**	294353
Date Analyzed:	05/24/2024	**Extraction Method:**	SW3060A
Instrument:	IC2	**Analytical Method:**	SW7199
Matrix:	Soil	**Unit:**	mg/Kg
Project:	Geosyntec-Simplot	**Sample ID:**	MB/LCS/LCSD-294353

QC Summary Report for SW7199 (Hexavalent chromium)

Analyte	MB Result	MDL	RL			
Hexavalent chromium	ND	0.092	0.20	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Hexavalent chromium	3.7	3.8	4	92	95	70-130	3.22	10

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Quality Control Report

Client:	Prima Environmental	**WorkOrder:**	2405F87
Date Prepared:	05/31/2024	**BatchID:**	294822
Date Analyzed:	06/03/2024	**Extraction Method:**	SW9060A
Instrument:	WC_CNS	**Analytical Method:**	SW9060A
Matrix:	Soil	**Unit:**	mg/kg
Project:	Geosyntec-Simplot	**Sample ID:**	MB/LCS/LCSD-294822

QC Summary Report for SW9060A

Analyte	MB Result	MDL	RL			
Total Organic Carbon	ND	130	200	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Total Organic Carbon	8100	8200	8200	98	100	80-120	1.50	20

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2405F87 **ClientCode: PEM**

☐ WaterTrax ☐ CLIP ☐ EDF ☒ EQuIS ☒ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☐ Excel

Report to:
Cindy Schreier
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762
(916) 939-7300 FAX: (916) 363-8829

Email: cschreier@primaenvironmental.com; data
cc/3rd Party:
PO:
Project: Geosyntec-Simplot

Bill to:
Accounts Payable
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 30
El Dorado Hills, CA 95762

Requested TAT: 5 days;
Date Received: **05/22/2024**
Date Logged: **05/23/2024**

					Requested Tests (See legend below)											
Lab ID	**ClientSampID**	**Matrix**	**Collection Date**	**Hold**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2405F87-001	Geosyn-Sim Unt SO	Soil	5/20/2024 12:45	☐		A	A	A								
2405F87-002	Geosyn-Sim Unt GW	Water	5/21/2024 10:50	☐	A			A	A							

Test Legend:

1	218_6_FF_W	2	7199_TTLC_LL_S	3	cnsTOC_S	4	PRDisposal Fee
5	PRFILTERING KIT	6		7		8	
9		10		11		12	

Prepared by: Gemma Gomez

The following SampID: 002A contains testgroup 218.6 Hexavalent Chromium + Filter Kit.

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: PRIMA ENVIRONMENTAL **Project:** Geosyntec-Simplot **Work Order:** 2405F87

Client Contact: Cindy Schreier **QC Level:** LEVEL 2

Contact's Email: cschreier@primaenvironmental.com; data@primaenvironmental.com; **Comments:** **Date Logged:** 5/23/2024

☐ WaterTrax ☐ CLIP ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Cont./ Comp.	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	Geosyn-Sim Unt SO	Soil	SW9060A (TOC)	1	16OZ GJ, Unpres	☐	☐	☐	5/20/2024 12:45	5 days	6/3/2024		☐	☐
			SW7199 (Hexavalent chromium, Low-Level)			☐	☐	☐		5 days	5/31/2024		☐	☐
002A	Geosyn-Sim Unt GW	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	5/21/2024 10:50	5 days	5/31/2024	None	☐	☐

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

TestGroup Definition:

† 218.6 Preserved Container with Syringe and 3 Filters

Cont./Comp. = Containers /Composites

General COC

MAI Work Order # 2405F87

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CHAIN OF CUSTODY RECORD

Turn Around Time:	1 Day Rush		2 Day Rush		3 Day Rush		STD	●	Quote #	224245													
J-Flag / MDL		ESL		Cleanup Approved		Dry Weight		Bottle Order #															
Delivery Format:	PDF		GeoTracker EDF		EDD		CLIP EDT (DW)		Detect Summary														

Report To: Cindy Schreier Bill To: Cindy Schreier

Company: Prima Environmental

Email: data@primaenvironmental.com

Alt Email: Tele: (916) 939-7300

Project Name: Geosyntec-Simplot Project #:

Project Location: PO #

Sampler Signature: M. Schreier

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Cr(VI)	E218.6 (Hexavalent chromium)	E300.1 (Inorganic Anions*)	SM5310B (DOC) Field Filtered	SW7199 (Hexavalent chromium, Low-Level)	SW8260B (1,4-Dioxane) (SIM Mode)	SW9060A (TOC)
Geosyn-Sim Unt SO	5-20-2024	12:45	1	S	none	●						●
Geosyn-Sim Unt GW	5-21-2024	10:50	1	GW			●					

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
M. Schreier PRIMA	5.21.24	1430	FedEX		
				5.22.24	09:42

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 1.5 wet °C Initials JG

FedEX: 776489943603

Page 1 of 1

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Sample Receipt Checklist

Client Name:	Prima Environmental	Date and Time Received:	5/22/2024 09:42
Project:	Geosyntec-Simplot	Date Logged:	5/23/2024
		Received by:	Gemma Gomez
WorkOrder №:	2405F87 Matrix: Soil/Water	Logged by:	Gemma Gomez
Carrier:	FedEx		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	NA	☐
Custody seals intact on sample bottles?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 1.5°C				NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes	☐	No	☐	NA	☑

Comments:

McCampbell Analytical, Inc.
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Analytical Report

WorkOrder: 2407B56

Report Created for: Prima Environmental

5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762

Project Contact: Cindy Schreier
Project P.O.:
Project: Geosyntec-Simplot

Project Location:
Project Received: 07/18/2024

Analytical Report reviewed & approved for release on 07/24/2024 by:

Christine Askari
Project Manager

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2407B56

Project: Geosyntec-Simplot

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CCV	Continuing Calibration Verification.
CCV REC (%)	% recovery of Continuing Calibration Verification.
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LCS2	Second LCS for the batch. Spike level is lower than that for the first LCS; applicable to method 1633.
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit [1]
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit [2]
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SNR	Surrogate is diluted out of the calibration range
SPK Val	Spike Value

[1] MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016. Values are based upon our default extraction volume/amount and are subject to change.

[2] RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.) Values are based upon our default extraction volume/amount and are subject to change.

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2407B56

Project: Geosyntec-Simplot

SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TNTC	“Too Numerous to Count;” greater than 250 colonies observed on the plate.
TZA	TimeZone Net Adjustment for sample collected outside of MAI's Coordinated Universal Time (UTC). (Adjustment for Daylight Saving is not accounted.)
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

a14	Reporting limit raised due to the physical nature of the sample.

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2407B56
Date Received:	07/18/2024 9:11	**Extraction Method:**	E218.6
Date Prepared:	07/23/2024-07/24/2024	**Analytical Method:**	E218.6
Project:	Geosyntec-Simplot	**Unit:**	µg/L

Hexavalent chromium by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim Unt Time 0	2407B56-001A	Water	07/10/2024 15:20	IC2 24072412.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**0.40**	0.40	2	07/24/2024 01:54

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim PC-A	2407B56-002A	Water	07/17/2024 08:50	IC2 24072413.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	0.40	2	07/24/2024 02:04

Analyst(s): ND Analytical Comments: a14

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-pH Low A	2407B56-003A	Water	07/17/2024 08:50	IC2 24072305.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**26**	10	50	07/23/2024 00:35

Analyst(s): ND

(Cont.)

CA ELAP 1644

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2407B56
Date Received:	07/18/2024 9:11	**Extraction Method:**	E218.6
Date Prepared:	07/23/2024-07/24/2024	**Analytical Method:**	E218.6
Project:	Geosyntec-Simplot	**Unit:**	µg/L

Hexavalent chromium by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-pH High A	2407B56-004A	Water	07/17/2024 08:50	IC2 24072302.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**45**	10	50	07/23/2024 00:03

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-HP low A	2407B56-005A	Water	07/17/2024 08:50	IC2 24072306.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**10**	10	50	07/23/2024 00:45

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-HP High A	2407B56-006A	Water	07/17/2024 08:50	IC2 24072307.CHW	298078

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	10	50	07/23/2024 00:56

Analyst(s): ND

Analytical Comments: a14

CA ELAP 1644

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Quality Control Report

Client:	Prima Environmental	**WorkOrder:**	2407B56
Date Prepared:	07/22/2024	**BatchID:**	298078
Date Analyzed:	07/22/2024	**Extraction Method:**	E218.6
Instrument:	IC2	**Analytical Method:**	E218.6
Matrix:	Water	**Unit:**	µg/L
Project:	Geosyntec-Simplot	**Sample ID:**	MB/LCS/LCSD-298078

QC Summary Report for E218.6

Analyte	MB Result	MDL	RL			
Hexavalent chromium	ND	0.038	0.20	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Hexavalent chromium	0.98	1.0	1	98	100	90-110	1.91	10

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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2407B56 **ClientCode: PEM**

☐ WaterTrax ☐ CLIP ☐ EDF ☒ EQuIS ☒ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☐ Excel

Report to:
Cindy Schreier
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762
(916) 939-7300 FAX: (916) 363-8829

Email: cschreier@primaenvironmental.com; data
cc/3rd Party:
PO:
Project: Geosyntec-Simplot

Bill to:
Accounts Payable
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 30
El Dorado Hills, CA 95762

Requested TAT: 5 days;
Date Received: **07/18/2024**
Date Logged: **07/19/2024**

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2407B56-001	Geosyn-Sim Unt Time 0	Water	7/10/2024 15:20	☐	A	A	A									
2407B56-002	Geosyn-Sim PC-A	Water	7/17/2024 08:50	☐	A	A	A									
2407B56-003	Geosyn-Sim AP-pH Low A	Water	7/17/2024 08:50	☐	A	A	A									
2407B56-004	Geosyn-Sim AP-pH High A	Water	7/17/2024 08:50	☐	A	A	A									
2407B56-005	Geosyn-Sim AP-HP low A	Water	7/17/2024 08:50	☐	A	A	A									
2407B56-006	Geosyn-Sim AP-HP High A	Water	7/17/2024 08:50	☐	A	A	A									

Test Legend:

1	218_6_FF_W	2	PRDisposal Fee	3	PRFILTERING KIT	4	
5		6		7		8	
9		10		11		12	

Project Manager: Christine Askari **Prepared by: Emily Perez**

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A contain testgroup 218.6 Hexavalent Chromium + Filter Kit.

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: PRIMA ENVIRONMENTAL **Project:** Geosyntec-Simplot **Work Order:** 2407B56

Client Contact: Cindy Schreier **QC Level:** LEVEL 2

Contact's Email: cschreier@primaenvironmental.com; data@primaenvironmental.com; **Comments:** **Date Logged:** 7/19/2024

☐ WaterTrax ☐ CLIP ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Cont./ Comp.	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	Geosyn-Sim Unt Time 0	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/10/2024 15:20	5 days	7/25/2024	None	☐	☐
002A	Geosyn-Sim PC-A	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/17/2024 8:50	5 days	7/25/2024	None	☐	☐
003A	Geosyn-Sim AP-pH Low A	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/17/2024 8:50	5 days	7/25/2024	None	☐	☐
004A	Geosyn-Sim AP-pH High A	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/17/2024 8:50	5 days	7/25/2024	None	☐	☐
005A	Geosyn-Sim AP-HP low A	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/17/2024 8:50	5 days	7/25/2024	Present	☐	☐
006A	Geosyn-Sim AP-HP High A	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	7/17/2024 8:50	5 days	7/25/2024	Present	☐	☐

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

TestGroup Definition:

† 218.6 Preserved Container with Syringe and 3 Filters

Cont./Comp. = Containers /Composites

MAI Work Order # 2407B56

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote # 224245
J-Flag / MDL | ESL | Cleanup Approved | Dry Weight | Bottle Order #
Delivery Format: PDF | GeoTracker EDF | EDD | CLIP EDT (DW) | Detect Summary

Report To: Cindy Schreier | Bill To: Cindy Schreier
Company: Prima Environmental
Email: data@primaenvironmental.com
Alt Email: | Tele: (916) 939-7300
Project Name: Geosyntec-Simplot | Project #:
Project Location: | PO #
Sampler Signature: M. Stickingen

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Cr(VI)	E218.6 (Hexavalent chromium)	E300.1 (Inorganic Anions*)	SM5310B (DOC) Field Filtered	SW7199 (Hexavalent chromium, Low-Level)	SW8260B (1,4-Dioxane) (SIM Mode)	SW9060A (TOC)
Geosyn-Sim Unt Time 0	7-10-24	15:20	1	GW	none		●					
Geosyn-Sim PC-A	7-17-24	08:50	1	GW	none		●					
Geosyn-Sim AP-pH Low A	7-17-24	08:50	1	GW	none		●					
Geosyn-Sim AP-pH High A	7-17-24	08:50	1	GW	none		●					
Geosyn-Sim AP-HP low A	7-17-24	08:50	1	GW	none		●					
Geosyn-Sim AP-HP High A	7-17-24	08:50	1	GW	none		●					
					Preserved NaOH/HCl							

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions: Sample has been field filtered

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
M. Stickingen PRIMA	7.17.24	1630	FedEX		
			Emily Pan	7/18/24	9:11

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 3.7 °C Initials
wet

Page 1 of 1

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Sample Receipt Checklist

Client Name: Prima Environmental
Project: Geosyntec-Simplot

WorkOrder №: 2407B56 Matrix: Water
Carrier: FedEx

Date and Time Received: 7/18/2024 09:11
Date Logged: 7/19/2024
Received by: Emily Perez
Logged by: Emily Perez

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	NA	☐
Custody seals intact on sample bottles?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 3.7°C				NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2)?	Yes	☐	No	☐	NA	☑

UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes	☐	No	☐	NA	☑

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 2408666

Report Created for: Prima Environmental

5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762

Project Contact: Cindy Schreier
Project P.O.:
Project: Geosyntec-Simplot

Project Location:
Project Received: 08/09/2024

Analytical Report reviewed & approved for release on 08/19/2024 by:

Christine Askari
Project Manager

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2408666

Project: Geosyntec-Simplot

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CCV	Continuing Calibration Verification.
CCV REC (%)	% recovery of Continuing Calibration Verification.
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LCS2	Second LCS for the batch. Spike level is lower than that for the first LCS; applicable to method 1633.
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit [1]
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit [2]
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SNR	Surrogate is diluted out of the calibration range
SPK Val	Spike Value

[1] MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016. Values are based upon our default extraction volume/amount and are subject to change.

[2] RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.) Values are based upon our default extraction volume/amount and are subject to change.

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Glossary of Terms & Qualifier Definitions

Client: Prima Environmental **WorkOrder:** 2408666

Project: Geosyntec-Simplot

SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TNTC	“Too Numerous to Count;” greater than 250 colonies observed on the plate.
TZA	TimeZone Net Adjustment for sample collected outside of MAI's Coordinated Universal Time (UTC). (Adjustment for Daylight Saving is not accounted.)
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

a1	Sample diluted due to matrix interference.

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Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2408666
Date Received:	08/09/2024 9:24	**Extraction Method:**	E218.6
Date Prepared:	08/14/2024	**Analytical Method:**	E218.6
Project:	Geosyntec-Simplot	**Unit:**	µg/L

Hexavalent chromium by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim PC-B	2408666-001A	Water	08/08/2024 11:00	IC2 24081451.CHW	299456

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	20	100	08/14/2024 21:13

Analyst(s): ND Analytical Comments: a1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-pH Low B	2408666-002A	Water	08/08/2024 11:00	IC2 24081452.CHW	299456

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**35**	20	100	08/14/2024 21:24

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-pH High B	2408666-003A	Water	08/08/2024 11:00	IC2 24081453.CHW	299456

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	**50**	20	100	08/14/2024 21:34

Analyst(s): ND

(Cont.)

CA ELAP 1644

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Prima Environmental	**WorkOrder:**	2408666
Date Received:	08/09/2024 9:24	**Extraction Method:**	E218.6
Date Prepared:	08/14/2024	**Analytical Method:**	E218.6
Project:	Geosyntec-Simplot	**Unit:**	µg/L

Hexavalent chromium by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-HP low B	2408666-004A	Water	08/08/2024 11:00	IC2 24081454.CHW	299456

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	20	100	08/14/2024 21:45

Analyst(s): ND Analytical Comments: a1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Geosyn-Sim AP-HP High B	2408666-005A	Water	08/08/2024 11:00	IC2 24081455.CHW	299456

Analytes	Result	RL	DF	Date Analyzed
Hexavalent chromium	ND	20	100	08/14/2024 21:56

Analyst(s): ND Analytical Comments: a1

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Quality Control Report

Client:	Prima Environmental	**WorkOrder:**	2408666
Date Prepared:	08/09/2024	**BatchID:**	299456
Date Analyzed:	08/09/2024	**Extraction Method:**	E218.6
Instrument:	IC2	**Analytical Method:**	E218.6
Matrix:	Water	**Unit:**	µg/L
Project:	Geosyntec-Simplot	**Sample ID:**	MB/LCS/LCSD-299456

QC Summary Report for E218.6

Analyte	MB Result	MDL	RL			
Hexavalent chromium	ND	0.038	0.20	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Hexavalent chromium	1.0	1.0	1	101	103	90-110	1.18	10

McCampbell Analytical, Inc.
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Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2408666 **ClientCode: PEM** **QuoteID: 243589**

☐ WaterTrax ☐ CLIP ☐ EDF ☒ EQuIS ☒ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☐ Excel

Report to:
Cindy Schreier
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 300
El Dorado Hills, CA 95762
(916) 939-7300 FAX: (916) 363-8829

Email: cschreier@primaenvironmental.com; data
cc/3rd Party:
PO:
Project: Geosyntec-Simplot

Bill to:
Accounts Payable
Prima Environmental
5070 Robert J. Mathews Pkwy, Suite 30
El Dorado Hills, CA 95762

Requested TAT: 5 days;
Date Received: **08/09/2024**
Date Logged: **08/09/2024**

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2408666-001	Geosyn-Sim PC-B	Water	8/8/2024 11:00	☐	A	A	A									
2408666-002	Geosyn-Sim AP-pH Low B	Water	8/8/2024 11:00	☐	A	A	A									
2408666-003	Geosyn-Sim AP-pH High B	Water	8/8/2024 11:00	☐	A	A	A									
2408666-004	Geosyn-Sim AP-HP low B	Water	8/8/2024 11:00	☐	A	A	A									
2408666-005	Geosyn-Sim AP-HP High B	Water	8/8/2024 11:00	☐	A	A	A									

Test Legend:

1	218_6_FF_W	2	PRDisposal Fee	3	PRFILTERING KIT	4	
5		6		7		8	
9		10		11		12	

Project Manager: Christine Askari **Prepared by: Emily Perez**

The following SampIDs: 001A, 002A, 003A, 004A, 005A contain testgroup 218.6 Hexavalent Chromium + Filter Kit.

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: PRIMA ENVIRONMENTAL **Project:** Geosyntec-Simplot **Work Order:** 2408666

Client Contact: Cindy Schreier **QC Level:** LEVEL 2

Contact's Email: cschreier@primaenvironmental.com; data@primaenvironmental.com; **Comments:** **Date Logged:** 8/9/2024

☐ WaterTrax ☐ CLIP ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Cont./ Comp.	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	Geosyn-Sim PC-B	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	8/8/2024 11:00	5 days	8/16/2024	None	☐	☐
002A	Geosyn-Sim AP-pH Low B	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	8/8/2024 11:00	5 days	8/16/2024	None	☐	☐
003A	Geosyn-Sim AP-pH High B	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	8/8/2024 11:00	5 days	8/16/2024	None	☐	☐
004A	Geosyn-Sim AP-HP low B	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	8/8/2024 11:00	5 days	8/16/2024	None	☐	☐
005A	Geosyn-Sim AP-HP High B	Water	E218.6 Field Filtered (Hexavalent chromium) †	1	125mL HDPE w/ NH42SO4+NH4OH	☐	☐	☐	8/8/2024 11:00	5 days	8/16/2024	None	☐	☐

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

TestGroup Definition:

† 218.6 Preserved Container with Syringe and 3 Filters

Cont./Comp. = Containers /Composites

General COC

MAI Work Order # 24086666

8

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CHAIN OF CUSTODY RECORD

Turn Around Time:	1 Day Rush		2 Day Rush		3 Day Rush		STD	●	Quote #	224245															
J-Flag / MDL		ESL		Cleanup Approved			Dry Weight		Bottle Order #																
Delivery Format:	PDF		GeoTracker EDF		EDD		CLIP EDT (DW)		Detect Summary																

Report To: Cindy Schreier Bill To: Cindy Schreier

Company: Prima Environmental

Email: data@primaenvironmental.com

Alt Email: Tele: (916) 939-7300

Project Name: Geosyntec-Simplot Project #:

Project Location: PO #

Sampler Signature: M. Stidriger

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Analysis Requested: E218.6 (Hexavalent chromium)	E300.1 (Inorganic Anions*)	SM5310B (DOC) Field Filtered	SW7199 (Hexavalent chromium, Low-Level)	SW8260B (1,4-Dioxane) (SIM Mode)	SW9060A (TOC)													
Geosyn-Sim PC-B	8-08-24	11:00	1	GW		●																		
Geosyn-Sim AP-pH Low B	8-08-24	11:00	1	GW		●																		
Geosyn-Sim AP-pH High B	8-08-24	11:00	1	GW		●																		
Geosyn-Sim AP-HP low B	8-08-24	11:00	1	GW		●																		
Geosyn-Sim AP-HP High B	8-08-24	11:00	1	GW		●																		

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Sample has been field filtered

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
M. Stidriger PRIMA	8.8.24	1630	FedEx.		
			Emily P	8/9/24	09:24

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 1.7 °C Initials

wet

IR45

FedEx: 777873717149

Page 1 of 1

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Sample Receipt Checklist

Client Name: Prima Environmental
Project: Geosyntec-Simplot

WorkOrder №: 2408666 Matrix: Water
Carrier: FedEx

Date and Time Received: 8/9/2024 09:24
Date Logged: 8/9/2024
Received by: Emily Perez
Logged by: Emily Perez

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☑	No	☐	NA	☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA	☑
Custody seals intact on sample bottles?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 1.7°C				NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2)?	Yes	☐	No	☐	NA	☑

UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes	☐	No	☐	NA	☑

Comments:

ANALYTICAL REPORT

June 07, 2024

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

PRIMA Environmental, Inc

Sample Delivery Group:	L1739194
Samples Received:	05/22/2024
Project Number:	GEOSYNTEC-SIMPLOT
Description:	Geosyntec-Simplot

Report To: Cindy Schreier
5070 Robert J. Mathews Parkway
Ste. 300
El Dorado Hills, CA 95762

Entire Report Reviewed By:

Shane Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

GEOSYN-SIM UNT GW L1739194-01 GW

Collected by: Mariah F
Collected date/time: 05/21/24 09:11
Received date/time: 05/22/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2292014	1	05/26/24 11:47	05/26/24 11:47	BJM	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2292165	1	05/24/24 10:49	05/24/24 14:54	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2293775	1	05/27/24 04:29	05/27/24 04:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2294360	1	05/28/24 15:43	05/28/24 15:43	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2296326	1	05/31/24 16:43	06/01/24 23:50	DMG	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2291597	1	05/25/24 07:36	05/28/24 09:37	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2293571	1	05/28/24 07:36	05/28/24 18:00	JCH	Mt. Juliet, TN

GEOSYN-SIM UNT SO L1739194-02 Solid

Collected by: Mariah F
Collected date/time: 05/20/24 12:45
Received date/time: 05/22/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2292486	1	05/24/24 07:52	05/24/24 07:59	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2295278	.1	05/30/24 07:51	05/30/24 15:09	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2293084	1	05/24/24 10:35	05/25/24 05:25	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2293082	1	05/24/24 10:35	05/25/24 20:27	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2292509	1	05/24/24 07:27	05/24/24 21:05	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2292381	1.93	05/25/24 08:46	05/27/24 16:39	RDH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2294818	1	05/29/24 15:31	05/30/24 03:08	AGW	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Shane Gambill
Project Manager

Sample Delivery Group (SDG) Narrative

pH outside of method requirement.

Lab Sample ID	Project Sample ID	Method
L1739194-01	GEOSYN-SIM UNT GW	3511/8015

Wet Chemistry by Method 2320 B-2011

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	Alkalinity	762000		8450	20000	1	05/26/2024 11:47	WG2292014

Metals (ICP) by Method 6010B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	Arsenic	20.8		4.40	10.0	1	05/24/2024 14:54	WG2292165
GEOSYN-SIM UNT GW	L1739194-01	Barium	169		0.736	5.00	1	05/24/2024 14:54	WG2292165

Metals (ICP) by Method 6010B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT SO	L1739194-02	Arsenic	5.29		0.0682	0.263	.1	05/30/2024 15:09	WG2295278
GEOSYN-SIM UNT SO	L1739194-02	Barium	96.7		0.0112	0.0658	.1	05/30/2024 15:09	WG2295278
GEOSYN-SIM UNT SO	L1739194-02	Cadmium	0.0352	J	0.00620	0.0658	.1	05/30/2024 15:09	WG2295278
GEOSYN-SIM UNT SO	L1739194-02	Chromium	8.88		0.0175	0.132	.1	05/30/2024 15:09	WG2295278
GEOSYN-SIM UNT SO	L1739194-02	Selenium	0.500		0.101	0.263	.1	05/30/2024 15:09	WG2295278

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	TPHG C5 - C12	2530		30.4	100	1	05/27/2024 04:29	WG2293775

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT SO	L1739194-02	TPHG C5 - C12	11.7		0.0437	0.132	1	05/25/2024 05:25	WG2293084

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	Benzene	56.6		0.0941	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	n-Butylbenzene	9.29		0.157	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	sec-Butylbenzene	3.40		0.125	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	1,2-Dichloroethane	23.1		0.0819	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	Ethylbenzene	13.8		0.137	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	n-Hexane	60.2		0.749	5.00	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	Isopropylbenzene	10.9		0.105	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	p-Isopropyltoluene	2.09		0.120	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	Naphthalene	52.3		0.174	2.50	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	n-Propylbenzene	20.7		0.0993	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	Toluene	0.391	J	0.278	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	1,2,4-Trimethylbenzene	81.6		0.322	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	1,2,3-Trimethylbenzene	8.16		0.104	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	1,3,5-Trimethylbenzene	44.7		0.104	0.500	1	05/28/2024 15:43	WG2294360
GEOSYN-SIM UNT GW	L1739194-01	Xylenes, Total	9.56		0.174	1.50	1	05/28/2024 15:43	WG2294360

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT SO	L1739194-02	Benzene	0.00457		0.000763	0.00163	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	sec-Butylbenzene	0.0170	J	0.00470	0.0204	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	Chlorobenzene	0.00209	J	0.000343	0.00408	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	Isopropylbenzene	0.0158		0.000694	0.00408	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	p-Isopropyltoluene	0.0118		0.00416	0.00817	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	Naphthalene	0.130		0.00797	0.0204	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	n-Propylbenzene	0.0333		0.00155	0.00817	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	Toluene	0.0111		0.00212	0.00817	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	1,2,4-Trimethylbenzene	0.00609	J	0.00258	0.00817	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	1,2,3-Trimethylbenzene	0.00503	J	0.00258	0.00817	1	05/25/2024 20:27	WG2293082
GEOSYN-SIM UNT SO	L1739194-02	1,3,5-Trimethylbenzene	0.00555	J	0.00327	0.00817	1	05/25/2024 20:27	WG2293082

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	C12-C22 Hydrocarbons	1880		33.0	100	1	06/01/2024 23:50	WG2296326
GEOSYN-SIM UNT GW	L1739194-01	C22-C32 Hydrocarbons	871		33.0	100	1	06/01/2024 23:50	WG2296326
GEOSYN-SIM UNT GW	L1739194-01	C32-C40 Hydrocarbons	154		33.0	100	1	06/01/2024 23:50	WG2296326

Semi-Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT SO	L1739194-02	C12-C22 Hydrocarbons	3.61	J	0.965	5.26	1	05/24/2024 21:05	WG2292509
GEOSYN-SIM UNT SO	L1739194-02	C22-C32 Hydrocarbons	8.87		1.75	5.26	1	05/24/2024 21:05	WG2292509
GEOSYN-SIM UNT SO	L1739194-02	C32-C40 Hydrocarbons	11.3		1.75	5.26	1	05/24/2024 21:05	WG2292509

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT GW	L1739194-01	Acenaphthene	0.0611		0.0190	0.0500	1	05/28/2024 18:00	WG2293571
GEOSYN-SIM UNT GW	L1739194-01	Fluorene	0.0215	J	0.0169	0.0500	1	05/28/2024 18:00	WG2293571
GEOSYN-SIM UNT GW	L1739194-01	Naphthalene	1.83		0.0917	0.250	1	05/28/2024 18:00	WG2293571
GEOSYN-SIM UNT GW	L1739194-01	Phenanthrene	0.0545		0.0180	0.0500	1	05/28/2024 18:00	WG2293571
GEOSYN-SIM UNT GW	L1739194-01	1-Methylnaphthalene	28.6		0.0687	0.250	1	05/28/2024 18:00	WG2293571

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM UNT SO	L1739194-02	Naphthalene	0.0400		0.00537	0.0263	1	05/30/2024 03:08	WG2294818
GEOSYN-SIM UNT SO	L1739194-02	1-Methylnaphthalene	0.0492		0.00591	0.0263	1	05/30/2024 03:08	WG2294818
GEOSYN-SIM UNT SO	L1739194-02	2-Methylnaphthalene	0.00675	J	0.00562	0.0263	1	05/30/2024 03:08	WG2294818

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	762000		8450	20000	1	05/26/2024 11:47	WG2292014

Sample Narrative:

L1739194-01 WG2292014: Endpoint pH 4.5 Headspace

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic	20.8		4.40	10.0	1	05/24/2024 14:54	WG2292165
Barium	169		0.736	5.00	1	05/24/2024 14:54	WG2292165
Cadmium	U		0.479	2.00	1	05/24/2024 14:54	WG2292165
Chromium	U		1.40	10.0	1	05/24/2024 14:54	WG2292165
Selenium	U		7.35	10.0	1	05/24/2024 14:54	WG2292165

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHG C5 - C12	2530		30.4	100	1	05/27/2024 04:29	WG2293775
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*05/27/2024 04:29*	WG2293775

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	05/28/2024 15:43	WG2294360
Acrylonitrile	U		0.671	5.00	1	05/28/2024 15:43	WG2294360
Benzene	56.6		0.0941	0.500	1	05/28/2024 15:43	WG2294360
Bromobenzene	U		0.118	0.500	1	05/28/2024 15:43	WG2294360
Bromodichloromethane	U		0.136	0.500	1	05/28/2024 15:43	WG2294360
Bromochloromethane	U		0.128	0.500	1	05/28/2024 15:43	WG2294360
Bromoform	U		0.129	0.500	1	05/28/2024 15:43	WG2294360
Bromomethane	U		0.605	2.50	1	05/28/2024 15:43	WG2294360
n-Butylbenzene	9.29		0.157	0.500	1	05/28/2024 15:43	WG2294360
sec-Butylbenzene	3.40		0.125	0.500	1	05/28/2024 15:43	WG2294360
tert-Butylbenzene	U		0.127	0.500	1	05/28/2024 15:43	WG2294360
Carbon disulfide	U		0.0962	0.500	1	05/28/2024 15:43	WG2294360
Carbon tetrachloride	U		0.128	0.500	1	05/28/2024 15:43	WG2294360
Chlorobenzene	U		0.117	0.500	1	05/28/2024 15:43	WG2294360
Chlorodibromomethane	U		0.140	0.500	1	05/28/2024 15:43	WG2294360
Chloroethane	U		0.192	2.50	1	05/28/2024 15:43	WG2294360
2-Chloroethyl vinyl ether	U		0.575	50.0	1	05/28/2024 15:43	WG2294360
Chloroform	U		0.111	0.500	1	05/28/2024 15:43	WG2294360
Chloromethane	U		0.960	1.25	1	05/28/2024 15:43	WG2294360
2-Chlorotoluene	U		0.106	0.500	1	05/28/2024 15:43	WG2294360
4-Chlorotoluene	U		0.114	0.500	1	05/28/2024 15:43	WG2294360
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/28/2024 15:43	WG2294360
1,2-Dibromoethane	U		0.126	0.500	1	05/28/2024 15:43	WG2294360
Dibromomethane	U		0.122	0.500	1	05/28/2024 15:43	WG2294360
1,2-Dichlorobenzene	U		0.107	0.500	1	05/28/2024 15:43	WG2294360
1,3-Dichlorobenzene	U		0.299	0.500	1	05/28/2024 15:43	WG2294360
1,4-Dichlorobenzene	U		0.120	0.500	1	05/28/2024 15:43	WG2294360
Dichlorodifluoromethane	U		0.374	2.50	1	05/28/2024 15:43	WG2294360
1,1-Dichloroethane	U		0.100	0.500	1	05/28/2024 15:43	WG2294360
1,2-Dichloroethane	23.1		0.0819	0.500	1	05/28/2024 15:43	WG2294360
1,1-Dichloroethene	U		0.188	0.500	1	05/28/2024 15:43	WG2294360

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/28/2024 15:43	WG2294360
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/28/2024 15:43	WG2294360
1,2-Dichloropropane	U		0.149	0.500	1	05/28/2024 15:43	WG2294360
1,1-Dichloropropene	U		0.142	0.500	1	05/28/2024 15:43	WG2294360
1,3-Dichloropropane	U		0.109	1.00	1	05/28/2024 15:43	WG2294360
cis-1,3-Dichloropropene	U	J4	0.111	0.500	1	05/28/2024 15:43	WG2294360
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/28/2024 15:43	WG2294360
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/28/2024 15:43	WG2294360
2,2-Dichloropropane	U		0.161	0.500	1	05/28/2024 15:43	WG2294360
Di-isopropyl ether	U		0.105	0.500	1	05/28/2024 15:43	WG2294360
Ethylbenzene	13.8		0.137	0.500	1	05/28/2024 15:43	WG2294360
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/28/2024 15:43	WG2294360
2-Hexanone	U		0.787	5.00	1	05/28/2024 15:43	WG2294360
n-Hexane	60.2		0.749	5.00	1	05/28/2024 15:43	WG2294360
Iodomethane	U		0.554	5.00	1	05/28/2024 15:43	WG2294360
Isopropylbenzene	10.9		0.105	0.500	1	05/28/2024 15:43	WG2294360
p-Isopropyltoluene	2.09		0.120	0.500	1	05/28/2024 15:43	WG2294360
2-Butanone (MEK)	U		1.19	5.00	1	05/28/2024 15:43	WG2294360
Methylene Chloride	U		0.430	2.50	1	05/28/2024 15:43	WG2294360
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/28/2024 15:43	WG2294360
Methyl tert-butyl ether	U		0.101	0.500	1	05/28/2024 15:43	WG2294360
Naphthalene	52.3		0.174	2.50	1	05/28/2024 15:43	WG2294360
n-Propylbenzene	20.7		0.0993	0.500	1	05/28/2024 15:43	WG2294360
Styrene	U		0.118	0.500	1	05/28/2024 15:43	WG2294360
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/28/2024 15:43	WG2294360
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/28/2024 15:43	WG2294360
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/28/2024 15:43	WG2294360
Tetrachloroethene	U		0.300	0.500	1	05/28/2024 15:43	WG2294360
Toluene	0.391	J	0.278	0.500	1	05/28/2024 15:43	WG2294360
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/28/2024 15:43	WG2294360
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/28/2024 15:43	WG2294360
1,1,1-Trichloroethane	U		0.149	0.500	1	05/28/2024 15:43	WG2294360
1,1,2-Trichloroethane	U		0.158	0.500	1	05/28/2024 15:43	WG2294360
Trichloroethene	U		0.190	0.500	1	05/28/2024 15:43	WG2294360
Trichlorofluoromethane	U		0.160	2.50	1	05/28/2024 15:43	WG2294360
1,2,3-Trichloropropane	U		0.237	2.50	1	05/28/2024 15:43	WG2294360
1,2,4-Trimethylbenzene	81.6		0.322	0.500	1	05/28/2024 15:43	WG2294360
1,2,3-Trimethylbenzene	8.16		0.104	0.500	1	05/28/2024 15:43	WG2294360
1,3,5-Trimethylbenzene	44.7		0.104	0.500	1	05/28/2024 15:43	WG2294360
Vinyl acetate	U		0.692	5.00	1	05/28/2024 15:43	WG2294360
Vinyl chloride	U		0.234	0.500	1	05/28/2024 15:43	WG2294360
Xylenes, Total	9.56		0.174	1.50	1	05/28/2024 15:43	WG2294360
(S) Toluene-d8	*109*			*80.0-120*		*05/28/2024 15:43*	WG2294360
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*		*05/28/2024 15:43*	WG2294360
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/28/2024 15:43*	WG2294360

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	1880		33.0	100	1	06/01/2024 23:50	WG2296326
C22-C32 Hydrocarbons	871		33.0	100	1	06/01/2024 23:50	WG2296326
C32-C40 Hydrocarbons	154		33.0	100	1	06/01/2024 23:50	WG2296326
(S) o-Terphenyl	*67.9*			*52.0-156*		*06/01/2024 23:50*	WG2296326

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	U		0.547	2.00	1	05/28/2024 09:37	WG2291597
Dalapon	U		0.344	2.00	1	05/28/2024 09:37	WG2291597
2,4-DB	U		0.302	2.00	1	05/28/2024 09:37	WG2291597
Dicamba	U		0.245	2.00	1	05/28/2024 09:37	WG2291597
Dichloroprop	U		1.04	2.00	1	05/28/2024 09:37	WG2291597
Dinoseb	U		0.250	2.00	1	05/28/2024 09:37	WG2291597
MCPA	U		13.1	100	1	05/28/2024 09:37	WG2291597
MCPP	U		66.0	100	1	05/28/2024 09:37	WG2291597
2,4,5-T	U		0.258	2.00	1	05/28/2024 09:37	WG2291597
2,4,5-TP (Silvex)	U		0.335	2.00	1	05/28/2024 09:37	WG2291597
Pentachlorophenol	U		0.111	1.00	1	05/28/2024 09:37	WG2291597
(S) 2,4-Dichlorophenyl Acetic Acid	*98.2*			*14.0-158*		*05/28/2024 09:37*	WG2291597

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	05/28/2024 18:00	WG2293571
Acenaphthene	0.0611		0.0190	0.0500	1	05/28/2024 18:00	WG2293571
Acenaphthylene	U		0.0171	0.0500	1	05/28/2024 18:00	WG2293571
Benzo(a)anthracene	U		0.0203	0.0500	1	05/28/2024 18:00	WG2293571
Benzo(a)pyrene	U		0.0184	0.0500	1	05/28/2024 18:00	WG2293571
Benzo(b)fluoranthene	U		0.0168	0.0500	1	05/28/2024 18:00	WG2293571
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	05/28/2024 18:00	WG2293571
Benzo(k)fluoranthene	U		0.0202	0.0500	1	05/28/2024 18:00	WG2293571
Chrysene	U		0.0179	0.0500	1	05/28/2024 18:00	WG2293571
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	05/28/2024 18:00	WG2293571
Fluoranthene	U		0.0270	0.100	1	05/28/2024 18:00	WG2293571
Fluorene	0.0215	J	0.0169	0.0500	1	05/28/2024 18:00	WG2293571
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	05/28/2024 18:00	WG2293571
Naphthalene	1.83		0.0917	0.250	1	05/28/2024 18:00	WG2293571
Phenanthrene	0.0545		0.0180	0.0500	1	05/28/2024 18:00	WG2293571
Pyrene	U		0.0169	0.0500	1	05/28/2024 18:00	WG2293571
1-Methylnaphthalene	28.6		0.0687	0.250	1	05/28/2024 18:00	WG2293571
2-Methylnaphthalene	U		0.0674	0.250	1	05/28/2024 18:00	WG2293571
2-Chloronaphthalene	U		0.0682	0.250	1	05/28/2024 18:00	WG2293571
(S) Nitrobenzene-d5	*115*			*31.0-160*		*05/28/2024 18:00*	WG2293571
(S) 2-Fluorobiphenyl	*105*			*48.0-148*		*05/28/2024 18:00*	WG2293571
(S) p-Terphenyl-d14	*104*			*37.0-146*		*05/28/2024 18:00*	WG2293571

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.0		1	05/24/2024 07:59	WG2292486

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	5.29		0.0682	0.263	.1	05/30/2024 15:09	WG2295278
Barium	96.7		0.0112	0.0658	.1	05/30/2024 15:09	WG2295278
Cadmium	0.0352	J	0.00620	0.0658	.1	05/30/2024 15:09	WG2295278
Chromium	8.88		0.0175	0.132	.1	05/30/2024 15:09	WG2295278
Selenium	0.500		0.101	0.263	.1	05/30/2024 15:09	WG2295278

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	11.7		0.0437	0.132	1	05/25/2024 05:25	WG2293084
(S) a,a,a-Trifluorotoluene(FID)	*115*			*77.0-120*		*05/25/2024 05:25*	WG2293084

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J4	0.0596	0.0817	1	05/25/2024 20:27	WG2293082
Acrylonitrile	U		0.00590	0.0204	1	05/25/2024 20:27	WG2293082
Benzene	0.00457		0.000763	0.00163	1	05/25/2024 20:27	WG2293082
Bromobenzene	U		0.00147	0.0204	1	05/25/2024 20:27	WG2293082
Bromodichloromethane	U		0.00118	0.00408	1	05/25/2024 20:27	WG2293082
Bromoform	U		0.00191	0.0408	1	05/25/2024 20:27	WG2293082
Bromomethane	U		0.00322	0.0204	1	05/25/2024 20:27	WG2293082
n-Butylbenzene	U		0.00857	0.0204	1	05/25/2024 20:27	WG2293082
sec-Butylbenzene	0.0170	J	0.00470	0.0204	1	05/25/2024 20:27	WG2293082
tert-Butylbenzene	U		0.00318	0.00817	1	05/25/2024 20:27	WG2293082
Carbon tetrachloride	U		0.00147	0.00817	1	05/25/2024 20:27	WG2293082
Chlorobenzene	0.00209	J	0.000343	0.00408	1	05/25/2024 20:27	WG2293082
Chlorodibromomethane	U		0.00100	0.00408	1	05/25/2024 20:27	WG2293082
Chloroethane	U		0.00278	0.00817	1	05/25/2024 20:27	WG2293082
Chloroform	U		0.00168	0.00408	1	05/25/2024 20:27	WG2293082
Chloromethane	U		0.00710	0.0204	1	05/25/2024 20:27	WG2293082
2-Chlorotoluene	U		0.00141	0.00408	1	05/25/2024 20:27	WG2293082
4-Chlorotoluene	U		0.000735	0.00817	1	05/25/2024 20:27	WG2293082
1,2-Dibromo-3-Chloropropane	U		0.00637	0.0408	1	05/25/2024 20:27	WG2293082
1,2-Dibromoethane	U		0.00106	0.00408	1	05/25/2024 20:27	WG2293082
Dibromomethane	U		0.00122	0.00817	1	05/25/2024 20:27	WG2293082
1,2-Dichlorobenzene	U		0.000694	0.00817	1	05/25/2024 20:27	WG2293082
1,3-Dichlorobenzene	U		0.000980	0.00817	1	05/25/2024 20:27	WG2293082
1,4-Dichlorobenzene	U		0.00114	0.00817	1	05/25/2024 20:27	WG2293082
Dichlorodifluoromethane	U		0.00263	0.00817	1	05/25/2024 20:27	WG2293082
1,1-Dichloroethane	U		0.000802	0.00408	1	05/25/2024 20:27	WG2293082
1,2-Dichloroethane	U		0.00106	0.00408	1	05/25/2024 20:27	WG2293082
1,1-Dichloroethene	U		0.000990	0.00408	1	05/25/2024 20:27	WG2293082
cis-1,2-Dichloroethene	U		0.00120	0.00408	1	05/25/2024 20:27	WG2293082
trans-1,2-Dichloroethene	U		0.00170	0.00817	1	05/25/2024 20:27	WG2293082
1,2-Dichloropropane	U	J4	0.00232	0.00817	1	05/25/2024 20:27	WG2293082
1,1-Dichloropropene	U		0.00132	0.00408	1	05/25/2024 20:27	WG2293082
1,3-Dichloropropane	U		0.000818	0.00817	1	05/25/2024 20:27	WG2293082
cis-1,3-Dichloropropene	U		0.00124	0.00408	1	05/25/2024 20:27	WG2293082

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
trans-1,3-Dichloropropene	U		0.00186	0.00817	1	05/25/2024 20:27	WG2293082
2,2-Dichloropropane	U		0.00225	0.00408	1	05/25/2024 20:27	WG2293082
Di-isopropyl ether	U		0.000670	0.00163	1	05/25/2024 20:27	WG2293082
Ethylbenzene	U		0.00120	0.00408	1	05/25/2024 20:27	WG2293082
Hexachloro-1,3-butadiene	U		0.00980	0.0408	1	05/25/2024 20:27	WG2293082
Isopropylbenzene	0.0158		0.000694	0.00408	1	05/25/2024 20:27	WG2293082
p-Isopropyltoluene	0.0118		0.00416	0.00817	1	05/25/2024 20:27	WG2293082
2-Butanone (MEK)	U	J4	0.104	0.163	1	05/25/2024 20:27	WG2293082
Methylene Chloride	U		0.0108	0.0408	1	05/25/2024 20:27	WG2293082
4-Methyl-2-pentanone (MIBK)	U		0.00372	0.0408	1	05/25/2024 20:27	WG2293082
Methyl tert-butyl ether	U		0.000572	0.00163	1	05/25/2024 20:27	WG2293082
Naphthalene	0.130		0.00797	0.0204	1	05/25/2024 20:27	WG2293082
n-Propylbenzene	0.0333		0.00155	0.00817	1	05/25/2024 20:27	WG2293082
Styrene	U		0.000374	0.0204	1	05/25/2024 20:27	WG2293082
1,1,1,2-Tetrachloroethane	U		0.00155	0.00408	1	05/25/2024 20:27	WG2293082
1,1,2,2-Tetrachloroethane	U		0.00114	0.00408	1	05/25/2024 20:27	WG2293082
1,1,2-Trichlorotrifluoroethane	U		0.00123	0.00408	1	05/25/2024 20:27	WG2293082
Tetrachloroethene	U		0.00146	0.00408	1	05/25/2024 20:27	WG2293082
Toluene	0.0111		0.00212	0.00817	1	05/25/2024 20:27	WG2293082
1,2,3-Trichlorobenzene	U		0.0120	0.0204	1	05/25/2024 20:27	WG2293082
1,2,4-Trichlorobenzene	U		0.00719	0.0204	1	05/25/2024 20:27	WG2293082
1,1,1-Trichloroethane	U		0.00151	0.00408	1	05/25/2024 20:27	WG2293082
1,1,2-Trichloroethane	U		0.000975	0.00408	1	05/25/2024 20:27	WG2293082
Trichloroethene	U		0.000954	0.00163	1	05/25/2024 20:27	WG2293082
Trichlorofluoromethane	U	J4	0.00135	0.00408	1	05/25/2024 20:27	WG2293082
1,2,3-Trichloropropane	U		0.00265	0.0204	1	05/25/2024 20:27	WG2293082
1,2,4-Trimethylbenzene	0.00609	J	0.00258	0.00817	1	05/25/2024 20:27	WG2293082
1,2,3-Trimethylbenzene	0.00503	J	0.00258	0.00817	1	05/25/2024 20:27	WG2293082
1,3,5-Trimethylbenzene	0.00555	J	0.00327	0.00817	1	05/25/2024 20:27	WG2293082
Vinyl chloride	U		0.00189	0.00408	1	05/25/2024 20:27	WG2293082
Xylenes, Total	U		0.00144	0.0106	1	05/25/2024 20:27	WG2293082
(S) Toluene-d8	*96.6*			*75.0-131*		*05/25/2024 20:27*	WG2293082
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*05/25/2024 20:27*	WG2293082
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*05/25/2024 20:27*	WG2293082

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	3.61	J	0.965	5.26	1	05/24/2024 21:05	WG2292509
C22-C32 Hydrocarbons	8.87		1.75	5.26	1	05/24/2024 21:05	WG2292509
C32-C40 Hydrocarbons	11.3		1.75	5.26	1	05/24/2024 21:05	WG2292509
(S) o-Terphenyl	*56.2*			*18.0-148*		*05/24/2024 21:05*	WG2292509

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.0178	0.178	1.93	05/27/2024 16:39	WG2292381
Dalapon	U		0.0287	0.178	1.93	05/27/2024 16:39	WG2292381
2,4-DB	U		0.0754	0.178	1.93	05/27/2024 16:39	WG2292381
Dicamba	U		0.0399	0.178	1.93	05/27/2024 16:39	WG2292381
Dichloroprop	U		0.0622	0.178	1.93	05/27/2024 16:39	WG2292381
Dinoseb	U		0.0178	0.178	1.93	05/27/2024 16:39	WG2292381
MCPA	U		1.13	16.5	1.93	05/27/2024 16:39	WG2292381
MCPP	U		0.932	16.5	1.93	05/27/2024 16:39	WG2292381
2,4,5-T	U		0.0216	0.178	1.93	05/27/2024 16:39	WG2292381

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0272	0.178	1.93	05/27/2024 16:39	WG2292381
(S) 2,4-Dichlorophenyl Acetic Acid	*71.1*			*22.0-132*		*05/27/2024 16:39*	WG2292381

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00303	0.00790	1	05/30/2024 03:08	WG2294818
Acenaphthene	U		0.00275	0.00790	1	05/30/2024 03:08	WG2294818
Acenaphthylene	U		0.00284	0.00790	1	05/30/2024 03:08	WG2294818
Benzo(a)anthracene	U		0.00228	0.00790	1	05/30/2024 03:08	WG2294818
Benzo(a)pyrene	U		0.00236	0.00790	1	05/30/2024 03:08	WG2294818
Benzo(b)fluoranthene	U		0.00201	0.00790	1	05/30/2024 03:08	WG2294818
Benzo(g,h,i)perylene	U		0.00233	0.00790	1	05/30/2024 03:08	WG2294818
Benzo(k)fluoranthene	U		0.00283	0.00790	1	05/30/2024 03:08	WG2294818
Chrysene	U		0.00305	0.00790	1	05/30/2024 03:08	WG2294818
Dibenz(a,h)anthracene	U		0.00226	0.00790	1	05/30/2024 03:08	WG2294818
Fluoranthene	U		0.00299	0.00790	1	05/30/2024 03:08	WG2294818
Fluorene	U		0.00270	0.00790	1	05/30/2024 03:08	WG2294818
Indeno(1,2,3-cd)pyrene	U		0.00238	0.00790	1	05/30/2024 03:08	WG2294818
Naphthalene	0.0400		0.00537	0.0263	1	05/30/2024 03:08	WG2294818
Phenanthrene	U		0.00304	0.00790	1	05/30/2024 03:08	WG2294818
Pyrene	U		0.00263	0.00790	1	05/30/2024 03:08	WG2294818
1-Methylnaphthalene	0.0492		0.00591	0.0263	1	05/30/2024 03:08	WG2294818
2-Methylnaphthalene	0.00675	J	0.00562	0.0263	1	05/30/2024 03:08	WG2294818
2-Chloronaphthalene	U		0.00613	0.0263	1	05/30/2024 03:08	WG2294818
(S) p-Terphenyl-d14	*30.9*			*23.0-120*		*05/30/2024 03:08*	WG2294818
(S) Nitrobenzene-d5	*46.8*			*14.0-149*		*05/30/2024 03:08*	WG2294818
(S) 2-Fluorobiphenyl	*33.7*	J2		*34.0-125*		*05/30/2024 03:08*	WG2294818

QUALITY CONTROL SUMMARY

L1739194-02

Method Blank (MB)

(MB) R4073976-1 05/24/24 07:59

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1739265-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1739265-02 05/24/24 07:59 • (DUP) R4073976-3 05/24/24 07:59

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	90.1	90.2	1	0.116		10

Laboratory Control Sample (LCS)

(LCS) R4073976-2 05/24/24 07:59

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4074133-2 05/26/24 10:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1739119-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1739119-01 05/26/24 10:24 • (DUP) R4074133-3 05/26/24 10:29

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	117000	117000	1	0.502		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1739125-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1739125-02 05/26/24 12:06 • (DUP) R4074133-4 05/26/24 12:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	18800	19000	1	1.20	J	20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4074133-1 05/26/24 10:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	97700	97.7	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R4073808-1 05/24/24 14:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		4.40	10.0
Barium	1.23	J	0.736	5.00
Cadmium	U		0.479	2.00
Chromium	U		1.40	10.0
Selenium	U		7.35	10.0

Laboratory Control Sample (LCS)

(LCS) R4073808-2 05/24/24 14:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	1000	990	99.0	80.0-120	
Barium	1000	1050	105	80.0-120	
Cadmium	1000	975	97.5	80.0-120	
Chromium	1000	1030	103	80.0-120	
Selenium	1000	939	93.9	80.0-120	

L1736060-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1736060-07 05/24/24 14:32 • (MS) R4073808-4 05/24/24 14:35 • (MSD) R4073808-5 05/24/24 14:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	6.18	972	1010	96.5	100	1	75.0-125			3.49	20
Barium	1000	61.8	1080	1120	102	105	1	75.0-125			3.06	20
Cadmium	1000	U	944	966	94.4	96.6	1	75.0-125			2.38	20
Chromium	1000	9.85	1010	1040	99.7	103	1	75.0-125			3.40	20
Selenium	1000	14.0	939	984	92.5	97.0	1	75.0-125			4.66	20

Method Blank (MB)

(MB) R4075445-7 05/30/24 14:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.518	2.00
Barium	0.116	J	0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Selenium	U		0.764	2.00

Laboratory Control Sample (LCS)

(LCS) R4075445-8 05/30/24 14:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	88.3	88.3	80.0-120	
Barium	100	92.4	92.4	80.0-120	
Cadmium	100	89.5	89.5	80.0-120	
Chromium	100	92.8	92.8	80.0-120	
Selenium	100	84.1	84.1	80.0-120	

L1740887-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1740887-02 05/30/24 14:59 • (MS) R4075445-9 05/30/24 15:01 • (MSD) R4075445-10 05/30/24 15:02

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	104	3.90	81.0	87.2	74.5	80.5	1	75.0-125	J6		7.37	20
Barium	104	93.2	148	161	53.3	65.9	1	75.0-125	J6	J6	8.45	20
Cadmium	104	0.172	79.7	86.7	76.8	83.6	1	75.0-125			8.39	20
Chromium	104	27.1	101	109	71.3	79.3	1	75.0-125	J6		7.88	20
Selenium	104	U	75.0	78.3	72.5	75.6	1	75.0-125	J6		4.27	20

Method Blank (MB)

(MB) R4074737-3 05/25/24 02:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	U		0.0332	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.2*			*77.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074737-1 05/24/24 23:34 • (LCSD) R4074737-2 05/24/24 23:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	5.00	5.24	5.24	105	105	72.0-125			0.000	20
(S) a,a,a-Trifluorotoluene(FID)				*101*	*99.6*	*77.0-120*				

L1735386-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1735386-07 05/25/24 02:31 • (MS) R4074737-4 05/25/24 08:57 • (MSD) R4074737-5 05/25/24 09:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	5.17	U	4.47	4.63	86.5	84.1	1	10.0-141			3.46	29
(S) a,a,a-Trifluorotoluene(FID)					*93.1*	*92.8*		*77.0-120*				

Sample Narrative:

OS: Analysis out of hold due to laboratory error

Method Blank (MB)

(MB) R4074845-4 05/27/24 00:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C5 - C12	88.2	J	30.4	100
(S) a,a,a-Trifluorotoluene(FID)	*93.9*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074845-1 05/26/24 22:44 • (LCSD) R4074845-2 05/26/24 23:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	5000	5360	5400	107	108	71.0-127			0.743	20
(S) a,a,a-Trifluorotoluene(FID)				*111*	*110*	*78.0-120*				

Method Blank (MB)

(MB) R4074804-3 05/25/24 13:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00500
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R4074804-3 05/25/24 13:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*94.1*			*75.0-131*
(S) 4-Bromofluorobenzene	*97.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074804-1 05/25/24 12:19 • (LCSD) R4074804-2 05/25/24 12:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	1.36	1.23	218	197	10.0-160	J4	J4	10.0	31
Acrylonitrile	0.625	0.611	0.660	97.8	106	45.0-153			7.71	22
Benzene	0.125	0.126	0.127	101	102	70.0-123			0.791	20
Bromobenzene	0.125	0.118	0.115	94.4	92.0	73.0-121			2.58	20
Bromodichloromethane	0.125	0.126	0.123	101	98.4	73.0-121			2.41	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074804-1 05/25/24 12:19 • (LCSD) R4074804-2 05/25/24 12:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.0965	0.0994	77.2	79.5	64.0-132			2.96	20
Bromomethane	0.125	0.0950	0.0961	76.0	76.9	56.0-147			1.15	20
n-Butylbenzene	0.125	0.117	0.111	93.6	88.8	68.0-135			5.26	20
sec-Butylbenzene	0.125	0.133	0.137	106	110	74.0-130			2.96	20
tert-Butylbenzene	0.125	0.122	0.123	97.6	98.4	75.0-127			0.816	20
Carbon tetrachloride	0.125	0.118	0.130	94.4	104	66.0-128			9.68	20
Chlorobenzene	0.125	0.106	0.110	84.8	88.0	76.0-128			3.70	20
Chlorodibromomethane	0.125	0.102	0.105	81.6	84.0	74.0-127			2.90	20
Chloroethane	0.125	0.118	0.112	94.4	89.6	61.0-134			5.22	20
Chloroform	0.125	0.119	0.121	95.2	96.8	72.0-123			1.67	20
Chloromethane	0.125	0.138	0.158	110	126	51.0-138			13.5	20
2-Chlorotoluene	0.125	0.117	0.124	93.6	99.2	75.0-124			5.81	20
4-Chlorotoluene	0.125	0.132	0.134	106	107	75.0-124			1.50	20
1,2-Dibromo-3-Chloropropane	0.125	0.0947	0.104	75.8	83.2	59.0-130			9.36	20
1,2-Dibromoethane	0.125	0.105	0.104	84.0	83.2	74.0-128			0.957	20
Dibromomethane	0.125	0.107	0.110	85.6	88.0	75.0-122			2.76	20
1,2-Dichlorobenzene	0.125	0.116	0.119	92.8	95.2	76.0-124			2.55	20
1,3-Dichlorobenzene	0.125	0.114	0.116	91.2	92.8	76.0-125			1.74	20
1,4-Dichlorobenzene	0.125	0.111	0.113	88.8	90.4	77.0-121			1.79	20
Dichlorodifluoromethane	0.125	0.125	0.131	100	105	43.0-156			4.69	20
1,1-Dichloroethane	0.125	0.140	0.152	112	122	70.0-127			8.22	20
1,2-Dichloroethane	0.125	0.149	0.150	119	120	65.0-131			0.669	20
1,1-Dichloroethene	0.125	0.123	0.119	98.4	95.2	65.0-131			3.31	20
cis-1,2-Dichloroethene	0.125	0.122	0.125	97.6	100	73.0-125			2.43	20
trans-1,2-Dichloroethene	0.125	0.119	0.125	95.2	100	71.0-125			4.92	20
1,2-Dichloropropane	0.125	0.149	0.157	119	126	74.0-125		J4	5.23	20
1,1-Dichloropropene	0.125	0.141	0.147	113	118	73.0-125			4.17	20
1,3-Dichloropropane	0.125	0.118	0.120	94.4	96.0	80.0-125			1.68	20
cis-1,3-Dichloropropene	0.125	0.141	0.145	113	116	76.0-127			2.80	20
trans-1,3-Dichloropropene	0.125	0.130	0.136	104	109	73.0-127			4.51	20
2,2-Dichloropropane	0.125	0.129	0.136	103	109	59.0-135			5.28	20
Di-isopropyl ether	0.125	0.159	0.160	127	128	60.0-136			0.627	20
Ethylbenzene	0.125	0.106	0.107	84.8	85.6	74.0-126			0.939	20
Hexachloro-1,3-butadiene	0.125	0.114	0.116	91.2	92.8	57.0-150			1.74	20
Isopropylbenzene	0.125	0.108	0.109	86.4	87.2	72.0-127			0.922	20
p-Isopropyltoluene	0.125	0.128	0.133	102	106	72.0-133			3.83	20
2-Butanone (MEK)	0.625	1.05	1.05	168	168	30.0-160	J4	J4	0.000	24
Methylene Chloride	0.125	0.110	0.112	88.0	89.6	68.0-123			1.80	20
4-Methyl-2-pentanone (MIBK)	0.625	0.703	0.728	112	116	56.0-143			3.49	20
Methyl tert-butyl ether	0.125	0.0978	0.0930	78.2	74.4	66.0-132			5.03	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074804-1 05/25/24 12:19 • (LCSD) R4074804-2 05/25/24 12:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.0979	0.0988	78.3	79.0	59.0-130			0.915	20
n-Propylbenzene	0.125	0.125	0.139	100	111	74.0-126			10.6	20
Styrene	0.125	0.112	0.117	89.6	93.6	72.0-127			4.37	20
1,1,1,2-Tetrachloroethane	0.125	0.101	0.106	80.8	84.8	74.0-129			4.83	20
1,1,2,2-Tetrachloroethane	0.125	0.121	0.122	96.8	97.6	68.0-128			0.823	20
1,1,2-Trichlorotrifluoroethane	0.125	0.0776	0.0810	62.1	64.8	61.0-139			4.29	20
Tetrachloroethene	0.125	0.101	0.109	80.8	87.2	70.0-136			7.62	20
Toluene	0.125	0.120	0.124	96.0	99.2	75.0-121			3.28	20
1,2,3-Trichlorobenzene	0.125	0.111	0.114	88.8	91.2	59.0-139			2.67	20
1,2,4-Trichlorobenzene	0.125	0.106	0.107	84.8	85.6	62.0-137			0.939	20
1,1,1-Trichloroethane	0.125	0.120	0.122	96.0	97.6	69.0-126			1.65	20
1,1,2-Trichloroethane	0.125	0.110	0.113	88.0	90.4	78.0-123			2.69	20
Trichloroethene	0.125	0.113	0.120	90.4	96.0	76.0-126			6.01	20
Trichlorofluoromethane	0.125	0.0755	0.0867	60.4	69.4	61.0-142	J4		13.8	20
1,2,3-Trichloropropane	0.125	0.109	0.116	87.2	92.8	67.0-129			6.22	20
1,2,4-Trimethylbenzene	0.125	0.125	0.129	100	103	70.0-126			3.15	20
1,2,3-Trimethylbenzene	0.125	0.122	0.126	97.6	101	74.0-124			3.23	20
1,3,5-Trimethylbenzene	0.125	0.130	0.135	104	108	73.0-127			3.77	20
Vinyl chloride	0.125	0.130	0.133	104	106	63.0-134			2.28	20
Xylenes, Total	0.375	0.333	0.341	88.8	90.9	72.0-127			2.37	20
(S) Toluene-d8				*93.3*	*95.4*	*75.0-131*				
(S) 4-Bromofluorobenzene				*96.8*	*97.4*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*106*	*108*	*70.0-130*				

Method Blank (MB)

(MB) R4075045-4 05/28/24 11:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
2-Chloroethyl vinyl ether	U		0.575	50.0
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
2,2-Dichloropropane	U		0.161	0.500

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R4075045-4 05/28/24 11:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Di-isopropyl ether	U		0.105	0.500
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	0.500
1,2,3-Trimethylbenzene	U		0.104	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*113*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*95.9*			*70.0-130*

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4075045-1 05/28/24 10:34 • (LCSD) R4075045-2 05/28/24 10:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	30.7	32.5	123	130	19.0-160			5.70	27
Acrylonitrile	25.0	21.9	22.9	87.6	91.6	55.0-149			4.46	20
Benzene	5.00	4.21	4.11	84.2	82.2	70.0-123			2.40	20
Bromobenzene	5.00	4.01	4.19	80.2	83.8	73.0-121			4.39	20
Bromodichloromethane	5.00	3.89	3.79	77.8	75.8	75.0-120			2.60	20
Bromochloromethane	5.00	4.94	4.84	98.8	96.8	76.0-122			2.04	20
Bromoform	5.00	4.23	4.29	84.6	85.8	68.0-132			1.41	20
Bromomethane	5.00	3.04	3.65	60.8	73.0	10.0-160			18.2	25
n-Butylbenzene	5.00	4.51	4.90	90.2	98.0	73.0-125			8.29	20
sec-Butylbenzene	5.00	4.19	4.48	83.8	89.6	75.0-125			6.69	20
tert-Butylbenzene	5.00	4.30	4.53	86.0	90.6	76.0-124			5.21	20
Carbon disulfide	5.00	3.68	3.74	73.6	74.8	61.0-128			1.62	20
Carbon tetrachloride	5.00	4.22	4.26	84.4	85.2	68.0-126			0.943	20
Chlorobenzene	5.00	4.74	4.69	94.8	93.8	80.0-121			1.06	20
Chlorodibromomethane	5.00	4.33	4.46	86.6	89.2	77.0-125			2.96	20
Chloroethane	5.00	4.69	4.72	93.8	94.4	47.0-150			0.638	20
2-Chloroethyl vinyl ether	25.0	22.0	21.9	88.0	87.6	51.0-160	J	J	0.456	20
Chloroform	5.00	4.20	4.12	84.0	82.4	73.0-120			1.92	20
Chloromethane	5.00	3.78	3.78	75.6	75.6	41.0-142			0.000	20
2-Chlorotoluene	5.00	4.31	4.39	86.2	87.8	76.0-123			1.84	20
4-Chlorotoluene	5.00	3.93	4.06	78.6	81.2	75.0-122			3.25	20
1,2-Dibromo-3-Chloropropane	5.00	3.45	3.73	69.0	74.6	58.0-134			7.80	20
1,2-Dibromoethane	5.00	4.56	4.79	91.2	95.8	80.0-122			4.92	20
Dibromomethane	5.00	4.26	4.22	85.2	84.4	80.0-120			0.943	20
1,2-Dichlorobenzene	5.00	4.60	4.87	92.0	97.4	79.0-121			5.70	20
1,3-Dichlorobenzene	5.00	4.46	4.79	89.2	95.8	79.0-120			7.14	20
1,4-Dichlorobenzene	5.00	4.46	4.72	89.2	94.4	79.0-120			5.66	20
Dichlorodifluoromethane	5.00	3.76	3.96	75.2	79.2	51.0-149			5.18	20
1,1-Dichloroethane	5.00	4.17	4.01	83.4	80.2	70.0-126			3.91	20
1,2-Dichloroethane	5.00	3.79	3.75	75.8	75.0	70.0-128			1.06	20
1,1-Dichloroethene	5.00	4.22	4.13	84.4	82.6	71.0-124			2.16	20
cis-1,2-Dichloroethene	5.00	4.27	4.15	85.4	83.0	73.0-120			2.85	20
trans-1,2-Dichloroethene	5.00	4.39	4.16	87.8	83.2	73.0-120			5.38	20
1,2-Dichloropropane	5.00	4.11	4.16	82.2	83.2	77.0-125			1.21	20
1,1-Dichloropropene	5.00	4.27	4.27	85.4	85.4	74.0-126			0.000	20
1,3-Dichloropropane	5.00	4.41	4.57	88.2	91.4	80.0-120			3.56	20
cis-1,3-Dichloropropene	5.00	3.83	3.96	76.6	79.2	80.0-123	J4	J4	3.34	20
trans-1,3-Dichloropropene	5.00	4.05	4.05	81.0	81.0	78.0-124			0.000	20
trans-1,4-Dichloro-2-butene	5.00	3.15	2.79	63.0	55.8	33.0-144	J	J	12.1	20
2,2-Dichloropropane	5.00	3.93	3.95	78.6	79.0	58.0-130			0.508	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4075045-1 05/28/24 10:34 • (LCSD) R4075045-2 05/28/24 10:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Di-isopropyl ether	5.00	3.92	3.87	78.4	77.4	58.0-138			1.28	20
Ethylbenzene	5.00	5.12	4.95	102	99.0	79.0-123			3.38	20
Hexachloro-1,3-butadiene	5.00	4.21	4.62	84.2	92.4	54.0-138			9.29	20
2-Hexanone	25.0	25.6	25.7	102	103	67.0-149			0.390	20
n-Hexane	5.00	4.45	4.54	89.0	90.8	57.0-133	J	J	2.00	20
Iodomethane	25.0	11.7	12.9	46.8	51.6	33.0-147			9.76	26
Isopropylbenzene	5.00	4.60	4.53	92.0	90.6	76.0-127			1.53	20
p-Isopropyltoluene	5.00	4.11	4.39	82.2	87.8	76.0-125			6.59	20
2-Butanone (MEK)	25.0	24.3	25.2	97.2	101	44.0-160			3.64	20
Methylene Chloride	5.00	4.19	4.18	83.8	83.6	67.0-120			0.239	20
4-Methyl-2-pentanone (MIBK)	25.0	20.0	20.5	80.0	82.0	68.0-142			2.47	20
Methyl tert-butyl ether	5.00	3.87	3.92	77.4	78.4	68.0-125			1.28	20
Naphthalene	5.00	3.04	3.15	60.8	63.0	54.0-135			3.55	20
n-Propylbenzene	5.00	4.17	4.38	83.4	87.6	77.0-124			4.91	20
Styrene	5.00	4.44	4.49	88.8	89.8	73.0-130			1.12	20
1,1,1,2-Tetrachloroethane	5.00	4.40	4.73	88.0	94.6	75.0-125			7.23	20
1,1,2,2-Tetrachloroethane	5.00	4.20	4.17	84.0	83.4	65.0-130			0.717	20
1,1,2-Trichlorotrifluoroethane	5.00	4.60	4.54	92.0	90.8	69.0-132			1.31	20
Tetrachloroethene	5.00	5.22	5.46	104	109	72.0-132			4.49	20
Toluene	5.00	4.60	4.58	92.0	91.6	79.0-120			0.436	20
1,2,3-Trichlorobenzene	5.00	3.37	3.52	67.4	70.4	50.0-138			4.35	20
1,2,4-Trichlorobenzene	5.00	3.55	3.77	71.0	75.4	57.0-137			6.01	20
1,1,1-Trichloroethane	5.00	4.12	4.03	82.4	80.6	73.0-124			2.21	20
1,1,2-Trichloroethane	5.00	4.64	4.58	92.8	91.6	80.0-120			1.30	20
Trichloroethene	5.00	4.85	4.50	97.0	90.0	78.0-124			7.49	20
Trichlorofluoromethane	5.00	4.58	4.54	91.6	90.8	59.0-147			0.877	20
1,2,3-Trichloropropane	5.00	4.56	4.20	91.2	84.0	73.0-130			8.22	20
1,2,4-Trimethylbenzene	5.00	4.30	4.42	86.0	88.4	76.0-121			2.75	20
1,2,3-Trimethylbenzene	5.00	4.13	4.32	82.6	86.4	77.0-120			4.50	20
1,3,5-Trimethylbenzene	5.00	4.24	4.55	84.8	91.0	76.0-122			7.05	20
Vinyl acetate	25.0	23.8	23.8	95.2	95.2	11.0-160			0.000	20
Vinyl chloride	5.00	4.65	4.58	93.0	91.6	67.0-131			1.52	20
Xylenes, Total	15.0	14.9	14.7	99.3	98.0	79.0-123			1.35	20
(S) Toluene-d8				*109*	*112*	*80.0-120*				
(S) 4-Bromofluorobenzene				*99.1*	*101*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*96.7*	*94.9*	*70.0-130*				

Method Blank (MB)

(MB) R4076211-3 06/01/24 01:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C12-C22 Hydrocarbons	U		33.0	100
C22-C32 Hydrocarbons	U		33.0	100
C32-C40 Hydrocarbons	U		33.0	100
(S) o-Terphenyl	*61.5*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4076211-1 06/01/24 00:34 • (LCSD) R4076211-2 06/01/24 00:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	750	809	819	108	109	50.0-150			1.23	20
C22-C32 Hydrocarbons	750	684	688	91.2	91.7	50.0-150			0.583	20
(S) o-Terphenyl				*66.0*	*65.5*	*52.0-156*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R4073924-1 05/24/24 15:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*82.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4073924-2 05/24/24 15:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	21.2	84.8	50.0-150	
C22-C32 Hydrocarbons	25.0	16.9	67.6	50.0-150	
(S) o-Terphenyl			*79.6*	*18.0-148*	

L1735386-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1735386-07 05/24/24 15:29 • (MS) R4073924-3 05/24/24 15:43 • (MSD) R4073924-4 05/24/24 15:57

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	28.1	U	23.5	23.0	83.6	82.0	1	50.0-150			1.93	20
C22-C32 Hydrocarbons	28.1	U	20.5	22.0	72.8	78.4	1	50.0-150			7.41	20
(S) o-Terphenyl					*74.0*	*72.5*		*18.0-148*				

Method Blank (MB)

(MB) R4074620-1 05/28/24 04:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2,4-D	U		0.547	2.00
Dalapon	U		0.344	2.00
2,4-DB	U		0.302	2.00
Dicamba	U		0.245	2.00
Dichloroprop	U		1.04	2.00
Dinoseb	U		0.250	2.00
MCPA	U		13.1	100
MCPP	U		66.0	100
2,4,5-T	U		0.258	2.00
2,4,5-TP (Silvex)	U		0.335	2.00
Pentachlorophenol	U		0.111	1.00
(S) 2,4-Dichlorophenyl Acetic Acid	*85.4*			*14.0-158*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074620-2 05/28/24 04:22 • (LCSD) R4074620-3 05/28/24 04:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2,4-D	2.50	2.59	2.69	104	108	50.0-120			3.79	20
Dalapon	2.50	2.34	2.38	93.6	95.2	32.0-120			1.69	20
2,4-DB	2.50	2.44	2.38	97.6	95.2	53.0-140			2.49	20
Dicamba	2.50	2.19	2.19	87.6	87.6	51.0-120			0.000	20
Dichloroprop	2.50	2.15	1.91	86.0	76.4	55.0-127		J	11.8	20
Dinoseb	2.50	2.52	2.62	101	105	36.0-134			3.89	20
MCPA	250	206	190	82.4	76.0	10.0-160	P	P	8.08	40
MCPP	250	264	279	106	112	10.0-160			5.52	23
2,4,5-T	2.50	2.60	2.57	104	103	54.0-120			1.16	20
2,4,5-TP (Silvex)	2.50	2.34	2.30	93.6	92.0	50.0-125			1.72	20
Pentachlorophenol	0.500	0.498	0.478	99.6	95.6	41.0-120	J	J	4.10	20
(S) 2,4-Dichlorophenyl Acetic Acid				*95.4*	*91.6*	*14.0-158*				

Method Blank (MB)

(MB) R4074581-1 05/27/24 15:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*79.0*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4074581-2 05/27/24 15:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0575	69.0	40.0-120	
Dalapon	0.0833	0.0497	59.7	15.0-120	
2,4-DB	0.0833	0.0511	61.3	25.0-143	
Dicamba	0.0833	0.0507	60.9	43.0-120	
Dichloroprop	0.0833	0.0541	64.9	32.0-129	
Dinoseb	0.0833	0.0172	20.6	10.0-120	
MCPA	8.33	9.91	119	31.0-121	P
MCPP	8.33	5.74	68.9	28.0-133	
2,4,5-T	0.0833	0.0537	64.5	41.0-120	
2,4,5-TP (Silvex)	0.0833	0.0541	64.9	42.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*61.7*	*22.0-132*	

L1739287-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1739287-01 05/27/24 16:49 • (MS) R4074581-3 05/27/24 17:00 • (MSD) R4074581-4 05/27/24 17:10

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0950	U	0.0835	0.0841	87.9	88.2	1	10.0-160			0.691	24
Dalapon	0.0950	U	0.0767	0.0679	80.7	71.2	1	10.0-121			12.2	27
2,4-DB	0.0950	U	0.0798	0.0687	84.0	72.1	1	10.0-160			15.0	22

L1739287-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1739287-01 05/27/24 16:49 • (MS) R4074581-3 05/27/24 17:00 • (MSD) R4074581-4 05/27/24 17:10

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Dicamba	0.0950	U	0.0696	0.0631	73.3	66.2	1	10.0-154			9.77	21
Dichloroprop	0.0950	U	0.0661	0.0613	69.6	64.3	1	10.0-158			7.64	20
Dinoseb	0.0950	U	0.0236	0.0183	24.9	19.2	1	10.0-120			25.4	40
MCPA	9.50	U	12.2	10.6	128	111	1	10.0-160	P	P	14.0	40
MCPP	9.50	U	11.0	9.79	116	103	1	10.0-160	P		12.0	40
2,4,5-T	0.0950	U	0.0686	0.0619	72.2	64.9	1	10.0-157			10.3	20
2,4,5-TP (Silvex)	0.0950	U	0.0678	0.0619	71.3	64.9	1	10.0-156			9.12	20
(S) 2,4-Dichlorophenyl Acetic Acid					*71.3*	*66.1*		*22.0-132*				

Method Blank (MB)

(MB) R4074886-3 05/28/24 15:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0190	0.0500
Acenaphthene	U		0.0190	0.0500
Acenaphthylene	U		0.0171	0.0500
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(g,h,i)perylene	U		0.0184	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Fluoranthene	U		0.0270	0.100
Fluorene	U		0.0169	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
Phenanthrene	U		0.0180	0.0500
Pyrene	U		0.0169	0.0500
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
2-Chloronaphthalene	U		0.0682	0.250
(S) Nitrobenzene-d5	*115*			*31.0-160*
(S) 2-Fluorobiphenyl	*112*			*48.0-148*
(S) p-Terphenyl-d14	*109*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074886-1 05/28/24 15:07 • (LCSD) R4074886-2 05/28/24 15:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	2.13	2.14	106	107	67.0-150			0.468	20
Acenaphthene	2.00	2.15	2.16	107	108	65.0-138			0.464	20
Acenaphthylene	2.00	2.25	2.25	112	112	66.0-140			0.000	20
Benzo(a)anthracene	2.00	2.04	1.97	102	98.5	61.0-140			3.49	20
Benzo(a)pyrene	2.00	1.94	1.93	97.0	96.5	60.0-143			0.517	20
Benzo(b)fluoranthene	2.00	1.86	1.89	93.0	94.5	58.0-141			1.60	20
Benzo(g,h,i)perylene	2.00	1.90	1.90	95.0	95.0	52.0-153			0.000	20
Benzo(k)fluoranthene	2.00	1.84	1.84	92.0	92.0	58.0-148			0.000	20
Chrysene	2.00	2.08	2.08	104	104	64.0-144			0.000	20
Dibenz(a,h)anthracene	2.00	1.79	1.76	89.5	88.0	52.0-155			1.69	20
Fluoranthene	2.00	2.34	2.33	117	117	69.0-153			0.428	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4074886-1 05/28/24 15:07 • (LCSD) R4074886-2 05/28/24 15:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	2.00	2.24	2.23	112	111	64.0-136			0.447	20
Indeno(1,2,3-cd)pyrene	2.00	1.70	1.71	85.0	85.5	54.0-153			0.587	20
Naphthalene	2.00	2.19	2.19	109	109	61.0-137			0.000	20
Phenanthrene	2.00	2.17	2.15	108	107	62.0-137			0.926	20
Pyrene	2.00	2.26	2.28	113	114	60.0-142			0.881	20
1-Methylnaphthalene	2.00	2.26	2.26	113	113	66.0-142			0.000	20
2-Methylnaphthalene	2.00	2.19	2.19	109	109	62.0-136			0.000	20
2-Chloronaphthalene	2.00	2.25	2.25	112	112	64.0-140			0.000	20
(S) Nitrobenzene-d5				*122*	*118*	*31.0-160*				
(S) 2-Fluorobiphenyl				*111*	*113*	*48.0-148*				
(S) p-Terphenyl-d14				*103*	*103*	*37.0-146*				

Method Blank (MB)

(MB) R4075296-2 05/29/24 21:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*72.1*			*23.0-120*
(S) Nitrobenzene-d5	*69.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*69.2*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4075296-1 05/29/24 21:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0567	70.9	50.0-126	
Acenaphthene	0.0800	0.0548	68.5	50.0-120	
Acenaphthylene	0.0800	0.0559	69.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0542	67.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0483	60.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0565	70.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0563	70.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0571	71.4	49.0-125	
Chrysene	0.0800	0.0589	73.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0509	63.6	47.0-125	
Fluoranthene	0.0800	0.0632	79.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4075296-1 05/29/24 21:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0595	74.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0509	63.6	46.0-125	
Naphthalene	0.0800	0.0531	66.4	50.0-120	
Phenanthrene	0.0800	0.0594	74.3	47.0-120	
Pyrene	0.0800	0.0644	80.5	43.0-123	
1-Methylnaphthalene	0.0800	0.0574	71.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0544	68.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0567	70.9	50.0-120	
(S) p-Terphenyl-d14			*72.4*	*23.0-120*	
(S) Nitrobenzene-d5			*77.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*71.9*	*34.0-125*	

L1739265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1739265-01 05/30/24 08:26 • (MS) R4075305-1 05/30/24 08:44 • (MSD) R4075305-2 05/30/24 09:04

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0875	U	0.0626	0.0638	71.6	72.6	1	10.0-145			1.92	30
Acenaphthene	0.0875	U	0.0606	0.0615	69.3	70.0	1	14.0-127			1.45	27
Acenaphthylene	0.0875	U	0.0647	0.0658	74.0	74.9	1	21.0-124			1.69	25
Benzo(a)anthracene	0.0875	U	0.0696	0.0708	79.5	80.5	1	10.0-139			1.73	30
Benzo(a)pyrene	0.0875	U	0.0585	0.0595	66.9	67.7	1	10.0-141			1.68	31
Benzo(b)fluoranthene	0.0875	0.00274	0.0566	0.0579	61.5	62.7	1	10.0-140			2.32	36
Benzo(g,h,i)perylene	0.0875	U	0.0594	0.0613	67.9	69.7	1	10.0-140			3.11	33
Benzo(k)fluoranthene	0.0875	U	0.0538	0.0558	61.5	63.4	1	10.0-137			3.63	31
Chrysene	0.0875	U	0.0653	0.0671	74.6	76.3	1	10.0-145			2.67	30
Dibenz(a,h)anthracene	0.0875	U	0.0605	0.0668	69.2	76.0	1	10.0-132			9.89	31
Fluoranthene	0.0875	U	0.0711	0.0717	81.3	81.5	1	10.0-153			0.773	33
Fluorene	0.0875	U	0.0647	0.0647	74.0	73.6	1	11.0-130			0.000	29
Indeno(1,2,3-cd)pyrene	0.0875	U	0.0626	0.0630	71.6	71.6	1	10.0-137			0.528	32
Naphthalene	0.0875	U	0.0641	0.0627	73.2	71.4	1	10.0-135			2.09	27
Phenanthrene	0.0875	U	0.0642	0.0651	73.4	74.0	1	10.0-144			1.37	31
Pyrene	0.0875	U	0.0615	0.0627	70.3	71.4	1	10.0-148			1.96	35
1-Methylnaphthalene	0.0875	U	0.0687	0.0690	78.5	78.5	1	10.0-142			0.481	28
2-Methylnaphthalene	0.0875	U	0.0700	0.0688	80.1	78.3	1	10.0-137			1.75	28
2-Chloronaphthalene	0.0875	U	0.0625	0.0643	71.5	73.1	1	29.0-120			2.79	24
(S) p-Terphenyl-d14					*60.2*	*68.8*		*23.0-120*				
(S) Nitrobenzene-d5					*74.3*	*81.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*66.1*	*73.9*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P	RPD between the primary and confirmatory analysis exceeded 40%.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

L1739194

ALL SHADED AREAS are for LAB USE ONLY

Company: PRIMA Env	Billing Information: Same, Attn Chris Brooks
Address: 5070 Robert J Mathews Pkwy, Ste 300 el Dorado Hills, CA 95762	
Report To: Cindy Schreier	Email To: data@primaenvironmental.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Geosyntec-Simplot	State: CA County/City: El Dorado Time Zone Collected: [✓] PT [ ] MT [ ] CT [ ] ET
Phone: 916-939-7300 Email:	Site/Facility ID #:
Collected By (print): Marian Flickinger	Purchase Order #: Quote #:
Collected By (signature): M. Flickinger	Turnaround Date Required: 5 days
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [✓] 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [✓] No

DW PWS ID #:

DW Location Code:

Immediately Packed on Ice: [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO - 5d	DRO/ORO - 5d	Herbicides - 5d	PAHs-SIM -5d	VOCs - 5d	Alkalinity	Metals (As, Ba, Cd, Cr, Se)	Lab Sample # / Comments
Geosyn-Sim Unt GW	GW		5-21-24	9:11				12	X	X	X	X	X	X	X	-01
Geosyn-Sim Unt SO	SL		5-20-24	12:45				2	X	X	X	X	X		X	-02

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N (NA)
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): (Y) N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #:

Samples received via: 7764 8480 1270
(FEDEX) UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments:
EDH 2.5+0.1 = 2.6

Relinquished by/Company: (Signature) M. Flickinger PRIMA	Date/Time: 5.21.24 1430	Received by/Company: (Signature) FedEx	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 5/22/24

MTJL LAB USE ONLY

Table #:

Acctnum:

Template: C159

PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

July 26, 2024

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

PRIMA Environmental, Inc

Sample Delivery Group:	L1755360
Samples Received:	07/11/2024
Project Number:	
Description:	Geosyntec-Simplot

Report To: Cindy Schreier
5070 Robert J. Mathews Parkway
Ste. 300
El Dorado Hills, CA 95762

Entire Report Reviewed By:

J Dozier

Jordan Dozier
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

GEOSYN-SIM TIME 0 L1755360-01 GW

Collected by | Collected date/time 07/10/24 15:20 | Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2323107	1	07/18/24 12:42	07/18/24 19:04	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2323280	1	07/15/24 17:45	07/15/24 17:45	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2322568	1	07/13/24 22:47	07/13/24 22:47	DYW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2322817	25	07/14/24 20:45	07/14/24 20:45	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2321647	1	07/12/24 15:08	07/15/24 17:24	DMG	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2321635	1.02	07/13/24 23:28	07/23/24 04:41	HLA	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2321635	10.2	07/13/24 23:28	07/26/24 09:18	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2323925	1	07/16/24 17:05	07/17/24 02:54	AGW	Mt. Juliet, TN

GEOSYN-SIM TIME 0 (SO) L1755360-02 Solid

Collected by | Collected date/time 07/10/24 15:20 | Received date/time 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2321667	1	07/12/24 10:19	07/12/24 10:32	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2323417	1.01	07/15/24 17:10	07/16/24 03:45	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2323457	1	07/15/24 17:10	07/15/24 22:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2321646	1	07/12/24 07:01	07/12/24 23:33	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2320817	6.89	07/12/24 13:29	07/15/24 16:18	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2324054	1	07/16/24 16:47	07/17/24 05:16	DSH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jordan Dozier
Project Manager

DETECTION SUMMARY

Metals (ICP) by Method 6010B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	Arsenic	9.94	J	4.40	10.0	1	07/18/2024 19:04	WG2323107
GEOSYN-SIM TIME 0	L1755360-01	Barium	58.3		0.736	5.00	1	07/18/2024 19:04	WG2323107
GEOSYN-SIM TIME 0	L1755360-01	Cadmium	1.47	J	0.479	2.00	1	07/18/2024 19:04	WG2323107
GEOSYN-SIM TIME 0	L1755360-01	Selenium	10.4		7.35	10.0	1	07/18/2024 19:04	WG2323107

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	TPHG C5 - C12	2330		30.4	100	1	07/15/2024 17:45	WG2323280

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0 (SO)	L1755360-02	TPHG C5 - C12	5.27		0.0445	0.134	1.01	07/16/2024 03:45	WG2323417

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	Benzene	1.24		0.0941	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	sec-Butylbenzene	2.62		0.125	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Carbon disulfide	0.287	J	0.0962	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	1,2-Dichloroethane	29.5		0.0819	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	1,2-Dichloropropane	1.20		0.149	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Ethylbenzene	0.325	J	0.137	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	2-Hexanone	2.14	J	0.787	5.00	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	n-Hexane	84.0		0.749	5.00	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Isopropylbenzene	3.30		0.105	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	p-Isopropyltoluene	1.95		0.120	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	2-Butanone (MEK)	40.5		1.19	5.00	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Methylene Chloride	1.18	J	0.430	2.50	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Naphthalene	395		4.35	62.5	25	07/14/2024 20:45	WG2322817
GEOSYN-SIM TIME 0	L1755360-01	n-Propylbenzene	6.57		0.0993	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Toluene	3.03		0.278	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	1,2,4-Trimethylbenzene	1.17		0.322	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	1,2,3-Trimethylbenzene	1.39		0.104	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	1,3,5-Trimethylbenzene	2.77		0.104	0.500	1	07/13/2024 22:47	WG2322568
GEOSYN-SIM TIME 0	L1755360-01	Xylenes, Total	1.45	J	0.174	1.50	1	07/13/2024 22:47	WG2322568

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0 (SO)	L1755360-02	Acetone	0.211		0.0605	0.0829	1	07/15/2024 22:48	WG2323457
GEOSYN-SIM TIME 0 (SO)	L1755360-02	n-Butylbenzene	0.0260		0.00870	0.0207	1	07/15/2024 22:48	WG2323457
GEOSYN-SIM TIME 0 (SO)	L1755360-02	sec-Butylbenzene	0.00792	J	0.00477	0.0207	1	07/15/2024 22:48	WG2323457
GEOSYN-SIM TIME 0 (SO)	L1755360-02	p-Isopropyltoluene	0.00701	J	0.00423	0.00829	1	07/15/2024 22:48	WG2323457
GEOSYN-SIM TIME 0 (SO)	L1755360-02	Naphthalene	0.0225	B	0.00809	0.0207	1	07/15/2024 22:48	WG2323457
GEOSYN-SIM TIME 0 (SO)	L1755360-02	n-Propylbenzene	0.00414	J	0.00158	0.00829	1	07/15/2024 22:48	WG2323457

DETECTION SUMMARY

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	C12-C22 Hydrocarbons	2830		33.0	100	1	07/15/2024 17:24	WG2321647
GEOSYN-SIM TIME 0	L1755360-01	C22-C32 Hydrocarbons	1050		33.0	100	1	07/15/2024 17:24	WG2321647
GEOSYN-SIM TIME 0	L1755360-01	C32-C40 Hydrocarbons	481		33.0	100	1	07/15/2024 17:24	WG2321647

Semi-Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0 (SO)	L1755360-02	C12-C22 Hydrocarbons	1.69	J	0.974	5.31	1	07/12/2024 23:33	WG2321646
GEOSYN-SIM TIME 0 (SO)	L1755360-02	C22-C32 Hydrocarbons	1.91	J	1.77	5.31	1	07/12/2024 23:33	WG2321646

Chlorinated Acid Herbicides (GC) by Method 8151

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	2,4-D	30.3		5.58	20.4	10.2	07/26/2024 09:18	WG2321635
GEOSYN-SIM TIME 0	L1755360-01	Dicamba	1.51	J	0.250	2.04	1.02	07/23/2024 04:41	WG2321635
GEOSYN-SIM TIME 0	L1755360-01	Dinoseb	29.8	P	2.55	20.4	10.2	07/26/2024 09:18	WG2321635

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0	L1755360-01	Phenanthrene	0.0383	J	0.0180	0.0500	1	07/17/2024 02:54	WG2323925

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM TIME 0 (SO)	L1755360-02	Naphthalene	0.0165	J	0.00542	0.0266	1	07/17/2024 05:16	WG2324054
GEOSYN-SIM TIME 0 (SO)	L1755360-02	1-Methylnaphthalene	0.0169	J	0.00596	0.0266	1	07/17/2024 05:16	WG2324054

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic	9.94	J	4.40	10.0	1	07/18/2024 19:04	WG2323107
Barium	58.3		0.736	5.00	1	07/18/2024 19:04	WG2323107
Cadmium	1.47	J	0.479	2.00	1	07/18/2024 19:04	WG2323107
Chromium	U		1.40	10.0	1	07/18/2024 19:04	WG2323107
Selenium	10.4		7.35	10.0	1	07/18/2024 19:04	WG2323107

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHG C5 - C12	2330		30.4	100	1	07/15/2024 17:45	WG2323280
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*07/15/2024 17:45*	WG2323280

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	07/13/2024 22:47	WG2322568
Acrylonitrile	U		0.671	5.00	1	07/13/2024 22:47	WG2322568
Benzene	1.24		0.0941	0.500	1	07/13/2024 22:47	WG2322568
Bromobenzene	U		0.118	0.500	1	07/13/2024 22:47	WG2322568
Bromodichloromethane	U		0.136	0.500	1	07/13/2024 22:47	WG2322568
Bromochloromethane	U		0.128	0.500	1	07/13/2024 22:47	WG2322568
Bromoform	U		0.129	0.500	1	07/13/2024 22:47	WG2322568
Bromomethane	U		0.605	2.50	1	07/13/2024 22:47	WG2322568
n-Butylbenzene	U		0.157	0.500	1	07/13/2024 22:47	WG2322568
sec-Butylbenzene	2.62		0.125	0.500	1	07/13/2024 22:47	WG2322568
tert-Butylbenzene	U		0.127	0.500	1	07/13/2024 22:47	WG2322568
Carbon disulfide	0.287	J	0.0962	0.500	1	07/13/2024 22:47	WG2322568
Carbon tetrachloride	U		0.128	0.500	1	07/13/2024 22:47	WG2322568
Chlorobenzene	U		0.117	0.500	1	07/13/2024 22:47	WG2322568
Chlorodibromomethane	U		0.140	0.500	1	07/13/2024 22:47	WG2322568
Chloroethane	U		0.192	2.50	1	07/13/2024 22:47	WG2322568
2-Chloroethyl vinyl ether	U		0.575	50.0	1	07/13/2024 22:47	WG2322568
Chloroform	U		0.111	0.500	1	07/13/2024 22:47	WG2322568
Chloromethane	U		0.960	1.25	1	07/13/2024 22:47	WG2322568
2-Chlorotoluene	U		0.106	0.500	1	07/13/2024 22:47	WG2322568
4-Chlorotoluene	U		0.114	0.500	1	07/13/2024 22:47	WG2322568
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	07/13/2024 22:47	WG2322568
1,2-Dibromoethane	U		0.126	0.500	1	07/13/2024 22:47	WG2322568
Dibromomethane	U		0.122	0.500	1	07/13/2024 22:47	WG2322568
1,2-Dichlorobenzene	U		0.107	0.500	1	07/13/2024 22:47	WG2322568
1,3-Dichlorobenzene	U		0.299	0.500	1	07/13/2024 22:47	WG2322568
1,4-Dichlorobenzene	U		0.120	0.500	1	07/13/2024 22:47	WG2322568
Dichlorodifluoromethane	U		0.374	2.50	1	07/13/2024 22:47	WG2322568
1,1-Dichloroethane	U		0.100	0.500	1	07/13/2024 22:47	WG2322568
1,2-Dichloroethane	29.5		0.0819	0.500	1	07/13/2024 22:47	WG2322568
1,1-Dichloroethene	U		0.188	0.500	1	07/13/2024 22:47	WG2322568
cis-1,2-Dichloroethene	U		0.126	0.500	1	07/13/2024 22:47	WG2322568
trans-1,2-Dichloroethene	U		0.149	0.500	1	07/13/2024 22:47	WG2322568
1,2-Dichloropropane	1.20		0.149	0.500	1	07/13/2024 22:47	WG2322568
1,1-Dichloropropene	U		0.142	0.500	1	07/13/2024 22:47	WG2322568
1,3-Dichloropropane	U		0.109	1.00	1	07/13/2024 22:47	WG2322568
cis-1,3-Dichloropropene	U		0.111	0.500	1	07/13/2024 22:47	WG2322568
trans-1,3-Dichloropropene	U		0.118	0.500	1	07/13/2024 22:47	WG2322568
trans-1,4-Dichloro-2-butene	U	J4	0.467	5.00	1	07/13/2024 22:47	WG2322568

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2,2-Dichloropropane	U		0.161	0.500	1	07/13/2024 22:47	WG2322568
Di-isopropyl ether	U		0.105	0.500	1	07/13/2024 22:47	WG2322568
Ethylbenzene	0.325	J	0.137	0.500	1	07/13/2024 22:47	WG2322568
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/13/2024 22:47	WG2322568
2-Hexanone	2.14	J	0.787	5.00	1	07/13/2024 22:47	WG2322568
n-Hexane	84.0		0.749	5.00	1	07/13/2024 22:47	WG2322568
Iodomethane	U		0.554	5.00	1	07/13/2024 22:47	WG2322568
Isopropylbenzene	3.30		0.105	0.500	1	07/13/2024 22:47	WG2322568
p-Isopropyltoluene	1.95		0.120	0.500	1	07/13/2024 22:47	WG2322568
2-Butanone (MEK)	40.5		1.19	5.00	1	07/13/2024 22:47	WG2322568
Methylene Chloride	1.18	J	0.430	2.50	1	07/13/2024 22:47	WG2322568
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	07/13/2024 22:47	WG2322568
Methyl tert-butyl ether	U		0.101	0.500	1	07/13/2024 22:47	WG2322568
Naphthalene	395		4.35	62.5	25	07/14/2024 20:45	WG2322817
n-Propylbenzene	6.57		0.0993	0.500	1	07/13/2024 22:47	WG2322568
Styrene	U		0.118	0.500	1	07/13/2024 22:47	WG2322568
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	07/13/2024 22:47	WG2322568
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	07/13/2024 22:47	WG2322568
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	07/13/2024 22:47	WG2322568
Tetrachloroethene	U		0.300	0.500	1	07/13/2024 22:47	WG2322568
Toluene	3.03		0.278	0.500	1	07/13/2024 22:47	WG2322568
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/13/2024 22:47	WG2322568
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/13/2024 22:47	WG2322568
1,1,1-Trichloroethane	U		0.149	0.500	1	07/13/2024 22:47	WG2322568
1,1,2-Trichloroethane	U		0.158	0.500	1	07/13/2024 22:47	WG2322568
Trichloroethene	U		0.190	0.500	1	07/13/2024 22:47	WG2322568
Trichlorofluoromethane	U		0.160	2.50	1	07/13/2024 22:47	WG2322568
1,2,3-Trichloropropane	U		0.237	2.50	1	07/13/2024 22:47	WG2322568
1,2,4-Trimethylbenzene	1.17		0.322	0.500	1	07/13/2024 22:47	WG2322568
1,2,3-Trimethylbenzene	1.39		0.104	0.500	1	07/13/2024 22:47	WG2322568
1,3,5-Trimethylbenzene	2.77		0.104	0.500	1	07/13/2024 22:47	WG2322568
Vinyl acetate	U		0.692	5.00	1	07/13/2024 22:47	WG2322568
Vinyl chloride	U		0.234	0.500	1	07/13/2024 22:47	WG2322568
Xylenes, Total	1.45	J	0.174	1.50	1	07/13/2024 22:47	WG2322568
(S) Toluene-d8	*104*			*80.0-120*		*07/13/2024 22:47*	WG2322568
(S) Toluene-d8	*110*			*80.0-120*		*07/14/2024 20:45*	WG2322817
(S) 4-Bromofluorobenzene	*85.8*			*77.0-126*		*07/13/2024 22:47*	WG2322568
(S) 4-Bromofluorobenzene	*113*			*77.0-126*		*07/14/2024 20:45*	WG2322817
(S) 1,2-Dichloroethane-d4	*135*	J1		*70.0-130*		*07/13/2024 22:47*	WG2322568
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*07/14/2024 20:45*	WG2322817

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	2830		33.0	100	1	07/15/2024 17:24	WG2321647
C22-C32 Hydrocarbons	1050		33.0	100	1	07/15/2024 17:24	WG2321647
C32-C40 Hydrocarbons	481		33.0	100	1	07/15/2024 17:24	WG2321647
(S) o-Terphenyl	*106*			*52.0-156*		*07/15/2024 17:24*	WG2321647

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	30.3		5.58	20.4	10.2	07/26/2024 09:18	WG2321635
Dalapon	U		0.351	2.04	1.02	07/23/2024 04:41	WG2321635
2,4-DB	U		0.308	2.04	1.02	07/23/2024 04:41	WG2321635
Dicamba	1.51	J	0.250	2.04	1.02	07/23/2024 04:41	WG2321635
Dichloroprop	U		1.06	2.04	1.02	07/23/2024 04:41	WG2321635
Dinoseb	29.8	P	2.55	20.4	10.2	07/26/2024 09:18	WG2321635
MCPA	U		13.4	102	1.02	07/23/2024 04:41	WG2321635
MCPP	U		67.3	102	1.02	07/23/2024 04:41	WG2321635
2,4,5-T	U		0.263	2.04	1.02	07/23/2024 04:41	WG2321635
2,4,5-TP (Silvex)	U		0.342	2.04	1.02	07/23/2024 04:41	WG2321635
Pentachlorophenol	U		0.113	1.02	1.02	07/23/2024 04:41	WG2321635
(S) 2,4-Dichlorophenyl Acetic Acid	*445*	J1		*14.0-158*		*07/26/2024 09:18*	WG2321635
(S) 2,4-Dichlorophenyl Acetic Acid	*97.3*			*14.0-158*		*07/23/2024 04:41*	WG2321635

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/17/2024 02:54	WG2323925
Acenaphthene	U		0.0190	0.0500	1	07/17/2024 02:54	WG2323925
Acenaphthylene	U		0.0171	0.0500	1	07/17/2024 02:54	WG2323925
Benzo(a)anthracene	U		0.0203	0.0500	1	07/17/2024 02:54	WG2323925
Benzo(a)pyrene	U		0.0184	0.0500	1	07/17/2024 02:54	WG2323925
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/17/2024 02:54	WG2323925
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/17/2024 02:54	WG2323925
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/17/2024 02:54	WG2323925
Chrysene	U		0.0179	0.0500	1	07/17/2024 02:54	WG2323925
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/17/2024 02:54	WG2323925
Fluoranthene	U		0.0270	0.100	1	07/17/2024 02:54	WG2323925
Fluorene	U		0.0169	0.0500	1	07/17/2024 02:54	WG2323925
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/17/2024 02:54	WG2323925
Naphthalene	U		0.0917	0.250	1	07/17/2024 02:54	WG2323925
Phenanthrene	0.0383	J	0.0180	0.0500	1	07/17/2024 02:54	WG2323925
Pyrene	U		0.0169	0.0500	1	07/17/2024 02:54	WG2323925
1-Methylnaphthalene	U		0.0687	0.250	1	07/17/2024 02:54	WG2323925
2-Methylnaphthalene	U		0.0674	0.250	1	07/17/2024 02:54	WG2323925
2-Chloronaphthalene	U		0.0682	0.250	1	07/17/2024 02:54	WG2323925
(S) Nitrobenzene-d5	*74.5*			*31.0-160*		*07/17/2024 02:54*	WG2323925
(S) 2-Fluorobiphenyl	*77.0*			*48.0-148*		*07/17/2024 02:54*	WG2323925
(S) p-Terphenyl-d14	*86.0*			*37.0-146*		*07/17/2024 02:54*	WG2323925

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.3		1	07/12/2024 10:32	WG2321667

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	5.27		0.0445	0.134	1.01	07/16/2024 03:45	WG2323417
(S) a,a,a-Trifluorotoluene(FID)	*92.8*			*77.0-120*		*07/16/2024 03:45*	WG2323417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.211		0.0605	0.0829	1	07/15/2024 22:48	WG2323457
Acrylonitrile	U		0.00599	0.0207	1	07/15/2024 22:48	WG2323457
Benzene	U		0.000774	0.00166	1	07/15/2024 22:48	WG2323457
Bromobenzene	U		0.00149	0.0207	1	07/15/2024 22:48	WG2323457
Bromodichloromethane	U		0.00120	0.00414	1	07/15/2024 22:48	WG2323457
Bromoform	U		0.00194	0.0414	1	07/15/2024 22:48	WG2323457
Bromomethane	U		0.00327	0.0207	1	07/15/2024 22:48	WG2323457
n-Butylbenzene	0.0260		0.00870	0.0207	1	07/15/2024 22:48	WG2323457
sec-Butylbenzene	0.00792	J	0.00477	0.0207	1	07/15/2024 22:48	WG2323457
tert-Butylbenzene	U		0.00323	0.00829	1	07/15/2024 22:48	WG2323457
Carbon tetrachloride	U		0.00149	0.00829	1	07/15/2024 22:48	WG2323457
Chlorobenzene	U		0.000348	0.00414	1	07/15/2024 22:48	WG2323457
Chlorodibromomethane	U		0.00101	0.00414	1	07/15/2024 22:48	WG2323457
Chloroethane	U		0.00282	0.00829	1	07/15/2024 22:48	WG2323457
Chloroform	U		0.00171	0.00414	1	07/15/2024 22:48	WG2323457
Chloromethane	U		0.00721	0.0207	1	07/15/2024 22:48	WG2323457
2-Chlorotoluene	U		0.00143	0.00414	1	07/15/2024 22:48	WG2323457
4-Chlorotoluene	U		0.000746	0.00829	1	07/15/2024 22:48	WG2323457
1,2-Dibromo-3-Chloropropane	U		0.00647	0.0414	1	07/15/2024 22:48	WG2323457
1,2-Dibromoethane	U		0.00107	0.00414	1	07/15/2024 22:48	WG2323457
Dibromomethane	U		0.00124	0.00829	1	07/15/2024 22:48	WG2323457
1,2-Dichlorobenzene	U		0.000705	0.00829	1	07/15/2024 22:48	WG2323457
1,3-Dichlorobenzene	U		0.000995	0.00829	1	07/15/2024 22:48	WG2323457
1,4-Dichlorobenzene	U		0.00116	0.00829	1	07/15/2024 22:48	WG2323457
Dichlorodifluoromethane	U		0.00267	0.00829	1	07/15/2024 22:48	WG2323457
1,1-Dichloroethane	U		0.000814	0.00414	1	07/15/2024 22:48	WG2323457
1,2-Dichloroethane	U		0.00108	0.00414	1	07/15/2024 22:48	WG2323457
1,1-Dichloroethene	U		0.00100	0.00414	1	07/15/2024 22:48	WG2323457
cis-1,2-Dichloroethene	U		0.00122	0.00414	1	07/15/2024 22:48	WG2323457
trans-1,2-Dichloroethene	U		0.00172	0.00829	1	07/15/2024 22:48	WG2323457
1,2-Dichloropropane	U		0.00235	0.00829	1	07/15/2024 22:48	WG2323457
1,1-Dichloropropene	U		0.00134	0.00414	1	07/15/2024 22:48	WG2323457
1,3-Dichloropropane	U		0.000831	0.00829	1	07/15/2024 22:48	WG2323457
cis-1,3-Dichloropropene	U		0.00126	0.00414	1	07/15/2024 22:48	WG2323457
trans-1,3-Dichloropropene	U		0.00189	0.00829	1	07/15/2024 22:48	WG2323457
2,2-Dichloropropane	U		0.00229	0.00414	1	07/15/2024 22:48	WG2323457
Di-isopropyl ether	U	J4	0.000680	0.00166	1	07/15/2024 22:48	WG2323457
Ethylbenzene	U		0.00122	0.00414	1	07/15/2024 22:48	WG2323457
Hexachloro-1,3-butadiene	U		0.00995	0.0414	1	07/15/2024 22:48	WG2323457
Isopropylbenzene	U		0.000705	0.00414	1	07/15/2024 22:48	WG2323457
p-Isopropyltoluene	0.00701	J	0.00423	0.00829	1	07/15/2024 22:48	WG2323457
2-Butanone (MEK)	U	J4	0.105	0.166	1	07/15/2024 22:48	WG2323457
Methylene Chloride	U		0.0110	0.0414	1	07/15/2024 22:48	WG2323457
4-Methyl-2-pentanone (MIBK)	U		0.00378	0.0414	1	07/15/2024 22:48	WG2323457

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	U		0.000580	0.00166	1	07/15/2024 22:48	WG2323457
Naphthalene	0.0225	B	0.00809	0.0207	1	07/15/2024 22:48	WG2323457
n-Propylbenzene	0.00414	J	0.00158	0.00829	1	07/15/2024 22:48	WG2323457
Styrene	U		0.000380	0.0207	1	07/15/2024 22:48	WG2323457
1,1,1,2-Tetrachloroethane	U		0.00157	0.00414	1	07/15/2024 22:48	WG2323457
1,1,2,2-Tetrachloroethane	U		0.00115	0.00414	1	07/15/2024 22:48	WG2323457
1,1,2-Trichlorotrifluoroethane	U		0.00125	0.00414	1	07/15/2024 22:48	WG2323457
Tetrachloroethene	U		0.00149	0.00414	1	07/15/2024 22:48	WG2323457
Toluene	U		0.00216	0.00829	1	07/15/2024 22:48	WG2323457
1,2,3-Trichlorobenzene	U		0.0122	0.0207	1	07/15/2024 22:48	WG2323457
1,2,4-Trichlorobenzene	U		0.00729	0.0207	1	07/15/2024 22:48	WG2323457
1,1,1-Trichloroethane	U		0.00153	0.00414	1	07/15/2024 22:48	WG2323457
1,1,2-Trichloroethane	U		0.000990	0.00414	1	07/15/2024 22:48	WG2323457
Trichloroethene	U		0.000968	0.00166	1	07/15/2024 22:48	WG2323457
Trichlorofluoromethane	U		0.00137	0.00414	1	07/15/2024 22:48	WG2323457
1,2,3-Trichloropropane	U		0.00269	0.0207	1	07/15/2024 22:48	WG2323457
1,2,4-Trimethylbenzene	U		0.00262	0.00829	1	07/15/2024 22:48	WG2323457
1,2,3-Trimethylbenzene	U		0.00262	0.00829	1	07/15/2024 22:48	WG2323457
1,3,5-Trimethylbenzene	U		0.00332	0.00829	1	07/15/2024 22:48	WG2323457
Vinyl chloride	U		0.00192	0.00414	1	07/15/2024 22:48	WG2323457
Xylenes, Total	U		0.00146	0.0108	1	07/15/2024 22:48	WG2323457
(S) Toluene-d8	*101*			*75.0-131*		*07/15/2024 22:48*	WG2323457
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*07/15/2024 22:48*	WG2323457
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*		*07/15/2024 22:48*	WG2323457

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1.69	J	0.974	5.31	1	07/12/2024 23:33	WG2321646
C22-C32 Hydrocarbons	1.91	J	1.77	5.31	1	07/12/2024 23:33	WG2321646
C32-C40 Hydrocarbons	U		1.77	5.31	1	07/12/2024 23:33	WG2321646
(S) o-Terphenyl	*72.3*			*18.0-148*		*07/12/2024 23:33*	WG2321646

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.0643	0.640	6.89	07/15/2024 16:18	WG2320817
Dalapon	U		0.103	0.640	6.89	07/15/2024 16:18	WG2320817
2,4-DB	U		0.272	0.640	6.89	07/15/2024 16:18	WG2320817
Dicamba	U		0.143	0.640	6.89	07/15/2024 16:18	WG2320817
Dichloroprop	U		0.224	0.640	6.89	07/15/2024 16:18	WG2320817
Dinoseb	U		0.0638	0.640	6.89	07/15/2024 16:18	WG2320817
MCPA	U		4.05	59.5	6.89	07/15/2024 16:18	WG2320817
MCPP	U		3.36	59.5	6.89	07/15/2024 16:18	WG2320817
2,4,5-T	U		0.0780	0.640	6.89	07/15/2024 16:18	WG2320817
2,4,5-TP (Silvex)	U		0.0979	0.640	6.89	07/15/2024 16:18	WG2320817
(S) 2,4-Dichlorophenyl Acetic Acid	*68.3*			*22.0-132*		*07/15/2024 16:18*	WG2320817

Sample Narrative:

L1755360-02 WG2320817: Dilution due to matrix impact during extraction procedure

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00305	0.00797	1	07/17/2024 05:16	WG2324054
Acenaphthene	U		0.00278	0.00797	1	07/17/2024 05:16	WG2324054
Acenaphthylene	U		0.00287	0.00797	1	07/17/2024 05:16	WG2324054
Benzo(a)anthracene	U		0.00230	0.00797	1	07/17/2024 05:16	WG2324054
Benzo(a)pyrene	U		0.00238	0.00797	1	07/17/2024 05:16	WG2324054
Benzo(b)fluoranthene	U		0.00203	0.00797	1	07/17/2024 05:16	WG2324054
Benzo(g,h,i)perylene	U		0.00235	0.00797	1	07/17/2024 05:16	WG2324054
Benzo(k)fluoranthene	U		0.00286	0.00797	1	07/17/2024 05:16	WG2324054
Chrysene	U		0.00308	0.00797	1	07/17/2024 05:16	WG2324054
Dibenz(a,h)anthracene	U		0.00228	0.00797	1	07/17/2024 05:16	WG2324054
Fluoranthene	U		0.00301	0.00797	1	07/17/2024 05:16	WG2324054
Fluorene	U		0.00272	0.00797	1	07/17/2024 05:16	WG2324054
Indeno(1,2,3-cd)pyrene	U		0.00240	0.00797	1	07/17/2024 05:16	WG2324054
Naphthalene	0.0165	J	0.00542	0.0266	1	07/17/2024 05:16	WG2324054
Phenanthrene	U		0.00307	0.00797	1	07/17/2024 05:16	WG2324054
Pyrene	U		0.00266	0.00797	1	07/17/2024 05:16	WG2324054
1-Methylnaphthalene	0.0169	J	0.00596	0.0266	1	07/17/2024 05:16	WG2324054
2-Methylnaphthalene	U		0.00567	0.0266	1	07/17/2024 05:16	WG2324054
2-Chloronaphthalene	U		0.00619	0.0266	1	07/17/2024 05:16	WG2324054
(S) p-Terphenyl-d14	*24.2*			*23.0-120*		*07/17/2024 05:16*	WG2324054
(S) Nitrobenzene-d5	*19.9*			*14.0-149*		*07/17/2024 05:16*	WG2324054
(S) 2-Fluorobiphenyl	*24.6*	J2		*34.0-125*		*07/17/2024 05:16*	WG2324054

Method Blank (MB)

(MB) R4093362-1 07/12/24 10:32

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1755258-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1755258-11 07/12/24 10:32 • (DUP) R4093362-3 07/12/24 10:32

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	90.0	86.7	1	3.64		10

Laboratory Control Sample (LCS)

(LCS) R4093362-2 07/12/24 10:32

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4095826-1 07/18/24 18:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		4.40	10.0
Barium	U		0.736	5.00
Cadmium	U		0.479	2.00
Chromium	U		1.40	10.0
Selenium	U		7.35	10.0

Laboratory Control Sample (LCS)

(LCS) R4095826-2 07/18/24 18:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	1000	992	99.2	80.0-120	
Barium	1000	1020	102	80.0-120	
Cadmium	1000	1030	103	80.0-120	
Chromium	1000	1020	102	80.0-120	
Selenium	1000	975	97.5	80.0-120	

L1755004-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755004-11 07/18/24 18:19 • (MS) R4095826-4 07/18/24 18:22 • (MSD) R4095826-5 07/18/24 18:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	U	1020	1030	102	103	1	75.0-125			0.390	20
Barium	1000	19.7	985	982	96.6	96.2	1	75.0-125			0.376	20
Cadmium	1000	U	1020	1020	102	102	1	75.0-125			0.355	20
Chromium	1000	U	973	976	97.3	97.6	1	75.0-125			0.328	20
Selenium	1000	U	1070	1070	107	107	1	75.0-125			0.125	20

Method Blank (MB)

(MB) R4096020-2 07/15/24 13:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C5 - C12	U		30.4	100
(S) a,a,a-Trifluorotoluene(FID)	*112*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4096020-1 07/15/24 13:03 • (LCSD) R4096020-3 07/15/24 14:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	5000	4900	5040	98.0	101	71.0-127			2.82	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*105*	*78.0-120*				

Method Blank (MB)

(MB) R4094766-2 07/16/24 00:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	U		0.0332	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.7*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4094766-1 07/15/24 23:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5.00	4.78	95.6	72.0-125	
(S) a,a,a-Trifluorotoluene(FID)			*94.2*	*77.0-120*	

Method Blank (MB)

(MB) R4093635-2 07/13/24 19:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
2-Chloroethyl vinyl ether	U		0.575	50.0
Chloroform	0.584		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
2,2-Dichloropropane	U		0.161	0.500

Method Blank (MB)

(MB) R4093635-2 07/13/24 19:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Di-isopropyl ether	U		0.105	0.500
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	0.500
1,2,3-Trimethylbenzene	U		0.104	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*106*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*125*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4093635-1 07/13/24 19:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	34.3	137	19.0-160	
Acrylonitrile	25.0	30.4	122	55.0-149	
Benzene	5.00	5.32	106	70.0-123	
Bromobenzene	5.00	4.67	93.4	73.0-121	
Bromodichloromethane	5.00	5.19	104	75.0-120	
Bromochloromethane	5.00	5.07	101	76.0-122	
Bromoform	5.00	3.99	79.8	68.0-132	
Bromomethane	5.00	3.76	75.2	10.0-160	
n-Butylbenzene	5.00	4.68	93.6	73.0-125	
sec-Butylbenzene	5.00	5.15	103	75.0-125	
tert-Butylbenzene	5.00	4.89	97.8	76.0-124	
Carbon disulfide	5.00	4.81	96.2	61.0-128	
Carbon tetrachloride	5.00	5.48	110	68.0-126	
Chlorobenzene	5.00	4.72	94.4	80.0-121	
Chlorodibromomethane	5.00	4.39	87.8	77.0-125	
Chloroethane	5.00	4.64	92.8	47.0-150	
2-Chloroethyl vinyl ether	25.0	24.1	96.4	51.0-160	J
Chloroform	5.00	5.78	116	73.0-120	
Chloromethane	5.00	5.76	115	41.0-142	
2-Chlorotoluene	5.00	4.92	98.4	76.0-123	
4-Chlorotoluene	5.00	4.76	95.2	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	3.55	71.0	58.0-134	
1,2-Dibromoethane	5.00	4.49	89.8	80.0-122	
Dibromomethane	5.00	5.13	103	80.0-120	
1,2-Dichlorobenzene	5.00	4.53	90.6	79.0-121	
1,3-Dichlorobenzene	5.00	4.76	95.2	79.0-120	
1,4-Dichlorobenzene	5.00	4.72	94.4	79.0-120	
Dichlorodifluoromethane	5.00	5.58	112	51.0-149	
1,1-Dichloroethane	5.00	5.66	113	70.0-126	
1,2-Dichloroethane	5.00	5.48	110	70.0-128	
1,1-Dichloroethene	5.00	4.63	92.6	71.0-124	
cis-1,2-Dichloroethene	5.00	5.13	103	73.0-120	
trans-1,2-Dichloroethene	5.00	4.92	98.4	73.0-120	
1,2-Dichloropropane	5.00	5.55	111	77.0-125	
1,1-Dichloropropene	5.00	5.45	109	74.0-126	
1,3-Dichloropropane	5.00	4.74	94.8	80.0-120	
cis-1,3-Dichloropropene	5.00	4.79	95.8	80.0-123	
trans-1,3-Dichloropropene	5.00	4.34	86.8	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	1.47	29.4	33.0-144	J J4
2,2-Dichloropropane	5.00	5.20	104	58.0-130	

Laboratory Control Sample (LCS)

(LCS) R4093635-1 07/13/24 19:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Di-isopropyl ether	5.00	5.89	118	58.0-138	
Ethylbenzene	5.00	4.68	93.6	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.04	101	54.0-138	
2-Hexanone	25.0	22.3	89.2	67.0-149	
n-Hexane	5.00	6.28	126	57.0-133	
Iodomethane	25.0	23.7	94.8	33.0-147	
Isopropylbenzene	5.00	4.98	99.6	76.0-127	
p-Isopropyltoluene	5.00	4.95	99.0	76.0-125	
2-Butanone (MEK)	25.0	25.7	103	44.0-160	
Methylene Chloride	5.00	5.03	101	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	24.0	96.0	68.0-142	
Methyl tert-butyl ether	5.00	5.47	109	68.0-125	
n-Propylbenzene	5.00	4.93	98.6	77.0-124	
Styrene	5.00	4.56	91.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.74	94.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.16	83.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.88	97.6	69.0-132	
Tetrachloroethene	5.00	4.88	97.6	72.0-132	
Toluene	5.00	4.81	96.2	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.12	82.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.16	83.2	57.0-137	
1,1,1-Trichloroethane	5.00	5.71	114	73.0-124	
1,1,2-Trichloroethane	5.00	4.71	94.2	80.0-120	
Trichloroethene	5.00	5.28	106	78.0-124	
Trichlorofluoromethane	5.00	4.31	86.2	59.0-147	
1,2,3-Trichloropropane	5.00	4.45	89.0	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.73	94.6	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.77	95.4	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.87	97.4	76.0-122	
Vinyl acetate	25.0	20.5	82.0	11.0-160	
Vinyl chloride	5.00	4.98	99.6	67.0-131	
Xylenes, Total	15.0	13.8	92.0	79.0-123	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*110*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*122*	*70.0-130*	

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R4095441-3 07/14/24 19:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Naphthalene	U		0.174	2.50
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*114*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4095441-1 07/14/24 17:57 • (LCSD) R4095441-2 07/14/24 18:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	5.00	4.20	4.42	84.0	88.4	54.0-135			5.10	20
(S) Toluene-d8				*107*	*105*	*80.0-120*				
(S) 4-Bromofluorobenzene				*111*	*109*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*118*	*119*	*70.0-130*				

Method Blank (MB)

(MB) R4095525-3 07/15/24 20:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	0.0103		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00500
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R4095525-3 07/15/24 20:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	0.00548	J	0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*97.2*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4095525-1 07/15/24 19:13 • (LCSD) R4095525-2 07/15/24 19:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.775	0.775	124	124	10.0-160			0.000	31
Acrylonitrile	0.625	0.850	0.850	136	136	45.0-153			0.000	22
Benzene	0.125	0.123	0.127	98.4	102	70.0-123			3.20	20
Bromobenzene	0.125	0.135	0.140	108	112	73.0-121			3.64	20
Bromodichloromethane	0.125	0.145	0.147	116	118	73.0-121			1.37	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4095525-1 07/15/24 19:13 • (LCSD) R4095525-2 07/15/24 19:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.146	0.147	117	118	64.0-132			0.683	20
Bromomethane	0.125	0.112	0.123	89.6	98.4	56.0-147			9.36	20
n-Butylbenzene	0.125	0.138	0.142	110	114	68.0-135			2.86	20
sec-Butylbenzene	0.125	0.133	0.137	106	110	74.0-130			2.96	20
tert-Butylbenzene	0.125	0.138	0.140	110	112	75.0-127			1.44	20
Carbon tetrachloride	0.125	0.140	0.137	112	110	66.0-128			2.17	20
Chlorobenzene	0.125	0.125	0.128	100	102	76.0-128			2.37	20
Chlorodibromomethane	0.125	0.132	0.133	106	106	74.0-127			0.755	20
Chloroethane	0.125	0.126	0.132	101	106	61.0-134			4.65	20
Chloroform	0.125	0.134	0.132	107	106	72.0-123			1.50	20
Chloromethane	0.125	0.141	0.141	113	113	51.0-138			0.000	20
2-Chlorotoluene	0.125	0.132	0.137	106	110	75.0-124			3.72	20
4-Chlorotoluene	0.125	0.126	0.125	101	100	75.0-124			0.797	20
1,2-Dibromo-3-Chloropropane	0.125	0.120	0.127	96.0	102	59.0-130			5.67	20
1,2-Dibromoethane	0.125	0.129	0.129	103	103	74.0-128			0.000	20
Dibromomethane	0.125	0.133	0.135	106	108	75.0-122			1.49	20
1,2-Dichlorobenzene	0.125	0.135	0.136	108	109	76.0-124			0.738	20
1,3-Dichlorobenzene	0.125	0.137	0.141	110	113	76.0-125			2.88	20
1,4-Dichlorobenzene	0.125	0.134	0.132	107	106	77.0-121			1.50	20
Dichlorodifluoromethane	0.125	0.145	0.144	116	115	43.0-156			0.692	20
1,1-Dichloroethane	0.125	0.137	0.137	110	110	70.0-127			0.000	20
1,2-Dichloroethane	0.125	0.134	0.136	107	109	65.0-131			1.48	20
1,1-Dichloroethene	0.125	0.129	0.133	103	106	65.0-131			3.05	20
cis-1,2-Dichloroethene	0.125	0.126	0.131	101	105	73.0-125			3.89	20
trans-1,2-Dichloroethene	0.125	0.129	0.137	103	110	71.0-125			6.02	20
1,2-Dichloropropane	0.125	0.134	0.139	107	111	74.0-125			3.66	20
1,1-Dichloropropene	0.125	0.131	0.134	105	107	73.0-125			2.26	20
1,3-Dichloropropane	0.125	0.135	0.135	108	108	80.0-125			0.000	20
cis-1,3-Dichloropropene	0.125	0.145	0.149	116	119	76.0-127			2.72	20
trans-1,3-Dichloropropene	0.125	0.144	0.142	115	114	73.0-127			1.40	20
2,2-Dichloropropane	0.125	0.126	0.127	101	102	59.0-135			0.791	20
Di-isopropyl ether	0.125	0.175	0.177	140	142	60.0-136	J4	J4	1.14	20
Ethylbenzene	0.125	0.131	0.129	105	103	74.0-126			1.54	20
Hexachloro-1,3-butadiene	0.125	0.134	0.137	107	110	57.0-150			2.21	20
Isopropylbenzene	0.125	0.134	0.133	107	106	72.0-127			0.749	20
p-Isopropyltoluene	0.125	0.135	0.142	108	114	72.0-133			5.05	20
2-Butanone (MEK)	0.625	1.03	1.01	165	162	30.0-160	J4	J4	1.96	24
Methylene Chloride	0.125	0.120	0.119	96.0	95.2	68.0-123			0.837	20
4-Methyl-2-pentanone (MIBK)	0.625	0.854	0.840	137	134	56.0-143			1.65	20
Methyl tert-butyl ether	0.125	0.151	0.155	121	124	66.0-132			2.61	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4095525-1 07/15/24 19:13 • (LCSD) R4095525-2 07/15/24 19:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.0922	0.0979	73.8	78.3	59.0-130			6.00	20
n-Propylbenzene	0.125	0.151	0.153	121	122	74.0-126			1.32	20
Styrene	0.125	0.119	0.122	95.2	97.6	72.0-127			2.49	20
1,1,1,2-Tetrachloroethane	0.125	0.143	0.143	114	114	74.0-129			0.000	20
1,1,2,2-Tetrachloroethane	0.125	0.138	0.139	110	111	68.0-128			0.722	20
1,1,2-Trichlorotrifluoroethane	0.125	0.126	0.128	101	102	61.0-139			1.57	20
Tetrachloroethene	0.125	0.130	0.132	104	106	70.0-136			1.53	20
Toluene	0.125	0.129	0.130	103	104	75.0-121			0.772	20
1,2,3-Trichlorobenzene	0.125	0.119	0.115	95.2	92.0	59.0-139			3.42	20
1,2,4-Trichlorobenzene	0.125	0.119	0.125	95.2	100	62.0-137			4.92	20
1,1,1-Trichloroethane	0.125	0.147	0.150	118	120	69.0-126			2.02	20
1,1,2-Trichloroethane	0.125	0.136	0.136	109	109	78.0-123			0.000	20
Trichloroethene	0.125	0.132	0.134	106	107	76.0-126			1.50	20
Trichlorofluoromethane	0.125	0.118	0.123	94.4	98.4	61.0-142			4.15	20
1,2,3-Trichloropropane	0.125	0.127	0.135	102	108	67.0-129			6.11	20
1,2,4-Trimethylbenzene	0.125	0.136	0.141	109	113	70.0-126			3.61	20
1,2,3-Trimethylbenzene	0.125	0.126	0.130	101	104	74.0-124			3.12	20
1,3,5-Trimethylbenzene	0.125	0.139	0.144	111	115	73.0-127			3.53	20
Vinyl chloride	0.125	0.125	0.125	100	100	63.0-134			0.000	20
Xylenes, Total	0.375	0.385	0.390	103	104	72.0-127			1.29	20
(S) Toluene-d8				*98.8*	*99.4*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*100*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*105*	*105*	*70.0-130*				

L1755455-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755455-01 07/15/24 23:07 • (MS) R4095525-4 07/16/24 04:48 • (MSD) R4095525-5 07/16/24 05:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	U	0.278	0.305	44.5	48.8	1	10.0-160			9.26	40
Acrylonitrile	0.625	U	0.647	0.740	104	118	1	10.0-160			13.4	40
Benzene	0.125	U	0.121	0.109	96.8	87.2	1	10.0-149			10.4	37
Bromobenzene	0.125	U	0.138	0.124	110	99.2	1	10.0-156			10.7	38
Bromodichloromethane	0.125	U	0.151	0.134	121	107	1	10.0-143			11.9	37
Bromoform	0.125	U	0.153	0.137	122	110	1	10.0-146			11.0	36
Bromomethane	0.125	U	0.0764	0.0584	61.1	46.7	1	10.0-149			26.7	38
n-Butylbenzene	0.125	U	0.143	0.136	114	109	1	10.0-160			5.02	40
sec-Butylbenzene	0.125	U	0.135	0.123	108	98.4	1	10.0-159			9.30	39
tert-Butylbenzene	0.125	U	0.139	0.126	111	101	1	10.0-156			9.81	39

L1755455-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755455-01 07/15/24 23:07 • (MS) R4095525-4 07/16/24 04:48 • (MSD) R4095525-5 07/16/24 05:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.125	U	0.143	0.124	114	99.2	1	10.0-145			14.2	37
Chlorobenzene	0.125	U	0.131	0.118	105	94.4	1	10.0-152			10.4	39
Chlorodibromomethane	0.125	U	0.135	0.121	108	96.8	1	10.0-146			10.9	37
Chloroethane	0.125	U	0.0712	0.0488	57.0	39.0	1	10.0-146			37.3	40
Chloroform	0.125	0.00760	0.133	0.113	100	84.3	1	10.0-146			16.3	37
Chloromethane	0.125	U	0.128	0.115	102	92.0	1	10.0-159			10.7	37
2-Chlorotoluene	0.125	U	0.134	0.121	107	96.8	1	10.0-159			10.2	38
4-Chlorotoluene	0.125	U	0.118	0.127	94.4	102	1	10.0-155			7.35	39
1,2-Dibromo-3-Chloropropane	0.125	U	0.101	0.109	80.8	87.2	1	10.0-151			7.62	39
1,2-Dibromoethane	0.125	U	0.134	0.119	107	95.2	1	10.0-148			11.9	34
Dibromomethane	0.125	U	0.130	0.123	104	98.4	1	10.0-147			5.53	35
1,2-Dichlorobenzene	0.125	U	0.142	0.128	114	102	1	10.0-155			10.4	37
1,3-Dichlorobenzene	0.125	U	0.140	0.123	112	98.4	1	10.0-153			12.9	38
1,4-Dichlorobenzene	0.125	U	0.136	0.121	109	96.8	1	10.0-151			11.7	38
Dichlorodifluoromethane	0.125	U	0.153	0.129	122	103	1	10.0-160			17.0	35
1,1-Dichloroethane	0.125	U	0.138	0.121	110	96.8	1	10.0-147			13.1	37
1,2-Dichloroethane	0.125	0.00100	0.128	0.119	102	94.4	1	10.0-148			7.29	35
1,1-Dichloroethene	0.125	U	0.129	0.111	103	88.8	1	10.0-155			15.0	37
cis-1,2-Dichloroethene	0.125	U	0.135	0.117	108	93.6	1	10.0-149			14.3	37
trans-1,2-Dichloroethene	0.125	U	0.123	0.109	98.4	87.2	1	10.0-150			12.1	37
1,2-Dichloropropane	0.125	U	0.141	0.128	113	102	1	10.0-148			9.67	37
1,1-Dichloropropene	0.125	U	0.133	0.116	106	92.8	1	10.0-153			13.7	35
1,3-Dichloropropane	0.125	U	0.135	0.123	108	98.4	1	10.0-154			9.30	35
cis-1,3-Dichloropropene	0.125	U	0.146	0.136	117	109	1	10.0-151			7.09	37
trans-1,3-Dichloropropene	0.125	U	0.139	0.129	111	103	1	10.0-148			7.46	37
2,2-Dichloropropane	0.125	U	0.110	0.0898	88.0	71.8	1	10.0-138			20.2	36
Di-isopropyl ether	0.125	U	0.161	0.156	129	125	1	10.0-147			3.15	36
Ethylbenzene	0.125	U	0.133	0.120	106	96.0	1	10.0-160			10.3	38
Hexachloro-1,3-butadiene	0.125	U	0.147	0.157	118	126	1	10.0-160			6.58	40
Isopropylbenzene	0.125	U	0.144	0.125	115	100	1	10.0-155			14.1	38
p-Isopropyltoluene	0.125	U	0.143	0.130	114	104	1	10.0-160			9.52	40
2-Butanone (MEK)	0.625	U	0.680	0.798	109	128	1	10.0-160			16.0	40
Methylene Chloride	0.125	U	0.113	0.105	90.4	84.0	1	10.0-141			7.34	37
4-Methyl-2-pentanone (MIBK)	0.625	U	0.708	0.723	113	116	1	10.0-160			2.10	35
Methyl tert-butyl ether	0.125	U	0.138	0.123	110	98.4	1	11.0-147			11.5	35
Naphthalene	0.125	0.00528	0.0998	0.0985	75.6	74.6	1	10.0-160			1.31	36
n-Propylbenzene	0.125	U	0.145	0.131	116	105	1	10.0-158			10.1	38
Styrene	0.125	U	0.130	0.114	104	91.2	1	10.0-160			13.1	40
1,1,1,2-Tetrachloroethane	0.125	U	0.151	0.131	121	105	1	10.0-149			14.2	39
1,1,2,2-Tetrachloroethane	0.125	0.000925	0.100	0.111	79.3	88.1	1	10.0-160			10.4	35

L1755455-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755455-01 07/15/24 23:07 • (MS) R4095525-4 07/16/24 04:48 • (MSD) R4095525-5 07/16/24 05:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2-Trichlorotrifluoroethane	0.125	U	0.140	0.121	112	96.8	1	10.0-160			14.6	36
Tetrachloroethene	0.125	U	0.132	0.119	106	95.2	1	10.0-156			10.4	39
Toluene	0.125	U	0.130	0.113	104	90.4	1	10.0-156			14.0	38
1,2,3-Trichlorobenzene	0.125	U	0.147	0.146	118	117	1	10.0-160			0.683	40
1,2,4-Trichlorobenzene	0.125	U	0.148	0.147	118	118	1	10.0-160			0.678	40
1,1,1-Trichloroethane	0.125	U	0.151	0.126	121	101	1	10.0-144			18.1	35
1,1,2-Trichloroethane	0.125	U	0.139	0.127	111	102	1	10.0-160			9.02	35
Trichloroethene	0.125	U	0.160	0.129	128	103	1	10.0-156			21.5	38
Trichlorofluoromethane	0.125	U	0.0753	0.0610	60.2	48.8	1	10.0-160			21.0	40
1,2,3-Trichloropropane	0.125	U	0.116	0.109	92.8	87.2	1	10.0-156			6.22	35
1,2,4-Trimethylbenzene	0.125	U	0.139	0.123	111	98.4	1	10.0-160			12.2	36
1,2,3-Trimethylbenzene	0.125	U	0.131	0.118	105	94.4	1	10.0-160			10.4	36
1,3,5-Trimethylbenzene	0.125	U	0.137	0.122	110	97.6	1	10.0-160			11.6	38
Vinyl chloride	0.125	U	0.122	0.108	97.6	86.4	1	10.0-160			12.2	37
Xylenes, Total	0.375	U	0.399	0.351	106	93.6	1	10.0-160			12.8	38
(S) Toluene-d8					*98.3*	*98.9*		*75.0-131*				
(S) 4-Bromofluorobenzene					*105*	*102*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*95.1*	*98.0*		*70.0-130*				

Method Blank (MB)

(MB) R4093805-1 07/14/24 12:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C12-C22 Hydrocarbons	U		33.0	100
C22-C32 Hydrocarbons	U		33.0	100
C32-C40 Hydrocarbons	U		33.0	100
(S) o-Terphenyl	*79.5*			*52.0-156*

Laboratory Control Sample (LCS)

(LCS) R4093805-2 07/14/24 13:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	750	943	126	50.0-150	
C22-C32 Hydrocarbons	750	758	101	50.0-150	
(S) o-Terphenyl			*102*	*52.0-156*	

L1755439-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755439-01 07/14/24 14:23 • (MS) R4093805-3 07/14/24 14:43 • (MSD) R4093805-4 07/14/24 15:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	714	112	1070	1060	134	133	1	50.0-150			0.939	20
C22-C32 Hydrocarbons	714	61.8	828	811	116	114	1	50.0-150			2.07	20
(S) o-Terphenyl					*111*	*115*		*52.0-156*				

Method Blank (MB)

(MB) R4093437-1 07/12/24 17:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*77.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4093437-2 07/12/24 17:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	17.7	70.8	50.0-150	
C22-C32 Hydrocarbons	25.0	14.3	57.2	50.0-150	
(S) o-Terphenyl			*75.1*	*18.0-148*	

L1755622-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755622-13 07/12/24 19:17 • (MS) R4093437-3 07/12/24 19:31 • (MSD) R4093437-4 07/12/24 19:46

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	28.3	U	20.9	20.6	73.9	72.2	1	50.0-150			1.11	20
C22-C32 Hydrocarbons	28.3	U	17.1	17.2	60.4	60.1	1	50.0-150			0.673	20
(S) o-Terphenyl					*74.7*	*72.7*		*18.0-148*				

Method Blank (MB)

(MB) R4094075-1 07/15/24 11:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*77.2*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4094075-2 07/15/24 11:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0633	76.0	40.0-120	
Dalapon	0.0833	0.0482	57.9	15.0-120	
2,4-DB	0.0833	0.0651	78.2	25.0-143	
Dicamba	0.0833	0.0583	70.0	43.0-120	
Dichloroprop	0.0833	0.0724	86.9	32.0-129	
Dinoseb	0.0833	0.0144	17.3	10.0-120	
MCPA	8.33	8.06	96.8	31.0-121	
MCPP	8.33	7.16	86.0	28.0-133	
2,4,5-T	0.0833	0.0720	86.4	41.0-120	
2,4,5-TP (Silvex)	0.0833	0.0672	80.7	42.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*75.4*	*22.0-132*	

L1755783-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755783-01 07/15/24 14:10 • (MS) R4094075-3 07/15/24 14:22 • (MSD) R4094075-4 07/15/24 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0828	U	0.0376	0.0460	45.4	55.6	1	10.0-160			20.1	24
Dalapon	0.0828	U	0.0146	0.0119	17.6	14.4	1	10.0-121			20.4	27
2,4-DB	0.0828	U	0.122	0.109	147	132	1	10.0-160	P	P	11.3	22
Dicamba	0.0828	U	0.0288	0.0241	34.8	29.1	1	10.0-154			17.8	21

L1755783-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755783-01 07/15/24 14:10 • (MS) R4094075-3 07/15/24 14:22 • (MSD) R4094075-4 07/15/24 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Dichloroprop	0.0828	U	0.0497	0.0623	60.0	75.2	1	10.0-158		J3	22.5	20
Dinoseb	0.0828	U	0.0269	0.0226	32.5	27.3	1	10.0-120			17.4	40
MCPA	8.28	U	5.91	4.90	71.4	59.2	1	10.0-160			18.7	40
MCPP	8.28	U	5.59	4.10	67.5	49.5	1	10.0-160			30.8	40
2,4,5-T	0.0828	U	0.0339	0.0310	40.9	37.4	1	10.0-157			8.94	20
2,4,5-TP (Silvex)	0.0828	U	0.0424	0.0393	51.2	47.5	1	10.0-156			7.59	20
(S) 2,4-Dichlorophenyl Acetic Acid					*72.3*	*77.1*		*22.0-132*				

Method Blank (MB)

(MB) R4097006-1 07/22/24 15:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2,4-D	U		0.547	2.00
Dalapon	U		0.344	2.00
2,4-DB	U		0.302	2.00
Dicamba	U		0.245	2.00
Dichloroprop	U		1.04	2.00
Dinoseb	U		0.250	2.00
MCPA	U		13.1	100
MCPP	U		66.0	100
2,4,5-T	U		0.258	2.00
2,4,5-TP (Silvex)	U		0.335	2.00
Pentachlorophenol	U		0.111	1.00
(S) 2,4-Dichlorophenyl Acetic Acid	*84.4*			*14.0-158*

Laboratory Control Sample (LCS)

(LCS) R4097006-2 07/22/24 16:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	2.50	2.35	94.0	50.0-120	
Dalapon	2.50	2.68	107	32.0-120	P
2,4-DB	2.50	2.05	82.0	53.0-140	
Dicamba	2.50	1.83	73.2	51.0-120	J
Dichloroprop	2.50	2.55	102	55.0-127	P
Dinoseb	2.50	1.56	62.4	36.0-134	J
MCPA	250	216	86.4	10.0-160	
MCPP	250	321	128	10.0-160	P
2,4,5-T	2.50	2.10	84.0	54.0-120	
2,4,5-TP (Silvex)	2.50	1.96	78.4	50.0-125	J
Pentachlorophenol	0.500	0.351	70.2	41.0-120	J
(S) 2,4-Dichlorophenyl Acetic Acid			*96.6*	*14.0-158*	

L1755608-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755608-16 07/23/24 20:21 • (MS) R4097605-1 07/23/24 20:32 • (MSD) R4097605-2 07/23/24 20:44

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	2.50	U	2.44	2.21	97.6	89.8	1	50.0-120			9.89	20
Dalapon	2.50	U	3.12	4.11	125	167	1	32.0-120	J5 P	J3 J5 P	27.4	20

L1755608-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755608-16 07/23/24 20:21 • (MS) R4097605-1 07/23/24 20:32 • (MSD) R4097605-2 07/23/24 20:44

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-DB	2.50	U	2.07	1.90	82.8	77.2	1	53.0-140		J	8.56	20
Dicamba	2.50	U	2.03	2.09	81.2	85.0	1	51.0-120			2.91	20
Dichloroprop	2.50	U	2.59	2.62	104	107	1	55.0-127	P	P	1.15	20
Dinoseb	2.50	U	1.80	1.80	72.0	73.2	1	36.0-134	J	J	0.000	20
MCPA	250	U	216	190	86.4	77.2	1	10.0-160	P		12.8	40
MCPP	250	U	201	207	80.4	84.1	1	10.0-160	P	P	2.94	23
2,4,5-T	2.50	U	2.24	2.04	89.6	82.9	1	54.0-120			9.35	20
2,4,5-TP (Silvex)	2.50	U	2.12	2.12	84.8	86.2	1	50.0-125			0.000	20
Pentachlorophenol	0.500	U	0.351	0.349	70.2	70.9	1	41.0-120	J	J	0.571	20
(S) 2,4-Dichlorophenyl Acetic Acid					*103*	*109*		*14.0-158*				

Sample Narrative:

OS: Surrogate failure due to matrix interference.

Method Blank (MB)

(MB) R4094602-3 07/16/24 22:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0190	0.0500
Acenaphthene	U		0.0190	0.0500
Acenaphthylene	U		0.0171	0.0500
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(g,h,i)perylene	U		0.0184	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Fluoranthene	U		0.0270	0.100
Fluorene	U		0.0169	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
Phenanthrene	U		0.0180	0.0500
Pyrene	U		0.0169	0.0500
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
2-Chloronaphthalene	U		0.0682	0.250
(S) Nitrobenzene-d5	*92.5*			*31.0-160*
(S) 2-Fluorobiphenyl	*87.0*			*48.0-148*
(S) p-Terphenyl-d14	*99.0*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4094602-1 07/16/24 21:29 • (LCSD) R4094602-2 07/16/24 21:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	1.96	1.94	98.0	97.0	67.0-150			1.03	20
Acenaphthene	2.00	1.72	1.77	86.0	88.5	65.0-138			2.87	20
Acenaphthylene	2.00	1.86	1.91	93.0	95.5	66.0-140			2.65	20
Benzo(a)anthracene	2.00	1.87	1.90	93.5	95.0	61.0-140			1.59	20
Benzo(a)pyrene	2.00	1.76	1.81	88.0	90.5	60.0-143			2.80	20
Benzo(b)fluoranthene	2.00	1.85	1.89	92.5	94.5	58.0-141			2.14	20
Benzo(g,h,i)perylene	2.00	1.69	1.77	84.5	88.5	52.0-153			4.62	20
Benzo(k)fluoranthene	2.00	1.66	1.73	83.0	86.5	58.0-148			4.13	20
Chrysene	2.00	1.92	1.96	96.0	98.0	64.0-144			2.06	20
Dibenz(a,h)anthracene	2.00	1.66	1.71	83.0	85.5	52.0-155			2.97	20
Fluoranthene	2.00	2.02	2.02	101	101	69.0-153			0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4094602-1 07/16/24 21:29 • (LCSD) R4094602-2 07/16/24 21:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	2.00	1.93	1.97	96.5	98.5	64.0-136			2.05	20
Indeno(1,2,3-cd)pyrene	2.00	1.65	1.71	82.5	85.5	54.0-153			3.57	20
Naphthalene	2.00	1.76	1.83	88.0	91.5	61.0-137			3.90	20
Phenanthrene	2.00	1.85	1.87	92.5	93.5	62.0-137			1.08	20
Pyrene	2.00	1.90	1.93	95.0	96.5	60.0-142			1.57	20
1-Methylnaphthalene	2.00	1.82	1.91	91.0	95.5	66.0-142			4.83	20
2-Methylnaphthalene	2.00	1.82	1.89	91.0	94.5	62.0-136			3.77	20
2-Chloronaphthalene	2.00	1.79	1.85	89.5	92.5	64.0-140			3.30	20
(S) Nitrobenzene-d5				*98.0*	*97.0*	*31.0-160*				
(S) 2-Fluorobiphenyl				*91.0*	*83.5*	*48.0-148*				
(S) p-Terphenyl-d14				*99.5*	*102*	*37.0-146*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R4094997-2 07/16/24 22:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*61.5*			*23.0-120*
(S) Nitrobenzene-d5	*60.2*			*14.0-149*
(S) 2-Fluorobiphenyl	*56.1*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4094997-1 07/16/24 22:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0513	64.1	50.0-126	
Acenaphthene	0.0800	0.0477	59.6	50.0-120	
Acenaphthylene	0.0800	0.0501	62.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0524	65.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0485	60.6	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0513	64.1	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0527	65.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0482	60.3	49.0-125	
Chrysene	0.0800	0.0531	66.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0545	68.1	47.0-125	
Fluoranthene	0.0800	0.0532	66.5	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4094997-1 07/16/24 22:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0546	68.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0550	68.8	46.0-125	
Naphthalene	0.0800	0.0496	62.0	50.0-120	
Phenanthrene	0.0800	0.0535	66.9	47.0-120	
Pyrene	0.0800	0.0523	65.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0516	64.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0499	62.4	50.0-120	
2-Chloronaphthalene	0.0800	0.0487	60.9	50.0-120	
(S) p-Terphenyl-d14			*58.6*	*23.0-120*	
(S) Nitrobenzene-d5			*54.7*	*14.0-149*	
(S) 2-Fluorobiphenyl			*52.0*	*34.0-125*	

L1756473-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1756473-04 07/16/24 23:42 • (MS) R4094997-3 07/17/24 00:01 • (MSD) R4094997-4 07/17/24 00:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	U	0.0481	0.0462	60.1	57.8	1	10.0-145			4.03	30
Acenaphthene	0.0800	U	0.0427	0.0372	53.4	46.5	1	14.0-127			13.8	27
Acenaphthylene	0.0800	U	0.0452	0.0400	56.5	50.0	1	21.0-124			12.2	25
Benzo(a)anthracene	0.0800	U	0.0482	0.0481	60.3	60.1	1	10.0-139			0.208	30
Benzo(a)pyrene	0.0800	U	0.0470	0.0477	58.7	59.6	1	10.0-141			1.48	31
Benzo(b)fluoranthene	0.0800	U	0.0471	0.0487	58.9	60.9	1	10.0-140			3.34	36
Benzo(g,h,i)perylene	0.0800	U	0.0493	0.0512	61.6	64.0	1	10.0-140			3.78	33
Benzo(k)fluoranthene	0.0800	U	0.0478	0.0490	59.8	61.3	1	10.0-137			2.48	31
Chrysene	0.0800	U	0.0538	0.0551	67.3	68.9	1	10.0-145			2.39	30
Dibenz(a,h)anthracene	0.0800	U	0.0544	0.0577	68.0	72.1	1	10.0-132			5.89	31
Fluoranthene	0.0800	U	0.0471	0.0429	58.9	53.6	1	10.0-153			9.33	33
Fluorene	0.0800	U	0.0484	0.0439	60.5	54.9	1	11.0-130			9.75	29
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0496	0.0512	62.0	64.0	1	10.0-137			3.17	32
Naphthalene	0.0800	U	0.0474	0.0422	59.3	52.7	1	10.0-135			11.6	27
Phenanthrene	0.0800	U	0.0480	0.0428	60.0	53.5	1	10.0-144			11.5	31
Pyrene	0.0800	U	0.0465	0.0432	58.1	54.0	1	10.0-148			7.36	35
1-Methylnaphthalene	0.0800	U	0.0467	0.0407	58.4	50.9	1	10.0-142			13.7	28
2-Methylnaphthalene	0.0800	U	0.0464	0.0406	58.0	50.8	1	10.0-137			13.3	28
2-Chloronaphthalene	0.0800	U	0.0466	0.0410	58.1	51.1	1	29.0-120			12.8	24
(S) p-Terphenyl-d14					*57.3*	*49.6*		*23.0-120*				
(S) Nitrobenzene-d5					*62.1*	*67.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*50.6*	*34.4*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
P	RPD between the primary and confirmatory analysis exceeded 40%.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical™

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: G164

ALL SHADED AREAS are for LAB USE ONLY

Company: PRIMA Env	Billing Information: Same, Attn Chris Brooks
Address: 5070 Robert J Mathews Pkwy, Ste 300 el Dorado Hills, CA 95762	
Report To: Cindy Schreier	Email To: data@primaenvironmental.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Geosyntec-Simplot	State: CA / County/City: El Dorado / Time Zone Collected: [✓] PT [ ] MT [ ] CT [ ] ET
Phone: 916-939-7300 Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [✓] No
Collected By (print):	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: 5 days / Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [X] Yes [ ] No / Analysis: metals

Container Preservative Type **

Lab Project Manager: L1755360

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO	DRO/ORO	Herbicides	PAHs-SIM	VOCs	Metals (As, Ba, Cd, Cr, Se)	
Geosyn-Sim Time 0	GW		7-10-24	15:20				11	X	X	X	X	X	X	
Geosyn-Sim Time 0 (so)	soil		7-10-24	15:20				1	X	X	X	X	X		

PH-10BDH094

TRC-3223A24B

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

-01

-02

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 7773 2580 0265

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____ oC
Cooler 1 Therm Corr. Factor: _____ oC
Cooler 1 Corrected Temp: _____ oC
Comments:
EDDS 4.4-0.3=4.7

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Schi PRIMA	7/10/24 ~1600	FedEx	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
		Robert Bonto	07/11/2024 0900
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

August 01, 2024

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

PRIMA Environmental, Inc

Sample Delivery Group:	L1758088
Samples Received:	07/18/2024
Project Number:	
Description:	Geosyntec-Simplot

Report To: Cindy Schreier
5070 Robert J. Mathews Parkway
Ste. 300
El Dorado Hills, CA 95762

Entire Report Reviewed By:

Jordan Dozier
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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GEOSYN-SIM PC-A L1758088-01 GW

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2327644	1	07/26/24 12:20	07/26/24 16:33	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2327974	1	07/23/24 07:51	07/23/24 07:51	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327536	1	07/22/24 15:32	07/22/24 15:32	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2328603	1	07/25/24 16:48	07/26/24 11:13	AUU	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	1.01	07/20/24 06:08	07/29/24 03:35	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	10.1	07/20/24 06:08	07/31/24 13:06	LTB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	5.05	07/20/24 06:08	07/30/24 16:10	HLA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	1	07/24/24 08:06	07/24/24 23:09	JRM	Mt. Juliet, TN

GEOSYN-SIM PC-A (SO) L1758088-02 Solid

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2326366	1	07/19/24 15:40	07/19/24 15:54	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2329848	1.01	07/23/24 22:59	07/25/24 13:06	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330348	1	07/23/24 22:59	07/26/24 07:52	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2329375	1	07/24/24 17:21	07/25/24 02:35	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2331580	1	07/24/24 12:17	07/28/24 06:35	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2331414	1	07/29/24 07:38	07/29/24 19:21	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-PH LOW A L1758088-03 GW

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2327644	1	07/26/24 12:20	07/26/24 16:36	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2327974	1	07/23/24 08:13	07/23/24 08:13	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327536	1	07/22/24 15:53	07/22/24 15:53	DYW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330113	20	07/26/24 01:34	07/26/24 01:34	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2328603	1	07/25/24 16:48	07/26/24 11:52	AUU	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	1.09	07/20/24 06:08	07/29/24 05:37	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	10.9	07/20/24 06:08	07/31/24 13:17	LTB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	5.45	07/20/24 06:08	07/31/24 12:43	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	1	07/24/24 08:06	07/24/24 19:01	JRM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	10	07/24/24 08:06	07/26/24 06:42	ALM	Mt. Juliet, TN

GEOSYN-SIM AP-PH LOW A (SO) L1758088-04 Solid

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2326366	1	07/19/24 15:40	07/19/24 15:54	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2329848	1	07/23/24 22:59	07/25/24 13:30	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330348	1	07/23/24 22:59	07/26/24 08:11	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2329375	1	07/24/24 17:21	07/25/24 02:49	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2331580	1	07/24/24 12:17	07/28/24 07:15	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2332231	1	07/29/24 22:24	07/30/24 02:00	JCH	Mt. Juliet, TN

GEOSYN-SIM AP-PH HIGH A L1758088-05 GW

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2327644	1	07/26/24 12:20	07/26/24 16:39	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2327974	10	07/23/24 10:30	07/23/24 10:30	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327536	1	07/22/24 16:15	07/22/24 16:15	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2328603	1	07/25/24 16:48	07/26/24 12:13	AUU	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	1.09	07/20/24 06:08	07/29/24 04:56	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	2.18	07/20/24 06:08	07/30/24 16:40	HLA	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	2.18	07/20/24 06:08	07/31/24 12:08	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	1	07/24/24 08:06	07/24/24 19:19	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-PH HIGH A (SO) L1758088-06 Solid

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2326366	1	07/19/24 15:40	07/19/24 15:54	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2329848	1	07/23/24 22:59	07/25/24 13:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330348	1.01	07/23/24 22:59	07/26/24 08:30	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2329375	1	07/24/24 17:21	07/25/24 02:21	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2331580	1	07/24/24 12:17	07/28/24 07:26	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2332231	1	07/29/24 22:24	07/30/24 02:17	JCH	Mt. Juliet, TN

GEOSYN-SIM AP-HP LOW A L1758088-07 GW

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2327644	1	07/26/24 12:20	07/26/24 16:49	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2327974	1	07/23/24 08:36	07/23/24 08:36	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327536	1	07/22/24 16:36	07/22/24 16:36	DYW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330113	1	07/26/24 00:12	07/26/24 00:12	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2328603	1	07/25/24 16:48	07/26/24 12:33	AUU	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	1	07/20/24 06:08	07/29/24 03:45	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	5	07/20/24 06:08	07/31/24 12:31	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	1	07/24/24 08:06	07/24/24 19:37	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-HP LOW A (SO) L1758088-08 Solid

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2326366	1	07/19/24 15:40	07/19/24 15:54	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2329848	1	07/23/24 22:59	07/25/24 14:17	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330348	1.01	07/23/24 22:59	07/26/24 08:49	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2329375	1	07/24/24 17:21	07/25/24 03:16	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2331580	1	07/24/24 12:17	07/28/24 07:36	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2332231	1	07/29/24 22:24	07/30/24 02:34	JCH	Mt. Juliet, TN

GEOSYN-SIM AP-HP HIGH A L1758088-09 GW

Collected by: Mariah F | Collected date/time: 07/17/24 08:50 | Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2327644	1	07/26/24 12:20	07/26/24 16:52	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2327974	1	07/23/24 08:59	07/23/24 08:59	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2327536	1	07/22/24 16:57	07/22/24 16:57	DYW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330113	1	07/26/24 00:32	07/26/24 00:32	JHH	Mt. Juliet, TN

SAMPLE SUMMARY

GEOSYN-SIM AP-HP HIGH A L1758088-09 GW

Collected by: Mariah F
Collected date/time: 07/17/24 08:50
Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2328603	1	07/25/24 16:48	07/26/24 13:15	AUU	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2326058	1	07/20/24 06:08	07/29/24 03:55	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2328840	1	07/24/24 08:06	07/24/24 19:54	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-HP HIGH A (SO) L1758088-10 Solid

Collected by: Mariah F
Collected date/time: 07/17/24 08:50
Received date/time: 07/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2326370	1	07/19/24 17:14	07/19/24 17:22	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2329848	1.01	07/23/24 22:59	07/25/24 14:40	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2330348	1	07/23/24 22:59	07/26/24 09:08	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2329375	1	07/24/24 17:21	07/25/24 02:07	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2331580	1	07/24/24 12:17	07/28/24 07:46	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2332231	1	07/29/24 22:24	07/30/24 02:51	JCH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jordan Dozier
Project Manager

Sample Delivery Group (SDG) Narrative

pH outside of method requirement.

Lab Sample ID	Project Sample ID	Method
L1758088-03	GEOSYN-SIM AP-PH LOW A	3511/8015
L1758088-07	GEOSYN-SIM AP-HP LOW A	3511/8015

DETECTION SUMMARY

Metals (ICP) by Method 6010B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	Arsenic	9.70	J	4.40	10.0	1	07/26/2024 16:33	WG2327644
GEOSYN-SIM PC-A	L1758088-01	Barium	72.6		0.736	5.00	1	07/26/2024 16:33	WG2327644
GEOSYN-SIM PC-A	L1758088-01	Cadmium	0.642	J	0.479	2.00	1	07/26/2024 16:33	WG2327644
GEOSYN-SIM PC-A	L1758088-01	Selenium	8.91	J	7.35	10.0	1	07/26/2024 16:33	WG2327644
GEOSYN-SIM AP-PH LOW A	L1758088-03	Arsenic	22.2		4.40	10.0	1	07/26/2024 16:36	WG2327644
GEOSYN-SIM AP-PH LOW A	L1758088-03	Barium	142		0.736	5.00	1	07/26/2024 16:36	WG2327644
GEOSYN-SIM AP-PH LOW A	L1758088-03	Cadmium	1.03	J	0.479	2.00	1	07/26/2024 16:36	WG2327644
GEOSYN-SIM AP-PH LOW A	L1758088-03	Chromium	9.44	J	1.40	10.0	1	07/26/2024 16:36	WG2327644
GEOSYN-SIM AP-PH LOW A	L1758088-03	Selenium	23.6		7.35	10.0	1	07/26/2024 16:36	WG2327644
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Arsenic	438		4.40	10.0	1	07/26/2024 16:39	WG2327644
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Barium	17.3		0.736	5.00	1	07/26/2024 16:39	WG2327644
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Chromium	35.6		1.40	10.0	1	07/26/2024 16:39	WG2327644
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Selenium	28.6		7.35	10.0	1	07/26/2024 16:39	WG2327644
GEOSYN-SIM AP-HP LOW A	L1758088-07	Arsenic	152		4.40	10.0	1	07/26/2024 16:49	WG2327644
GEOSYN-SIM AP-HP LOW A	L1758088-07	Barium	26.9		0.736	5.00	1	07/26/2024 16:49	WG2327644
GEOSYN-SIM AP-HP LOW A	L1758088-07	Chromium	23.5		1.40	10.0	1	07/26/2024 16:49	WG2327644
GEOSYN-SIM AP-HP LOW A	L1758088-07	Selenium	11.9		7.35	10.0	1	07/26/2024 16:49	WG2327644
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Arsenic	14.0		4.40	10.0	1	07/26/2024 16:52	WG2327644
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Barium	98.6		0.736	5.00	1	07/26/2024 16:52	WG2327644
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Cadmium	2.45		0.479	2.00	1	07/26/2024 16:52	WG2327644
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Chromium	11.9		1.40	10.0	1	07/26/2024 16:52	WG2327644
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Selenium	24.8		7.35	10.0	1	07/26/2024 16:52	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	TPHG C5 - C12	1010		30.4	100	1	07/23/2024 07:51	WG2327974
GEOSYN-SIM AP-PH LOW A	L1758088-03	TPHG C5 - C12	1590		30.4	100	1	07/23/2024 08:13	WG2327974
GEOSYN-SIM AP-PH HIGH A	L1758088-05	TPHG C5 - C12	769	B J	304	1000	10	07/23/2024 10:30	WG2327974
GEOSYN-SIM AP-HP LOW A	L1758088-07	TPHG C5 - C12	284	B	30.4	100	1	07/23/2024 08:36	WG2327974
GEOSYN-SIM AP-HP HIGH A	L1758088-09	TPHG C5 - C12	116	B	30.4	100	1	07/23/2024 08:59	WG2327974

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A (SO)	L1758088-02	TPHG C5 - C12	2.34		0.0435	0.131	1.01	07/25/2024 13:06	WG2329848
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	TPHG C5 - C12	3.97		0.0447	0.135	1	07/25/2024 13:30	WG2329848

DETECTION SUMMARY

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	TPHG C5 - C12	3.76		0.0451	0.136	1	07/25/2024 13:53	WG2329848
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	TPHG C5 - C12	4.48		0.0431	0.130	1	07/25/2024 14:17	WG2329848
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	TPHG C5 - C12	1.77		0.0443	0.133	1.01	07/25/2024 14:40	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	Benzene	1.15		0.0941	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	sec-Butylbenzene	0.766	J	0.125	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	1,2-Dichloroethane	28.4		0.0819	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	1,2-Dichloropropane	1.05		0.149	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	Isopropylbenzene	0.986	J	0.105	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	p-Isopropyltoluene	0.826	J	0.120	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	2-Butanone (MEK)	29.7		1.19	10.0	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	4-Methyl-2-pentanone (MIBK)	6.34	J	0.478	10.0	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	Naphthalene	6.48		1.00	5.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	n-Propylbenzene	1.44		0.0993	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	Toluene	1.06		0.278	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	1,2,3-Trimethylbenzene	0.248	J	0.104	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM PC-A	L1758088-01	1,3,5-Trimethylbenzene	0.257	J	0.104	1.00	1	07/22/2024 15:32	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Acetone	107		11.3	50.0	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Benzene	0.900	J	0.0941	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	n-Butylbenzene	3.74		0.157	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	sec-Butylbenzene	1.52		0.125	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	1,2-Dichloroethane	27.5		0.0819	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	1,2-Dichloropropane	0.981	J	0.149	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Ethylbenzene	0.141	J	0.137	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Isopropylbenzene	2.28		0.105	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	p-Isopropyltoluene	1.03		0.120	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	2-Butanone (MEK)	43.1		1.19	10.0	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	4-Methyl-2-pentanone (MIBK)	6.13	J	0.478	10.0	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Naphthalene	401		20.0	100	20	07/26/2024 01:34	WG2330113
GEOSYN-SIM AP-PH LOW A	L1758088-03	n-Propylbenzene	3.36		0.0993	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Tetrachloroethene	1.51		0.300	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Toluene	1.31		0.278	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	1,2,4-Trimethylbenzene	0.526	J	0.322	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	1,2,3-Trimethylbenzene	0.914	J	0.104	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	1,3,5-Trimethylbenzene	1.28		0.104	1.00	1	07/22/2024 15:53	WG2327536
GEOSYN-SIM AP-PH LOW A	L1758088-03	Xylenes, Total	0.837	J	0.174	3.00	1	07/22/2024 15:53	WG2327536

DETECTION SUMMARY

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Acetone	62.9		11.3	50.0	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Benzene	1.75		0.0941	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	n-Butylbenzene	1.12		0.157	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	sec-Butylbenzene	0.486	J	0.125	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	1,2-Dichloroethane	16.6		0.0819	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	1,2-Dichloropropane	0.494	J	0.149	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Isopropylbenzene	0.671	J	0.105	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	p-Isopropyltoluene	0.252	J	0.120	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	4-Methyl-2-pentanone (MIBK)	3.22	J	0.478	10.0	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Naphthalene	63.0		1.00	5.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	n-Propylbenzene	0.903	J	0.0993	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Toluene	0.465	J	0.278	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	1,2,3-Trimethylbenzene	0.435	J	0.104	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-PH HIGH A	L1758088-05	1,3,5-Trimethylbenzene	0.134	J	0.104	1.00	1	07/22/2024 16:15	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	Acetone	172		11.3	50.0	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	1,2-Dichloroethane	25.2		0.0819	1.00	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	1,2-Dichloropropane	0.770	J	0.149	1.00	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	2-Butanone (MEK)	58.1		1.19	10.0	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	Methylene Chloride	0.727	J	0.430	5.00	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	4-Methyl-2-pentanone (MIBK)	9.50	J	0.478	10.0	1	07/22/2024 16:36	WG2327536
GEOSYN-SIM AP-HP LOW A	L1758088-07	Naphthalene	6.05		1.00	5.00	1	07/26/2024 00:12	WG2330113
GEOSYN-SIM AP-HP HIGH A	L1758088-09	Acetone	378		11.3	50.0	1	07/22/2024 16:57	WG2327536
GEOSYN-SIM AP-HP HIGH A	L1758088-09	1,2-Dichloroethane	3.44		0.0819	1.00	1	07/22/2024 16:57	WG2327536
GEOSYN-SIM AP-HP HIGH A	L1758088-09	2-Butanone (MEK)	2.93	J	1.19	10.0	1	07/22/2024 16:57	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A (SO)	L1758088-02	n-Butylbenzene	0.0337		0.00839	0.0200	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	sec-Butylbenzene	0.00791	J	0.00460	0.0200	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	Isopropylbenzene	0.00384	J	0.000679	0.00399	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	p-Isopropyltoluene	0.00583	J	0.00407	0.00799	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	Methyl tert-butyl ether	0.000639	J	0.000559	0.00160	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	Naphthalene	0.0184	J	0.00780	0.0200	1	07/26/2024 07:52	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A (SO)	L1758088-02	n-Propylbenzene	0.00703	J	0.00152	0.00799	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	1,2,4-Trimethylbenzene	0.00487	J	0.00252	0.00799	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	1,2,3-Trimethylbenzene	0.00292	J	0.00252	0.00799	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM PC-A (SO)	L1758088-02	Xylenes, Total	0.00511	J	0.00141	0.0104	1	07/26/2024 07:52	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	n-Butylbenzene	0.0766		0.00888	0.0211	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	sec-Butylbenzene	0.0157	J	0.00487	0.0211	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	Isopropylbenzene	0.0113		0.000719	0.00423	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	p-Isopropyltoluene	0.0112		0.00431	0.00846	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	Naphthalene	0.327		0.00826	0.0211	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	n-Propylbenzene	0.0213		0.00161	0.00846	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	1,2,4-Trimethylbenzene	0.00643	J	0.00267	0.00846	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	1,2,3-Trimethylbenzene	0.00372	J	0.00267	0.00846	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	1,3,5-Trimethylbenzene	0.00587	J	0.00338	0.00846	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	Xylenes, Total	0.00355	J	0.00149	0.0110	1	07/26/2024 08:11	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	n-Butylbenzene	0.0452		0.00908	0.0216	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	sec-Butylbenzene	0.0108	J	0.00499	0.0216	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	Isopropylbenzene	0.00519		0.000735	0.00433	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	p-Isopropyltoluene	0.00636	J	0.00442	0.00865	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	Methyl tert-butyl ether	0.00134	J	0.000605	0.00173	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	Naphthalene	0.0976		0.00845	0.0216	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	n-Propylbenzene	0.0106		0.00164	0.00865	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	1,2,4-Trimethylbenzene	0.00403	J	0.00274	0.00865	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	1,2,3-Trimethylbenzene	0.00295	J	0.00274	0.00865	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	Xylenes, Total	0.00329	J	0.00152	0.0112	1.01	07/26/2024 08:30	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	n-Butylbenzene	0.0424		0.00845	0.0201	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	sec-Butylbenzene	0.00853	J	0.00464	0.0201	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	Isopropylbenzene	0.00588		0.000684	0.00403	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	p-Isopropyltoluene	0.00568	J	0.00411	0.00805	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	Methyl tert-butyl ether	0.000604	J	0.000563	0.00161	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	Naphthalene	0.0751		0.00786	0.0201	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	n-Propylbenzene	0.0104		0.00153	0.00805	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	1,2,4-Trimethylbenzene	0.00338	J	0.00255	0.00805	1.01	07/26/2024 08:49	WG2330348
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	Xylenes, Total	0.00354	J	0.00142	0.0105	1.01	07/26/2024 08:49	WG2330348

DETECTION SUMMARY

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	n-Butylbenzene	0.0394		0.00863	0.0205	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	sec-Butylbenzene	0.00879	J	0.00473	0.0205	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	Isopropylbenzene	0.00679		0.000698	0.00411	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	p-Isopropyltoluene	0.00588	J	0.00419	0.00822	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	Naphthalene	0.0846		0.00802	0.0205	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	n-Propylbenzene	0.0120		0.00156	0.00822	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	1,2,4-Trimethylbenzene	0.00345	J	0.00260	0.00822	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	1,2,3-Trimethylbenzene	0.00276	J	0.00260	0.00822	1	07/26/2024 09:08	WG2330348
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	Xylenes, Total	0.00304	J	0.00145	0.0107	1	07/26/2024 09:08	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	C12-C22 Hydrocarbons	2380		33.0	100	1	07/26/2024 11:13	WG2328603
GEOSYN-SIM PC-A	L1758088-01	C22-C32 Hydrocarbons	961		33.0	100	1	07/26/2024 11:13	WG2328603
GEOSYN-SIM PC-A	L1758088-01	C32-C40 Hydrocarbons	265		33.0	100	1	07/26/2024 11:13	WG2328603
GEOSYN-SIM AP-PH LOW A	L1758088-03	C12-C22 Hydrocarbons	1920		33.0	100	1	07/26/2024 11:52	WG2328603
GEOSYN-SIM AP-PH LOW A	L1758088-03	C22-C32 Hydrocarbons	273		33.0	100	1	07/26/2024 11:52	WG2328603
GEOSYN-SIM AP-PH LOW A	L1758088-03	C32-C40 Hydrocarbons	110		33.0	100	1	07/26/2024 11:52	WG2328603
GEOSYN-SIM AP-PH HIGH A	L1758088-05	C12-C22 Hydrocarbons	1070		33.0	100	1	07/26/2024 12:13	WG2328603
GEOSYN-SIM AP-PH HIGH A	L1758088-05	C22-C32 Hydrocarbons	196		33.0	100	1	07/26/2024 12:13	WG2328603
GEOSYN-SIM AP-PH HIGH A	L1758088-05	C32-C40 Hydrocarbons	136		33.0	100	1	07/26/2024 12:13	WG2328603
GEOSYN-SIM AP-HP LOW A	L1758088-07	C12-C22 Hydrocarbons	388		33.0	100	1	07/26/2024 12:33	WG2328603
GEOSYN-SIM AP-HP LOW A	L1758088-07	C32-C40 Hydrocarbons	46.5	J	33.0	100	1	07/26/2024 12:33	WG2328603
GEOSYN-SIM AP-HP HIGH A	L1758088-09	C32-C40 Hydrocarbons	64.5	J	33.0	100	1	07/26/2024 13:15	WG2328603

Semi-Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A (SO)	L1758088-02	C12-C22 Hydrocarbons	3.35	J	0.952	5.20	1	07/25/2024 02:35	WG2329375
GEOSYN-SIM PC-A (SO)	L1758088-02	C22-C32 Hydrocarbons	3.23	J	1.73	5.20	1	07/25/2024 02:35	WG2329375
GEOSYN-SIM PC-A (SO)	L1758088-02	C32-C40 Hydrocarbons	3.51	J	1.73	5.20	1	07/25/2024 02:35	WG2329375
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	C12-C22 Hydrocarbons	2.72	J	0.986	5.38	1	07/25/2024 02:49	WG2329375
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	C22-C32 Hydrocarbons	3.82	J	1.79	5.38	1	07/25/2024 02:49	WG2329375
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	C32-C40 Hydrocarbons	5.29	J	1.79	5.38	1	07/25/2024 02:49	WG2329375

DETECTION SUMMARY

Semi-Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	C12-C22 Hydrocarbons	3.46	J	0.995	5.43	1	07/25/2024 02:21	WG2329375
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	C22-C32 Hydrocarbons	4.38	J	1.81	5.43	1	07/25/2024 02:21	WG2329375
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	C32-C40 Hydrocarbons	5.12	J	1.81	5.43	1	07/25/2024 02:21	WG2329375
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	C12-C22 Hydrocarbons	5.78		0.951	5.19	1	07/25/2024 03:16	WG2329375
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	C22-C32 Hydrocarbons	10.0		1.73	5.19	1	07/25/2024 03:16	WG2329375
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	C32-C40 Hydrocarbons	12.0		1.73	5.19	1	07/25/2024 03:16	WG2329375
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	C12-C22 Hydrocarbons	2.02	J	0.969	5.29	1	07/25/2024 02:07	WG2329375
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	C22-C32 Hydrocarbons	2.43	J	1.76	5.29	1	07/25/2024 02:07	WG2329375
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	C32-C40 Hydrocarbons	2.93	J	1.76	5.29	1	07/25/2024 02:07	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	2,4-D	11.1		2.76	10.1	5.05	07/30/2024 16:10	WG2326058
GEOSYN-SIM PC-A	L1758088-01	Dinoseb	22.2		2.53	20.2	10.1	07/31/2024 13:06	WG2326058
GEOSYN-SIM AP-PH LOW A	L1758088-03	2,4-D	39.5	P	5.96	21.8	10.9	07/31/2024 13:17	WG2326058
GEOSYN-SIM AP-PH LOW A	L1758088-03	Dinoseb	26.3		1.36	10.9	5.45	07/31/2024 12:43	WG2326058
GEOSYN-SIM AP-PH HIGH A	L1758088-05	2,4-D	7.85	P	1.19	4.36	2.18	07/30/2024 16:40	WG2326058
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Dinoseb	4.80		0.545	4.36	2.18	07/31/2024 12:08	WG2326058
GEOSYN-SIM AP-HP LOW A	L1758088-07	Dinoseb	13.2		1.25	10.0	5	07/31/2024 12:31	WG2326058

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A	L1758088-01	Fluorene	0.0397	J	0.0169	0.0500	1	07/24/2024 23:09	WG2328840
GEOSYN-SIM AP-PH LOW A	L1758088-03	Fluorene	0.0170	J	0.0169	0.0500	1	07/24/2024 19:01	WG2328840
GEOSYN-SIM AP-PH LOW A	L1758088-03	Naphthalene	367		0.917	2.50	10	07/26/2024 06:42	WG2328840
GEOSYN-SIM AP-PH LOW A	L1758088-03	Phenanthrene	0.0437	J	0.0180	0.0500	1	07/24/2024 19:01	WG2328840
GEOSYN-SIM AP-PH LOW A	L1758088-03	1-Methylnaphthalene	15.3		0.0687	0.250	1	07/24/2024 19:01	WG2328840
GEOSYN-SIM AP-PH LOW A	L1758088-03	2-Methylnaphthalene	2.01		0.0674	0.250	1	07/24/2024 19:01	WG2328840
GEOSYN-SIM AP-PH HIGH A	L1758088-05	Naphthalene	3.96		0.0917	0.250	1	07/24/2024 19:19	WG2328840
GEOSYN-SIM AP-PH HIGH A	L1758088-05	1-Methylnaphthalene	3.32		0.0687	0.250	1	07/24/2024 19:19	WG2328840
GEOSYN-SIM AP-PH HIGH A	L1758088-05	2-Methylnaphthalene	0.269		0.0674	0.250	1	07/24/2024 19:19	WG2328840

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM AP-HP LOW A	L1758088-07	Naphthalene	42.2		0.0917	0.250	1	07/24/2024 19:37	WG2328840
GEOSYN-SIM AP-HP LOW A	L1758088-07	Phenanthrene	0.0205	J	0.0180	0.0500	1	07/24/2024 19:37	WG2328840
GEOSYN-SIM AP-HP LOW A	L1758088-07	1-Methylnaphthalene	2.30		0.0687	0.250	1	07/24/2024 19:37	WG2328840
GEOSYN-SIM AP-HP LOW A	L1758088-07	2-Methylnaphthalene	0.329		0.0674	0.250	1	07/24/2024 19:37	WG2328840

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-A (SO)	L1758088-02	Naphthalene	0.0359		0.00530	0.0260	1	07/29/2024 19:21	WG2331414
GEOSYN-SIM PC-A (SO)	L1758088-02	1-Methylnaphthalene	0.0455		0.00583	0.0260	1	07/29/2024 19:21	WG2331414
GEOSYN-SIM PC-A (SO)	L1758088-02	2-Methylnaphthalene	0.00638	J	0.00555	0.0260	1	07/29/2024 19:21	WG2331414
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	Naphthalene	0.258		0.00549	0.0269	1	07/30/2024 02:00	WG2332231
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	1-Methylnaphthalene	0.0784		0.00604	0.0269	1	07/30/2024 02:00	WG2332231
GEOSYN-SIM AP-PH LOW A (SO)	L1758088-04	2-Methylnaphthalene	0.0129	J	0.00574	0.0269	1	07/30/2024 02:00	WG2332231
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	Naphthalene	0.0694		0.00554	0.0271	1	07/30/2024 02:17	WG2332231
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	1-Methylnaphthalene	0.0444		0.00609	0.0271	1	07/30/2024 02:17	WG2332231
GEOSYN-SIM AP-PH HIGH A (SO)	L1758088-06	2-Methylnaphthalene	0.00734	J	0.00580	0.0271	1	07/30/2024 02:17	WG2332231
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	Naphthalene	0.0487		0.00530	0.0260	1	07/30/2024 02:34	WG2332231
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	1-Methylnaphthalene	0.0437		0.00583	0.0260	1	07/30/2024 02:34	WG2332231
GEOSYN-SIM AP-HP LOW A (SO)	L1758088-08	2-Methylnaphthalene	0.00558	J	0.00554	0.0260	1	07/30/2024 02:34	WG2332231
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	Naphthalene	0.0611		0.00539	0.0264	1	07/30/2024 02:51	WG2332231
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	Phenanthrene	0.00328	J	0.00305	0.00793	1	07/30/2024 02:51	WG2332231
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	1-Methylnaphthalene	0.0506		0.00593	0.0264	1	07/30/2024 02:51	WG2332231
GEOSYN-SIM AP-HP HIGH A (SO)	L1758088-10	2-Methylnaphthalene	0.00814	J	0.00564	0.0264	1	07/30/2024 02:51	WG2332231

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic	9.70	J	4.40	10.0	1	07/26/2024 16:33	WG2327644
Barium	72.6		0.736	5.00	1	07/26/2024 16:33	WG2327644
Cadmium	0.642	J	0.479	2.00	1	07/26/2024 16:33	WG2327644
Chromium	U		1.40	10.0	1	07/26/2024 16:33	WG2327644
Selenium	8.91	J	7.35	10.0	1	07/26/2024 16:33	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHG C5 - C12	1010		30.4	100	1	07/23/2024 07:51	WG2327974
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*07/23/2024 07:51*	WG2327974

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	07/22/2024 15:32	WG2327536
Acrolein	U		2.54	50.0	1	07/22/2024 15:32	WG2327536
Acrylonitrile	U		0.671	10.0	1	07/22/2024 15:32	WG2327536
Benzene	1.15		0.0941	1.00	1	07/22/2024 15:32	WG2327536
Bromobenzene	U		0.118	1.00	1	07/22/2024 15:32	WG2327536
Bromodichloromethane	U		0.136	1.00	1	07/22/2024 15:32	WG2327536
Bromoform	U		0.129	1.00	1	07/22/2024 15:32	WG2327536
Bromomethane	U		0.605	5.00	1	07/22/2024 15:32	WG2327536
n-Butylbenzene	U		0.157	1.00	1	07/22/2024 15:32	WG2327536
sec-Butylbenzene	0.766	J	0.125	1.00	1	07/22/2024 15:32	WG2327536
tert-Butylbenzene	U		0.127	1.00	1	07/22/2024 15:32	WG2327536
Carbon tetrachloride	U		0.128	1.00	1	07/22/2024 15:32	WG2327536
Chlorobenzene	U		0.116	1.00	1	07/22/2024 15:32	WG2327536
Chlorodibromomethane	U		0.140	1.00	1	07/22/2024 15:32	WG2327536
Chloroethane	U		0.192	5.00	1	07/22/2024 15:32	WG2327536
Chloroform	U		0.111	5.00	1	07/22/2024 15:32	WG2327536
Chloromethane	U		0.960	2.50	1	07/22/2024 15:32	WG2327536
2-Chlorotoluene	U		0.106	1.00	1	07/22/2024 15:32	WG2327536
4-Chlorotoluene	U		0.114	1.00	1	07/22/2024 15:32	WG2327536
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	07/22/2024 15:32	WG2327536
1,2-Dibromoethane	U		0.126	1.00	1	07/22/2024 15:32	WG2327536
Dibromomethane	U		0.122	1.00	1	07/22/2024 15:32	WG2327536
1,2-Dichlorobenzene	U		0.107	1.00	1	07/22/2024 15:32	WG2327536
1,3-Dichlorobenzene	U		0.110	1.00	1	07/22/2024 15:32	WG2327536
1,4-Dichlorobenzene	U		0.120	1.00	1	07/22/2024 15:32	WG2327536
Dichlorodifluoromethane	U		0.374	5.00	1	07/22/2024 15:32	WG2327536
1,1-Dichloroethane	U		0.100	1.00	1	07/22/2024 15:32	WG2327536
1,2-Dichloroethane	28.4		0.0819	1.00	1	07/22/2024 15:32	WG2327536
1,1-Dichloroethene	U		0.188	1.00	1	07/22/2024 15:32	WG2327536
cis-1,2-Dichloroethene	U		0.126	1.00	1	07/22/2024 15:32	WG2327536
trans-1,2-Dichloroethene	U		0.149	1.00	1	07/22/2024 15:32	WG2327536
1,2-Dichloropropane	1.05		0.149	1.00	1	07/22/2024 15:32	WG2327536
1,1-Dichloropropene	U		0.142	1.00	1	07/22/2024 15:32	WG2327536
1,3-Dichloropropane	U		0.110	1.00	1	07/22/2024 15:32	WG2327536
cis-1,3-Dichloropropene	U		0.111	1.00	1	07/22/2024 15:32	WG2327536
trans-1,3-Dichloropropene	U		0.118	1.00	1	07/22/2024 15:32	WG2327536
2,2-Dichloropropane	U		0.161	1.00	1	07/22/2024 15:32	WG2327536
Di-isopropyl ether	U		0.105	1.00	1	07/22/2024 15:32	WG2327536
Ethylbenzene	U		0.137	1.00	1	07/22/2024 15:32	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/22/2024 15:32	WG2327536
Isopropylbenzene	0.986	J	0.105	1.00	1	07/22/2024 15:32	WG2327536
p-Isopropyltoluene	0.826	J	0.120	1.00	1	07/22/2024 15:32	WG2327536
2-Butanone (MEK)	29.7		1.19	10.0	1	07/22/2024 15:32	WG2327536
Methylene Chloride	U		0.430	5.00	1	07/22/2024 15:32	WG2327536
4-Methyl-2-pentanone (MIBK)	6.34	J	0.478	10.0	1	07/22/2024 15:32	WG2327536
Methyl tert-butyl ether	U		0.101	1.00	1	07/22/2024 15:32	WG2327536
Naphthalene	6.48		1.00	5.00	1	07/22/2024 15:32	WG2327536
n-Propylbenzene	1.44		0.0993	1.00	1	07/22/2024 15:32	WG2327536
Styrene	U		0.118	1.00	1	07/22/2024 15:32	WG2327536
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	07/22/2024 15:32	WG2327536
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	07/22/2024 15:32	WG2327536
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	07/22/2024 15:32	WG2327536
Tetrachloroethene	U		0.300	1.00	1	07/22/2024 15:32	WG2327536
Toluene	1.06		0.278	1.00	1	07/22/2024 15:32	WG2327536
1,2,3-Trichlorobenzene	U		0.230	1.00	1	07/22/2024 15:32	WG2327536
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/22/2024 15:32	WG2327536
1,1,1-Trichloroethane	U		0.149	1.00	1	07/22/2024 15:32	WG2327536
1,1,2-Trichloroethane	U		0.158	1.00	1	07/22/2024 15:32	WG2327536
Trichloroethene	U		0.190	1.00	1	07/22/2024 15:32	WG2327536
Trichlorofluoromethane	U		0.160	5.00	1	07/22/2024 15:32	WG2327536
1,2,3-Trichloropropane	U		0.237	2.50	1	07/22/2024 15:32	WG2327536
1,2,4-Trimethylbenzene	U		0.322	1.00	1	07/22/2024 15:32	WG2327536
1,2,3-Trimethylbenzene	0.248	J	0.104	1.00	1	07/22/2024 15:32	WG2327536
1,3,5-Trimethylbenzene	0.257	J	0.104	1.00	1	07/22/2024 15:32	WG2327536
Vinyl chloride	U		0.234	1.00	1	07/22/2024 15:32	WG2327536
Xylenes, Total	U		0.174	3.00	1	07/22/2024 15:32	WG2327536
(S) Toluene-d8	*102*			*80.0-120*		*07/22/2024 15:32*	WG2327536
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*07/22/2024 15:32*	WG2327536
(S) 1,2-Dichloroethane-d4	*122*			*70.0-130*		*07/22/2024 15:32*	WG2327536

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	2380		33.0	100	1	07/26/2024 11:13	WG2328603
C22-C32 Hydrocarbons	961		33.0	100	1	07/26/2024 11:13	WG2328603
C32-C40 Hydrocarbons	265		33.0	100	1	07/26/2024 11:13	WG2328603
(S) o-Terphenyl	*137*			*52.0-156*		*07/26/2024 11:13*	WG2328603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	11.1		2.76	10.1	5.05	07/30/2024 16:10	WG2326058
Dalapon	U	J4	0.347	2.02	1.01	07/29/2024 03:35	WG2326058
2,4-DB	U		0.305	2.02	1.01	07/29/2024 03:35	WG2326058
Dicamba	U		0.247	2.02	1.01	07/29/2024 03:35	WG2326058
Dichloroprop	U		1.05	2.02	1.01	07/29/2024 03:35	WG2326058
Dinoseb	22.2		2.53	20.2	10.1	07/31/2024 13:06	WG2326058
MCPA	U		13.2	101	1.01	07/29/2024 03:35	WG2326058
MCPP	U		66.7	101	1.01	07/29/2024 03:35	WG2326058
2,4,5-T	U		0.261	2.02	1.01	07/29/2024 03:35	WG2326058
2,4,5-TP (Silvex)	U		0.338	2.02	1.01	07/29/2024 03:35	WG2326058
Pentachlorophenol	U		0.112	1.01	1.01	07/29/2024 03:35	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*527*	J1		*14.0-158*		*07/29/2024 03:35*	WG2326058

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 2,4-Dichlorophenyl Acetic Acid	*251*	J1		*14.0-158*		*07/31/2024 13:06*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*3490*	J1		*14.0-158*		*07/30/2024 16:10*	WG2326058

Sample Narrative:

L1758088-01 WG2326058: Surrogate failure due to matrix interference.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/24/2024 23:09	WG2328840
Acenaphthene	U		0.0190	0.0500	1	07/24/2024 23:09	WG2328840
Acenaphthylene	U		0.0171	0.0500	1	07/24/2024 23:09	WG2328840
Benzo(a)anthracene	U		0.0203	0.0500	1	07/24/2024 23:09	WG2328840
Benzo(a)pyrene	U		0.0184	0.0500	1	07/24/2024 23:09	WG2328840
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/24/2024 23:09	WG2328840
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/24/2024 23:09	WG2328840
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/24/2024 23:09	WG2328840
Chrysene	U		0.0179	0.0500	1	07/24/2024 23:09	WG2328840
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/24/2024 23:09	WG2328840
Fluoranthene	U		0.0270	0.100	1	07/24/2024 23:09	WG2328840
Fluorene	0.0397	J	0.0169	0.0500	1	07/24/2024 23:09	WG2328840
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/24/2024 23:09	WG2328840
Naphthalene	U		0.0917	0.250	1	07/24/2024 23:09	WG2328840
Phenanthrene	U		0.0180	0.0500	1	07/24/2024 23:09	WG2328840
Pyrene	U		0.0169	0.0500	1	07/24/2024 23:09	WG2328840
1-Methylnaphthalene	U		0.0687	0.250	1	07/24/2024 23:09	WG2328840
2-Methylnaphthalene	U		0.0674	0.250	1	07/24/2024 23:09	WG2328840
2-Chloronaphthalene	U		0.0682	0.250	1	07/24/2024 23:09	WG2328840
(S) Nitrobenzene-d5	*145*			*31.0-160*		*07/24/2024 23:09*	WG2328840
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*07/24/2024 23:09*	WG2328840
(S) p-Terphenyl-d14	*119*			*37.0-146*		*07/24/2024 23:09*	WG2328840

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.0		1	07/19/2024 15:54	WG2326366

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.34		0.0435	0.131	1.01	07/25/2024 13:06	WG2329848
(S) a,a,a-Trifluorotoluene(FID)	*96.1*			*77.0-120*		*07/25/2024 13:06*	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0583	0.0799	1	07/26/2024 07:52	WG2330348
Acrylonitrile	U		0.00577	0.0200	1	07/26/2024 07:52	WG2330348
Benzene	U		0.000746	0.00160	1	07/26/2024 07:52	WG2330348
Bromobenzene	U		0.00144	0.0200	1	07/26/2024 07:52	WG2330348
Bromodichloromethane	U		0.00116	0.00399	1	07/26/2024 07:52	WG2330348
Bromoform	U		0.00187	0.0399	1	07/26/2024 07:52	WG2330348
Bromomethane	U		0.00315	0.0200	1	07/26/2024 07:52	WG2330348
n-Butylbenzene	0.0337		0.00839	0.0200	1	07/26/2024 07:52	WG2330348
sec-Butylbenzene	0.00791	J	0.00460	0.0200	1	07/26/2024 07:52	WG2330348
tert-Butylbenzene	U		0.00312	0.00799	1	07/26/2024 07:52	WG2330348
Carbon tetrachloride	U		0.00143	0.00799	1	07/26/2024 07:52	WG2330348
Chlorobenzene	U		0.000336	0.00399	1	07/26/2024 07:52	WG2330348
Chlorodibromomethane	U		0.000978	0.00399	1	07/26/2024 07:52	WG2330348
Chloroethane	U		0.00272	0.00799	1	07/26/2024 07:52	WG2330348
Chloroform	U		0.00165	0.00399	1	07/26/2024 07:52	WG2330348
Chloromethane	U		0.00695	0.0200	1	07/26/2024 07:52	WG2330348
2-Chlorotoluene	U		0.00138	0.00399	1	07/26/2024 07:52	WG2330348
4-Chlorotoluene	U		0.000719	0.00799	1	07/26/2024 07:52	WG2330348
1,2-Dibromo-3-Chloropropane	U		0.00623	0.0399	1	07/26/2024 07:52	WG2330348
1,2-Dibromoethane	U		0.00104	0.00399	1	07/26/2024 07:52	WG2330348
Dibromomethane	U		0.00120	0.00799	1	07/26/2024 07:52	WG2330348
1,2-Dichlorobenzene	U		0.000679	0.00799	1	07/26/2024 07:52	WG2330348
1,3-Dichlorobenzene	U		0.000959	0.00799	1	07/26/2024 07:52	WG2330348
1,4-Dichlorobenzene	U		0.00112	0.00799	1	07/26/2024 07:52	WG2330348
Dichlorodifluoromethane	U		0.00257	0.00799	1	07/26/2024 07:52	WG2330348
1,1-Dichloroethane	U		0.000785	0.00399	1	07/26/2024 07:52	WG2330348
1,2-Dichloroethane	U		0.00104	0.00399	1	07/26/2024 07:52	WG2330348
1,1-Dichloroethene	U		0.000968	0.00399	1	07/26/2024 07:52	WG2330348
cis-1,2-Dichloroethene	U		0.00117	0.00399	1	07/26/2024 07:52	WG2330348
trans-1,2-Dichloroethene	U		0.00166	0.00799	1	07/26/2024 07:52	WG2330348
1,2-Dichloropropane	U		0.00227	0.00799	1	07/26/2024 07:52	WG2330348
1,1-Dichloropropene	U		0.00129	0.00399	1	07/26/2024 07:52	WG2330348
1,3-Dichloropropane	U		0.000801	0.00799	1	07/26/2024 07:52	WG2330348
cis-1,3-Dichloropropene	U		0.00121	0.00399	1	07/26/2024 07:52	WG2330348
trans-1,3-Dichloropropene	U		0.00182	0.00799	1	07/26/2024 07:52	WG2330348
2,2-Dichloropropane	U		0.00221	0.00399	1	07/26/2024 07:52	WG2330348
Di-isopropyl ether	U		0.000655	0.00160	1	07/26/2024 07:52	WG2330348
Ethylbenzene	U		0.00118	0.00399	1	07/26/2024 07:52	WG2330348
Hexachloro-1,3-butadiene	U		0.00959	0.0399	1	07/26/2024 07:52	WG2330348
Isopropylbenzene	0.00384	J	0.000679	0.00399	1	07/26/2024 07:52	WG2330348
p-Isopropyltoluene	0.00583	J	0.00407	0.00799	1	07/26/2024 07:52	WG2330348
2-Butanone (MEK)	U		0.101	0.160	1	07/26/2024 07:52	WG2330348
Methylene Chloride	U		0.0106	0.0399	1	07/26/2024 07:52	WG2330348
4-Methyl-2-pentanone (MIBK)	U		0.00364	0.0399	1	07/26/2024 07:52	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	0.000639	J	0.000559	0.00160	1	07/26/2024 07:52	WG2330348
Naphthalene	0.0184	J	0.00780	0.0200	1	07/26/2024 07:52	WG2330348
n-Propylbenzene	0.00703	J	0.00152	0.00799	1	07/26/2024 07:52	WG2330348
Styrene	U		0.000366	0.0200	1	07/26/2024 07:52	WG2330348
1,1,1,2-Tetrachloroethane	U		0.00151	0.00399	1	07/26/2024 07:52	WG2330348
1,1,2,2-Tetrachloroethane	U		0.00111	0.00399	1	07/26/2024 07:52	WG2330348
1,1,2-Trichlorotrifluoroethane	U		0.00120	0.00399	1	07/26/2024 07:52	WG2330348
Tetrachloroethene	U		0.00143	0.00399	1	07/26/2024 07:52	WG2330348
Toluene	U		0.00208	0.00799	1	07/26/2024 07:52	WG2330348
1,2,3-Trichlorobenzene	U		0.0117	0.0200	1	07/26/2024 07:52	WG2330348
1,2,4-Trichlorobenzene	U		0.00703	0.0200	1	07/26/2024 07:52	WG2330348
1,1,1-Trichloroethane	U		0.00147	0.00399	1	07/26/2024 07:52	WG2330348
1,1,2-Trichloroethane	U		0.000954	0.00399	1	07/26/2024 07:52	WG2330348
Trichloroethene	U		0.000933	0.00160	1	07/26/2024 07:52	WG2330348
Trichlorofluoromethane	U		0.00132	0.00399	1	07/26/2024 07:52	WG2330348
1,2,3-Trichloropropane	U		0.00259	0.0200	1	07/26/2024 07:52	WG2330348
1,2,4-Trimethylbenzene	0.00487	J	0.00252	0.00799	1	07/26/2024 07:52	WG2330348
1,2,3-Trimethylbenzene	0.00292	J	0.00252	0.00799	1	07/26/2024 07:52	WG2330348
1,3,5-Trimethylbenzene	U		0.00320	0.00799	1	07/26/2024 07:52	WG2330348
Vinyl chloride	U		0.00185	0.00399	1	07/26/2024 07:52	WG2330348
Xylenes, Total	0.00511	J	0.00141	0.0104	1	07/26/2024 07:52	WG2330348
(S) Toluene-d8	*103*			*75.0-131*		*07/26/2024 07:52*	WG2330348
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/26/2024 07:52*	WG2330348
(S) 1,2-Dichloroethane-d4	*89.2*			*70.0-130*		*07/26/2024 07:52*	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	3.35	J	0.952	5.20	1	07/25/2024 02:35	WG2329375
C22-C32 Hydrocarbons	3.23	J	1.73	5.20	1	07/25/2024 02:35	WG2329375
C32-C40 Hydrocarbons	3.51	J	1.73	5.20	1	07/25/2024 02:35	WG2329375
(S) o-Terphenyl	*58.7*			*18.0-148*		*07/25/2024 02:35*	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00912	0.0909	1	07/28/2024 06:35	WG2331580
Dalapon	U		0.0147	0.0909	1	07/28/2024 06:35	WG2331580
2,4-DB	U		0.0386	0.0909	1	07/28/2024 06:35	WG2331580
Dicamba	U		0.0204	0.0909	1	07/28/2024 06:35	WG2331580
Dichloroprop	U		0.0318	0.0909	1	07/28/2024 06:35	WG2331580
Dinoseb	U		0.00905	0.0909	1	07/28/2024 06:35	WG2331580
MCPA	U		0.575	8.44	1	07/28/2024 06:35	WG2331580
MCPP	U		0.477	8.44	1	07/28/2024 06:35	WG2331580
2,4,5-T	U		0.0111	0.0909	1	07/28/2024 06:35	WG2331580
2,4,5-TP (Silvex)	U		0.0139	0.0909	1	07/28/2024 06:35	WG2331580
(S) 2,4-Dichlorophenyl Acetic Acid	*75.0*			*22.0-132*		*07/28/2024 06:35*	WG2331580

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00299	0.00779	1	07/29/2024 19:21	WG2331414
Acenaphthene	U		0.00271	0.00779	1	07/29/2024 19:21	WG2331414
Acenaphthylene	U		0.00281	0.00779	1	07/29/2024 19:21	WG2331414
Benzo(a)anthracene	U		0.00225	0.00779	1	07/29/2024 19:21	WG2331414

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00233	0.00779	1	07/29/2024 19:21	WG2331414
Benzo(b)fluoranthene	U		0.00199	0.00779	1	07/29/2024 19:21	WG2331414
Benzo(g,h,i)perylene	U		0.00230	0.00779	1	07/29/2024 19:21	WG2331414
Benzo(k)fluoranthene	U		0.00279	0.00779	1	07/29/2024 19:21	WG2331414
Chrysene	U		0.00301	0.00779	1	07/29/2024 19:21	WG2331414
Dibenz(a,h)anthracene	U		0.00223	0.00779	1	07/29/2024 19:21	WG2331414
Fluoranthene	U		0.00295	0.00779	1	07/29/2024 19:21	WG2331414
Fluorene	U		0.00266	0.00779	1	07/29/2024 19:21	WG2331414
Indeno(1,2,3-cd)pyrene	U		0.00235	0.00779	1	07/29/2024 19:21	WG2331414
Naphthalene	0.0359		0.00530	0.0260	1	07/29/2024 19:21	WG2331414
Phenanthrene	U		0.00300	0.00779	1	07/29/2024 19:21	WG2331414
Pyrene	U		0.00260	0.00779	1	07/29/2024 19:21	WG2331414
1-Methylnaphthalene	0.0455		0.00583	0.0260	1	07/29/2024 19:21	WG2331414
2-Methylnaphthalene	0.00638	J	0.00555	0.0260	1	07/29/2024 19:21	WG2331414
2-Chloronaphthalene	U		0.00605	0.0260	1	07/29/2024 19:21	WG2331414
(S) p-Terphenyl-d14	*81.2*			*23.0-120*		*07/29/2024 19:21*	WG2331414
(S) Nitrobenzene-d5	*60.2*			*14.0-149*		*07/29/2024 19:21*	WG2331414
(S) 2-Fluorobiphenyl	*65.3*			*34.0-125*		*07/29/2024 19:21*	WG2331414

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	22.2		4.40	10.0	1	07/26/2024 16:36	WG2327644
Barium	142		0.736	5.00	1	07/26/2024 16:36	WG2327644
Cadmium	1.03	J	0.479	2.00	1	07/26/2024 16:36	WG2327644
Chromium	9.44	J	1.40	10.0	1	07/26/2024 16:36	WG2327644
Selenium	23.6		7.35	10.0	1	07/26/2024 16:36	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	1590		30.4	100	1	07/23/2024 08:13	WG2327974
(S) a,a,a-Trifluorotoluene(FID)	*102*			*78.0-120*		*07/23/2024 08:13*	WG2327974

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	107		11.3	50.0	1	07/22/2024 15:53	WG2327536
Acrolein	U		2.54	50.0	1	07/22/2024 15:53	WG2327536
Acrylonitrile	U		0.671	10.0	1	07/22/2024 15:53	WG2327536
Benzene	0.900	J	0.0941	1.00	1	07/22/2024 15:53	WG2327536
Bromobenzene	U		0.118	1.00	1	07/22/2024 15:53	WG2327536
Bromodichloromethane	U		0.136	1.00	1	07/22/2024 15:53	WG2327536
Bromoform	U		0.129	1.00	1	07/22/2024 15:53	WG2327536
Bromomethane	U		0.605	5.00	1	07/22/2024 15:53	WG2327536
n-Butylbenzene	3.74		0.157	1.00	1	07/22/2024 15:53	WG2327536
sec-Butylbenzene	1.52		0.125	1.00	1	07/22/2024 15:53	WG2327536
tert-Butylbenzene	U		0.127	1.00	1	07/22/2024 15:53	WG2327536
Carbon tetrachloride	U		0.128	1.00	1	07/22/2024 15:53	WG2327536
Chlorobenzene	U		0.116	1.00	1	07/22/2024 15:53	WG2327536
Chlorodibromomethane	U		0.140	1.00	1	07/22/2024 15:53	WG2327536
Chloroethane	U		0.192	5.00	1	07/22/2024 15:53	WG2327536
Chloroform	U		0.111	5.00	1	07/22/2024 15:53	WG2327536
Chloromethane	U		0.960	2.50	1	07/22/2024 15:53	WG2327536
2-Chlorotoluene	U		0.106	1.00	1	07/22/2024 15:53	WG2327536
4-Chlorotoluene	U		0.114	1.00	1	07/22/2024 15:53	WG2327536
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	07/22/2024 15:53	WG2327536
1,2-Dibromoethane	U		0.126	1.00	1	07/22/2024 15:53	WG2327536
Dibromomethane	U		0.122	1.00	1	07/22/2024 15:53	WG2327536
1,2-Dichlorobenzene	U		0.107	1.00	1	07/22/2024 15:53	WG2327536
1,3-Dichlorobenzene	U		0.110	1.00	1	07/22/2024 15:53	WG2327536
1,4-Dichlorobenzene	U		0.120	1.00	1	07/22/2024 15:53	WG2327536
Dichlorodifluoromethane	U		0.374	5.00	1	07/22/2024 15:53	WG2327536
1,1-Dichloroethane	U		0.100	1.00	1	07/22/2024 15:53	WG2327536
1,2-Dichloroethane	27.5		0.0819	1.00	1	07/22/2024 15:53	WG2327536
1,1-Dichloroethene	U		0.188	1.00	1	07/22/2024 15:53	WG2327536
cis-1,2-Dichloroethene	U		0.126	1.00	1	07/22/2024 15:53	WG2327536
trans-1,2-Dichloroethene	U		0.149	1.00	1	07/22/2024 15:53	WG2327536
1,2-Dichloropropane	0.981	J	0.149	1.00	1	07/22/2024 15:53	WG2327536
1,1-Dichloropropene	U		0.142	1.00	1	07/22/2024 15:53	WG2327536
1,3-Dichloropropane	U		0.110	1.00	1	07/22/2024 15:53	WG2327536
cis-1,3-Dichloropropene	U		0.111	1.00	1	07/22/2024 15:53	WG2327536
trans-1,3-Dichloropropene	U		0.118	1.00	1	07/22/2024 15:53	WG2327536
2,2-Dichloropropane	U		0.161	1.00	1	07/22/2024 15:53	WG2327536
Di-isopropyl ether	U		0.105	1.00	1	07/22/2024 15:53	WG2327536
Ethylbenzene	0.141	J	0.137	1.00	1	07/22/2024 15:53	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/22/2024 15:53	WG2327536
Isopropylbenzene	2.28		0.105	1.00	1	07/22/2024 15:53	WG2327536
p-Isopropyltoluene	1.03		0.120	1.00	1	07/22/2024 15:53	WG2327536
2-Butanone (MEK)	43.1		1.19	10.0	1	07/22/2024 15:53	WG2327536
Methylene Chloride	U		0.430	5.00	1	07/22/2024 15:53	WG2327536
4-Methyl-2-pentanone (MIBK)	6.13	J	0.478	10.0	1	07/22/2024 15:53	WG2327536
Methyl tert-butyl ether	U		0.101	1.00	1	07/22/2024 15:53	WG2327536
Naphthalene	401		20.0	100	20	07/26/2024 01:34	WG2330113
n-Propylbenzene	3.36		0.0993	1.00	1	07/22/2024 15:53	WG2327536
Styrene	U		0.118	1.00	1	07/22/2024 15:53	WG2327536
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	07/22/2024 15:53	WG2327536
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	07/22/2024 15:53	WG2327536
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	07/22/2024 15:53	WG2327536
Tetrachloroethene	1.51		0.300	1.00	1	07/22/2024 15:53	WG2327536
Toluene	1.31		0.278	1.00	1	07/22/2024 15:53	WG2327536
1,2,3-Trichlorobenzene	U		0.230	1.00	1	07/22/2024 15:53	WG2327536
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/22/2024 15:53	WG2327536
1,1,1-Trichloroethane	U		0.149	1.00	1	07/22/2024 15:53	WG2327536
1,1,2-Trichloroethane	U		0.158	1.00	1	07/22/2024 15:53	WG2327536
Trichloroethene	U		0.190	1.00	1	07/22/2024 15:53	WG2327536
Trichlorofluoromethane	U		0.160	5.00	1	07/22/2024 15:53	WG2327536
1,2,3-Trichloropropane	U		0.237	2.50	1	07/22/2024 15:53	WG2327536
1,2,4-Trimethylbenzene	0.526	J	0.322	1.00	1	07/22/2024 15:53	WG2327536
1,2,3-Trimethylbenzene	0.914	J	0.104	1.00	1	07/22/2024 15:53	WG2327536
1,3,5-Trimethylbenzene	1.28		0.104	1.00	1	07/22/2024 15:53	WG2327536
Vinyl chloride	U		0.234	1.00	1	07/22/2024 15:53	WG2327536
Xylenes, Total	0.837	J	0.174	3.00	1	07/22/2024 15:53	WG2327536
(S) Toluene-d8	*104*			*80.0-120*		*07/22/2024 15:53*	WG2327536
(S) Toluene-d8	*117*			*80.0-120*		*07/26/2024 01:34*	WG2330113
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*07/22/2024 15:53*	WG2327536
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*07/26/2024 01:34*	WG2330113
(S) 1,2-Dichloroethane-d4	*120*			*70.0-130*		*07/22/2024 15:53*	WG2327536
(S) 1,2-Dichloroethane-d4	*90.6*			*70.0-130*		*07/26/2024 01:34*	WG2330113

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1920		33.0	100	1	07/26/2024 11:52	WG2328603
C22-C32 Hydrocarbons	273		33.0	100	1	07/26/2024 11:52	WG2328603
C32-C40 Hydrocarbons	110		33.0	100	1	07/26/2024 11:52	WG2328603
(S) o-Terphenyl	*120*			*52.0-156*		*07/26/2024 11:52*	WG2328603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2,4-D	39.5	P	5.96	21.8	10.9	07/31/2024 13:17	WG2326058
Dalapon	U	J4	0.375	2.18	1.09	07/29/2024 05:37	WG2326058
2,4-DB	U		0.329	2.18	1.09	07/29/2024 05:37	WG2326058
Dicamba	U		0.267	2.18	1.09	07/29/2024 05:37	WG2326058
Dichloroprop	U		1.13	2.18	1.09	07/29/2024 05:37	WG2326058
Dinoseb	26.3		1.36	10.9	5.45	07/31/2024 12:43	WG2326058
MCPA	U		14.3	109	1.09	07/29/2024 05:37	WG2326058
MCPP	U		71.9	109	1.09	07/29/2024 05:37	WG2326058
2,4,5-T	U		0.281	2.18	1.09	07/29/2024 05:37	WG2326058
2,4,5-TP (Silvex)	U		0.365	2.18	1.09	07/29/2024 05:37	WG2326058

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Pentachlorophenol	U		0.121	1.09	1.09	07/29/2024 05:37	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*189*	J1		*14.0-158*		*07/31/2024 13:17*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*198*	J1		*14.0-158*		*07/31/2024 12:43*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*147*			*14.0-158*		*07/29/2024 05:37*	WG2326058

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/24/2024 19:01	WG2328840
Acenaphthene	U		0.0190	0.0500	1	07/24/2024 19:01	WG2328840
Acenaphthylene	U		0.0171	0.0500	1	07/24/2024 19:01	WG2328840
Benzo(a)anthracene	U		0.0203	0.0500	1	07/24/2024 19:01	WG2328840
Benzo(a)pyrene	U		0.0184	0.0500	1	07/24/2024 19:01	WG2328840
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/24/2024 19:01	WG2328840
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/24/2024 19:01	WG2328840
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/24/2024 19:01	WG2328840
Chrysene	U		0.0179	0.0500	1	07/24/2024 19:01	WG2328840
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/24/2024 19:01	WG2328840
Fluoranthene	U		0.0270	0.100	1	07/24/2024 19:01	WG2328840
Fluorene	0.0170	J	0.0169	0.0500	1	07/24/2024 19:01	WG2328840
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/24/2024 19:01	WG2328840
Naphthalene	367		0.917	2.50	10	07/26/2024 06:42	WG2328840
Phenanthrene	0.0437	J	0.0180	0.0500	1	07/24/2024 19:01	WG2328840
Pyrene	U		0.0169	0.0500	1	07/24/2024 19:01	WG2328840
1-Methylnaphthalene	15.3		0.0687	0.250	1	07/24/2024 19:01	WG2328840
2-Methylnaphthalene	2.01		0.0674	0.250	1	07/24/2024 19:01	WG2328840
2-Chloronaphthalene	U		0.0682	0.250	1	07/24/2024 19:01	WG2328840
(S) Nitrobenzene-d5	*124*			*31.0-160*		*07/24/2024 19:01*	WG2328840
(S) Nitrobenzene-d5	*129*			*31.0-160*		*07/26/2024 06:42*	WG2328840
(S) 2-Fluorobiphenyl	*114*			*48.0-148*		*07/24/2024 19:01*	WG2328840
(S) 2-Fluorobiphenyl	*123*			*48.0-148*		*07/26/2024 06:42*	WG2328840
(S) p-Terphenyl-d14	*130*			*37.0-146*		*07/26/2024 06:42*	WG2328840
(S) p-Terphenyl-d14	*122*			*37.0-146*		*07/24/2024 19:01*	WG2328840

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.3		1	07/19/2024 15:54	WG2326366

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.97		0.0447	0.135	1	07/25/2024 13:30	WG2329848
(S) a,a,a-Trifluorotoluene(FID)	*96.2*			*77.0-120*		*07/25/2024 13:30*	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0618	0.0846	1	07/26/2024 08:11	WG2330348
Acrylonitrile	U		0.00611	0.0211	1	07/26/2024 08:11	WG2330348
Benzene	U		0.000790	0.00169	1	07/26/2024 08:11	WG2330348
Bromobenzene	U		0.00152	0.0211	1	07/26/2024 08:11	WG2330348
Bromodichloromethane	U		0.00123	0.00423	1	07/26/2024 08:11	WG2330348
Bromoform	U		0.00198	0.0423	1	07/26/2024 08:11	WG2330348
Bromomethane	U		0.00333	0.0211	1	07/26/2024 08:11	WG2330348
n-Butylbenzene	0.0766		0.00888	0.0211	1	07/26/2024 08:11	WG2330348
sec-Butylbenzene	0.0157	J	0.00487	0.0211	1	07/26/2024 08:11	WG2330348
tert-Butylbenzene	U		0.00330	0.00846	1	07/26/2024 08:11	WG2330348
Carbon tetrachloride	U		0.00152	0.00846	1	07/26/2024 08:11	WG2330348
Chlorobenzene	U		0.000355	0.00423	1	07/26/2024 08:11	WG2330348
Chlorodibromomethane	U		0.00104	0.00423	1	07/26/2024 08:11	WG2330348
Chloroethane	U		0.00288	0.00846	1	07/26/2024 08:11	WG2330348
Chloroform	U		0.00174	0.00423	1	07/26/2024 08:11	WG2330348
Chloromethane	U		0.00736	0.0211	1	07/26/2024 08:11	WG2330348
2-Chlorotoluene	U		0.00146	0.00423	1	07/26/2024 08:11	WG2330348
4-Chlorotoluene	U		0.000761	0.00846	1	07/26/2024 08:11	WG2330348
1,2-Dibromo-3-Chloropropane	U		0.00660	0.0423	1	07/26/2024 08:11	WG2330348
1,2-Dibromoethane	U		0.00110	0.00423	1	07/26/2024 08:11	WG2330348
Dibromomethane	U		0.00127	0.00846	1	07/26/2024 08:11	WG2330348
1,2-Dichlorobenzene	U		0.000719	0.00846	1	07/26/2024 08:11	WG2330348
1,3-Dichlorobenzene	U		0.00102	0.00846	1	07/26/2024 08:11	WG2330348
1,4-Dichlorobenzene	U		0.00118	0.00846	1	07/26/2024 08:11	WG2330348
Dichlorodifluoromethane	U		0.00272	0.00846	1	07/26/2024 08:11	WG2330348
1,1-Dichloroethane	U		0.000831	0.00423	1	07/26/2024 08:11	WG2330348
1,2-Dichloroethane	U		0.00110	0.00423	1	07/26/2024 08:11	WG2330348
1,1-Dichloroethene	U		0.00103	0.00423	1	07/26/2024 08:11	WG2330348
cis-1,2-Dichloroethene	U		0.00124	0.00423	1	07/26/2024 08:11	WG2330348
trans-1,2-Dichloroethene	U		0.00176	0.00846	1	07/26/2024 08:11	WG2330348
1,2-Dichloropropane	U		0.00240	0.00846	1	07/26/2024 08:11	WG2330348
1,1-Dichloropropene	U		0.00137	0.00423	1	07/26/2024 08:11	WG2330348
1,3-Dichloropropane	U		0.000848	0.00846	1	07/26/2024 08:11	WG2330348
cis-1,3-Dichloropropene	U		0.00128	0.00423	1	07/26/2024 08:11	WG2330348
trans-1,3-Dichloropropene	U		0.00193	0.00846	1	07/26/2024 08:11	WG2330348
2,2-Dichloropropane	U		0.00233	0.00423	1	07/26/2024 08:11	WG2330348
Di-isopropyl ether	U		0.000694	0.00169	1	07/26/2024 08:11	WG2330348
Ethylbenzene	U		0.00125	0.00423	1	07/26/2024 08:11	WG2330348
Hexachloro-1,3-butadiene	U		0.0102	0.0423	1	07/26/2024 08:11	WG2330348
Isopropylbenzene	0.0113		0.000719	0.00423	1	07/26/2024 08:11	WG2330348
p-Isopropyltoluene	0.0112		0.00431	0.00846	1	07/26/2024 08:11	WG2330348
2-Butanone (MEK)	U		0.107	0.169	1	07/26/2024 08:11	WG2330348
Methylene Chloride	U		0.0112	0.0423	1	07/26/2024 08:11	WG2330348
4-Methyl-2-pentanone (MIBK)	U		0.00386	0.0423	1	07/26/2024 08:11	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	U		0.000592	0.00169	1	07/26/2024 08:11	WG2330348
Naphthalene	0.327		0.00826	0.0211	1	07/26/2024 08:11	WG2330348
n-Propylbenzene	0.0213		0.00161	0.00846	1	07/26/2024 08:11	WG2330348
Styrene	U		0.000387	0.0211	1	07/26/2024 08:11	WG2330348
1,1,1,2-Tetrachloroethane	U		0.00160	0.00423	1	07/26/2024 08:11	WG2330348
1,1,2,2-Tetrachloroethane	U		0.00118	0.00423	1	07/26/2024 08:11	WG2330348
1,1,2-Trichlorotrifluoroethane	U		0.00128	0.00423	1	07/26/2024 08:11	WG2330348
Tetrachloroethene	U		0.00152	0.00423	1	07/26/2024 08:11	WG2330348
Toluene	U		0.00220	0.00846	1	07/26/2024 08:11	WG2330348
1,2,3-Trichlorobenzene	U		0.0124	0.0211	1	07/26/2024 08:11	WG2330348
1,2,4-Trichlorobenzene	U		0.00744	0.0211	1	07/26/2024 08:11	WG2330348
1,1,1-Trichloroethane	U		0.00156	0.00423	1	07/26/2024 08:11	WG2330348
1,1,2-Trichloroethane	U		0.00101	0.00423	1	07/26/2024 08:11	WG2330348
Trichloroethene	U		0.000988	0.00169	1	07/26/2024 08:11	WG2330348
Trichlorofluoromethane	U		0.00140	0.00423	1	07/26/2024 08:11	WG2330348
1,2,3-Trichloropropane	U		0.00274	0.0211	1	07/26/2024 08:11	WG2330348
1,2,4-Trimethylbenzene	0.00643	J	0.00267	0.00846	1	07/26/2024 08:11	WG2330348
1,2,3-Trimethylbenzene	0.00372	J	0.00267	0.00846	1	07/26/2024 08:11	WG2330348
1,3,5-Trimethylbenzene	0.00587	J	0.00338	0.00846	1	07/26/2024 08:11	WG2330348
Vinyl chloride	U		0.00196	0.00423	1	07/26/2024 08:11	WG2330348
Xylenes, Total	0.00355	J	0.00149	0.0110	1	07/26/2024 08:11	WG2330348
(S) Toluene-d8	*103*			*75.0-131*		*07/26/2024 08:11*	WG2330348
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/26/2024 08:11*	WG2330348
(S) 1,2-Dichloroethane-d4	*87.8*			*70.0-130*		*07/26/2024 08:11*	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	2.72	J	0.986	5.38	1	07/25/2024 02:49	WG2329375
C22-C32 Hydrocarbons	3.82	J	1.79	5.38	1	07/25/2024 02:49	WG2329375
C32-C40 Hydrocarbons	5.29	J	1.79	5.38	1	07/25/2024 02:49	WG2329375
(S) o-Terphenyl	*66.1*			*18.0-148*		*07/25/2024 02:49*	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00944	0.0942	1	07/28/2024 07:15	WG2331580
Dalapon	U		0.0152	0.0942	1	07/28/2024 07:15	WG2331580
2,4-DB	U		0.0400	0.0942	1	07/28/2024 07:15	WG2331580
Dicamba	U		0.0211	0.0942	1	07/28/2024 07:15	WG2331580
Dichloroprop	U		0.0330	0.0942	1	07/28/2024 07:15	WG2331580
Dinoseb	U		0.00938	0.0942	1	07/28/2024 07:15	WG2331580
MCPA	U		0.596	8.74	1	07/28/2024 07:15	WG2331580
MCPP	U		0.494	8.74	1	07/28/2024 07:15	WG2331580
2,4,5-T	U		0.0115	0.0942	1	07/28/2024 07:15	WG2331580
2,4,5-TP (Silvex)	U		0.0144	0.0942	1	07/28/2024 07:15	WG2331580
(S) 2,4-Dichlorophenyl Acetic Acid	*87.3*			*22.0-132*		*07/28/2024 07:15*	WG2331580

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00309	0.00807	1	07/30/2024 02:00	WG2332231
Acenaphthene	U		0.00281	0.00807	1	07/30/2024 02:00	WG2332231
Acenaphthylene	U		0.00291	0.00807	1	07/30/2024 02:00	WG2332231
Benzo(a)anthracene	U		0.00233	0.00807	1	07/30/2024 02:00	WG2332231

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00241	0.00807	1	07/30/2024 02:00	WG2332231
Benzo(b)fluoranthene	U		0.00206	0.00807	1	07/30/2024 02:00	WG2332231
Benzo(g,h,i)perylene	U		0.00238	0.00807	1	07/30/2024 02:00	WG2332231
Benzo(k)fluoranthene	U		0.00289	0.00807	1	07/30/2024 02:00	WG2332231
Chrysene	U		0.00312	0.00807	1	07/30/2024 02:00	WG2332231
Dibenz(a,h)anthracene	U		0.00231	0.00807	1	07/30/2024 02:00	WG2332231
Fluoranthene	U		0.00305	0.00807	1	07/30/2024 02:00	WG2332231
Fluorene	U		0.00276	0.00807	1	07/30/2024 02:00	WG2332231
Indeno(1,2,3-cd)pyrene	U		0.00243	0.00807	1	07/30/2024 02:00	WG2332231
Naphthalene	0.258		0.00549	0.0269	1	07/30/2024 02:00	WG2332231
Phenanthrene	U		0.00311	0.00807	1	07/30/2024 02:00	WG2332231
Pyrene	U		0.00269	0.00807	1	07/30/2024 02:00	WG2332231
1-Methylnaphthalene	0.0784		0.00604	0.0269	1	07/30/2024 02:00	WG2332231
2-Methylnaphthalene	0.0129	J	0.00574	0.0269	1	07/30/2024 02:00	WG2332231
2-Chloronaphthalene	U		0.00627	0.0269	1	07/30/2024 02:00	WG2332231
(S) p-Terphenyl-d14	*71.5*			*23.0-120*		*07/30/2024 02:00*	WG2332231
(S) Nitrobenzene-d5	*89.8*			*14.0-149*		*07/30/2024 02:00*	WG2332231
(S) 2-Fluorobiphenyl	*75.6*			*34.0-125*		*07/30/2024 02:00*	WG2332231

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	438		4.40	10.0	1	07/26/2024 16:39	WG2327644
Barium	17.3		0.736	5.00	1	07/26/2024 16:39	WG2327644
Cadmium	U		0.479	2.00	1	07/26/2024 16:39	WG2327644
Chromium	35.6		1.40	10.0	1	07/26/2024 16:39	WG2327644
Selenium	28.6		7.35	10.0	1	07/26/2024 16:39	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	769	B J	304	1000	10	07/23/2024 10:30	WG2327974
(S) a,a,a-Trifluorotoluene(FID)	*102*			*78.0-120*		*07/23/2024 10:30*	WG2327974

Sample Narrative:

L1758088-05 WG2327974: Lowest possible dilution due to sample foaming.

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	62.9		11.3	50.0	1	07/22/2024 16:15	WG2327536
Acrolein	U		2.54	50.0	1	07/22/2024 16:15	WG2327536
Acrylonitrile	U		0.671	10.0	1	07/22/2024 16:15	WG2327536
Benzene	1.75		0.0941	1.00	1	07/22/2024 16:15	WG2327536
Bromobenzene	U		0.118	1.00	1	07/22/2024 16:15	WG2327536
Bromodichloromethane	U		0.136	1.00	1	07/22/2024 16:15	WG2327536
Bromoform	U		0.129	1.00	1	07/22/2024 16:15	WG2327536
Bromomethane	U		0.605	5.00	1	07/22/2024 16:15	WG2327536
n-Butylbenzene	1.12		0.157	1.00	1	07/22/2024 16:15	WG2327536
sec-Butylbenzene	0.486	J	0.125	1.00	1	07/22/2024 16:15	WG2327536
tert-Butylbenzene	U		0.127	1.00	1	07/22/2024 16:15	WG2327536
Carbon tetrachloride	U		0.128	1.00	1	07/22/2024 16:15	WG2327536
Chlorobenzene	U		0.116	1.00	1	07/22/2024 16:15	WG2327536
Chlorodibromomethane	U		0.140	1.00	1	07/22/2024 16:15	WG2327536
Chloroethane	U		0.192	5.00	1	07/22/2024 16:15	WG2327536
Chloroform	U		0.111	5.00	1	07/22/2024 16:15	WG2327536
Chloromethane	U		0.960	2.50	1	07/22/2024 16:15	WG2327536
2-Chlorotoluene	U		0.106	1.00	1	07/22/2024 16:15	WG2327536
4-Chlorotoluene	U		0.114	1.00	1	07/22/2024 16:15	WG2327536
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	07/22/2024 16:15	WG2327536
1,2-Dibromoethane	U		0.126	1.00	1	07/22/2024 16:15	WG2327536
Dibromomethane	U		0.122	1.00	1	07/22/2024 16:15	WG2327536
1,2-Dichlorobenzene	U		0.107	1.00	1	07/22/2024 16:15	WG2327536
1,3-Dichlorobenzene	U		0.110	1.00	1	07/22/2024 16:15	WG2327536
1,4-Dichlorobenzene	U		0.120	1.00	1	07/22/2024 16:15	WG2327536
Dichlorodifluoromethane	U		0.374	5.00	1	07/22/2024 16:15	WG2327536
1,1-Dichloroethane	U		0.100	1.00	1	07/22/2024 16:15	WG2327536
1,2-Dichloroethane	16.6		0.0819	1.00	1	07/22/2024 16:15	WG2327536
1,1-Dichloroethene	U		0.188	1.00	1	07/22/2024 16:15	WG2327536
cis-1,2-Dichloroethene	U		0.126	1.00	1	07/22/2024 16:15	WG2327536
trans-1,2-Dichloroethene	U		0.149	1.00	1	07/22/2024 16:15	WG2327536
1,2-Dichloropropane	0.494	J	0.149	1.00	1	07/22/2024 16:15	WG2327536
1,1-Dichloropropene	U		0.142	1.00	1	07/22/2024 16:15	WG2327536
1,3-Dichloropropane	U		0.110	1.00	1	07/22/2024 16:15	WG2327536
cis-1,3-Dichloropropene	U		0.111	1.00	1	07/22/2024 16:15	WG2327536
trans-1,3-Dichloropropene	U		0.118	1.00	1	07/22/2024 16:15	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2,2-Dichloropropane	U		0.161	1.00	1	07/22/2024 16:15	WG2327536
Di-isopropyl ether	U		0.105	1.00	1	07/22/2024 16:15	WG2327536
Ethylbenzene	U		0.137	1.00	1	07/22/2024 16:15	WG2327536
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/22/2024 16:15	WG2327536
Isopropylbenzene	0.671	J	0.105	1.00	1	07/22/2024 16:15	WG2327536
p-Isopropyltoluene	0.252	J	0.120	1.00	1	07/22/2024 16:15	WG2327536
2-Butanone (MEK)	U		1.19	10.0	1	07/22/2024 16:15	WG2327536
Methylene Chloride	U		0.430	5.00	1	07/22/2024 16:15	WG2327536
4-Methyl-2-pentanone (MIBK)	3.22	J	0.478	10.0	1	07/22/2024 16:15	WG2327536
Methyl tert-butyl ether	U		0.101	1.00	1	07/22/2024 16:15	WG2327536
Naphthalene	63.0		1.00	5.00	1	07/22/2024 16:15	WG2327536
n-Propylbenzene	0.903	J	0.0993	1.00	1	07/22/2024 16:15	WG2327536
Styrene	U		0.118	1.00	1	07/22/2024 16:15	WG2327536
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	07/22/2024 16:15	WG2327536
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	07/22/2024 16:15	WG2327536
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	07/22/2024 16:15	WG2327536
Tetrachloroethene	U		0.300	1.00	1	07/22/2024 16:15	WG2327536
Toluene	0.465	J	0.278	1.00	1	07/22/2024 16:15	WG2327536
1,2,3-Trichlorobenzene	U		0.230	1.00	1	07/22/2024 16:15	WG2327536
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/22/2024 16:15	WG2327536
1,1,1-Trichloroethane	U		0.149	1.00	1	07/22/2024 16:15	WG2327536
1,1,2-Trichloroethane	U		0.158	1.00	1	07/22/2024 16:15	WG2327536
Trichloroethene	U		0.190	1.00	1	07/22/2024 16:15	WG2327536
Trichlorofluoromethane	U		0.160	5.00	1	07/22/2024 16:15	WG2327536
1,2,3-Trichloropropane	U		0.237	2.50	1	07/22/2024 16:15	WG2327536
1,2,4-Trimethylbenzene	U		0.322	1.00	1	07/22/2024 16:15	WG2327536
1,2,3-Trimethylbenzene	0.435	J	0.104	1.00	1	07/22/2024 16:15	WG2327536
1,3,5-Trimethylbenzene	0.134	J	0.104	1.00	1	07/22/2024 16:15	WG2327536
Vinyl chloride	U		0.234	1.00	1	07/22/2024 16:15	WG2327536
Xylenes, Total	U		0.174	3.00	1	07/22/2024 16:15	WG2327536
(S) Toluene-d8	*104*			*80.0-120*		*07/22/2024 16:15*	WG2327536
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*07/22/2024 16:15*	WG2327536
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*07/22/2024 16:15*	WG2327536

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1070		33.0	100	1	07/26/2024 12:13	WG2328603
C22-C32 Hydrocarbons	196		33.0	100	1	07/26/2024 12:13	WG2328603
C32-C40 Hydrocarbons	136		33.0	100	1	07/26/2024 12:13	WG2328603
(S) o-Terphenyl	*134*			*52.0-156*		*07/26/2024 12:13*	WG2328603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2,4-D	7.85	P	1.19	4.36	2.18	07/30/2024 16:40	WG2326058
Dalapon	U	J4	0.375	2.18	1.09	07/29/2024 04:56	WG2326058
2,4-DB	U		0.329	2.18	1.09	07/29/2024 04:56	WG2326058
Dicamba	U		0.267	2.18	1.09	07/29/2024 04:56	WG2326058
Dichloroprop	U		1.13	2.18	1.09	07/29/2024 04:56	WG2326058
Dinoseb	4.80		0.545	4.36	2.18	07/31/2024 12:08	WG2326058
MCPA	U		14.3	109	1.09	07/29/2024 04:56	WG2326058
MCPP	U		71.9	109	1.09	07/29/2024 04:56	WG2326058
2,4,5-T	U		0.281	2.18	1.09	07/29/2024 04:56	WG2326058
2,4,5-TP (Silvex)	U		0.365	2.18	1.09	07/29/2024 04:56	WG2326058

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Pentachlorophenol	U		0.121	1.09	1.09	07/29/2024 04:56	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*103*			*14.0-158*		*07/30/2024 16:40*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*235*	J1		*14.0-158*		*07/31/2024 12:08*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*204*	J1		*14.0-158*		*07/29/2024 04:56*	WG2326058

Sample Narrative:

L1758088-05 WG2326058: Surrogate failure due to matrix interference.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/24/2024 19:19	WG2328840
Acenaphthene	U		0.0190	0.0500	1	07/24/2024 19:19	WG2328840
Acenaphthylene	U		0.0171	0.0500	1	07/24/2024 19:19	WG2328840
Benzo(a)anthracene	U		0.0203	0.0500	1	07/24/2024 19:19	WG2328840
Benzo(a)pyrene	U		0.0184	0.0500	1	07/24/2024 19:19	WG2328840
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/24/2024 19:19	WG2328840
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/24/2024 19:19	WG2328840
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/24/2024 19:19	WG2328840
Chrysene	U		0.0179	0.0500	1	07/24/2024 19:19	WG2328840
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/24/2024 19:19	WG2328840
Fluoranthene	U		0.0270	0.100	1	07/24/2024 19:19	WG2328840
Fluorene	U		0.0169	0.0500	1	07/24/2024 19:19	WG2328840
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/24/2024 19:19	WG2328840
Naphthalene	3.96		0.0917	0.250	1	07/24/2024 19:19	WG2328840
Phenanthrene	U		0.0180	0.0500	1	07/24/2024 19:19	WG2328840
Pyrene	U		0.0169	0.0500	1	07/24/2024 19:19	WG2328840
1-Methylnaphthalene	3.32		0.0687	0.250	1	07/24/2024 19:19	WG2328840
2-Methylnaphthalene	0.269		0.0674	0.250	1	07/24/2024 19:19	WG2328840
2-Chloronaphthalene	U		0.0682	0.250	1	07/24/2024 19:19	WG2328840
(S) Nitrobenzene-d5	*124*			*31.0-160*		*07/24/2024 19:19*	WG2328840
(S) 2-Fluorobiphenyl	*107*			*48.0-148*		*07/24/2024 19:19*	WG2328840
(S) p-Terphenyl-d14	*118*			*37.0-146*		*07/24/2024 19:19*	WG2328840

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.7		1	07/19/2024 15:54	WG2326366

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.76		0.0451	0.136	1	07/25/2024 13:53	WG2329848
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*77.0-120*		*07/25/2024 13:53*	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0632	0.0865	1.01	07/26/2024 08:30	WG2330348
Acrylonitrile	U		0.00625	0.0216	1.01	07/26/2024 08:30	WG2330348
Benzene	U		0.000809	0.00173	1.01	07/26/2024 08:30	WG2330348
Bromobenzene	U		0.00156	0.0216	1.01	07/26/2024 08:30	WG2330348
Bromodichloromethane	U		0.00125	0.00433	1.01	07/26/2024 08:30	WG2330348
Bromoform	U		0.00202	0.0433	1.01	07/26/2024 08:30	WG2330348
Bromomethane	U		0.00341	0.0216	1.01	07/26/2024 08:30	WG2330348
n-Butylbenzene	0.0452		0.00908	0.0216	1.01	07/26/2024 08:30	WG2330348
sec-Butylbenzene	0.0108	J	0.00499	0.0216	1.01	07/26/2024 08:30	WG2330348
tert-Butylbenzene	U		0.00337	0.00865	1.01	07/26/2024 08:30	WG2330348
Carbon tetrachloride	U		0.00155	0.00865	1.01	07/26/2024 08:30	WG2330348
Chlorobenzene	U		0.000363	0.00433	1.01	07/26/2024 08:30	WG2330348
Chlorodibromomethane	U		0.00106	0.00433	1.01	07/26/2024 08:30	WG2330348
Chloroethane	U		0.00295	0.00865	1.01	07/26/2024 08:30	WG2330348
Chloroform	U		0.00178	0.00433	1.01	07/26/2024 08:30	WG2330348
Chloromethane	U		0.00752	0.0216	1.01	07/26/2024 08:30	WG2330348
2-Chlorotoluene	U		0.00150	0.00433	1.01	07/26/2024 08:30	WG2330348
4-Chlorotoluene	U		0.000779	0.00865	1.01	07/26/2024 08:30	WG2330348
1,2-Dibromo-3-Chloropropane	U		0.00675	0.0433	1.01	07/26/2024 08:30	WG2330348
1,2-Dibromoethane	U		0.00112	0.00433	1.01	07/26/2024 08:30	WG2330348
Dibromomethane	U		0.00130	0.00865	1.01	07/26/2024 08:30	WG2330348
1,2-Dichlorobenzene	U		0.000735	0.00865	1.01	07/26/2024 08:30	WG2330348
1,3-Dichlorobenzene	U		0.00104	0.00865	1.01	07/26/2024 08:30	WG2330348
1,4-Dichlorobenzene	U		0.00121	0.00865	1.01	07/26/2024 08:30	WG2330348
Dichlorodifluoromethane	U		0.00279	0.00865	1.01	07/26/2024 08:30	WG2330348
1,1-Dichloroethane	U		0.000850	0.00433	1.01	07/26/2024 08:30	WG2330348
1,2-Dichloroethane	U		0.00112	0.00433	1.01	07/26/2024 08:30	WG2330348
1,1-Dichloroethene	U		0.00105	0.00433	1.01	07/26/2024 08:30	WG2330348
cis-1,2-Dichloroethene	U		0.00127	0.00433	1.01	07/26/2024 08:30	WG2330348
trans-1,2-Dichloroethene	U		0.00180	0.00865	1.01	07/26/2024 08:30	WG2330348
1,2-Dichloropropane	U		0.00245	0.00865	1.01	07/26/2024 08:30	WG2330348
1,1-Dichloropropene	U		0.00140	0.00433	1.01	07/26/2024 08:30	WG2330348
1,3-Dichloropropane	U		0.000867	0.00865	1.01	07/26/2024 08:30	WG2330348
cis-1,3-Dichloropropene	U		0.00131	0.00433	1.01	07/26/2024 08:30	WG2330348
trans-1,3-Dichloropropene	U		0.00197	0.00865	1.01	07/26/2024 08:30	WG2330348
2,2-Dichloropropane	U		0.00238	0.00433	1.01	07/26/2024 08:30	WG2330348
Di-isopropyl ether	U		0.000709	0.00173	1.01	07/26/2024 08:30	WG2330348
Ethylbenzene	U		0.00127	0.00433	1.01	07/26/2024 08:30	WG2330348
Hexachloro-1,3-butadiene	U		0.0104	0.0433	1.01	07/26/2024 08:30	WG2330348
Isopropylbenzene	0.00519		0.000735	0.00433	1.01	07/26/2024 08:30	WG2330348
p-Isopropyltoluene	0.00636	J	0.00442	0.00865	1.01	07/26/2024 08:30	WG2330348
2-Butanone (MEK)	U		0.110	0.173	1.01	07/26/2024 08:30	WG2330348
Methylene Chloride	U		0.0115	0.0433	1.01	07/26/2024 08:30	WG2330348
4-Methyl-2-pentanone (MIBK)	U		0.00394	0.0433	1.01	07/26/2024 08:30	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	0.00134	J	0.000605	0.00173	1.01	07/26/2024 08:30	WG2330348
Naphthalene	0.0976		0.00845	0.0216	1.01	07/26/2024 08:30	WG2330348
n-Propylbenzene	0.0106		0.00164	0.00865	1.01	07/26/2024 08:30	WG2330348
Styrene	U		0.000396	0.0216	1.01	07/26/2024 08:30	WG2330348
1,1,1,2-Tetrachloroethane	U		0.00164	0.00433	1.01	07/26/2024 08:30	WG2330348
1,1,2,2-Tetrachloroethane	U		0.00120	0.00433	1.01	07/26/2024 08:30	WG2330348
1,1,2-Trichlorotrifluoroethane	U		0.00131	0.00433	1.01	07/26/2024 08:30	WG2330348
Tetrachloroethene	U		0.00155	0.00433	1.01	07/26/2024 08:30	WG2330348
Toluene	U		0.00224	0.00865	1.01	07/26/2024 08:30	WG2330348
1,2,3-Trichlorobenzene	U		0.0127	0.0216	1.01	07/26/2024 08:30	WG2330348
1,2,4-Trichlorobenzene	U		0.00761	0.0216	1.01	07/26/2024 08:30	WG2330348
1,1,1-Trichloroethane	U		0.00160	0.00433	1.01	07/26/2024 08:30	WG2330348
1,1,2-Trichloroethane	U		0.00103	0.00433	1.01	07/26/2024 08:30	WG2330348
Trichloroethene	U		0.00101	0.00173	1.01	07/26/2024 08:30	WG2330348
Trichlorofluoromethane	U		0.00143	0.00433	1.01	07/26/2024 08:30	WG2330348
1,2,3-Trichloropropane	U		0.00281	0.0216	1.01	07/26/2024 08:30	WG2330348
1,2,4-Trimethylbenzene	0.00403	J	0.00274	0.00865	1.01	07/26/2024 08:30	WG2330348
1,2,3-Trimethylbenzene	0.00295	J	0.00274	0.00865	1.01	07/26/2024 08:30	WG2330348
1,3,5-Trimethylbenzene	U		0.00346	0.00865	1.01	07/26/2024 08:30	WG2330348
Vinyl chloride	U		0.00200	0.00433	1.01	07/26/2024 08:30	WG2330348
Xylenes, Total	0.00329	J	0.00152	0.0112	1.01	07/26/2024 08:30	WG2330348
(S) Toluene-d8	*106*			*75.0-131*		*07/26/2024 08:30*	WG2330348
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/26/2024 08:30*	WG2330348
(S) 1,2-Dichloroethane-d4	*87.5*			*70.0-130*		*07/26/2024 08:30*	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	3.46	J	0.995	5.43	1	07/25/2024 02:21	WG2329375
C22-C32 Hydrocarbons	4.38	J	1.81	5.43	1	07/25/2024 02:21	WG2329375
C32-C40 Hydrocarbons	5.12	J	1.81	5.43	1	07/25/2024 02:21	WG2329375
(S) o-Terphenyl	*57.0*			*18.0-148*		*07/25/2024 02:21*	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00953	0.0950	1	07/28/2024 07:26	WG2331580
Dalapon	U		0.0153	0.0950	1	07/28/2024 07:26	WG2331580
2,4-DB	U		0.0403	0.0950	1	07/28/2024 07:26	WG2331580
Dicamba	U		0.0213	0.0950	1	07/28/2024 07:26	WG2331580
Dichloroprop	U		0.0333	0.0950	1	07/28/2024 07:26	WG2331580
Dinoseb	U		0.00946	0.0950	1	07/28/2024 07:26	WG2331580
MCPA	U		0.601	8.82	1	07/28/2024 07:26	WG2331580
MCPP	U		0.498	8.82	1	07/28/2024 07:26	WG2331580
2,4,5-T	U		0.0116	0.0950	1	07/28/2024 07:26	WG2331580
2,4,5-TP (Silvex)	U		0.0145	0.0950	1	07/28/2024 07:26	WG2331580
(S) 2,4-Dichlorophenyl Acetic Acid	*82.4*			*22.0-132*		*07/28/2024 07:26*	WG2331580

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00312	0.00814	1	07/30/2024 02:17	WG2332231
Acenaphthene	U		0.00284	0.00814	1	07/30/2024 02:17	WG2332231
Acenaphthylene	U		0.00293	0.00814	1	07/30/2024 02:17	WG2332231
Benzo(a)anthracene	U		0.00235	0.00814	1	07/30/2024 02:17	WG2332231

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00243	0.00814	1	07/30/2024 02:17	WG2332231
Benzo(b)fluoranthene	U		0.00208	0.00814	1	07/30/2024 02:17	WG2332231
Benzo(g,h,i)perylene	U		0.00240	0.00814	1	07/30/2024 02:17	WG2332231
Benzo(k)fluoranthene	U		0.00292	0.00814	1	07/30/2024 02:17	WG2332231
Chrysene	U		0.00315	0.00814	1	07/30/2024 02:17	WG2332231
Dibenz(a,h)anthracene	U		0.00233	0.00814	1	07/30/2024 02:17	WG2332231
Fluoranthene	U		0.00308	0.00814	1	07/30/2024 02:17	WG2332231
Fluorene	U		0.00278	0.00814	1	07/30/2024 02:17	WG2332231
Indeno(1,2,3-cd)pyrene	U		0.00246	0.00814	1	07/30/2024 02:17	WG2332231
Naphthalene	0.0694		0.00554	0.0271	1	07/30/2024 02:17	WG2332231
Phenanthrene	U		0.00314	0.00814	1	07/30/2024 02:17	WG2332231
Pyrene	U		0.00271	0.00814	1	07/30/2024 02:17	WG2332231
1-Methylnaphthalene	0.0444		0.00609	0.0271	1	07/30/2024 02:17	WG2332231
2-Methylnaphthalene	0.00734	J	0.00580	0.0271	1	07/30/2024 02:17	WG2332231
2-Chloronaphthalene	U		0.00633	0.0271	1	07/30/2024 02:17	WG2332231
(S) p-Terphenyl-d14	*74.8*			*23.0-120*		*07/30/2024 02:17*	WG2332231
(S) Nitrobenzene-d5	*107*			*14.0-149*		*07/30/2024 02:17*	WG2332231
(S) 2-Fluorobiphenyl	*82.9*			*34.0-125*		*07/30/2024 02:17*	WG2332231

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	152		4.40	10.0	1	07/26/2024 16:49	WG2327644
Barium	26.9		0.736	5.00	1	07/26/2024 16:49	WG2327644
Cadmium	U		0.479	2.00	1	07/26/2024 16:49	WG2327644
Chromium	23.5		1.40	10.0	1	07/26/2024 16:49	WG2327644
Selenium	11.9		7.35	10.0	1	07/26/2024 16:49	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	284	B	30.4	100	1	07/23/2024 08:36	WG2327974
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*07/23/2024 08:36*	WG2327974

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	172		11.3	50.0	1	07/22/2024 16:36	WG2327536
Acrolein	U		2.54	50.0	1	07/22/2024 16:36	WG2327536
Acrylonitrile	U		0.671	10.0	1	07/22/2024 16:36	WG2327536
Benzene	U		0.0941	1.00	1	07/22/2024 16:36	WG2327536
Bromobenzene	U		0.118	1.00	1	07/22/2024 16:36	WG2327536
Bromodichloromethane	U		0.136	1.00	1	07/22/2024 16:36	WG2327536
Bromoform	U		0.129	1.00	1	07/22/2024 16:36	WG2327536
Bromomethane	U		0.605	5.00	1	07/22/2024 16:36	WG2327536
n-Butylbenzene	U		0.157	1.00	1	07/22/2024 16:36	WG2327536
sec-Butylbenzene	U		0.125	1.00	1	07/22/2024 16:36	WG2327536
tert-Butylbenzene	U		0.127	1.00	1	07/22/2024 16:36	WG2327536
Carbon tetrachloride	U		0.128	1.00	1	07/22/2024 16:36	WG2327536
Chlorobenzene	U		0.116	1.00	1	07/22/2024 16:36	WG2327536
Chlorodibromomethane	U		0.140	1.00	1	07/22/2024 16:36	WG2327536
Chloroethane	U		0.192	5.00	1	07/22/2024 16:36	WG2327536
Chloroform	U		0.111	5.00	1	07/22/2024 16:36	WG2327536
Chloromethane	U		0.960	2.50	1	07/22/2024 16:36	WG2327536
2-Chlorotoluene	U		0.106	1.00	1	07/22/2024 16:36	WG2327536
4-Chlorotoluene	U		0.114	1.00	1	07/22/2024 16:36	WG2327536
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	07/22/2024 16:36	WG2327536
1,2-Dibromoethane	U		0.126	1.00	1	07/22/2024 16:36	WG2327536
Dibromomethane	U		0.122	1.00	1	07/22/2024 16:36	WG2327536
1,2-Dichlorobenzene	U		0.107	1.00	1	07/22/2024 16:36	WG2327536
1,3-Dichlorobenzene	U		0.110	1.00	1	07/22/2024 16:36	WG2327536
1,4-Dichlorobenzene	U		0.120	1.00	1	07/22/2024 16:36	WG2327536
Dichlorodifluoromethane	U		0.374	5.00	1	07/22/2024 16:36	WG2327536
1,1-Dichloroethane	U		0.100	1.00	1	07/22/2024 16:36	WG2327536
1,2-Dichloroethane	25.2		0.0819	1.00	1	07/22/2024 16:36	WG2327536
1,1-Dichloroethene	U		0.188	1.00	1	07/22/2024 16:36	WG2327536
cis-1,2-Dichloroethene	U		0.126	1.00	1	07/22/2024 16:36	WG2327536
trans-1,2-Dichloroethene	U		0.149	1.00	1	07/22/2024 16:36	WG2327536
1,2-Dichloropropane	0.770	J	0.149	1.00	1	07/22/2024 16:36	WG2327536
1,1-Dichloropropene	U		0.142	1.00	1	07/22/2024 16:36	WG2327536
1,3-Dichloropropane	U		0.110	1.00	1	07/22/2024 16:36	WG2327536
cis-1,3-Dichloropropene	U		0.111	1.00	1	07/22/2024 16:36	WG2327536
trans-1,3-Dichloropropene	U		0.118	1.00	1	07/22/2024 16:36	WG2327536
2,2-Dichloropropane	U		0.161	1.00	1	07/22/2024 16:36	WG2327536
Di-isopropyl ether	U		0.105	1.00	1	07/22/2024 16:36	WG2327536
Ethylbenzene	U		0.137	1.00	1	07/22/2024 16:36	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/22/2024 16:36	WG2327536
Isopropylbenzene	U		0.105	1.00	1	07/22/2024 16:36	WG2327536
p-Isopropyltoluene	U		0.120	1.00	1	07/22/2024 16:36	WG2327536
2-Butanone (MEK)	58.1		1.19	10.0	1	07/22/2024 16:36	WG2327536
Methylene Chloride	0.727	J	0.430	5.00	1	07/22/2024 16:36	WG2327536
4-Methyl-2-pentanone (MIBK)	9.50	J	0.478	10.0	1	07/22/2024 16:36	WG2327536
Methyl tert-butyl ether	U		0.101	1.00	1	07/22/2024 16:36	WG2327536
Naphthalene	6.05		1.00	5.00	1	07/26/2024 00:12	WG2330113
n-Propylbenzene	U		0.0993	1.00	1	07/22/2024 16:36	WG2327536
Styrene	U		0.118	1.00	1	07/22/2024 16:36	WG2327536
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	07/22/2024 16:36	WG2327536
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	07/22/2024 16:36	WG2327536
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	07/22/2024 16:36	WG2327536
Tetrachloroethene	U		0.300	1.00	1	07/22/2024 16:36	WG2327536
Toluene	U		0.278	1.00	1	07/22/2024 16:36	WG2327536
1,2,3-Trichlorobenzene	U		0.230	1.00	1	07/22/2024 16:36	WG2327536
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/22/2024 16:36	WG2327536
1,1,1-Trichloroethane	U		0.149	1.00	1	07/22/2024 16:36	WG2327536
1,1,2-Trichloroethane	U		0.158	1.00	1	07/22/2024 16:36	WG2327536
Trichloroethene	U		0.190	1.00	1	07/22/2024 16:36	WG2327536
Trichlorofluoromethane	U		0.160	5.00	1	07/22/2024 16:36	WG2327536
1,2,3-Trichloropropane	U		0.237	2.50	1	07/22/2024 16:36	WG2327536
1,2,4-Trimethylbenzene	U		0.322	1.00	1	07/22/2024 16:36	WG2327536
1,2,3-Trimethylbenzene	U		0.104	1.00	1	07/22/2024 16:36	WG2327536
1,3,5-Trimethylbenzene	U		0.104	1.00	1	07/22/2024 16:36	WG2327536
Vinyl chloride	U		0.234	1.00	1	07/22/2024 16:36	WG2327536
Xylenes, Total	U		0.174	3.00	1	07/22/2024 16:36	WG2327536
(S) Toluene-d8	*103*			*80.0-120*		*07/22/2024 16:36*	WG2327536
(S) Toluene-d8	*115*			*80.0-120*		*07/26/2024 00:12*	WG2330113
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*07/22/2024 16:36*	WG2327536
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*07/26/2024 00:12*	WG2330113
(S) 1,2-Dichloroethane-d4	*120*			*70.0-130*		*07/22/2024 16:36*	WG2327536
(S) 1,2-Dichloroethane-d4	*99.9*			*70.0-130*		*07/26/2024 00:12*	WG2330113

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	388		33.0	100	1	07/26/2024 12:33	WG2328603
C22-C32 Hydrocarbons	U		33.0	100	1	07/26/2024 12:33	WG2328603
C32-C40 Hydrocarbons	46.5	J	33.0	100	1	07/26/2024 12:33	WG2328603
(S) o-Terphenyl	*111*			*52.0-156*		*07/26/2024 12:33*	WG2328603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	U		0.547	2.00	1	07/29/2024 03:45	WG2326058
Dalapon	U	J4	0.344	2.00	1	07/29/2024 03:45	WG2326058
2,4-DB	U		0.302	2.00	1	07/29/2024 03:45	WG2326058
Dicamba	U		0.245	2.00	1	07/29/2024 03:45	WG2326058
Dichloroprop	U		1.04	2.00	1	07/29/2024 03:45	WG2326058
Dinoseb	13.2		1.25	10.0	5	07/31/2024 12:31	WG2326058
MCPA	U		13.1	100	1	07/29/2024 03:45	WG2326058
MCPP	U		66.0	100	1	07/29/2024 03:45	WG2326058
2,4,5-T	U		0.258	2.00	1	07/29/2024 03:45	WG2326058
2,4,5-TP (Silvex)	U		0.335	2.00	1	07/29/2024 03:45	WG2326058

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Pentachlorophenol	U		0.111	1.00	1	07/29/2024 03:45	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*63.6*			*14.0-158*		*07/31/2024 12:31*	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*151*			*14.0-158*		*07/29/2024 03:45*	WG2326058

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/24/2024 19:37	WG2328840
Acenaphthene	U		0.0190	0.0500	1	07/24/2024 19:37	WG2328840
Acenaphthylene	U		0.0171	0.0500	1	07/24/2024 19:37	WG2328840
Benzo(a)anthracene	U		0.0203	0.0500	1	07/24/2024 19:37	WG2328840
Benzo(a)pyrene	U		0.0184	0.0500	1	07/24/2024 19:37	WG2328840
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/24/2024 19:37	WG2328840
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/24/2024 19:37	WG2328840
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/24/2024 19:37	WG2328840
Chrysene	U		0.0179	0.0500	1	07/24/2024 19:37	WG2328840
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/24/2024 19:37	WG2328840
Fluoranthene	U		0.0270	0.100	1	07/24/2024 19:37	WG2328840
Fluorene	U		0.0169	0.0500	1	07/24/2024 19:37	WG2328840
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/24/2024 19:37	WG2328840
Naphthalene	42.2		0.0917	0.250	1	07/24/2024 19:37	WG2328840
Phenanthrene	0.0205	J	0.0180	0.0500	1	07/24/2024 19:37	WG2328840
Pyrene	U		0.0169	0.0500	1	07/24/2024 19:37	WG2328840
1-Methylnaphthalene	2.30		0.0687	0.250	1	07/24/2024 19:37	WG2328840
2-Methylnaphthalene	0.329		0.0674	0.250	1	07/24/2024 19:37	WG2328840
2-Chloronaphthalene	U		0.0682	0.250	1	07/24/2024 19:37	WG2328840
(S) Nitrobenzene-d5	*112*			*31.0-160*		*07/24/2024 19:37*	WG2328840
(S) 2-Fluorobiphenyl	*99.5*			*48.0-148*		*07/24/2024 19:37*	WG2328840
(S) p-Terphenyl-d14	*111*			*37.0-146*		*07/24/2024 19:37*	WG2328840

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.0		1	07/19/2024 15:54	WG2326366

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	4.48		0.0431	0.130	1	07/25/2024 14:17	WG2329848
(S) a,a,a-Trifluorotoluene(FID)	*98.1*			*77.0-120*		*07/25/2024 14:17*	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0588	0.0805	1.01	07/26/2024 08:49	WG2330348
Acrylonitrile	U		0.00582	0.0201	1.01	07/26/2024 08:49	WG2330348
Benzene	U		0.000753	0.00161	1.01	07/26/2024 08:49	WG2330348
Bromobenzene	U		0.00145	0.0201	1.01	07/26/2024 08:49	WG2330348
Bromodichloromethane	U		0.00117	0.00403	1.01	07/26/2024 08:49	WG2330348
Bromoform	U		0.00188	0.0403	1.01	07/26/2024 08:49	WG2330348
Bromomethane	U		0.00317	0.0201	1.01	07/26/2024 08:49	WG2330348
n-Butylbenzene	0.0424		0.00845	0.0201	1.01	07/26/2024 08:49	WG2330348
sec-Butylbenzene	0.00853	J	0.00464	0.0201	1.01	07/26/2024 08:49	WG2330348
tert-Butylbenzene	U		0.00314	0.00805	1.01	07/26/2024 08:49	WG2330348
Carbon tetrachloride	U		0.00145	0.00805	1.01	07/26/2024 08:49	WG2330348
Chlorobenzene	U		0.000338	0.00403	1.01	07/26/2024 08:49	WG2330348
Chlorodibromomethane	U		0.000986	0.00403	1.01	07/26/2024 08:49	WG2330348
Chloroethane	U		0.00274	0.00805	1.01	07/26/2024 08:49	WG2330348
Chloroform	U		0.00166	0.00403	1.01	07/26/2024 08:49	WG2330348
Chloromethane	U		0.00700	0.0201	1.01	07/26/2024 08:49	WG2330348
2-Chlorotoluene	U		0.00139	0.00403	1.01	07/26/2024 08:49	WG2330348
4-Chlorotoluene	U		0.000726	0.00805	1.01	07/26/2024 08:49	WG2330348
1,2-Dibromo-3-Chloropropane	U		0.00628	0.0403	1.01	07/26/2024 08:49	WG2330348
1,2-Dibromoethane	U		0.00104	0.00403	1.01	07/26/2024 08:49	WG2330348
Dibromomethane	U		0.00121	0.00805	1.01	07/26/2024 08:49	WG2330348
1,2-Dichlorobenzene	U		0.000684	0.00805	1.01	07/26/2024 08:49	WG2330348
1,3-Dichlorobenzene	U		0.000966	0.00805	1.01	07/26/2024 08:49	WG2330348
1,4-Dichlorobenzene	U		0.00113	0.00805	1.01	07/26/2024 08:49	WG2330348
Dichlorodifluoromethane	U		0.00260	0.00805	1.01	07/26/2024 08:49	WG2330348
1,1-Dichloroethane	U		0.000791	0.00403	1.01	07/26/2024 08:49	WG2330348
1,2-Dichloroethane	U		0.00104	0.00403	1.01	07/26/2024 08:49	WG2330348
1,1-Dichloroethene	U		0.000976	0.00403	1.01	07/26/2024 08:49	WG2330348
cis-1,2-Dichloroethene	U		0.00118	0.00403	1.01	07/26/2024 08:49	WG2330348
trans-1,2-Dichloroethene	U		0.00167	0.00805	1.01	07/26/2024 08:49	WG2330348
1,2-Dichloropropane	U		0.00228	0.00805	1.01	07/26/2024 08:49	WG2330348
1,1-Dichloropropene	U		0.00130	0.00403	1.01	07/26/2024 08:49	WG2330348
1,3-Dichloropropane	U		0.000807	0.00805	1.01	07/26/2024 08:49	WG2330348
cis-1,3-Dichloropropene	U		0.00122	0.00403	1.01	07/26/2024 08:49	WG2330348
trans-1,3-Dichloropropene	U		0.00183	0.00805	1.01	07/26/2024 08:49	WG2330348
2,2-Dichloropropane	U		0.00222	0.00403	1.01	07/26/2024 08:49	WG2330348
Di-isopropyl ether	U		0.000660	0.00161	1.01	07/26/2024 08:49	WG2330348
Ethylbenzene	U		0.00119	0.00403	1.01	07/26/2024 08:49	WG2330348
Hexachloro-1,3-butadiene	U		0.00966	0.0403	1.01	07/26/2024 08:49	WG2330348
Isopropylbenzene	0.00588		0.000684	0.00403	1.01	07/26/2024 08:49	WG2330348
p-Isopropyltoluene	0.00568	J	0.00411	0.00805	1.01	07/26/2024 08:49	WG2330348
2-Butanone (MEK)	U		0.102	0.161	1.01	07/26/2024 08:49	WG2330348
Methylene Chloride	U		0.0107	0.0403	1.01	07/26/2024 08:49	WG2330348
4-Methyl-2-pentanone (MIBK)	U		0.00367	0.0403	1.01	07/26/2024 08:49	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	0.000604	J	0.000563	0.00161	1.01	07/26/2024 08:49	WG2330348
Naphthalene	0.0751		0.00786	0.0201	1.01	07/26/2024 08:49	WG2330348
n-Propylbenzene	0.0104		0.00153	0.00805	1.01	07/26/2024 08:49	WG2330348
Styrene	U		0.000368	0.0201	1.01	07/26/2024 08:49	WG2330348
1,1,1,2-Tetrachloroethane	U		0.00153	0.00403	1.01	07/26/2024 08:49	WG2330348
1,1,2,2-Tetrachloroethane	U		0.00112	0.00403	1.01	07/26/2024 08:49	WG2330348
1,1,2-Trichlorotrifluoroethane	U		0.00122	0.00403	1.01	07/26/2024 08:49	WG2330348
Tetrachloroethene	U		0.00144	0.00403	1.01	07/26/2024 08:49	WG2330348
Toluene	U		0.00209	0.00805	1.01	07/26/2024 08:49	WG2330348
1,2,3-Trichlorobenzene	U		0.0118	0.0201	1.01	07/26/2024 08:49	WG2330348
1,2,4-Trichlorobenzene	U		0.00708	0.0201	1.01	07/26/2024 08:49	WG2330348
1,1,1-Trichloroethane	U		0.00149	0.00403	1.01	07/26/2024 08:49	WG2330348
1,1,2-Trichloroethane	U		0.000962	0.00403	1.01	07/26/2024 08:49	WG2330348
Trichloroethene	U		0.000941	0.00161	1.01	07/26/2024 08:49	WG2330348
Trichlorofluoromethane	U		0.00133	0.00403	1.01	07/26/2024 08:49	WG2330348
1,2,3-Trichloropropane	U		0.00262	0.0201	1.01	07/26/2024 08:49	WG2330348
1,2,4-Trimethylbenzene	0.00338	J	0.00255	0.00805	1.01	07/26/2024 08:49	WG2330348
1,2,3-Trimethylbenzene	U		0.00255	0.00805	1.01	07/26/2024 08:49	WG2330348
1,3,5-Trimethylbenzene	U		0.00322	0.00805	1.01	07/26/2024 08:49	WG2330348
Vinyl chloride	U		0.00187	0.00403	1.01	07/26/2024 08:49	WG2330348
Xylenes, Total	0.00354	J	0.00142	0.0105	1.01	07/26/2024 08:49	WG2330348
(S) Toluene-d8	*102*			*75.0-131*		*07/26/2024 08:49*	WG2330348
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*07/26/2024 08:49*	WG2330348
(S) 1,2-Dichloroethane-d4	*87.8*			*70.0-130*		*07/26/2024 08:49*	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	5.78		0.951	5.19	1	07/25/2024 03:16	WG2329375
C22-C32 Hydrocarbons	10.0		1.73	5.19	1	07/25/2024 03:16	WG2329375
C32-C40 Hydrocarbons	12.0		1.73	5.19	1	07/25/2024 03:16	WG2329375
(S) o-Terphenyl	*70.6*			*18.0-148*		*07/25/2024 03:16*	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00911	0.0909	1	07/28/2024 07:36	WG2331580
Dalapon	U		0.0147	0.0909	1	07/28/2024 07:36	WG2331580
2,4-DB	U		0.0386	0.0909	1	07/28/2024 07:36	WG2331580
Dicamba	U		0.0204	0.0909	1	07/28/2024 07:36	WG2331580
Dichloroprop	U		0.0318	0.0909	1	07/28/2024 07:36	WG2331580
Dinoseb	U		0.00905	0.0909	1	07/28/2024 07:36	WG2331580
MCPA	U		0.575	8.44	1	07/28/2024 07:36	WG2331580
MCPP	U		0.476	8.44	1	07/28/2024 07:36	WG2331580
2,4,5-T	U		0.0111	0.0909	1	07/28/2024 07:36	WG2331580
2,4,5-TP (Silvex)	U		0.0139	0.0909	1	07/28/2024 07:36	WG2331580
(S) 2,4-Dichlorophenyl Acetic Acid	*60.8*			*22.0-132*		*07/28/2024 07:36*	WG2331580

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00299	0.00779	1	07/30/2024 02:34	WG2332231
Acenaphthene	U		0.00271	0.00779	1	07/30/2024 02:34	WG2332231
Acenaphthylene	U		0.00280	0.00779	1	07/30/2024 02:34	WG2332231
Benzo(a)anthracene	U		0.00225	0.00779	1	07/30/2024 02:34	WG2332231

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00232	0.00779	1	07/30/2024 02:34	WG2332231
Benzo(b)fluoranthene	U		0.00199	0.00779	1	07/30/2024 02:34	WG2332231
Benzo(g,h,i)perylene	U		0.00230	0.00779	1	07/30/2024 02:34	WG2332231
Benzo(k)fluoranthene	U		0.00279	0.00779	1	07/30/2024 02:34	WG2332231
Chrysene	U		0.00301	0.00779	1	07/30/2024 02:34	WG2332231
Dibenz(a,h)anthracene	U		0.00223	0.00779	1	07/30/2024 02:34	WG2332231
Fluoranthene	U		0.00295	0.00779	1	07/30/2024 02:34	WG2332231
Fluorene	U		0.00266	0.00779	1	07/30/2024 02:34	WG2332231
Indeno(1,2,3-cd)pyrene	U		0.00235	0.00779	1	07/30/2024 02:34	WG2332231
Naphthalene	0.0487		0.00530	0.0260	1	07/30/2024 02:34	WG2332231
Phenanthrene	U		0.00300	0.00779	1	07/30/2024 02:34	WG2332231
Pyrene	U		0.00260	0.00779	1	07/30/2024 02:34	WG2332231
1-Methylnaphthalene	0.0437		0.00583	0.0260	1	07/30/2024 02:34	WG2332231
2-Methylnaphthalene	0.00558	J	0.00554	0.0260	1	07/30/2024 02:34	WG2332231
2-Chloronaphthalene	U		0.00605	0.0260	1	07/30/2024 02:34	WG2332231
(S) p-Terphenyl-d14	*31.1*			*23.0-120*		*07/30/2024 02:34*	WG2332231
(S) Nitrobenzene-d5	*41.2*			*14.0-149*		*07/30/2024 02:34*	WG2332231
(S) 2-Fluorobiphenyl	*32.9*	J2		*34.0-125*		*07/30/2024 02:34*	WG2332231

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	14.0		4.40	10.0	1	07/26/2024 16:52	WG2327644
Barium	98.6		0.736	5.00	1	07/26/2024 16:52	WG2327644
Cadmium	2.45		0.479	2.00	1	07/26/2024 16:52	WG2327644
Chromium	11.9		1.40	10.0	1	07/26/2024 16:52	WG2327644
Selenium	24.8		7.35	10.0	1	07/26/2024 16:52	WG2327644

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	116	B	30.4	100	1	07/23/2024 08:59	WG2327974
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*07/23/2024 08:59*	WG2327974

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	378		11.3	50.0	1	07/22/2024 16:57	WG2327536
Acrolein	U		2.54	50.0	1	07/22/2024 16:57	WG2327536
Acrylonitrile	U		0.671	10.0	1	07/22/2024 16:57	WG2327536
Benzene	U		0.0941	1.00	1	07/22/2024 16:57	WG2327536
Bromobenzene	U		0.118	1.00	1	07/22/2024 16:57	WG2327536
Bromodichloromethane	U		0.136	1.00	1	07/22/2024 16:57	WG2327536
Bromoform	U		0.129	1.00	1	07/22/2024 16:57	WG2327536
Bromomethane	U		0.605	5.00	1	07/22/2024 16:57	WG2327536
n-Butylbenzene	U		0.157	1.00	1	07/22/2024 16:57	WG2327536
sec-Butylbenzene	U		0.125	1.00	1	07/22/2024 16:57	WG2327536
tert-Butylbenzene	U		0.127	1.00	1	07/22/2024 16:57	WG2327536
Carbon tetrachloride	U		0.128	1.00	1	07/22/2024 16:57	WG2327536
Chlorobenzene	U		0.116	1.00	1	07/22/2024 16:57	WG2327536
Chlorodibromomethane	U		0.140	1.00	1	07/22/2024 16:57	WG2327536
Chloroethane	U		0.192	5.00	1	07/22/2024 16:57	WG2327536
Chloroform	U		0.111	5.00	1	07/22/2024 16:57	WG2327536
Chloromethane	U		0.960	2.50	1	07/22/2024 16:57	WG2327536
2-Chlorotoluene	U		0.106	1.00	1	07/22/2024 16:57	WG2327536
4-Chlorotoluene	U		0.114	1.00	1	07/22/2024 16:57	WG2327536
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	07/22/2024 16:57	WG2327536
1,2-Dibromoethane	U		0.126	1.00	1	07/22/2024 16:57	WG2327536
Dibromomethane	U		0.122	1.00	1	07/22/2024 16:57	WG2327536
1,2-Dichlorobenzene	U		0.107	1.00	1	07/22/2024 16:57	WG2327536
1,3-Dichlorobenzene	U		0.110	1.00	1	07/22/2024 16:57	WG2327536
1,4-Dichlorobenzene	U		0.120	1.00	1	07/22/2024 16:57	WG2327536
Dichlorodifluoromethane	U		0.374	5.00	1	07/22/2024 16:57	WG2327536
1,1-Dichloroethane	U		0.100	1.00	1	07/22/2024 16:57	WG2327536
1,2-Dichloroethane	3.44		0.0819	1.00	1	07/22/2024 16:57	WG2327536
1,1-Dichloroethene	U		0.188	1.00	1	07/22/2024 16:57	WG2327536
cis-1,2-Dichloroethene	U		0.126	1.00	1	07/22/2024 16:57	WG2327536
trans-1,2-Dichloroethene	U		0.149	1.00	1	07/22/2024 16:57	WG2327536
1,2-Dichloropropane	U		0.149	1.00	1	07/22/2024 16:57	WG2327536
1,1-Dichloropropene	U		0.142	1.00	1	07/22/2024 16:57	WG2327536
1,3-Dichloropropane	U		0.110	1.00	1	07/22/2024 16:57	WG2327536
cis-1,3-Dichloropropene	U		0.111	1.00	1	07/22/2024 16:57	WG2327536
trans-1,3-Dichloropropene	U		0.118	1.00	1	07/22/2024 16:57	WG2327536
2,2-Dichloropropane	U		0.161	1.00	1	07/22/2024 16:57	WG2327536
Di-isopropyl ether	U		0.105	1.00	1	07/22/2024 16:57	WG2327536
Ethylbenzene	U		0.137	1.00	1	07/22/2024 16:57	WG2327536

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Hexachloro-1,3-butadiene	U		0.337	1.00	1	07/22/2024 16:57	WG2327536
Isopropylbenzene	U		0.105	1.00	1	07/22/2024 16:57	WG2327536
p-Isopropyltoluene	U		0.120	1.00	1	07/22/2024 16:57	WG2327536
2-Butanone (MEK)	2.93	J	1.19	10.0	1	07/22/2024 16:57	WG2327536
Methylene Chloride	U		0.430	5.00	1	07/22/2024 16:57	WG2327536
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	07/22/2024 16:57	WG2327536
Methyl tert-butyl ether	U		0.101	1.00	1	07/22/2024 16:57	WG2327536
Naphthalene	U		1.00	5.00	1	07/26/2024 00:32	WG2330113
n-Propylbenzene	U		0.0993	1.00	1	07/22/2024 16:57	WG2327536
Styrene	U		0.118	1.00	1	07/22/2024 16:57	WG2327536
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	07/22/2024 16:57	WG2327536
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	07/22/2024 16:57	WG2327536
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	07/22/2024 16:57	WG2327536
Tetrachloroethene	U		0.300	1.00	1	07/22/2024 16:57	WG2327536
Toluene	U		0.278	1.00	1	07/22/2024 16:57	WG2327536
1,2,3-Trichlorobenzene	U		0.230	1.00	1	07/22/2024 16:57	WG2327536
1,2,4-Trichlorobenzene	U		0.481	1.00	1	07/22/2024 16:57	WG2327536
1,1,1-Trichloroethane	U		0.149	1.00	1	07/22/2024 16:57	WG2327536
1,1,2-Trichloroethane	U		0.158	1.00	1	07/22/2024 16:57	WG2327536
Trichloroethene	U		0.190	1.00	1	07/22/2024 16:57	WG2327536
Trichlorofluoromethane	U		0.160	5.00	1	07/22/2024 16:57	WG2327536
1,2,3-Trichloropropane	U		0.237	2.50	1	07/22/2024 16:57	WG2327536
1,2,4-Trimethylbenzene	U		0.322	1.00	1	07/22/2024 16:57	WG2327536
1,2,3-Trimethylbenzene	U		0.104	1.00	1	07/22/2024 16:57	WG2327536
1,3,5-Trimethylbenzene	U		0.104	1.00	1	07/22/2024 16:57	WG2327536
Vinyl chloride	U		0.234	1.00	1	07/22/2024 16:57	WG2327536
Xylenes, Total	U		0.174	3.00	1	07/22/2024 16:57	WG2327536
(S) Toluene-d8	*104*			*80.0-120*		*07/22/2024 16:57*	WG2327536
(S) Toluene-d8	*116*			*80.0-120*		*07/26/2024 00:32*	WG2330113
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*07/22/2024 16:57*	WG2327536
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*07/26/2024 00:32*	WG2330113
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*07/22/2024 16:57*	WG2327536
(S) 1,2-Dichloroethane-d4	*94.1*			*70.0-130*		*07/26/2024 00:32*	WG2330113

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	U		33.0	100	1	07/26/2024 13:15	WG2328603
C22-C32 Hydrocarbons	U		33.0	100	1	07/26/2024 13:15	WG2328603
C32-C40 Hydrocarbons	64.5	J	33.0	100	1	07/26/2024 13:15	WG2328603
(S) o-Terphenyl	*78.4*			*52.0-156*		*07/26/2024 13:15*	WG2328603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	U		0.547	2.00	1	07/29/2024 03:55	WG2326058
Dalapon	U	J4	0.344	2.00	1	07/29/2024 03:55	WG2326058
2,4-DB	U		0.302	2.00	1	07/29/2024 03:55	WG2326058
Dicamba	U		0.245	2.00	1	07/29/2024 03:55	WG2326058
Dichloroprop	U		1.04	2.00	1	07/29/2024 03:55	WG2326058
Dinoseb	U	J4	0.250	2.00	1	07/29/2024 03:55	WG2326058
MCPA	U		13.1	100	1	07/29/2024 03:55	WG2326058
MCPP	U		66.0	100	1	07/29/2024 03:55	WG2326058
2,4,5-T	U		0.258	2.00	1	07/29/2024 03:55	WG2326058
2,4,5-TP (Silvex)	U		0.335	2.00	1	07/29/2024 03:55	WG2326058

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Pentachlorophenol	U		0.111	1.00	1	07/29/2024 03:55	WG2326058
(S) 2,4-Dichlorophenyl Acetic Acid	*436*	J1		*14.0-158*		*07/29/2024 03:55*	WG2326058

Sample Narrative:

L1758088-09 WG2326058: Surrogate failure due to matrix interference.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	07/24/2024 19:54	WG2328840
Acenaphthene	U		0.0190	0.0500	1	07/24/2024 19:54	WG2328840
Acenaphthylene	U		0.0171	0.0500	1	07/24/2024 19:54	WG2328840
Benzo(a)anthracene	U		0.0203	0.0500	1	07/24/2024 19:54	WG2328840
Benzo(a)pyrene	U		0.0184	0.0500	1	07/24/2024 19:54	WG2328840
Benzo(b)fluoranthene	U		0.0168	0.0500	1	07/24/2024 19:54	WG2328840
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	07/24/2024 19:54	WG2328840
Benzo(k)fluoranthene	U		0.0202	0.0500	1	07/24/2024 19:54	WG2328840
Chrysene	U		0.0179	0.0500	1	07/24/2024 19:54	WG2328840
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	07/24/2024 19:54	WG2328840
Fluoranthene	U		0.0270	0.100	1	07/24/2024 19:54	WG2328840
Fluorene	U		0.0169	0.0500	1	07/24/2024 19:54	WG2328840
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	07/24/2024 19:54	WG2328840
Naphthalene	U		0.0917	0.250	1	07/24/2024 19:54	WG2328840
Phenanthrene	U		0.0180	0.0500	1	07/24/2024 19:54	WG2328840
Pyrene	U		0.0169	0.0500	1	07/24/2024 19:54	WG2328840
1-Methylnaphthalene	U		0.0687	0.250	1	07/24/2024 19:54	WG2328840
2-Methylnaphthalene	U		0.0674	0.250	1	07/24/2024 19:54	WG2328840
2-Chloronaphthalene	U		0.0682	0.250	1	07/24/2024 19:54	WG2328840
(S) Nitrobenzene-d5	*123*			*31.0-160*		*07/24/2024 19:54*	WG2328840
(S) 2-Fluorobiphenyl	*103*			*48.0-148*		*07/24/2024 19:54*	WG2328840
(S) p-Terphenyl-d14	*128*			*37.0-146*		*07/24/2024 19:54*	WG2328840

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.7		1	07/19/2024 17:22	WG2326370

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	1.77		0.0443	0.133	1.01	07/25/2024 14:40	WG2329848
(S) a,a,a-Trifluorotoluene(FID)	*98.3*			*77.0-120*		*07/25/2024 14:40*	WG2329848

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0600	0.0822	1	07/26/2024 09:08	WG2330348
Acrylonitrile	U		0.00593	0.0205	1	07/26/2024 09:08	WG2330348
Benzene	U		0.000767	0.00164	1	07/26/2024 09:08	WG2330348
Bromobenzene	U		0.00148	0.0205	1	07/26/2024 09:08	WG2330348
Bromodichloromethane	U		0.00119	0.00411	1	07/26/2024 09:08	WG2330348
Bromoform	U		0.00192	0.0411	1	07/26/2024 09:08	WG2330348
Bromomethane	U		0.00324	0.0205	1	07/26/2024 09:08	WG2330348
n-Butylbenzene	0.0394		0.00863	0.0205	1	07/26/2024 09:08	WG2330348
sec-Butylbenzene	0.00879	J	0.00473	0.0205	1	07/26/2024 09:08	WG2330348
tert-Butylbenzene	U		0.00320	0.00822	1	07/26/2024 09:08	WG2330348
Carbon tetrachloride	U		0.00148	0.00822	1	07/26/2024 09:08	WG2330348
Chlorobenzene	U		0.000345	0.00411	1	07/26/2024 09:08	WG2330348
Chlorodibromomethane	U		0.00101	0.00411	1	07/26/2024 09:08	WG2330348
Chloroethane	U		0.00279	0.00822	1	07/26/2024 09:08	WG2330348
Chloroform	U		0.00169	0.00411	1	07/26/2024 09:08	WG2330348
Chloromethane	U		0.00715	0.0205	1	07/26/2024 09:08	WG2330348
2-Chlorotoluene	U		0.00142	0.00411	1	07/26/2024 09:08	WG2330348
4-Chlorotoluene	U		0.000739	0.00822	1	07/26/2024 09:08	WG2330348
1,2-Dibromo-3-Chloropropane	U		0.00641	0.0411	1	07/26/2024 09:08	WG2330348
1,2-Dibromoethane	U		0.00106	0.00411	1	07/26/2024 09:08	WG2330348
Dibromomethane	U		0.00123	0.00822	1	07/26/2024 09:08	WG2330348
1,2-Dichlorobenzene	U		0.000698	0.00822	1	07/26/2024 09:08	WG2330348
1,3-Dichlorobenzene	U		0.000986	0.00822	1	07/26/2024 09:08	WG2330348
1,4-Dichlorobenzene	U		0.00115	0.00822	1	07/26/2024 09:08	WG2330348
Dichlorodifluoromethane	U		0.00265	0.00822	1	07/26/2024 09:08	WG2330348
1,1-Dichloroethane	U		0.000807	0.00411	1	07/26/2024 09:08	WG2330348
1,2-Dichloroethane	U		0.00107	0.00411	1	07/26/2024 09:08	WG2330348
1,1-Dichloroethene	U		0.000996	0.00411	1	07/26/2024 09:08	WG2330348
cis-1,2-Dichloroethene	U		0.00121	0.00411	1	07/26/2024 09:08	WG2330348
trans-1,2-Dichloroethene	U		0.00171	0.00822	1	07/26/2024 09:08	WG2330348
1,2-Dichloropropane	U		0.00233	0.00822	1	07/26/2024 09:08	WG2330348
1,1-Dichloropropene	U		0.00133	0.00411	1	07/26/2024 09:08	WG2330348
1,3-Dichloropropane	U		0.000823	0.00822	1	07/26/2024 09:08	WG2330348
cis-1,3-Dichloropropene	U		0.00124	0.00411	1	07/26/2024 09:08	WG2330348
trans-1,3-Dichloropropene	U		0.00187	0.00822	1	07/26/2024 09:08	WG2330348
2,2-Dichloropropane	U		0.00227	0.00411	1	07/26/2024 09:08	WG2330348
Di-isopropyl ether	U		0.000674	0.00164	1	07/26/2024 09:08	WG2330348
Ethylbenzene	U		0.00121	0.00411	1	07/26/2024 09:08	WG2330348
Hexachloro-1,3-butadiene	U		0.00986	0.0411	1	07/26/2024 09:08	WG2330348
Isopropylbenzene	0.00679		0.000698	0.00411	1	07/26/2024 09:08	WG2330348
p-Isopropyltoluene	0.00588	J	0.00419	0.00822	1	07/26/2024 09:08	WG2330348
2-Butanone (MEK)	U		0.104	0.164	1	07/26/2024 09:08	WG2330348
Methylene Chloride	U		0.0109	0.0411	1	07/26/2024 09:08	WG2330348
4-Methyl-2-pentanone (MIBK)	U		0.00375	0.0411	1	07/26/2024 09:08	WG2330348

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	U		0.000575	0.00164	1	07/26/2024 09:08	WG2330348
Naphthalene	0.0846		0.00802	0.0205	1	07/26/2024 09:08	WG2330348
n-Propylbenzene	0.0120		0.00156	0.00822	1	07/26/2024 09:08	WG2330348
Styrene	U		0.000376	0.0205	1	07/26/2024 09:08	WG2330348
1,1,1,2-Tetrachloroethane	U		0.00156	0.00411	1	07/26/2024 09:08	WG2330348
1,1,2,2-Tetrachloroethane	U		0.00114	0.00411	1	07/26/2024 09:08	WG2330348
1,1,2-Trichlorotrifluoroethane	U		0.00124	0.00411	1	07/26/2024 09:08	WG2330348
Tetrachloroethene	U		0.00147	0.00411	1	07/26/2024 09:08	WG2330348
Toluene	U		0.00214	0.00822	1	07/26/2024 09:08	WG2330348
1,2,3-Trichlorobenzene	U		0.0120	0.0205	1	07/26/2024 09:08	WG2330348
1,2,4-Trichlorobenzene	U		0.00723	0.0205	1	07/26/2024 09:08	WG2330348
1,1,1-Trichloroethane	U		0.00152	0.00411	1	07/26/2024 09:08	WG2330348
1,1,2-Trichloroethane	U		0.000981	0.00411	1	07/26/2024 09:08	WG2330348
Trichloroethene	U		0.000960	0.00164	1	07/26/2024 09:08	WG2330348
Trichlorofluoromethane	U		0.00136	0.00411	1	07/26/2024 09:08	WG2330348
1,2,3-Trichloropropane	U		0.00266	0.0205	1	07/26/2024 09:08	WG2330348
1,2,4-Trimethylbenzene	0.00345	J	0.00260	0.00822	1	07/26/2024 09:08	WG2330348
1,2,3-Trimethylbenzene	0.00276	J	0.00260	0.00822	1	07/26/2024 09:08	WG2330348
1,3,5-Trimethylbenzene	U		0.00329	0.00822	1	07/26/2024 09:08	WG2330348
Vinyl chloride	U		0.00191	0.00411	1	07/26/2024 09:08	WG2330348
Xylenes, Total	0.00304	J	0.00145	0.0107	1	07/26/2024 09:08	WG2330348
(S) Toluene-d8	*103*			*75.0-131*		*07/26/2024 09:08*	WG2330348
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*07/26/2024 09:08*	WG2330348
(S) 1,2-Dichloroethane-d4	*90.2*			*70.0-130*		*07/26/2024 09:08*	WG2330348

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	2.02	J	0.969	5.29	1	07/25/2024 02:07	WG2329375
C22-C32 Hydrocarbons	2.43	J	1.76	5.29	1	07/25/2024 02:07	WG2329375
C32-C40 Hydrocarbons	2.93	J	1.76	5.29	1	07/25/2024 02:07	WG2329375
(S) o-Terphenyl	*60.7*			*18.0-148*		*07/25/2024 02:07*	WG2329375

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00928	0.0925	1	07/28/2024 07:46	WG2331580
Dalapon	U		0.0149	0.0925	1	07/28/2024 07:46	WG2331580
2,4-DB	U		0.0393	0.0925	1	07/28/2024 07:46	WG2331580
Dicamba	U		0.0207	0.0925	1	07/28/2024 07:46	WG2331580
Dichloroprop	U		0.0324	0.0925	1	07/28/2024 07:46	WG2331580
Dinoseb	U		0.00921	0.0925	1	07/28/2024 07:46	WG2331580
MCPA	U		0.585	8.59	1	07/28/2024 07:46	WG2331580
MCPP	U		0.485	8.59	1	07/28/2024 07:46	WG2331580
2,4,5-T	U		0.0113	0.0925	1	07/28/2024 07:46	WG2331580
2,4,5-TP (Silvex)	U		0.0141	0.0925	1	07/28/2024 07:46	WG2331580
(S) 2,4-Dichlorophenyl Acetic Acid	*62.4*			*22.0-132*		*07/28/2024 07:46*	WG2331580

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00304	0.00793	1	07/30/2024 02:51	WG2332231
Acenaphthene	U		0.00276	0.00793	1	07/30/2024 02:51	WG2332231
Acenaphthylene	U		0.00285	0.00793	1	07/30/2024 02:51	WG2332231
Benzo(a)anthracene	U		0.00229	0.00793	1	07/30/2024 02:51	WG2332231

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00237	0.00793	1	07/30/2024 02:51	WG2332231
Benzo(b)fluoranthene	U		0.00202	0.00793	1	07/30/2024 02:51	WG2332231
Benzo(g,h,i)perylene	U		0.00234	0.00793	1	07/30/2024 02:51	WG2332231
Benzo(k)fluoranthene	U		0.00284	0.00793	1	07/30/2024 02:51	WG2332231
Chrysene	U		0.00307	0.00793	1	07/30/2024 02:51	WG2332231
Dibenz(a,h)anthracene	U		0.00227	0.00793	1	07/30/2024 02:51	WG2332231
Fluoranthene	U		0.00300	0.00793	1	07/30/2024 02:51	WG2332231
Fluorene	U		0.00271	0.00793	1	07/30/2024 02:51	WG2332231
Indeno(1,2,3-cd)pyrene	U		0.00239	0.00793	1	07/30/2024 02:51	WG2332231
Naphthalene	0.0611		0.00539	0.0264	1	07/30/2024 02:51	WG2332231
Phenanthrene	0.00328	J	0.00305	0.00793	1	07/30/2024 02:51	WG2332231
Pyrene	U		0.00264	0.00793	1	07/30/2024 02:51	WG2332231
1-Methylnaphthalene	0.0506		0.00593	0.0264	1	07/30/2024 02:51	WG2332231
2-Methylnaphthalene	0.00814	J	0.00564	0.0264	1	07/30/2024 02:51	WG2332231
2-Chloronaphthalene	U		0.00616	0.0264	1	07/30/2024 02:51	WG2332231
(S) p-Terphenyl-d14	*68.0*			*23.0-120*		*07/30/2024 02:51*	WG2332231
(S) Nitrobenzene-d5	*77.7*			*14.0-149*		*07/30/2024 02:51*	WG2332231
(S) 2-Fluorobiphenyl	*68.8*			*34.0-125*		*07/30/2024 02:51*	WG2332231

Method Blank (MB)

(MB) R4096319-1 07/19/24 15:54

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1758071-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1758071-08 07/19/24 15:54 • (DUP) R4096319-3 07/19/24 15:54

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	73.1	71.7	1	1.87		10

Laboratory Control Sample (LCS)

(LCS) R4096319-2 07/19/24 15:54

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4096337-1 07/19/24 17:22

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1758092-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1758092-01 07/19/24 17:22 • (DUP) R4096337-3 07/19/24 17:22

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	65.1	65.3	1	0.238		10

Laboratory Control Sample (LCS)

(LCS) R4096337-2 07/19/24 17:22

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4099436-1 07/26/24 15:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		4.40	10.0
Barium	U		0.736	5.00
Cadmium	U		0.479	2.00
Chromium	U		1.40	10.0
Selenium	U		7.35	10.0

Laboratory Control Sample (LCS)

(LCS) R4099436-2 07/26/24 15:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	1000	942	94.2	80.0-120	
Barium	1000	998	99.8	80.0-120	
Cadmium	1000	924	92.4	80.0-120	
Chromium	1000	977	97.7	80.0-120	
Selenium	1000	941	94.1	80.0-120	

L1758046-37 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758046-37 07/26/24 15:55 • (MS) R4099436-4 07/26/24 16:00 • (MSD) R4099436-5 07/26/24 16:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	266000	264000	265000	0.000	0.000	1	75.0-125	E V	E V	0.637	20
Barium	1000	43.9	1020	1010	98.1	96.7	1	75.0-125			1.38	20
Cadmium	1000	9860	10600	10700	75.3	79.1	1	75.0-125	E	E	0.360	20
Chromium	1000	1.42	963	946	96.3	94.6	1	75.0-125			1.79	20
Selenium	1000	U	962	942	96.2	94.2	1	75.0-125			2.02	20

Method Blank (MB)

(MB) R4097239-3 07/23/24 01:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C5 - C12	40.0	J	30.4	100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4097239-1 07/22/24 23:50 • (LCSD) R4097239-2 07/23/24 00:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	5000	5230	4330	105	86.6	71.0-127			18.8	20
(S) a,a,a-Trifluorotoluene(FID)				*111*	*109*	*78.0-120*				

Method Blank (MB)

(MB) R4098703-2 07/25/24 11:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	0.0373	J	0.0332	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4098703-1 07/25/24 10:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5.00	4.85	97.0	72.0-125	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*77.0-120*	

Method Blank (MB)

(MB) R4098202-2 07/22/24 09:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00

Method Blank (MB)

(MB) R4098202-2 07/22/24 09:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4098202-1 07/22/24 08:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	16.7	66.8	19.0-160	J
Acrolein	25.0	38.7	155	10.0-160	J
Acrylonitrile	25.0	22.8	91.2	55.0-149	
Benzene	5.00	4.58	91.6	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R4098202-1 07/22/24 08:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromobenzene	5.00	4.10	82.0	73.0-121	
Bromodichloromethane	5.00	4.89	97.8	75.0-120	
Bromoform	5.00	4.39	87.8	68.0-132	
Bromomethane	5.00	2.51	50.2	10.0-160	J
n-Butylbenzene	5.00	3.88	77.6	73.0-125	
sec-Butylbenzene	5.00	4.00	80.0	75.0-125	
tert-Butylbenzene	5.00	3.92	78.4	76.0-124	
Carbon tetrachloride	5.00	5.53	111	68.0-126	
Chlorobenzene	5.00	4.23	84.6	80.0-121	
Chlorodibromomethane	5.00	4.43	88.6	77.0-125	
Chloroethane	5.00	4.93	98.6	47.0-150	J
Chloroform	5.00	5.13	103	73.0-120	
Chloromethane	5.00	4.18	83.6	41.0-142	
2-Chlorotoluene	5.00	4.05	81.0	76.0-123	
4-Chlorotoluene	5.00	4.03	80.6	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	3.35	67.0	58.0-134	J
1,2-Dibromoethane	5.00	4.15	83.0	80.0-122	
Dibromomethane	5.00	4.75	95.0	80.0-120	
1,2-Dichlorobenzene	5.00	4.17	83.4	79.0-121	
1,3-Dichlorobenzene	5.00	4.23	84.6	79.0-120	
1,4-Dichlorobenzene	5.00	4.18	83.6	79.0-120	
Dichlorodifluoromethane	5.00	3.78	75.6	51.0-149	J
1,1-Dichloroethane	5.00	4.62	92.4	70.0-126	
1,2-Dichloroethane	5.00	5.14	103	70.0-128	
1,1-Dichloroethene	5.00	4.30	86.0	71.0-124	
cis-1,2-Dichloroethene	5.00	4.77	95.4	73.0-120	
trans-1,2-Dichloroethene	5.00	4.65	93.0	73.0-120	
1,2-Dichloropropane	5.00	4.64	92.8	77.0-125	
1,1-Dichloropropene	5.00	4.36	87.2	74.0-126	
1,3-Dichloropropane	5.00	4.23	84.6	80.0-120	
cis-1,3-Dichloropropene	5.00	4.59	91.8	80.0-123	
trans-1,3-Dichloropropene	5.00	4.15	83.0	78.0-124	
2,2-Dichloropropane	5.00	4.57	91.4	58.0-130	
Di-isopropyl ether	5.00	4.95	99.0	58.0-138	
Ethylbenzene	5.00	4.22	84.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.81	96.2	54.0-138	
Isopropylbenzene	5.00	4.15	83.0	76.0-127	
p-Isopropyltoluene	5.00	4.00	80.0	76.0-125	
2-Butanone (MEK)	25.0	18.2	72.8	44.0-160	
Methylene Chloride	5.00	4.64	92.8	67.0-120	J

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Laboratory Control Sample (LCS)

(LCS) R4098202-1 07/22/24 08:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	25.0	19.9	79.6	68.0-142	
Methyl tert-butyl ether	5.00	4.50	90.0	68.0-125	
Naphthalene	5.00	3.48	69.6	54.0-135	J
n-Propylbenzene	5.00	3.86	77.2	77.0-124	
Styrene	5.00	4.22	84.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.55	91.0	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	3.50	70.0	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.38	87.6	69.0-132	
Tetrachloroethene	5.00	4.44	88.8	72.0-132	
Toluene	5.00	4.27	85.4	79.0-120	
1,2,3-Trichlorobenzene	5.00	3.97	79.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	3.77	75.4	57.0-137	
1,1,1-Trichloroethane	5.00	4.82	96.4	73.0-124	
1,1,2-Trichloroethane	5.00	4.31	86.2	80.0-120	
Trichloroethene	5.00	4.87	97.4	78.0-124	
Trichlorofluoromethane	5.00	5.29	106	59.0-147	
1,2,3-Trichloropropane	5.00	4.01	80.2	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.02	80.4	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.00	80.0	77.0-120	
1,3,5-Trimethylbenzene	5.00	3.98	79.6	76.0-122	
Vinyl chloride	5.00	4.26	85.2	67.0-131	
Xylenes, Total	15.0	12.3	82.0	79.0-123	
(S) Toluene-d8			*102*	*80.0-120*	
(S) 4-Bromofluorobenzene			*103*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

Method Blank (MB)

(MB) R4099059-4 07/25/24 21:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*115*			*80.0-120*
(S) 4-Bromofluorobenzene	*106*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*93.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4099059-3 07/25/24 20:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	5.00	4.51	90.2	54.0-135	J
(S) Toluene-d8			*110*	*80.0-120*	
(S) 4-Bromofluorobenzene			*104*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*95.3*	*70.0-130*	

Method Blank (MB)

(MB) R4099711-3 07/26/24 05:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00500
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R4099711-3 07/26/24 05:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*91.8*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099711-1 07/26/24 04:03 • (LCSD) R4099711-2 07/26/24 04:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.557	0.573	89.1	91.7	10.0-160			2.83	31
Acrylonitrile	0.625	0.663	0.642	106	103	45.0-153			3.22	22
Benzene	0.125	0.123	0.118	98.4	94.4	70.0-123			4.15	20
Bromobenzene	0.125	0.119	0.110	95.2	88.0	73.0-121			7.86	20
Bromodichloromethane	0.125	0.120	0.115	96.0	92.0	73.0-121			4.26	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099711-1 07/26/24 04:03 • (LCSD) R4099711-2 07/26/24 04:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.115	0.109	92.0	87.2	64.0-132			5.36	20
Bromomethane	0.125	0.112	0.106	89.6	84.8	56.0-147			5.50	20
n-Butylbenzene	0.125	0.122	0.119	97.6	95.2	68.0-135			2.49	20
sec-Butylbenzene	0.125	0.123	0.117	98.4	93.6	74.0-130			5.00	20
tert-Butylbenzene	0.125	0.120	0.113	96.0	90.4	75.0-127			6.01	20
Carbon tetrachloride	0.125	0.116	0.116	92.8	92.8	66.0-128			0.000	20
Chlorobenzene	0.125	0.121	0.114	96.8	91.2	76.0-128			5.96	20
Chlorodibromomethane	0.125	0.122	0.116	97.6	92.8	74.0-127			5.04	20
Chloroethane	0.125	0.117	0.113	93.6	90.4	61.0-134			3.48	20
Chloroform	0.125	0.120	0.115	96.0	92.0	72.0-123			4.26	20
Chloromethane	0.125	0.109	0.105	87.2	84.0	51.0-138			3.74	20
2-Chlorotoluene	0.125	0.121	0.118	96.8	94.4	75.0-124			2.51	20
4-Chlorotoluene	0.125	0.121	0.114	96.8	91.2	75.0-124			5.96	20
1,2-Dibromo-3-Chloropropane	0.125	0.121	0.116	96.8	92.8	59.0-130			4.22	20
1,2-Dibromoethane	0.125	0.125	0.118	100	94.4	74.0-128			5.76	20
Dibromomethane	0.125	0.118	0.116	94.4	92.8	75.0-122			1.71	20
1,2-Dichlorobenzene	0.125	0.122	0.114	97.6	91.2	76.0-124			6.78	20
1,3-Dichlorobenzene	0.125	0.121	0.115	96.8	92.0	76.0-125			5.08	20
1,4-Dichlorobenzene	0.125	0.117	0.108	93.6	86.4	77.0-121			8.00	20
Dichlorodifluoromethane	0.125	0.101	0.103	80.8	82.4	43.0-156			1.96	20
1,1-Dichloroethane	0.125	0.125	0.118	100	94.4	70.0-127			5.76	20
1,2-Dichloroethane	0.125	0.109	0.103	87.2	82.4	65.0-131			5.66	20
1,1-Dichloroethene	0.125	0.120	0.117	96.0	93.6	65.0-131			2.53	20
cis-1,2-Dichloroethene	0.125	0.126	0.120	101	96.0	73.0-125			4.88	20
trans-1,2-Dichloroethene	0.125	0.127	0.122	102	97.6	71.0-125			4.02	20
1,2-Dichloropropane	0.125	0.121	0.116	96.8	92.8	74.0-125			4.22	20
1,1-Dichloropropene	0.125	0.123	0.119	98.4	95.2	73.0-125			3.31	20
1,3-Dichloropropane	0.125	0.125	0.116	100	92.8	80.0-125			7.47	20
cis-1,3-Dichloropropene	0.125	0.124	0.118	99.2	94.4	76.0-127			4.96	20
trans-1,3-Dichloropropene	0.125	0.130	0.124	104	99.2	73.0-127			4.72	20
2,2-Dichloropropane	0.125	0.132	0.122	106	97.6	59.0-135			7.87	20
Di-isopropyl ether	0.125	0.126	0.120	101	96.0	60.0-136			4.88	20
Ethylbenzene	0.125	0.124	0.115	99.2	92.0	74.0-126			7.53	20
Hexachloro-1,3-butadiene	0.125	0.125	0.127	100	102	57.0-150			1.59	20
Isopropylbenzene	0.125	0.132	0.122	106	97.6	72.0-127			7.87	20
p-Isopropyltoluene	0.125	0.129	0.123	103	98.4	72.0-133			4.76	20
2-Butanone (MEK)	0.625	0.631	0.612	101	97.9	30.0-160			3.06	24
Methylene Chloride	0.125	0.122	0.116	97.6	92.8	68.0-123			5.04	20
4-Methyl-2-pentanone (MIBK)	0.625	0.653	0.614	104	98.2	56.0-143			6.16	20
Methyl tert-butyl ether	0.125	0.129	0.123	103	98.4	66.0-132			4.76	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099711-1 07/26/24 04:03 • (LCSD) R4099711-2 07/26/24 04:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.116	0.107	92.8	85.6	59.0-130			8.07	20
n-Propylbenzene	0.125	0.114	0.112	91.2	89.6	74.0-126			1.77	20
Styrene	0.125	0.133	0.124	106	99.2	72.0-127			7.00	20
1,1,1,2-Tetrachloroethane	0.125	0.127	0.118	102	94.4	74.0-129			7.35	20
1,1,2,2-Tetrachloroethane	0.125	0.120	0.116	96.0	92.8	68.0-128			3.39	20
1,1,2-Trichlorotrifluoroethane	0.125	0.110	0.113	88.0	90.4	61.0-139			2.69	20
Tetrachloroethene	0.125	0.122	0.118	97.6	94.4	70.0-136			3.33	20
Toluene	0.125	0.120	0.113	96.0	90.4	75.0-121			6.01	20
1,2,3-Trichlorobenzene	0.125	0.139	0.131	111	105	59.0-139			5.93	20
1,2,4-Trichlorobenzene	0.125	0.139	0.128	111	102	62.0-137			8.24	20
1,1,1-Trichloroethane	0.125	0.124	0.118	99.2	94.4	69.0-126			4.96	20
1,1,2-Trichloroethane	0.125	0.124	0.119	99.2	95.2	78.0-123			4.12	20
Trichloroethene	0.125	0.120	0.118	96.0	94.4	76.0-126			1.68	20
Trichlorofluoromethane	0.125	0.112	0.111	89.6	88.8	61.0-142			0.897	20
1,2,3-Trichloropropane	0.125	0.121	0.111	96.8	88.8	67.0-129			8.62	20
1,2,4-Trimethylbenzene	0.125	0.127	0.118	102	94.4	70.0-126			7.35	20
1,2,3-Trimethylbenzene	0.125	0.119	0.111	95.2	88.8	74.0-124			6.96	20
1,3,5-Trimethylbenzene	0.125	0.125	0.119	100	95.2	73.0-127			4.92	20
Vinyl chloride	0.125	0.119	0.117	95.2	93.6	63.0-134			1.69	20
Xylenes, Total	0.375	0.382	0.361	102	96.3	72.0-127			5.65	20
(S) Toluene-d8				*103*	*101*	*75.0-131*				
(S) 4-Bromofluorobenzene				*105*	*104*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*94.7*	*94.9*	*70.0-130*				

L1758088-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758088-02 07/26/24 07:52 • (MS) R4099711-4 07/26/24 12:19 • (MSD) R4099711-5 07/26/24 12:38

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.999	U	0.825	0.694	82.6	69.4	1	10.0-160			17.3	40
Acrylonitrile	0.999	U	0.959	0.904	96.0	90.6	1	10.0-160			5.83	40
Benzene	0.200	U	0.208	0.213	104	106	1	10.0-149			2.28	37
Bromobenzene	0.200	U	0.208	0.213	104	106	1	10.0-156			2.28	38
Bromodichloromethane	0.200	U	0.201	0.217	101	109	1	10.0-143			7.63	37
Bromoform	0.200	U	0.189	0.189	94.4	94.4	1	10.0-146			0.000	36
Bromomethane	0.200	U	0.112	0.117	56.0	58.8	1	10.0-149			4.88	38
n-Butylbenzene	0.200	0.0337	0.344	0.344	155	155	1	10.0-160			0.000	40
sec-Butylbenzene	0.200	0.00791	0.260	0.259	126	126	1	10.0-159			0.615	39
tert-Butylbenzene	0.200	U	0.238	0.240	119	120	1	10.0-156			0.669	39

L1758088-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758088-02 07/26/24 07:52 • (MS) R4099711-4 07/26/24 12:19 • (MSD) R4099711-5 07/26/24 12:38

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.200	U	0.211	0.213	106	106	1	10.0-145			0.755	37
Chlorobenzene	0.200	U	0.211	0.211	106	106	1	10.0-152			0.000	39
Chlorodibromomethane	0.200	U	0.208	0.206	104	103	1	10.0-146			0.772	37
Chloroethane	0.200	U	0.105	0.115	52.4	57.7	1	10.0-146			9.59	40
Chloroform	0.200	U	0.217	0.214	109	107	1	10.0-146			1.48	37
Chloromethane	0.200	U	0.193	0.165	96.8	82.4	1	10.0-159			16.1	37
2-Chlorotoluene	0.200	U	0.216	0.229	108	114	1	10.0-159			5.76	38
4-Chlorotoluene	0.200	U	0.217	0.222	109	111	1	10.0-155			2.18	39
1,2-Dibromo-3-Chloropropane	0.200	U	0.173	0.165	86.4	82.4	1	10.0-151			4.74	39
1,2-Dibromoethane	0.200	U	0.213	0.214	106	107	1	10.0-148			0.749	34
Dibromomethane	0.200	U	0.203	0.187	102	93.6	1	10.0-147			8.20	35
1,2-Dichlorobenzene	0.200	U	0.222	0.222	111	111	1	10.0-155			0.000	37
1,3-Dichlorobenzene	0.200	U	0.221	0.219	110	110	1	10.0-153			0.727	38
1,4-Dichlorobenzene	0.200	U	0.211	0.214	106	107	1	10.0-151			1.50	38
Dichlorodifluoromethane	0.200	U	0.139	0.145	69.4	72.6	1	10.0-160			4.51	35
1,1-Dichloroethane	0.200	U	0.209	0.216	105	108	1	10.0-147			3.01	37
1,2-Dichloroethane	0.200	U	0.179	0.179	89.6	89.6	1	10.0-148			0.000	35
1,1-Dichloroethene	0.200	U	0.203	0.211	102	106	1	10.0-155			3.86	37
cis-1,2-Dichloroethene	0.200	U	0.217	0.214	109	107	1	10.0-149			1.48	37
trans-1,2-Dichloroethene	0.200	U	0.208	0.206	104	103	1	10.0-150			0.772	37
1,2-Dichloropropane	0.200	U	0.224	0.222	112	111	1	10.0-148			0.717	37
1,1-Dichloropropene	0.200	U	0.219	0.221	110	110	1	10.0-153			0.727	35
1,3-Dichloropropane	0.200	U	0.213	0.211	106	106	1	10.0-154			0.755	35
cis-1,3-Dichloropropene	0.200	U	0.214	0.216	107	108	1	10.0-151			0.743	37
trans-1,3-Dichloropropene	0.200	U	0.217	0.221	109	110	1	10.0-148			1.46	37
2,2-Dichloropropane	0.200	U	0.169	0.168	84.8	84.0	1	10.0-138			0.948	36
Di-isopropyl ether	0.200	U	0.214	0.214	107	107	1	10.0-147			0.000	36
Ethylbenzene	0.200	U	0.219	0.222	110	111	1	10.0-160			1.45	38
Hexachloro-1,3-butadiene	0.200	U	0.259	0.254	130	127	1	10.0-160			1.87	40
Isopropylbenzene	0.200	0.00384	0.251	0.248	124	122	1	10.0-155			1.28	38
p-Isopropyltoluene	0.200	0.00583	0.278	0.280	136	137	1	10.0-160			0.573	40
2-Butanone (MEK)	0.999	U	0.906	0.917	90.7	91.8	1	10.0-160			1.23	40
Methylene Chloride	0.200	U	0.200	0.203	100	102	1	10.0-141			1.59	37
4-Methyl-2-pentanone (MIBK)	0.999	U	1.08	0.874	108	87.5	1	10.0-160			20.8	35
Methyl tert-butyl ether	0.200	0.000639	0.205	0.206	102	103	1	11.0-147			0.778	35
Naphthalene	0.200	0.0184	0.222	0.205	102	93.2	1	10.0-160			8.24	36
n-Propylbenzene	0.200	0.00703	0.233	0.238	113	116	1	10.0-158			2.03	38
Styrene	0.200	U	0.240	0.237	120	118	1	10.0-160			1.34	40
1,1,1,2-Tetrachloroethane	0.200	U	0.217	0.217	109	109	1	10.0-149			0.000	39

L1758088-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758088-02 07/26/24 07:52 • (MS) R4099711-4 07/26/24 12:19 • (MSD) R4099711-5 07/26/24 12:38

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	0.200	U	0.193	0.197	96.8	98.4	1	10.0-160			1.64	35
1,1,2-Trichlorotrifluoroethane	0.200	U	0.227	0.237	114	118	1	10.0-160			4.14	36
Tetrachloroethene	0.200	U	0.214	0.217	107	109	1	10.0-156			1.48	39
Toluene	0.200	U	0.205	0.206	102	103	1	10.0-156			0.778	38
1,2,3-Trichlorobenzene	0.200	U	0.246	0.219	123	110	1	10.0-160			11.7	40
1,2,4-Trichlorobenzene	0.200	U	0.262	0.238	131	119	1	10.0-160			9.58	40
1,1,1-Trichloroethane	0.200	U	0.225	0.225	113	113	1	10.0-144			0.000	35
1,1,2-Trichloroethane	0.200	U	0.224	0.219	112	110	1	10.0-160			2.17	35
Trichloroethene	0.200	U	0.205	0.211	102	106	1	10.0-156			3.08	38
Trichlorofluoromethane	0.200	U	0.124	0.130	62.0	65.2	1	10.0-160			5.03	40
1,2,3-Trichloropropane	0.200	U	0.189	0.190	94.4	95.2	1	10.0-156			0.844	35
1,2,4-Trimethylbenzene	0.200	0.00487	0.233	0.235	114	115	1	10.0-160			0.683	36
1,2,3-Trimethylbenzene	0.200	0.00292	0.214	0.214	106	106	1	10.0-160			0.000	36
1,3,5-Trimethylbenzene	0.200	U	0.237	0.238	118	119	1	10.0-160			0.673	38
Vinyl chloride	0.200	U	0.187	0.190	93.6	95.2	1	10.0-160			1.69	37
Xylenes, Total	0.599	0.00511	0.692	0.690	115	114	1	10.0-160			0.231	38
(S) Toluene-d8					*101*	*101*		*75.0-131*				
(S) 4-Bromofluorobenzene					*102*	*101*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*95.2*	*91.6*		*70.0-130*				

Method Blank (MB)

(MB) R4099106-1 07/26/24 07:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C12-C22 Hydrocarbons	U		33.0	100
C22-C32 Hydrocarbons	U		33.0	100
C32-C40 Hydrocarbons	U		33.0	100
(S) o-Terphenyl	*111*			*52.0-156*

Laboratory Control Sample (LCS)

(LCS) R4099106-2 07/26/24 08:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	750	981	131	50.0-150	
C22-C32 Hydrocarbons	750	784	105	50.0-150	
(S) o-Terphenyl			*107*	*52.0-156*	

L1758390-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758390-01 07/26/24 13:36 • (MS) R4099106-3 07/26/24 13:57 • (MSD) R4099106-4 07/26/24 14:18

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	714	1790	2810	2830	143	146	1	50.0-150			0.709	20
C22-C32 Hydrocarbons	714	168	971	982	112	114	1	50.0-150			1.13	20
(S) o-Terphenyl					*135*	*131*		*52.0-156*				

Method Blank (MB)

(MB) R4098220-1 07/25/24 00:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*90.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4098220-2 07/25/24 01:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	21.7	86.8	50.0-150	
C22-C32 Hydrocarbons	25.0	18.6	74.4	50.0-150	
(S) o-Terphenyl			*91.7*	*18.0-148*	

L1759109-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-01 07/25/24 04:40 • (MS) R4098220-3 07/25/24 04:54 • (MSD) R4098220-4 07/25/24 05:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	27.9	U	35.8	36.5	128	131	20	50.0-150			1.88	20
C22-C32 Hydrocarbons	24.6	78.2	92.8	76.6	52.4	0.000	20	50.0-150		J6	19.1	20
(S) o-Terphenyl					*89.0*	*92.2*		*18.0-148*	J7	J7		

Sample Narrative:

OS: Cannot run at lower dilution due to viscosity of extract

Method Blank (MB)

(MB) R4099904-1 07/28/24 19:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2,4-D	U		0.547	2.00
Dalapon	U		0.344	2.00
2,4-DB	U		0.302	2.00
Dicamba	U		0.245	2.00
Dichloroprop	U		1.04	2.00
Dinoseb	U		0.250	2.00
MCPA	U		13.1	100
MCPP	U		66.0	100
2,4,5-T	U		0.258	2.00
2,4,5-TP (Silvex)	U		0.335	2.00
Pentachlorophenol	U		0.111	1.00
(S) 2,4-Dichlorophenyl Acetic Acid	*85.6*			*14.0-158*

Laboratory Control Sample (LCS)

(LCS) R4099904-2 07/28/24 19:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	2.50	2.82	113	50.0-120	P
Dalapon	2.50	3.32	133	32.0-120	J4
2,4-DB	2.50	2.46	98.4	53.0-140	
Dicamba	2.50	2.59	104	51.0-120	
Dichloroprop	2.50	2.54	102	55.0-127	P
Dinoseb	2.50	3.72	149	36.0-134	J4
MCPA	250	267	107	10.0-160	P
MCPP	250	371	148	10.0-160	
2,4,5-T	2.50	2.76	110	54.0-120	
2,4,5-TP (Silvex)	2.50	2.49	99.6	50.0-125	
Pentachlorophenol	0.500	0.406	81.2	41.0-120	J
(S) 2,4-Dichlorophenyl Acetic Acid			*91.4*	*14.0-158*	

L1758469-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758469-01 07/29/24 06:28 • (MS) R4099904-3 07/29/24 06:38 • (MSD) R4099904-4 07/29/24 06:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	2.50	U	3.26	3.79	130	152	1	50.0-120	J5	J5	15.0	20
Dalapon	2.50	U	2.43	1.69	97.2	67.6	1	32.0-120		J3	35.9	20

L1758469-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758469-01 07/29/24 06:28 • (MS) R4099904-3 07/29/24 06:38 • (MSD) R4099904-4 07/29/24 06:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-DB	2.50	U	6.82	19.1	273	764	1	53.0-140	E J5 P	E J3 J5 P	94.8	20
Dicamba	2.50	U	2.62	2.91	105	116	1	51.0-120			10.5	20
Dichloroprop	2.50	U	13.0	12.4	520	496	1	55.0-127	E J5 P	E J5 P	4.72	20
Dinoseb	2.50	U	2.62	2.68	105	107	1	36.0-134			2.26	20
MCPA	250	U	360	461	144	184	1	10.0-160		J5	24.6	40
MCPP	250	U	393	610	157	244	1	10.0-160		E J3 J5 P	43.3	23
2,4,5-T	2.50	U	3.36	3.16	134	126	1	54.0-120	J5	J5	6.13	20
2,4,5-TP (Silvex)	2.50	U	3.63	3.71	145	148	1	50.0-125	J5 P	J5	2.18	20
Pentachlorophenol	0.500	U	0.445	0.552	89.0	110	1	41.0-120		J3	21.5	20
(S) 2,4-Dichlorophenyl Acetic Acid					*1430*	*488*		*14.0-158*	J1	J1		

Method Blank (MB)

(MB) R4099383-1 07/27/24 17:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*74.3*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4099383-2 07/27/24 17:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0467	56.1	40.0-120	
Dalapon	0.0833	0.0431	51.7	15.0-120	
2,4-DB	0.0833	0.0386	46.3	25.0-143	
Dicamba	0.0833	0.0595	71.4	43.0-120	
Dichloroprop	0.0833	0.0533	64.0	32.0-129	
Dinoseb	0.0833	0.0409	49.1	10.0-120	
MCPA	8.33	5.11	61.3	31.0-121	
MCPP	8.33	5.96	71.5	28.0-133	
2,4,5-T	0.0833	0.0541	64.9	41.0-120	
2,4,5-TP (Silvex)	0.0833	0.0564	67.7	42.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*59.9*	*22.0-132*	

L1758471-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758471-07 07/28/24 09:18 • (MS) R4099383-3 07/28/24 09:28 • (MSD) R4099383-4 07/28/24 09:38

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0851	U	0.0443	0.0438	52.1	51.5	1	10.0-160			1.17	24
Dalapon	0.0851	U	0.0412	0.0437	48.5	51.4	1	10.0-121			5.83	27
2,4-DB	0.0851	U	0.0364	0.0349	42.8	41.1	1	10.0-160			4.05	22

L1758471-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758471-07 07/28/24 09:18 • (MS) R4099383-3 07/28/24 09:28 • (MSD) R4099383-4 07/28/24 09:38

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg				%	%		%			%	%
Dicamba	0.0851	U	0.0503	0.0525	59.2	61.7	1	10.0-154			4.21	21
Dichloroprop	0.0851	U	0.0590	0.0577	69.3	67.9	1	10.0-158			2.12	20
Dinoseb	0.0851	U	0.0365	0.0351	42.9	41.2	1	10.0-120			4.03	40
MCPA	8.51	U	4.56	6.20	53.6	72.8	1	10.0-160			30.5	40
MCPP	8.51	U	4.53	4.58	53.2	53.8	1	10.0-160			1.13	40
2,4,5-T	0.0851	U	0.0441	0.0431	51.9	50.7	1	10.0-157			2.36	20
2,4,5-TP (Silvex)	0.0851	U	0.0588	0.0601	69.1	70.7	1	10.0-156			2.25	20
(S) 2,4-Dichlorophenyl Acetic Acid					*63.0*	*66.7*		*22.0-132*				

Method Blank (MB)

(MB) R4098581-3 07/24/24 16:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0190	0.0500
Acenaphthene	U		0.0190	0.0500
Acenaphthylene	U		0.0171	0.0500
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(g,h,i)perylene	U		0.0184	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Fluoranthene	U		0.0270	0.100
Fluorene	U		0.0169	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
Phenanthrene	U		0.0180	0.0500
Pyrene	U		0.0169	0.0500
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
2-Chloronaphthalene	U		0.0682	0.250
(S) Nitrobenzene-d5	*123*			*31.0-160*
(S) 2-Fluorobiphenyl	*125*			*48.0-148*
(S) p-Terphenyl-d14	*129*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4098581-1 07/24/24 16:04 • (LCSD) R4098581-2 07/24/24 16:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	2.03	1.87	102	93.5	67.0-150			8.21	20
Acenaphthene	2.00	1.99	1.84	99.5	92.0	65.0-138			7.83	20
Acenaphthylene	2.00	2.11	1.93	105	96.5	66.0-140			8.91	20
Benzo(a)anthracene	2.00	2.14	1.96	107	98.0	61.0-140			8.78	20
Benzo(a)pyrene	2.00	2.04	1.86	102	93.0	60.0-143			9.23	20
Benzo(b)fluoranthene	2.00	2.20	2.03	110	102	58.0-141			8.04	20
Benzo(g,h,i)perylene	2.00	2.11	1.92	105	96.0	52.0-153			9.43	20
Benzo(k)fluoranthene	2.00	2.11	1.91	105	95.5	58.0-148			9.95	20
Chrysene	2.00	2.19	2.00	109	100	64.0-144			9.07	20
Dibenz(a,h)anthracene	2.00	2.26	2.01	113	100	52.0-155			11.7	20
Fluoranthene	2.00	2.22	2.03	111	102	69.0-153			8.94	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4098581-1 07/24/24 16:04 • (LCSD) R4098581-2 07/24/24 16:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	2.00	2.24	2.03	112	102	64.0-136			9.84	20
Indeno(1,2,3-cd)pyrene	2.00	2.15	1.90	107	95.0	54.0-153			12.3	20
Naphthalene	2.00	2.15	2.00	107	100	61.0-137			7.23	20
Phenanthrene	2.00	2.14	1.97	107	98.5	62.0-137			8.27	20
Pyrene	2.00	2.16	1.97	108	98.5	60.0-142			9.20	20
1-Methylnaphthalene	2.00	2.27	2.10	114	105	66.0-142			7.78	20
2-Methylnaphthalene	2.00	2.20	2.02	110	101	62.0-136			8.53	20
2-Chloronaphthalene	2.00	2.12	1.96	106	98.0	64.0-140			7.84	20
(S) Nitrobenzene-d5				*122*	*111*	*31.0-160*				
(S) 2-Fluorobiphenyl				*114*	*108*	*48.0-148*				
(S) p-Terphenyl-d14				*123*	*112*	*37.0-146*				

Method Blank (MB)

(MB) R4099912-2 07/29/24 15:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*91.8*			*23.0-120*
(S) Nitrobenzene-d5	*70.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*80.2*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4099912-1 07/29/24 15:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0637	79.6	50.0-126	
Acenaphthene	0.0800	0.0657	82.1	50.0-120	
Acenaphthylene	0.0800	0.0647	80.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0614	76.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0598	74.8	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0705	88.1	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0678	84.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0641	80.1	49.0-125	
Chrysene	0.0800	0.0685	85.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0677	84.6	47.0-125	
Fluoranthene	0.0800	0.0685	85.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4099912-1 07/29/24 15:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0709	88.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0592	74.0	46.0-125	
Naphthalene	0.0800	0.0671	83.9	50.0-120	
Phenanthrene	0.0800	0.0687	85.9	47.0-120	
Pyrene	0.0800	0.0680	85.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0702	87.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0681	85.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0700	87.5	50.0-120	
(S) p-Terphenyl-d14			*100*	*23.0-120*	
(S) Nitrobenzene-d5			*77.2*	*14.0-149*	
(S) 2-Fluorobiphenyl			*86.7*	*34.0-125*	

L1758170-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758170-07 07/29/24 21:08 • (MS) R4099912-3 07/29/24 21:26 • (MSD) R4099912-4 07/29/24 21:43

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0916	0.0189	0.0785	0.0812	65.0	67.6	1	10.0-145			3.38	30
Acenaphthene	0.0916	U	0.0654	0.0684	71.4	74.2	1	14.0-127			4.39	27
Acenaphthylene	0.0916	0.00955	0.0774	0.0859	74.1	82.9	1	21.0-124			10.4	25
Benzo(a)anthracene	0.0916	0.0372	0.107	0.120	75.9	89.7	1	10.0-139			11.5	30
Benzo(a)pyrene	0.0916	0.0430	0.107	0.122	69.5	86.0	1	10.0-141			13.6	31
Benzo(b)fluoranthene	0.0916	0.0509	0.112	0.129	66.4	85.1	1	10.0-140			14.5	36
Benzo(g,h,i)perylene	0.0916	0.107	0.149	0.154	46.4	51.3	1	10.0-140			3.10	33
Benzo(k)fluoranthene	0.0916	0.0156	0.0691	0.0774	58.3	67.1	1	10.0-137			11.4	31
Chrysene	0.0916	0.0325	0.139	0.112	116	85.8	1	10.0-145			21.6	30
Dibenz(a,h)anthracene	0.0916	0.0101	0.0729	0.0722	68.5	67.4	1	10.0-132			0.971	31
Fluoranthene	0.0916	0.0688	0.114	0.149	49.7	87.2	1	10.0-153			26.4	33
Fluorene	0.0916	U	0.0728	0.0732	79.5	79.5	1	11.0-130			0.483	29
Indeno(1,2,3-cd)pyrene	0.0916	0.0390	0.0947	0.115	60.8	82.0	1	10.0-137			19.0	32
Naphthalene	0.0916	U	0.0715	0.0725	78.1	78.7	1	10.0-135			1.31	27
Phenanthrene	0.0916	0.0339	0.0863	0.0990	57.2	70.7	1	10.0-144			13.7	31
Pyrene	0.0916	0.0627	0.142	0.142	86.7	86.2	1	10.0-148			0.000	35
1-Methylnaphthalene	0.0916	U	0.0770	0.0772	84.1	83.8	1	10.0-142			0.152	28
2-Methylnaphthalene	0.0916	U	0.0772	0.0766	84.2	83.2	1	10.0-137			0.764	28
2-Chloronaphthalene	0.0916	U	0.0668	0.0673	72.9	73.1	1	29.0-120			0.701	24
(S) p-Terphenyl-d14					*78.4*	*74.1*		*23.0-120*				
(S) Nitrobenzene-d5					*79.6*	*70.1*		*14.0-149*				
(S) 2-Fluorobiphenyl					*73.2*	*72.0*		*34.0-125*				

Method Blank (MB)

(MB) R4100025-2 07/30/24 01:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*77.0*			*23.0-120*
(S) Nitrobenzene-d5	*83.2*			*14.0-149*
(S) 2-Fluorobiphenyl	*73.4*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4100025-1 07/30/24 01:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0783	97.9	50.0-126	
Acenaphthene	0.0800	0.0757	94.6	50.0-120	
Acenaphthylene	0.0800	0.0823	103	50.0-120	
Benzo(a)anthracene	0.0800	0.0764	95.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0699	87.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0740	92.5	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0747	93.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0749	93.6	49.0-125	
Chrysene	0.0800	0.0762	95.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0732	91.5	47.0-125	
Fluoranthene	0.0800	0.0783	97.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4100025-1 07/30/24 01:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0799	99.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0710	88.8	46.0-125	
Naphthalene	0.0800	0.0773	96.6	50.0-120	
Phenanthrene	0.0800	0.0788	98.5	47.0-120	
Pyrene	0.0800	0.0791	98.9	43.0-123	
1-Methylnaphthalene	0.0800	0.0791	98.9	51.0-121	
2-Methylnaphthalene	0.0800	0.0769	96.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0788	98.5	50.0-120	
(S) p-Terphenyl-d14			*99.4*	*23.0-120*	
(S) Nitrobenzene-d5			*109*	*14.0-149*	
(S) 2-Fluorobiphenyl			*96.2*	*34.0-125*	

L1760724-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1760724-04 07/30/24 05:44 • (MS) R4100025-3 07/30/24 06:01 • (MSD) R4100025-4 07/30/24 06:19

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0837	U	0.0570	0.0599	68.2	71.6	1	10.0-145			4.98	30
Acenaphthene	0.0837	U	0.0583	0.0583	69.7	69.7	1	14.0-127			0.000	27
Acenaphthylene	0.0837	U	0.0627	0.0632	75.0	75.5	1	21.0-124			0.685	25
Benzo(a)anthracene	0.0837	U	0.0575	0.0566	68.7	67.7	1	10.0-139			1.51	30
Benzo(a)pyrene	0.0837	U	0.0556	0.0571	66.5	68.3	1	10.0-141			2.68	31
Benzo(b)fluoranthene	0.0837	U	0.0601	0.0612	71.8	73.2	1	10.0-140			1.96	36
Benzo(g,h,i)perylene	0.0837	U	0.0563	0.0577	67.3	68.9	1	10.0-140			2.46	33
Benzo(k)fluoranthene	0.0837	U	0.0540	0.0558	64.6	66.8	1	10.0-137			3.34	31
Chrysene	0.0837	U	0.0589	0.0609	70.4	72.8	1	10.0-145			3.42	30
Dibenz(a,h)anthracene	0.0837	U	0.0527	0.0542	63.0	64.8	1	10.0-132			2.82	31
Fluoranthene	0.0837	U	0.0612	0.0634	73.2	75.8	1	10.0-153			3.46	33
Fluorene	0.0837	U	0.0608	0.0610	72.7	72.9	1	11.0-130			0.354	29
Indeno(1,2,3-cd)pyrene	0.0837	U	0.0521	0.0526	62.2	62.9	1	10.0-137			1.03	32
Naphthalene	0.0837	U	0.0598	0.0596	71.5	71.3	1	10.0-135			0.361	27
Phenanthrene	0.0837	U	0.0601	0.0621	71.8	74.2	1	10.0-144			3.35	31
Pyrene	0.0837	U	0.0618	0.0625	73.8	74.7	1	10.0-148			1.21	35
1-Methylnaphthalene	0.0837	U	0.0619	0.0610	74.0	72.9	1	10.0-142			1.40	28
2-Methylnaphthalene	0.0837	U	0.0592	0.0590	70.7	70.5	1	10.0-137			0.365	28
2-Chloronaphthalene	0.0837	U	0.0611	0.0619	73.1	74.0	1	29.0-120			1.23	24
(S) p-Terphenyl-d14					*73.7*	*75.3*		*23.0-120*				
(S) Nitrobenzene-d5					*77.3*	*75.2*		*14.0-149*				
(S) 2-Fluorobiphenyl					*73.2*	*74.4*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

GLOSSARY OF TERMS

Qualifier	Description
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P	RPD between the primary and confirmatory analysis exceeded 40%.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

D034

ALL SHADED AREAS are for LAB USE ONLY

Company: PRIMA Env	Billing Information: Same, Attn Chris Brooks
Address: 5070 Robert J Mathews Pkwy, Ste 300 el Dorado Hills, CA 95762	
Report To: Cindy Schreier	Email To: data@primaenvironmental.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Geosyntec-Simplot	State: CA County/City: El Dorado Time Zone Collected: [✓] PT [ ] MT [ ] CT [ ] ET
Phone: 916-939-7300 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [✓] No
Collected By (print): Marian Fiddinger	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): M Fiddinger	Turnaround Date Required: 5 days Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [✓] Yes [ ] No Analysis: Metals

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:
Lab Sample # / Comments:

L1758088

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO	DRO/ORO	Herbicides	PAHs-SIM	VOCs	Metals (As, Ba, Cd, Cr, Se)	Lab Sample #
Geosyn-Sim PC-A	Water		7-17-24	08:50				11	X	X	X	X	X	X	-01
Geosyn-Sim PC-A (so)	Soil		7-17-24	08:50				1	X	X	X	X	X		-02
Geosyn-Sim AP-pH Low A	Water		7-17-24	08:50				11	X	X	X	X	X	X	-03
Geosyn-Sim AP-pH Low A (SO)	Soil		7-17-24	08:50				1	X	X	X	X	X		-04
Geosyn-Sim AP-pH High A	Water		7-17-24	08:50				11	X	X	X	X	X	X	-05
Geosyn-Sim AP-pH High A (SO)	Soil		7-17-24	08:50				1	X	X	X	X	X		-06
Geosyn-Sim AP-HP Low A	Water		7-17-24	08:50				11	X	X	X	X	X	X	-07
Geosyn-Sim AP-HP Low A (SO)	Soil		7-17-24	08:50				1	X	X	X	X	X		-08
Geosyn-Sim AP-HP High A	Water		7-17-24	08:50				11	X	X	X	X	X	X	-09
Geosyn-Sim AP-HP High A (SO)	Soil		7-17-24	08:50				1	X	X	X	X	X		-10

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 7074 8786 5034

Radchem sample(s) screened (<500 cpm): (Y) N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: (FEDEX) UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N (NA)
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments: EDA94.1 10.3 = 4.4

Relinquished by/Company: (Signature) M Fiddinger PRIMA	Date/Time: 7.17.24 1630	Received by/Company: (Signature) FedEX	Date/Time:	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) C Roden	Date/Time: 7/18/24 0900	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

August 21, 2024

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

PRIMA Environmental, Inc

Sample Delivery Group:	L1765907
Samples Received:	08/09/2024
Project Number:	
Description:	Geosyntec-Simplot

Report To: Cindy Schreier
5070 Robert J. Mathews Parkway
Ste. 300
El Dorado Hills, CA 95762

Entire Report Reviewed By: J Dozier

Jordan Dozier
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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GEOSYN-SIM PC-B L1765907-01 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2341134	1	08/13/24 10:33	08/13/24 22:56	MAP	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342337	25	08/14/24 08:54	08/14/24 08:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2342295	10	08/14/24 01:15	08/14/24 01:15	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2344603	1	08/17/24 16:36	08/19/24 10:48	TJD	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1	08/12/24 06:15	08/13/24 16:53	MEW	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1	08/12/24 06:15	08/14/24 18:22	LTB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	2	08/12/24 06:15	08/19/24 18:23	NWH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2342715	2	08/15/24 07:28	08/16/24 02:49	JCH	Mt. Juliet, TN

GEOSYN-SIM PC-B(SO) L1765907-02 Solid

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2340898	1	08/13/24 08:16	08/13/24 08:25	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342881	1	08/13/24 13:34	08/14/24 14:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2343189	1	08/13/24 13:34	08/14/24 20:08	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2344595	1	08/17/24 06:51	08/18/24 03:11	SGB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340069	1	08/12/24 10:17	08/15/24 02:31	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2344249	1	08/16/24 10:22	08/16/24 20:02	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-PH LOW B L1765907-03 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2341134	1	08/13/24 10:33	08/13/24 22:58	MAP	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342337	25	08/14/24 09:16	08/14/24 09:16	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2342295	10	08/14/24 01:37	08/14/24 01:37	DYW	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2344603	1	08/17/24 16:36	08/19/24 11:52	TJD	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1.01	08/12/24 06:15	08/13/24 17:13	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1.01	08/12/24 06:15	08/14/24 19:31	LTB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	5.05	08/12/24 06:15	08/14/24 19:42	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2342715	1	08/15/24 07:28	08/15/24 22:30	JCH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2342715	10	08/15/24 07:28	08/17/24 01:39	AGW	Mt. Juliet, TN

GEOSYN-SIM AP-PH LOW B(SO) L1765907-04 Solid

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2340898	1	08/13/24 08:16	08/13/24 08:25	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342881	1	08/13/24 13:34	08/14/24 15:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2343189	1	08/13/24 13:34	08/14/24 20:27	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2344595	1	08/17/24 06:51	08/18/24 04:24	SGB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340069	1	08/12/24 10:17	08/15/24 02:42	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2344249	1	08/16/24 10:22	08/16/24 20:20	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-PH HIGH B L1765907-05 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2341134	1	08/13/24 10:33	08/13/24 23:00	MAP	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342337	25	08/14/24 09:38	08/14/24 09:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2342295	10	08/14/24 01:59	08/14/24 01:59	DYW	Mt. Juliet, TN

GEOSYN-SIM AP-PH HIGH B L1765907-05 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2344603	1	08/17/24 16:36	08/19/24 12:12	TJD	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1.06	08/12/24 06:15	08/13/24 16:42	NWH	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340061	1.06	08/12/24 06:15	08/14/24 18:11	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2342715	1	08/15/24 07:28	08/15/24 22:48	JCH	Mt. Juliet, TN

GEOSYN-SIM AP-PH HIGH B(SO) L1765907-06 Solid

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2340898	1	08/13/24 08:16	08/13/24 08:25	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342881	1	08/13/24 13:34	08/14/24 15:35	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2343189	1	08/13/24 13:34	08/14/24 20:46	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2344595	1	08/17/24 06:51	08/18/24 02:42	SGB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151	WG2340069	1	08/12/24 10:17	08/15/24 02:54	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2344249	1	08/16/24 10:22	08/16/24 20:38	JRM	Mt. Juliet, TN

GEOSYN-SIM AP-HP LOW B L1765907-07 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2341134	1	08/13/24 10:33	08/13/24 23:02	MAP	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342337	25	08/14/24 10:00	08/14/24 10:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2344603	1	08/17/24 16:36	08/19/24 12:54	TJD	Mt. Juliet, TN

GEOSYN-SIM AP-HP LOW B(SO) L1765907-08 Solid

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2340898	1	08/13/24 08:16	08/13/24 08:25	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342881	1	08/13/24 13:34	08/14/24 15:59	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2344595	1	08/17/24 06:51	08/18/24 02:57	SGB	Mt. Juliet, TN

GEOSYN-SIM AP-HP HIGH B L1765907-09 GW

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG2341134	1	08/13/24 10:33	08/13/24 23:03	MAP	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342337	25	08/14/24 10:22	08/14/24 10:22	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG2344603	1	08/17/24 16:36	08/19/24 13:15	TJD	Mt. Juliet, TN

GEOSYN-SIM AP-HP HIGH B(SO) L1765907-10 Solid

Collected by	Collected date/time	Received date/time
	08/08/24 11:00	08/09/24 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2340899	1	08/13/24 08:05	08/13/24 08:15	CMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG2342881	1	08/13/24 13:34	08/14/24 16:22	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG2344595	1	08/17/24 06:51	08/18/24 04:39	SGB	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jordan Dozier
Project Manager

Sample Delivery Group (SDG) Narrative

pH outside of method requirement.

Lab Sample ID	Project Sample ID	Method
L1765907-03	GEOSYN-SIM AP-PH LOW B	3511/8015

DETECTION SUMMARY

Metals (ICP) by Method 6010B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	Arsenic	16.6		4.40	10.0	1	08/13/2024 22:56	WG2341134
GEOSYN-SIM PC-B	L1765907-01	Barium	74.6		0.736	5.00	1	08/13/2024 22:56	WG2341134
GEOSYN-SIM PC-B	L1765907-01	Chromium	2.46	J	1.40	10.0	1	08/13/2024 22:56	WG2341134
GEOSYN-SIM AP-PH LOW B	L1765907-03	Arsenic	174		4.40	10.0	1	08/13/2024 22:58	WG2341134
GEOSYN-SIM AP-PH LOW B	L1765907-03	Barium	37.0		0.736	5.00	1	08/13/2024 22:58	WG2341134
GEOSYN-SIM AP-PH LOW B	L1765907-03	Chromium	35.7		1.40	10.0	1	08/13/2024 22:58	WG2341134
GEOSYN-SIM AP-PH LOW B	L1765907-03	Selenium	12.5		7.35	10.0	1	08/13/2024 22:58	WG2341134
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Arsenic	381		4.40	10.0	1	08/13/2024 23:00	WG2341134
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Barium	21.6		0.736	5.00	1	08/13/2024 23:00	WG2341134
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Chromium	41.8		1.40	10.0	1	08/13/2024 23:00	WG2341134
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Selenium	28.2		7.35	10.0	1	08/13/2024 23:00	WG2341134
GEOSYN-SIM AP-HP LOW B	L1765907-07	Arsenic	18.0		4.40	10.0	1	08/13/2024 23:02	WG2341134
GEOSYN-SIM AP-HP LOW B	L1765907-07	Barium	129		0.736	5.00	1	08/13/2024 23:02	WG2341134
GEOSYN-SIM AP-HP LOW B	L1765907-07	Cadmium	0.962	J	0.479	2.00	1	08/13/2024 23:02	WG2341134
GEOSYN-SIM AP-HP LOW B	L1765907-07	Chromium	9.49	J	1.40	10.0	1	08/13/2024 23:02	WG2341134
GEOSYN-SIM AP-HP LOW B	L1765907-07	Selenium	19.5		7.35	10.0	1	08/13/2024 23:02	WG2341134
GEOSYN-SIM AP-HP HIGH B	L1765907-09	Barium	142		0.736	5.00	1	08/13/2024 23:03	WG2341134
GEOSYN-SIM AP-HP HIGH B	L1765907-09	Cadmium	8.42		0.479	2.00	1	08/13/2024 23:03	WG2341134
GEOSYN-SIM AP-HP HIGH B	L1765907-09	Chromium	19.9		1.40	10.0	1	08/13/2024 23:03	WG2341134
GEOSYN-SIM AP-HP HIGH B	L1765907-09	Selenium	38.8		7.35	10.0	1	08/13/2024 23:03	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	TPHG C5 - C12	1280	J	760	2500	25	08/14/2024 08:54	WG2342337
GEOSYN-SIM AP-PH LOW B	L1765907-03	TPHG C5 - C12	999	J	760	2500	25	08/14/2024 09:16	WG2342337

Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B(SO)	L1765907-02	TPHG C5 - C12	5.43		0.0425	0.128	1	08/14/2024 14:49	WG2342881
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	TPHG C5 - C12	7.22		0.0450	0.136	1	08/14/2024 15:12	WG2342881
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	TPHG C5 - C12	5.87		0.0452	0.136	1	08/14/2024 15:35	WG2342881
GEOSYN-SIM AP-HP LOW B(SO)	L1765907-08	TPHG C5 - C12	4.28		0.0434	0.131	1	08/14/2024 15:59	WG2342881
GEOSYN-SIM AP-HP HIGH B(SO)	L1765907-10	TPHG C5 - C12	2.33		0.0449	0.135	1	08/14/2024 16:22	WG2342881

DETECTION SUMMARY

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	n-Butylbenzene	1.97	J	1.57	5.00	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	sec-Butylbenzene	2.52	J	1.25	5.00	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	1,2-Dichloroethane	28.5		0.819	5.00	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	Isopropylbenzene	3.37	J	1.05	5.00	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	Methylene Chloride	4.40	J	4.30	25.0	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	4-Methyl-2-pentanone (MIBK)	16.1	J	4.78	50.0	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	Naphthalene	11.7	J	1.74	25.0	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM PC-B	L1765907-01	n-Propylbenzene	1.90	J	0.993	5.00	10	08/14/2024 01:15	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	Acetone	191	J	113	250	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	n-Butylbenzene	1.96	J	1.57	5.00	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	1,2-Dichloroethane	29.7		0.819	5.00	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	n-Hexane	16.9	J	7.49	50.0	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	Isopropylbenzene	3.06	J	1.05	5.00	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	2-Butanone (MEK)	40.5	J	11.9	50.0	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	4-Methyl-2-pentanone (MIBK)	8.32	J	4.78	50.0	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH LOW B	L1765907-03	Naphthalene	54.2		1.74	25.0	10	08/14/2024 01:37	WG2342295
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Benzene	3.05	J	0.941	5.00	10	08/14/2024 01:59	WG2342295
GEOSYN-SIM AP-PH HIGH B	L1765907-05	1,2-Dichloroethane	12.5		0.819	5.00	10	08/14/2024 01:59	WG2342295
GEOSYN-SIM AP-PH HIGH B	L1765907-05	4-Methyl-2-pentanone (MIBK)	4.86	J	4.78	50.0	10	08/14/2024 01:59	WG2342295
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Naphthalene	6.62	J	1.74	25.0	10	08/14/2024 01:59	WG2342295

Volatile Organic Compounds (GC/MS) by Method 8260B

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B(SO)	L1765907-02	n-Butylbenzene	0.0183	J	0.00820	0.0195	1	08/14/2024 20:08	WG2343189
GEOSYN-SIM PC-B(SO)	L1765907-02	sec-Butylbenzene	0.00473	J	0.00450	0.0195	1	08/14/2024 20:08	WG2343189
GEOSYN-SIM PC-B(SO)	L1765907-02	Isopropylbenzene	0.00325	J	0.000664	0.00390	1	08/14/2024 20:08	WG2343189
GEOSYN-SIM PC-B(SO)	L1765907-02	Naphthalene	0.0308	J4	0.00762	0.0195	1	08/14/2024 20:08	WG2343189
GEOSYN-SIM PC-B(SO)	L1765907-02	n-Propylbenzene	0.00528	J	0.00148	0.00781	1	08/14/2024 20:08	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	Acetone	0.0695	J	0.0625	0.0856	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	n-Butylbenzene	0.0193	J	0.00898	0.0214	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	Isopropylbenzene	0.00236	J	0.000727	0.00428	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	Methyl tert-butyl ether	0.000599	J	0.000599	0.00171	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	Naphthalene	0.141	J4	0.00835	0.0214	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	n-Propylbenzene	0.00479	J	0.00163	0.00856	1	08/14/2024 20:27	WG2343189
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	Acetone	0.122		0.0629	0.0862	1	08/14/2024 20:46	WG2343189
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	Methyl tert-butyl ether	0.000646	B J	0.000603	0.00172	1	08/14/2024 20:46	WG2343189
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	Naphthalene	0.0257	J4	0.00841	0.0215	1	08/14/2024 20:46	WG2343189
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	n-Propylbenzene	0.00281	J	0.00164	0.00862	1	08/14/2024 20:46	WG2343189

DETECTION SUMMARY

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	C12-C22 Hydrocarbons	1930		33.0	100	1	08/19/2024 10:48	WG2344603
GEOSYN-SIM PC-B	L1765907-01	C22-C32 Hydrocarbons	864		33.0	100	1	08/19/2024 10:48	WG2344603
GEOSYN-SIM PC-B	L1765907-01	C32-C40 Hydrocarbons	292		33.0	100	1	08/19/2024 10:48	WG2344603
GEOSYN-SIM AP-PH LOW B	L1765907-03	C12-C22 Hydrocarbons	1400		33.0	100	1	08/19/2024 11:52	WG2344603
GEOSYN-SIM AP-PH LOW B	L1765907-03	C22-C32 Hydrocarbons	426		33.0	100	1	08/19/2024 11:52	WG2344603
GEOSYN-SIM AP-PH LOW B	L1765907-03	C32-C40 Hydrocarbons	174		33.0	100	1	08/19/2024 11:52	WG2344603
GEOSYN-SIM AP-PH HIGH B	L1765907-05	C12-C22 Hydrocarbons	187		33.0	100	1	08/19/2024 12:12	WG2344603
GEOSYN-SIM AP-PH HIGH B	L1765907-05	C22-C32 Hydrocarbons	52.5	J	33.0	100	1	08/19/2024 12:12	WG2344603
GEOSYN-SIM AP-PH HIGH B	L1765907-05	C32-C40 Hydrocarbons	67.0	J	33.0	100	1	08/19/2024 12:12	WG2344603
GEOSYN-SIM AP-HP LOW B	L1765907-07	C12-C22 Hydrocarbons	1050		33.0	100	1	08/19/2024 12:54	WG2344603
GEOSYN-SIM AP-HP LOW B	L1765907-07	C22-C32 Hydrocarbons	220		33.0	100	1	08/19/2024 12:54	WG2344603
GEOSYN-SIM AP-HP LOW B	L1765907-07	C32-C40 Hydrocarbons	106		33.0	100	1	08/19/2024 12:54	WG2344603
GEOSYN-SIM AP-HP HIGH B	L1765907-09	C12-C22 Hydrocarbons	255		33.0	100	1	08/19/2024 13:15	WG2344603
GEOSYN-SIM AP-HP HIGH B	L1765907-09	C22-C32 Hydrocarbons	36.2	J	33.0	100	1	08/19/2024 13:15	WG2344603
GEOSYN-SIM AP-HP HIGH B	L1765907-09	C32-C40 Hydrocarbons	71.0	J	33.0	100	1	08/19/2024 13:15	WG2344603

Semi-Volatile Organic Compounds (GC) by Method 8015

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B(SO)	L1765907-02	C12-C22 Hydrocarbons	1.10	J	0.938	5.12	1	08/18/2024 03:11	WG2344595
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	C12-C22 Hydrocarbons	1.21	J	0.994	5.42	1	08/18/2024 04:24	WG2344595
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	C12-C22 Hydrocarbons	1.20	J	0.998	5.45	1	08/18/2024 02:42	WG2344595
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	C32-C40 Hydrocarbons	2.75	J	1.81	5.45	1	08/18/2024 02:42	WG2344595
GEOSYN-SIM AP-HP LOW B(SO)	L1765907-08	C12-C22 Hydrocarbons	1.40	J	0.957	5.22	1	08/18/2024 02:57	WG2344595
GEOSYN-SIM AP-HP HIGH B(SO)	L1765907-10	C12-C22 Hydrocarbons	1.69	J	0.991	5.41	1	08/18/2024 04:39	WG2344595
GEOSYN-SIM AP-HP HIGH B(SO)	L1765907-10	C22-C32 Hydrocarbons	2.06	J	1.80	5.41	1	08/18/2024 04:39	WG2344595

Chlorinated Acid Herbicides (GC) by Method 8151

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	2,4-D	9.78		1.09	4.00	2	08/19/2024 18:23	WG2340061
GEOSYN-SIM PC-B	L1765907-01	Dicamba	1.36	J	0.245	2.00	1	08/14/2024 18:22	WG2340061
GEOSYN-SIM AP-PH LOW B	L1765907-03	2,4-D	10.6		2.76	10.1	5.05	08/14/2024 19:42	WG2340061
GEOSYN-SIM AP-PH LOW B	L1765907-03	Dinoseb	13.8		1.26	10.1	5.05	08/14/2024 19:42	WG2340061

DETECTION SUMMARY

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B	L1765907-01	Naphthalene	16.0		0.183	0.500	2	08/16/2024 02:49	WG2342715
GEOSYN-SIM PC-B	L1765907-01	Phenanthrene	0.0399	J	0.0360	0.100	2	08/16/2024 02:49	WG2342715
GEOSYN-SIM PC-B	L1765907-01	1-Methylnaphthalene	4.82		0.137	0.500	2	08/16/2024 02:49	WG2342715
GEOSYN-SIM PC-B	L1765907-01	2-Methylnaphthalene	0.821		0.135	0.500	2	08/16/2024 02:49	WG2342715
GEOSYN-SIM PC-B	L1765907-01	2-Chloronaphthalene	0.797		0.136	0.500	2	08/16/2024 02:49	WG2342715
GEOSYN-SIM AP-PH LOW B	L1765907-03	Naphthalene	119		0.917	2.50	10	08/17/2024 01:39	WG2342715
GEOSYN-SIM AP-PH LOW B	L1765907-03	Phenanthrene	0.0529		0.0180	0.0500	1	08/15/2024 22:30	WG2342715
GEOSYN-SIM AP-PH LOW B	L1765907-03	1-Methylnaphthalene	6.97		0.0687	0.250	1	08/15/2024 22:30	WG2342715
GEOSYN-SIM AP-PH LOW B	L1765907-03	2-Methylnaphthalene	0.872		0.0674	0.250	1	08/15/2024 22:30	WG2342715
GEOSYN-SIM AP-PH HIGH B	L1765907-05	Naphthalene	3.36		0.0917	0.250	1	08/15/2024 22:48	WG2342715
GEOSYN-SIM AP-PH HIGH B	L1765907-05	1-Methylnaphthalene	1.05		0.0687	0.250	1	08/15/2024 22:48	WG2342715
GEOSYN-SIM AP-PH HIGH B	L1765907-05	2-Methylnaphthalene	0.169	J	0.0674	0.250	1	08/15/2024 22:48	WG2342715

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Client ID	Lab Sample ID	Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
GEOSYN-SIM PC-B(SO)	L1765907-02	Naphthalene	0.0224	J	0.00522	0.0256	1	08/16/2024 20:02	WG2344249
GEOSYN-SIM PC-B(SO)	L1765907-02	1-Methylnaphthalene	0.0294		0.00575	0.0256	1	08/16/2024 20:02	WG2344249
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	Naphthalene	0.102		0.00553	0.0271	1	08/16/2024 20:20	WG2344249
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	1-Methylnaphthalene	0.0347		0.00609	0.0271	1	08/16/2024 20:20	WG2344249
GEOSYN-SIM AP-PH LOW B(SO)	L1765907-04	2-Methylnaphthalene	0.00580	J	0.00579	0.0271	1	08/16/2024 20:20	WG2344249
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	Benzo(b)fluoranthene	0.00252	J	0.00208	0.00817	1	08/16/2024 20:38	WG2344249
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	Naphthalene	0.0314		0.00555	0.0272	1	08/16/2024 20:38	WG2344249
GEOSYN-SIM AP-PH HIGH B(SO)	L1765907-06	1-Methylnaphthalene	0.0249	J	0.00611	0.0272	1	08/16/2024 20:38	WG2344249

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	16.6		4.40	10.0	1	08/13/2024 22:56	WG2341134
Barium	74.6		0.736	5.00	1	08/13/2024 22:56	WG2341134
Cadmium	U		0.479	2.00	1	08/13/2024 22:56	WG2341134
Chromium	2.46	J	1.40	10.0	1	08/13/2024 22:56	WG2341134
Selenium	U		7.35	10.0	1	08/13/2024 22:56	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	1280	J	760	2500	25	08/14/2024 08:54	WG2342337
(S) a,a,a-Trifluorotoluene(FID)	*98.1*			*78.0-120*		*08/14/2024 08:54*	WG2342337

Sample Narrative:

L1765907-01 WG2342337: Lowest possible dilution due to sample foaming.

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		113	250	10	08/14/2024 01:15	WG2342295
Acrylonitrile	U		6.71	50.0	10	08/14/2024 01:15	WG2342295
Benzene	U		0.941	5.00	10	08/14/2024 01:15	WG2342295
Bromobenzene	U		1.18	5.00	10	08/14/2024 01:15	WG2342295
Bromodichloromethane	U		1.36	5.00	10	08/14/2024 01:15	WG2342295
Bromochloromethane	U		1.28	5.00	10	08/14/2024 01:15	WG2342295
Bromoform	U		1.29	5.00	10	08/14/2024 01:15	WG2342295
Bromomethane	U		6.05	25.0	10	08/14/2024 01:15	WG2342295
n-Butylbenzene	1.97	J	1.57	5.00	10	08/14/2024 01:15	WG2342295
sec-Butylbenzene	2.52	J	1.25	5.00	10	08/14/2024 01:15	WG2342295
tert-Butylbenzene	U		1.27	5.00	10	08/14/2024 01:15	WG2342295
Carbon disulfide	U		0.962	5.00	10	08/14/2024 01:15	WG2342295
Carbon tetrachloride	U		1.28	5.00	10	08/14/2024 01:15	WG2342295
Chlorobenzene	U		1.17	5.00	10	08/14/2024 01:15	WG2342295
Chlorodibromomethane	U		1.40	5.00	10	08/14/2024 01:15	WG2342295
Chloroethane	U		1.92	25.0	10	08/14/2024 01:15	WG2342295
2-Chloroethyl vinyl ether	U		5.75	500	10	08/14/2024 01:15	WG2342295
Chloroform	U		1.11	5.00	10	08/14/2024 01:15	WG2342295
Chloromethane	U		9.60	12.5	10	08/14/2024 01:15	WG2342295
2-Chlorotoluene	U		1.06	5.00	10	08/14/2024 01:15	WG2342295
4-Chlorotoluene	U		1.14	5.00	10	08/14/2024 01:15	WG2342295
1,2-Dibromo-3-Chloropropane	U		2.76	25.0	10	08/14/2024 01:15	WG2342295
1,2-Dibromoethane	U		1.26	5.00	10	08/14/2024 01:15	WG2342295
Dibromomethane	U		1.22	5.00	10	08/14/2024 01:15	WG2342295
1,2-Dichlorobenzene	U		1.07	5.00	10	08/14/2024 01:15	WG2342295
1,3-Dichlorobenzene	U		2.99	5.00	10	08/14/2024 01:15	WG2342295
1,4-Dichlorobenzene	U		1.20	5.00	10	08/14/2024 01:15	WG2342295
Dichlorodifluoromethane	U		3.74	25.0	10	08/14/2024 01:15	WG2342295
1,1-Dichloroethane	U		1.00	5.00	10	08/14/2024 01:15	WG2342295
1,2-Dichloroethane	28.5		0.819	5.00	10	08/14/2024 01:15	WG2342295
1,1-Dichloroethene	U		1.88	5.00	10	08/14/2024 01:15	WG2342295
cis-1,2-Dichloroethene	U		1.26	5.00	10	08/14/2024 01:15	WG2342295
trans-1,2-Dichloroethene	U		1.49	5.00	10	08/14/2024 01:15	WG2342295
1,2-Dichloropropane	U		1.49	5.00	10	08/14/2024 01:15	WG2342295
1,1-Dichloropropene	U		1.42	5.00	10	08/14/2024 01:15	WG2342295
1,3-Dichloropropane	U		1.09	10.0	10	08/14/2024 01:15	WG2342295

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
cis-1,3-Dichloropropene	U		1.11	5.00	10	08/14/2024 01:15	WG2342295
trans-1,3-Dichloropropene	U		1.18	5.00	10	08/14/2024 01:15	WG2342295
trans-1,4-Dichloro-2-butene	U		4.67	50.0	10	08/14/2024 01:15	WG2342295
2,2-Dichloropropane	U		1.61	5.00	10	08/14/2024 01:15	WG2342295
Di-isopropyl ether	U		1.05	5.00	10	08/14/2024 01:15	WG2342295
Ethylbenzene	U		1.37	5.00	10	08/14/2024 01:15	WG2342295
Hexachloro-1,3-butadiene	U		3.37	10.0	10	08/14/2024 01:15	WG2342295
2-Hexanone	U		7.87	50.0	10	08/14/2024 01:15	WG2342295
n-Hexane	U		7.49	50.0	10	08/14/2024 01:15	WG2342295
Iodomethane	U		5.54	50.0	10	08/14/2024 01:15	WG2342295
Isopropylbenzene	3.37	J	1.05	5.00	10	08/14/2024 01:15	WG2342295
p-Isopropyltoluene	U		1.20	5.00	10	08/14/2024 01:15	WG2342295
2-Butanone (MEK)	U		11.9	50.0	10	08/14/2024 01:15	WG2342295
Methylene Chloride	4.40	J	4.30	25.0	10	08/14/2024 01:15	WG2342295
4-Methyl-2-pentanone (MIBK)	16.1	J	4.78	50.0	10	08/14/2024 01:15	WG2342295
Methyl tert-butyl ether	U		1.01	5.00	10	08/14/2024 01:15	WG2342295
Naphthalene	11.7	J	1.74	25.0	10	08/14/2024 01:15	WG2342295
n-Propylbenzene	1.90	J	0.993	5.00	10	08/14/2024 01:15	WG2342295
Styrene	U		1.18	5.00	10	08/14/2024 01:15	WG2342295
1,1,1,2-Tetrachloroethane	U		1.47	5.00	10	08/14/2024 01:15	WG2342295
1,1,2,2-Tetrachloroethane	U		1.33	5.00	10	08/14/2024 01:15	WG2342295
1,1,2-Trichlorotrifluoroethane	U		1.80	5.00	10	08/14/2024 01:15	WG2342295
Tetrachloroethene	U		3.00	5.00	10	08/14/2024 01:15	WG2342295
Toluene	U		2.78	5.00	10	08/14/2024 01:15	WG2342295
1,2,3-Trichlorobenzene	U		1.64	5.00	10	08/14/2024 01:15	WG2342295
1,2,4-Trichlorobenzene	U		4.81	10.0	10	08/14/2024 01:15	WG2342295
1,1,1-Trichloroethane	U		1.49	5.00	10	08/14/2024 01:15	WG2342295
1,1,2-Trichloroethane	U		1.58	5.00	10	08/14/2024 01:15	WG2342295
Trichloroethene	U		1.90	5.00	10	08/14/2024 01:15	WG2342295
Trichlorofluoromethane	U		1.60	25.0	10	08/14/2024 01:15	WG2342295
1,2,3-Trichloropropane	U		2.37	25.0	10	08/14/2024 01:15	WG2342295
1,2,4-Trimethylbenzene	U		3.22	5.00	10	08/14/2024 01:15	WG2342295
1,2,3-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:15	WG2342295
1,3,5-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:15	WG2342295
Vinyl acetate	U		6.92	50.0	10	08/14/2024 01:15	WG2342295
Vinyl chloride	U		2.34	5.00	10	08/14/2024 01:15	WG2342295
Xylenes, Total	U		1.74	15.0	10	08/14/2024 01:15	WG2342295
(S) Toluene-d8	*95.8*			*80.0-120*		*08/14/2024 01:15*	WG2342295
(S) 4-Bromofluorobenzene	*96.3*			*77.0-126*		*08/14/2024 01:15*	WG2342295
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*08/14/2024 01:15*	WG2342295

Sample Narrative:

L1765907-01 WG2342295: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1930		33.0	100	1	08/19/2024 10:48	WG2344603
C22-C32 Hydrocarbons	864		33.0	100	1	08/19/2024 10:48	WG2344603
C32-C40 Hydrocarbons	292		33.0	100	1	08/19/2024 10:48	WG2344603
(S) o-Terphenyl	*90.5*			*52.0-156*		*08/19/2024 10:48*	WG2344603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	9.78		1.09	4.00	2	08/19/2024 18:23	WG2340061
Dalapon	U		0.344	2.00	1	08/13/2024 16:53	WG2340061
2,4-DB	U		0.302	2.00	1	08/13/2024 16:53	WG2340061
Dicamba	1.36	J	0.245	2.00	1	08/14/2024 18:22	WG2340061
Dichloroprop	U		1.04	2.00	1	08/13/2024 16:53	WG2340061
Dinoseb	U		0.250	2.00	1	08/13/2024 16:53	WG2340061
MCPA	U		13.1	100	1	08/13/2024 16:53	WG2340061
MCPP	U		66.0	100	1	08/13/2024 16:53	WG2340061
2,4,5-T	U		0.258	2.00	1	08/13/2024 16:53	WG2340061
2,4,5-TP (Silvex)	U		0.335	2.00	1	08/13/2024 16:53	WG2340061
Pentachlorophenol	U		0.111	1.00	1	08/13/2024 16:53	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*133*			*14.0-158*		*08/13/2024 16:53*	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*97.6*			*14.0-158*		*08/14/2024 18:22*	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*149*			*14.0-158*		*08/19/2024 18:23*	WG2340061

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0380	0.100	2	08/16/2024 02:49	WG2342715
Acenaphthene	U		0.0380	0.100	2	08/16/2024 02:49	WG2342715
Acenaphthylene	U		0.0342	0.100	2	08/16/2024 02:49	WG2342715
Benzo(a)anthracene	U		0.0406	0.100	2	08/16/2024 02:49	WG2342715
Benzo(a)pyrene	U		0.0368	0.100	2	08/16/2024 02:49	WG2342715
Benzo(b)fluoranthene	U		0.0336	0.100	2	08/16/2024 02:49	WG2342715
Benzo(g,h,i)perylene	U		0.0368	0.100	2	08/16/2024 02:49	WG2342715
Benzo(k)fluoranthene	U		0.0404	0.100	2	08/16/2024 02:49	WG2342715
Chrysene	U		0.0358	0.100	2	08/16/2024 02:49	WG2342715
Dibenz(a,h)anthracene	U		0.0320	0.100	2	08/16/2024 02:49	WG2342715
Fluoranthene	U		0.0540	0.200	2	08/16/2024 02:49	WG2342715
Fluorene	U		0.0338	0.100	2	08/16/2024 02:49	WG2342715
Indeno(1,2,3-cd)pyrene	U		0.0316	0.100	2	08/16/2024 02:49	WG2342715
Naphthalene	16.0		0.183	0.500	2	08/16/2024 02:49	WG2342715
Phenanthrene	0.0399	J	0.0360	0.100	2	08/16/2024 02:49	WG2342715
Pyrene	U		0.0338	0.100	2	08/16/2024 02:49	WG2342715
1-Methylnaphthalene	4.82		0.137	0.500	2	08/16/2024 02:49	WG2342715
2-Methylnaphthalene	0.821		0.135	0.500	2	08/16/2024 02:49	WG2342715
2-Chloronaphthalene	0.797		0.136	0.500	2	08/16/2024 02:49	WG2342715
(S) Nitrobenzene-d5	*138*			*31.0-160*		*08/16/2024 02:49*	WG2342715
(S) 2-Fluorobiphenyl	*112*			*48.0-148*		*08/16/2024 02:49*	WG2342715
(S) p-Terphenyl-d14	*120*			*37.0-146*		*08/16/2024 02:49*	WG2342715

Sample Narrative:

L1765907-01 WG2342715: Dilution due to matrix impact during extraction procedure.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.1		1	08/13/2024 08:25	WG2340898

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	5.43		0.0425	0.128	1	08/14/2024 14:49	WG2342881
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*08/14/2024 14:49*	WG2342881

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0570	0.0781	1	08/14/2024 20:08	WG2343189
Acrylonitrile	U		0.00564	0.0195	1	08/14/2024 20:08	WG2343189
Benzene	U		0.000729	0.00156	1	08/14/2024 20:08	WG2343189
Bromobenzene	U		0.00141	0.0195	1	08/14/2024 20:08	WG2343189
Bromodichloromethane	U		0.00113	0.00390	1	08/14/2024 20:08	WG2343189
Bromoform	U		0.00183	0.0390	1	08/14/2024 20:08	WG2343189
Bromomethane	U		0.00308	0.0195	1	08/14/2024 20:08	WG2343189
n-Butylbenzene	0.0183	J	0.00820	0.0195	1	08/14/2024 20:08	WG2343189
sec-Butylbenzene	0.00473	J	0.00450	0.0195	1	08/14/2024 20:08	WG2343189
tert-Butylbenzene	U		0.00304	0.00781	1	08/14/2024 20:08	WG2343189
Carbon tetrachloride	U		0.00140	0.00781	1	08/14/2024 20:08	WG2343189
Chlorobenzene	U		0.000328	0.00390	1	08/14/2024 20:08	WG2343189
Chlorodibromomethane	U		0.000956	0.00390	1	08/14/2024 20:08	WG2343189
Chloroethane	U		0.00265	0.00781	1	08/14/2024 20:08	WG2343189
Chloroform	U		0.00161	0.00390	1	08/14/2024 20:08	WG2343189
Chloromethane	U		0.00679	0.0195	1	08/14/2024 20:08	WG2343189
2-Chlorotoluene	U		0.00135	0.00390	1	08/14/2024 20:08	WG2343189
4-Chlorotoluene	U		0.000703	0.00781	1	08/14/2024 20:08	WG2343189
1,2-Dibromo-3-Chloropropane	U		0.00609	0.0390	1	08/14/2024 20:08	WG2343189
1,2-Dibromoethane	U		0.00101	0.00390	1	08/14/2024 20:08	WG2343189
Dibromomethane	U		0.00117	0.00781	1	08/14/2024 20:08	WG2343189
1,2-Dichlorobenzene	U		0.000664	0.00781	1	08/14/2024 20:08	WG2343189
1,3-Dichlorobenzene	U		0.000937	0.00781	1	08/14/2024 20:08	WG2343189
1,4-Dichlorobenzene	U		0.00109	0.00781	1	08/14/2024 20:08	WG2343189
Dichlorodifluoromethane	U		0.00251	0.00781	1	08/14/2024 20:08	WG2343189
1,1-Dichloroethane	U		0.000767	0.00390	1	08/14/2024 20:08	WG2343189
1,2-Dichloroethane	U		0.00101	0.00390	1	08/14/2024 20:08	WG2343189
1,1-Dichloroethene	U		0.000946	0.00390	1	08/14/2024 20:08	WG2343189
cis-1,2-Dichloroethene	U		0.00115	0.00390	1	08/14/2024 20:08	WG2343189
trans-1,2-Dichloroethene	U		0.00162	0.00781	1	08/14/2024 20:08	WG2343189
1,2-Dichloropropane	U		0.00222	0.00781	1	08/14/2024 20:08	WG2343189
1,1-Dichloropropene	U		0.00126	0.00390	1	08/14/2024 20:08	WG2343189
1,3-Dichloropropane	U		0.000782	0.00781	1	08/14/2024 20:08	WG2343189
cis-1,3-Dichloropropene	U		0.00118	0.00390	1	08/14/2024 20:08	WG2343189
trans-1,3-Dichloropropene	U		0.00178	0.00781	1	08/14/2024 20:08	WG2343189
2,2-Dichloropropane	U		0.00215	0.00390	1	08/14/2024 20:08	WG2343189
Di-isopropyl ether	U		0.000640	0.00156	1	08/14/2024 20:08	WG2343189
Ethylbenzene	U		0.00115	0.00390	1	08/14/2024 20:08	WG2343189
Hexachloro-1,3-butadiene	U		0.00937	0.0390	1	08/14/2024 20:08	WG2343189
Isopropylbenzene	0.00325	J	0.000664	0.00390	1	08/14/2024 20:08	WG2343189
p-Isopropyltoluene	U		0.00398	0.00781	1	08/14/2024 20:08	WG2343189
2-Butanone (MEK)	U		0.0992	0.156	1	08/14/2024 20:08	WG2343189
Methylene Chloride	U		0.0104	0.0390	1	08/14/2024 20:08	WG2343189
4-Methyl-2-pentanone (MIBK)	U		0.00356	0.0390	1	08/14/2024 20:08	WG2343189

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	U		0.000547	0.00156	1	08/14/2024 20:08	WG2343189
Naphthalene	0.0308	J4	0.00762	0.0195	1	08/14/2024 20:08	WG2343189
n-Propylbenzene	0.00528	J	0.00148	0.00781	1	08/14/2024 20:08	WG2343189
Styrene	U		0.000358	0.0195	1	08/14/2024 20:08	WG2343189
1,1,1,2-Tetrachloroethane	U		0.00148	0.00390	1	08/14/2024 20:08	WG2343189
1,1,2,2-Tetrachloroethane	U		0.00109	0.00390	1	08/14/2024 20:08	WG2343189
1,1,2-Trichlorotrifluoroethane	U		0.00118	0.00390	1	08/14/2024 20:08	WG2343189
Tetrachloroethene	U		0.00140	0.00390	1	08/14/2024 20:08	WG2343189
Toluene	U		0.00203	0.00781	1	08/14/2024 20:08	WG2343189
1,2,3-Trichlorobenzene	U	J4	0.0114	0.0195	1	08/14/2024 20:08	WG2343189
1,2,4-Trichlorobenzene	U	J4	0.00687	0.0195	1	08/14/2024 20:08	WG2343189
1,1,1-Trichloroethane	U		0.00144	0.00390	1	08/14/2024 20:08	WG2343189
1,1,2-Trichloroethane	U		0.000932	0.00390	1	08/14/2024 20:08	WG2343189
Trichloroethene	U		0.000912	0.00156	1	08/14/2024 20:08	WG2343189
Trichlorofluoromethane	U		0.00129	0.00390	1	08/14/2024 20:08	WG2343189
1,2,3-Trichloropropane	U		0.00253	0.0195	1	08/14/2024 20:08	WG2343189
1,2,4-Trimethylbenzene	U		0.00247	0.00781	1	08/14/2024 20:08	WG2343189
1,2,3-Trimethylbenzene	U		0.00247	0.00781	1	08/14/2024 20:08	WG2343189
1,3,5-Trimethylbenzene	U		0.00312	0.00781	1	08/14/2024 20:08	WG2343189
Vinyl chloride	U		0.00181	0.00390	1	08/14/2024 20:08	WG2343189
Xylenes, Total	U		0.00137	0.0101	1	08/14/2024 20:08	WG2343189
(S) Toluene-d8	*108*			*75.0-131*		*08/14/2024 20:08*	WG2343189
(S) 4-Bromofluorobenzene	*96.4*			*67.0-138*		*08/14/2024 20:08*	WG2343189
(S) 1,2-Dichloroethane-d4	*91.8*			*70.0-130*		*08/14/2024 20:08*	WG2343189

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1.10	J	0.938	5.12	1	08/18/2024 03:11	WG2344595
C22-C32 Hydrocarbons	U		1.70	5.12	1	08/18/2024 03:11	WG2344595
C32-C40 Hydrocarbons	U		1.70	5.12	1	08/18/2024 03:11	WG2344595
(S) o-Terphenyl	*48.1*			*18.0-148*		*08/18/2024 03:11*	WG2344595

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00899	0.0896	1	08/15/2024 02:31	WG2340069
Dalapon	U		0.0145	0.0896	1	08/15/2024 02:31	WG2340069
2,4-DB	U		0.0380	0.0896	1	08/15/2024 02:31	WG2340069
Dicamba	U		0.0201	0.0896	1	08/15/2024 02:31	WG2340069
Dichloroprop	U		0.0314	0.0896	1	08/15/2024 02:31	WG2340069
Dinoseb	U		0.00892	0.0896	1	08/15/2024 02:31	WG2340069
MCPA	U		0.567	8.32	1	08/15/2024 02:31	WG2340069
MCPP	U		0.470	8.32	1	08/15/2024 02:31	WG2340069
2,4,5-T	U		0.0109	0.0896	1	08/15/2024 02:31	WG2340069
2,4,5-TP (Silvex)	U		0.0137	0.0896	1	08/15/2024 02:31	WG2340069
(S) 2,4-Dichlorophenyl Acetic Acid	*77.8*			*22.0-132*		*08/15/2024 02:31*	WG2340069

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00294	0.00768	1	08/16/2024 20:02	WG2344249
Acenaphthene	U		0.00268	0.00768	1	08/16/2024 20:02	WG2344249
Acenaphthylene	U		0.00276	0.00768	1	08/16/2024 20:02	WG2344249
Benzo(a)anthracene	U		0.00221	0.00768	1	08/16/2024 20:02	WG2344249

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00229	0.00768	1	08/16/2024 20:02	WG2344249
Benzo(b)fluoranthene	U		0.00196	0.00768	1	08/16/2024 20:02	WG2344249
Benzo(g,h,i)perylene	U		0.00227	0.00768	1	08/16/2024 20:02	WG2344249
Benzo(k)fluoranthene	U		0.00275	0.00768	1	08/16/2024 20:02	WG2344249
Chrysene	U		0.00297	0.00768	1	08/16/2024 20:02	WG2344249
Dibenz(a,h)anthracene	U		0.00220	0.00768	1	08/16/2024 20:02	WG2344249
Fluoranthene	U		0.00291	0.00768	1	08/16/2024 20:02	WG2344249
Fluorene	U		0.00262	0.00768	1	08/16/2024 20:02	WG2344249
Indeno(1,2,3-cd)pyrene	U		0.00232	0.00768	1	08/16/2024 20:02	WG2344249
Naphthalene	0.0224	J	0.00522	0.0256	1	08/16/2024 20:02	WG2344249
Phenanthrene	U		0.00296	0.00768	1	08/16/2024 20:02	WG2344249
Pyrene	U		0.00256	0.00768	1	08/16/2024 20:02	WG2344249
1-Methylnaphthalene	0.0294		0.00575	0.0256	1	08/16/2024 20:02	WG2344249
2-Methylnaphthalene	U		0.00547	0.0256	1	08/16/2024 20:02	WG2344249
2-Chloronaphthalene	U		0.00597	0.0256	1	08/16/2024 20:02	WG2344249
(S) p-Terphenyl-d14	*60.3*			*23.0-120*		*08/16/2024 20:02*	WG2344249
(S) Nitrobenzene-d5	*63.1*			*14.0-149*		*08/16/2024 20:02*	WG2344249
(S) 2-Fluorobiphenyl	*66.4*			*34.0-125*		*08/16/2024 20:02*	WG2344249

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	174		4.40	10.0	1	08/13/2024 22:58	WG2341134
Barium	37.0		0.736	5.00	1	08/13/2024 22:58	WG2341134
Cadmium	U		0.479	2.00	1	08/13/2024 22:58	WG2341134
Chromium	35.7		1.40	10.0	1	08/13/2024 22:58	WG2341134
Selenium	12.5		7.35	10.0	1	08/13/2024 22:58	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	999	J	760	2500	25	08/14/2024 09:16	WG2342337
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*78.0-120*		*08/14/2024 09:16*	WG2342337

Sample Narrative:

L1765907-03 WG2342337: Lowest possible dilution due to sample foaming.

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	191	J	113	250	10	08/14/2024 01:37	WG2342295
Acrylonitrile	U		6.71	50.0	10	08/14/2024 01:37	WG2342295
Benzene	U		0.941	5.00	10	08/14/2024 01:37	WG2342295
Bromobenzene	U		1.18	5.00	10	08/14/2024 01:37	WG2342295
Bromodichloromethane	U		1.36	5.00	10	08/14/2024 01:37	WG2342295
Bromochloromethane	U		1.28	5.00	10	08/14/2024 01:37	WG2342295
Bromoform	U		1.29	5.00	10	08/14/2024 01:37	WG2342295
Bromomethane	U		6.05	25.0	10	08/14/2024 01:37	WG2342295
n-Butylbenzene	1.96	J	1.57	5.00	10	08/14/2024 01:37	WG2342295
sec-Butylbenzene	U		1.25	5.00	10	08/14/2024 01:37	WG2342295
tert-Butylbenzene	U		1.27	5.00	10	08/14/2024 01:37	WG2342295
Carbon disulfide	U		0.962	5.00	10	08/14/2024 01:37	WG2342295
Carbon tetrachloride	U		1.28	5.00	10	08/14/2024 01:37	WG2342295
Chlorobenzene	U		1.17	5.00	10	08/14/2024 01:37	WG2342295
Chlorodibromomethane	U		1.40	5.00	10	08/14/2024 01:37	WG2342295
Chloroethane	U		1.92	25.0	10	08/14/2024 01:37	WG2342295
2-Chloroethyl vinyl ether	U		5.75	500	10	08/14/2024 01:37	WG2342295
Chloroform	U		1.11	5.00	10	08/14/2024 01:37	WG2342295
Chloromethane	U		9.60	12.5	10	08/14/2024 01:37	WG2342295
2-Chlorotoluene	U		1.06	5.00	10	08/14/2024 01:37	WG2342295
4-Chlorotoluene	U		1.14	5.00	10	08/14/2024 01:37	WG2342295
1,2-Dibromo-3-Chloropropane	U		2.76	25.0	10	08/14/2024 01:37	WG2342295
1,2-Dibromoethane	U		1.26	5.00	10	08/14/2024 01:37	WG2342295
Dibromomethane	U		1.22	5.00	10	08/14/2024 01:37	WG2342295
1,2-Dichlorobenzene	U		1.07	5.00	10	08/14/2024 01:37	WG2342295
1,3-Dichlorobenzene	U		2.99	5.00	10	08/14/2024 01:37	WG2342295
1,4-Dichlorobenzene	U		1.20	5.00	10	08/14/2024 01:37	WG2342295
Dichlorodifluoromethane	U		3.74	25.0	10	08/14/2024 01:37	WG2342295
1,1-Dichloroethane	U		1.00	5.00	10	08/14/2024 01:37	WG2342295
1,2-Dichloroethane	29.7		0.819	5.00	10	08/14/2024 01:37	WG2342295
1,1-Dichloroethene	U		1.88	5.00	10	08/14/2024 01:37	WG2342295
cis-1,2-Dichloroethene	U		1.26	5.00	10	08/14/2024 01:37	WG2342295
trans-1,2-Dichloroethene	U		1.49	5.00	10	08/14/2024 01:37	WG2342295
1,2-Dichloropropane	U		1.49	5.00	10	08/14/2024 01:37	WG2342295
1,1-Dichloropropene	U		1.42	5.00	10	08/14/2024 01:37	WG2342295
1,3-Dichloropropane	U		1.09	10.0	10	08/14/2024 01:37	WG2342295

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
cis-1,3-Dichloropropene	U		1.11	5.00	10	08/14/2024 01:37	WG2342295
trans-1,3-Dichloropropene	U		1.18	5.00	10	08/14/2024 01:37	WG2342295
trans-1,4-Dichloro-2-butene	U		4.67	50.0	10	08/14/2024 01:37	WG2342295
2,2-Dichloropropane	U		1.61	5.00	10	08/14/2024 01:37	WG2342295
Di-isopropyl ether	U		1.05	5.00	10	08/14/2024 01:37	WG2342295
Ethylbenzene	U		1.37	5.00	10	08/14/2024 01:37	WG2342295
Hexachloro-1,3-butadiene	U		3.37	10.0	10	08/14/2024 01:37	WG2342295
2-Hexanone	U		7.87	50.0	10	08/14/2024 01:37	WG2342295
n-Hexane	16.9	J	7.49	50.0	10	08/14/2024 01:37	WG2342295
Iodomethane	U		5.54	50.0	10	08/14/2024 01:37	WG2342295
Isopropylbenzene	3.06	J	1.05	5.00	10	08/14/2024 01:37	WG2342295
p-Isopropyltoluene	U		1.20	5.00	10	08/14/2024 01:37	WG2342295
2-Butanone (MEK)	40.5	J	11.9	50.0	10	08/14/2024 01:37	WG2342295
Methylene Chloride	U		4.30	25.0	10	08/14/2024 01:37	WG2342295
4-Methyl-2-pentanone (MIBK)	8.32	J	4.78	50.0	10	08/14/2024 01:37	WG2342295
Methyl tert-butyl ether	U		1.01	5.00	10	08/14/2024 01:37	WG2342295
Naphthalene	54.2		1.74	25.0	10	08/14/2024 01:37	WG2342295
n-Propylbenzene	U		0.993	5.00	10	08/14/2024 01:37	WG2342295
Styrene	U		1.18	5.00	10	08/14/2024 01:37	WG2342295
1,1,1,2-Tetrachloroethane	U		1.47	5.00	10	08/14/2024 01:37	WG2342295
1,1,2,2-Tetrachloroethane	U		1.33	5.00	10	08/14/2024 01:37	WG2342295
1,1,2-Trichlorotrifluoroethane	U		1.80	5.00	10	08/14/2024 01:37	WG2342295
Tetrachloroethene	U		3.00	5.00	10	08/14/2024 01:37	WG2342295
Toluene	U		2.78	5.00	10	08/14/2024 01:37	WG2342295
1,2,3-Trichlorobenzene	U		1.64	5.00	10	08/14/2024 01:37	WG2342295
1,2,4-Trichlorobenzene	U		4.81	10.0	10	08/14/2024 01:37	WG2342295
1,1,1-Trichloroethane	U		1.49	5.00	10	08/14/2024 01:37	WG2342295
1,1,2-Trichloroethane	U		1.58	5.00	10	08/14/2024 01:37	WG2342295
Trichloroethene	U		1.90	5.00	10	08/14/2024 01:37	WG2342295
Trichlorofluoromethane	U		1.60	25.0	10	08/14/2024 01:37	WG2342295
1,2,3-Trichloropropane	U		2.37	25.0	10	08/14/2024 01:37	WG2342295
1,2,4-Trimethylbenzene	U		3.22	5.00	10	08/14/2024 01:37	WG2342295
1,2,3-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:37	WG2342295
1,3,5-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:37	WG2342295
Vinyl acetate	U		6.92	50.0	10	08/14/2024 01:37	WG2342295
Vinyl chloride	U		2.34	5.00	10	08/14/2024 01:37	WG2342295
Xylenes, Total	U		1.74	15.0	10	08/14/2024 01:37	WG2342295
(S) Toluene-d8	*95.1*			*80.0-120*		*08/14/2024 01:37*	WG2342295
(S) 4-Bromofluorobenzene	*97.6*			*77.0-126*		*08/14/2024 01:37*	WG2342295
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*08/14/2024 01:37*	WG2342295

Sample Narrative:

L1765907-03 WG2342295: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	1400		33.0	100	1	08/19/2024 11:52	WG2344603
C22-C32 Hydrocarbons	426		33.0	100	1	08/19/2024 11:52	WG2344603
C32-C40 Hydrocarbons	174		33.0	100	1	08/19/2024 11:52	WG2344603
(S) o-Terphenyl	*77.9*			*52.0-156*		*08/19/2024 11:52*	WG2344603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	10.6		2.76	10.1	5.05	08/14/2024 19:42	WG2340061
Dalapon	U		0.347	2.02	1.01	08/13/2024 17:13	WG2340061
2,4-DB	U		0.305	2.02	1.01	08/13/2024 17:13	WG2340061
Dicamba	U		0.247	2.02	1.01	08/14/2024 19:31	WG2340061
Dichloroprop	U		1.05	2.02	1.01	08/13/2024 17:13	WG2340061
Dinoseb	13.8		1.26	10.1	5.05	08/14/2024 19:42	WG2340061
MCPA	U		13.2	101	1.01	08/13/2024 17:13	WG2340061
MCPP	U		66.7	101	1.01	08/13/2024 17:13	WG2340061
2,4,5-T	U		0.261	2.02	1.01	08/13/2024 17:13	WG2340061
2,4,5-TP (Silvex)	U		0.338	2.02	1.01	08/13/2024 17:13	WG2340061
Pentachlorophenol	U		0.112	1.01	1.01	08/13/2024 17:13	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*90.9*			*14.0-158*		*08/14/2024 19:31*	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*60.2*			*14.0-158*		*08/14/2024 19:42*	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*422*	J1		*14.0-158*		*08/13/2024 17:13*	WG2340061

Sample Narrative:

L1765907-03 WG2340061: Surrogate failure due to matrix interference.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	08/15/2024 22:30	WG2342715
Acenaphthene	U		0.0190	0.0500	1	08/15/2024 22:30	WG2342715
Acenaphthylene	U		0.0171	0.0500	1	08/15/2024 22:30	WG2342715
Benzo(a)anthracene	U		0.0203	0.0500	1	08/15/2024 22:30	WG2342715
Benzo(a)pyrene	U		0.0184	0.0500	1	08/15/2024 22:30	WG2342715
Benzo(b)fluoranthene	U		0.0168	0.0500	1	08/15/2024 22:30	WG2342715
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	08/15/2024 22:30	WG2342715
Benzo(k)fluoranthene	U		0.0202	0.0500	1	08/15/2024 22:30	WG2342715
Chrysene	U		0.0179	0.0500	1	08/15/2024 22:30	WG2342715
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	08/15/2024 22:30	WG2342715
Fluoranthene	U		0.0270	0.100	1	08/15/2024 22:30	WG2342715
Fluorene	U		0.0169	0.0500	1	08/15/2024 22:30	WG2342715
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	08/15/2024 22:30	WG2342715
Naphthalene	119		0.917	2.50	10	08/17/2024 01:39	WG2342715
Phenanthrene	0.0529		0.0180	0.0500	1	08/15/2024 22:30	WG2342715
Pyrene	U		0.0169	0.0500	1	08/15/2024 22:30	WG2342715
1-Methylnaphthalene	6.97		0.0687	0.250	1	08/15/2024 22:30	WG2342715
2-Methylnaphthalene	0.872		0.0674	0.250	1	08/15/2024 22:30	WG2342715
2-Chloronaphthalene	U		0.0682	0.250	1	08/15/2024 22:30	WG2342715
(S) Nitrobenzene-d5	*121*			*31.0-160*		*08/17/2024 01:39*	WG2342715
(S) Nitrobenzene-d5	*124*			*31.0-160*		*08/15/2024 22:30*	WG2342715
(S) 2-Fluorobiphenyl	*129*			*48.0-148*		*08/17/2024 01:39*	WG2342715
(S) 2-Fluorobiphenyl	*127*			*48.0-148*		*08/15/2024 22:30*	WG2342715
(S) p-Terphenyl-d14	*125*			*37.0-146*		*08/15/2024 22:30*	WG2342715
(S) p-Terphenyl-d14	*95.8*			*37.0-146*		*08/17/2024 01:39*	WG2342715

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.8		1	08/13/2024 08:25	WG2340898

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	7.22		0.0450	0.136	1	08/14/2024 15:12	WG2342881
(S) a,a,a-Trifluorotoluene(FID)	*98.0*			*77.0-120*		*08/14/2024 15:12*	WG2342881

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.0695	J	0.0625	0.0856	1	08/14/2024 20:27	WG2343189
Acrylonitrile	U		0.00618	0.0214	1	08/14/2024 20:27	WG2343189
Benzene	U		0.000799	0.00171	1	08/14/2024 20:27	WG2343189
Bromobenzene	U		0.00154	0.0214	1	08/14/2024 20:27	WG2343189
Bromodichloromethane	U		0.00124	0.00428	1	08/14/2024 20:27	WG2343189
Bromoform	U		0.00200	0.0428	1	08/14/2024 20:27	WG2343189
Bromomethane	U		0.00337	0.0214	1	08/14/2024 20:27	WG2343189
n-Butylbenzene	0.0193	J	0.00898	0.0214	1	08/14/2024 20:27	WG2343189
sec-Butylbenzene	U		0.00493	0.0214	1	08/14/2024 20:27	WG2343189
tert-Butylbenzene	U		0.00334	0.00856	1	08/14/2024 20:27	WG2343189
Carbon tetrachloride	U		0.00154	0.00856	1	08/14/2024 20:27	WG2343189
Chlorobenzene	U		0.000359	0.00428	1	08/14/2024 20:27	WG2343189
Chlorodibromomethane	U		0.00105	0.00428	1	08/14/2024 20:27	WG2343189
Chloroethane	U		0.00291	0.00856	1	08/14/2024 20:27	WG2343189
Chloroform	U		0.00176	0.00428	1	08/14/2024 20:27	WG2343189
Chloromethane	U		0.00744	0.0214	1	08/14/2024 20:27	WG2343189
2-Chlorotoluene	U		0.00148	0.00428	1	08/14/2024 20:27	WG2343189
4-Chlorotoluene	U		0.000770	0.00856	1	08/14/2024 20:27	WG2343189
1,2-Dibromo-3-Chloropropane	U		0.00667	0.0428	1	08/14/2024 20:27	WG2343189
1,2-Dibromoethane	U		0.00111	0.00428	1	08/14/2024 20:27	WG2343189
Dibromomethane	U		0.00128	0.00856	1	08/14/2024 20:27	WG2343189
1,2-Dichlorobenzene	U		0.000727	0.00856	1	08/14/2024 20:27	WG2343189
1,3-Dichlorobenzene	U		0.00103	0.00856	1	08/14/2024 20:27	WG2343189
1,4-Dichlorobenzene	U		0.00120	0.00856	1	08/14/2024 20:27	WG2343189
Dichlorodifluoromethane	U		0.00275	0.00856	1	08/14/2024 20:27	WG2343189
1,1-Dichloroethane	U		0.000840	0.00428	1	08/14/2024 20:27	WG2343189
1,2-Dichloroethane	U		0.00111	0.00428	1	08/14/2024 20:27	WG2343189
1,1-Dichloroethene	U		0.00104	0.00428	1	08/14/2024 20:27	WG2343189
cis-1,2-Dichloroethene	U		0.00126	0.00428	1	08/14/2024 20:27	WG2343189
trans-1,2-Dichloroethene	U		0.00178	0.00856	1	08/14/2024 20:27	WG2343189
1,2-Dichloropropane	U		0.00243	0.00856	1	08/14/2024 20:27	WG2343189
1,1-Dichloropropene	U		0.00138	0.00428	1	08/14/2024 20:27	WG2343189
1,3-Dichloropropane	U		0.000857	0.00856	1	08/14/2024 20:27	WG2343189
cis-1,3-Dichloropropene	U		0.00130	0.00428	1	08/14/2024 20:27	WG2343189
trans-1,3-Dichloropropene	U		0.00195	0.00856	1	08/14/2024 20:27	WG2343189
2,2-Dichloropropane	U		0.00236	0.00428	1	08/14/2024 20:27	WG2343189
Di-isopropyl ether	U		0.000702	0.00171	1	08/14/2024 20:27	WG2343189
Ethylbenzene	U		0.00126	0.00428	1	08/14/2024 20:27	WG2343189
Hexachloro-1,3-butadiene	U		0.0103	0.0428	1	08/14/2024 20:27	WG2343189
Isopropylbenzene	0.00236	J	0.000727	0.00428	1	08/14/2024 20:27	WG2343189
p-Isopropyltoluene	U		0.00436	0.00856	1	08/14/2024 20:27	WG2343189
2-Butanone (MEK)	U		0.109	0.171	1	08/14/2024 20:27	WG2343189
Methylene Chloride	U		0.0114	0.0428	1	08/14/2024 20:27	WG2343189
4-Methyl-2-pentanone (MIBK)	U		0.00390	0.0428	1	08/14/2024 20:27	WG2343189

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	0.000599	J	0.000599	0.00171	1	08/14/2024 20:27	WG2343189
Naphthalene	0.141	J4	0.00835	0.0214	1	08/14/2024 20:27	WG2343189
n-Propylbenzene	0.00479	J	0.00163	0.00856	1	08/14/2024 20:27	WG2343189
Styrene	U		0.000392	0.0214	1	08/14/2024 20:27	WG2343189
1,1,1,2-Tetrachloroethane	U		0.00162	0.00428	1	08/14/2024 20:27	WG2343189
1,1,2,2-Tetrachloroethane	U		0.00119	0.00428	1	08/14/2024 20:27	WG2343189
1,1,2-Trichlorotrifluoroethane	U		0.00129	0.00428	1	08/14/2024 20:27	WG2343189
Tetrachloroethene	U		0.00153	0.00428	1	08/14/2024 20:27	WG2343189
Toluene	U		0.00222	0.00856	1	08/14/2024 20:27	WG2343189
1,2,3-Trichlorobenzene	U	J4	0.0125	0.0214	1	08/14/2024 20:27	WG2343189
1,2,4-Trichlorobenzene	U	J4	0.00753	0.0214	1	08/14/2024 20:27	WG2343189
1,1,1-Trichloroethane	U		0.00158	0.00428	1	08/14/2024 20:27	WG2343189
1,1,2-Trichloroethane	U		0.00102	0.00428	1	08/14/2024 20:27	WG2343189
Trichloroethene	U		0.000999	0.00171	1	08/14/2024 20:27	WG2343189
Trichlorofluoromethane	U		0.00142	0.00428	1	08/14/2024 20:27	WG2343189
1,2,3-Trichloropropane	U		0.00277	0.0214	1	08/14/2024 20:27	WG2343189
1,2,4-Trimethylbenzene	U		0.00270	0.00856	1	08/14/2024 20:27	WG2343189
1,2,3-Trimethylbenzene	U		0.00270	0.00856	1	08/14/2024 20:27	WG2343189
1,3,5-Trimethylbenzene	U		0.00342	0.00856	1	08/14/2024 20:27	WG2343189
Vinyl chloride	U		0.00198	0.00428	1	08/14/2024 20:27	WG2343189
Xylenes, Total	U		0.00151	0.0111	1	08/14/2024 20:27	WG2343189
(S) Toluene-d8	*106*			*75.0-131*		*08/14/2024 20:27*	WG2343189
(S) 4-Bromofluorobenzene	*97.9*			*67.0-138*		*08/14/2024 20:27*	WG2343189
(S) 1,2-Dichloroethane-d4	*97.4*			*70.0-130*		*08/14/2024 20:27*	WG2343189

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1.21	J	0.994	5.42	1	08/18/2024 04:24	WG2344595
C22-C32 Hydrocarbons	U		1.80	5.42	1	08/18/2024 04:24	WG2344595
C32-C40 Hydrocarbons	U		1.80	5.42	1	08/18/2024 04:24	WG2344595
(S) o-Terphenyl	*50.2*			*18.0-148*		*08/18/2024 04:24*	WG2344595

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00952	0.0949	1	08/15/2024 02:42	WG2340069
Dalapon	U		0.0153	0.0949	1	08/15/2024 02:42	WG2340069
2,4-DB	U		0.0403	0.0949	1	08/15/2024 02:42	WG2340069
Dicamba	U		0.0213	0.0949	1	08/15/2024 02:42	WG2340069
Dichloroprop	U		0.0332	0.0949	1	08/15/2024 02:42	WG2340069
Dinoseb	U		0.00945	0.0949	1	08/15/2024 02:42	WG2340069
MCPA	U		0.600	8.81	1	08/15/2024 02:42	WG2340069
MCPP	U		0.497	8.81	1	08/15/2024 02:42	WG2340069
2,4,5-T	U		0.0115	0.0949	1	08/15/2024 02:42	WG2340069
2,4,5-TP (Silvex)	U		0.0145	0.0949	1	08/15/2024 02:42	WG2340069
(S) 2,4-Dichlorophenyl Acetic Acid	*77.0*			*22.0-132*		*08/15/2024 02:42*	WG2340069

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00312	0.00813	1	08/16/2024 20:20	WG2344249
Acenaphthene	U		0.00283	0.00813	1	08/16/2024 20:20	WG2344249
Acenaphthylene	U		0.00293	0.00813	1	08/16/2024 20:20	WG2344249
Benzo(a)anthracene	U		0.00235	0.00813	1	08/16/2024 20:20	WG2344249

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00243	0.00813	1	08/16/2024 20:20	WG2344249
Benzo(b)fluoranthene	U		0.00207	0.00813	1	08/16/2024 20:20	WG2344249
Benzo(g,h,i)perylene	U		0.00240	0.00813	1	08/16/2024 20:20	WG2344249
Benzo(k)fluoranthene	U		0.00291	0.00813	1	08/16/2024 20:20	WG2344249
Chrysene	U		0.00314	0.00813	1	08/16/2024 20:20	WG2344249
Dibenz(a,h)anthracene	U		0.00233	0.00813	1	08/16/2024 20:20	WG2344249
Fluoranthene	U		0.00308	0.00813	1	08/16/2024 20:20	WG2344249
Fluorene	U		0.00278	0.00813	1	08/16/2024 20:20	WG2344249
Indeno(1,2,3-cd)pyrene	U		0.00245	0.00813	1	08/16/2024 20:20	WG2344249
Naphthalene	0.102		0.00553	0.0271	1	08/16/2024 20:20	WG2344249
Phenanthrene	U		0.00313	0.00813	1	08/16/2024 20:20	WG2344249
Pyrene	U		0.00271	0.00813	1	08/16/2024 20:20	WG2344249
1-Methylnaphthalene	0.0347		0.00609	0.0271	1	08/16/2024 20:20	WG2344249
2-Methylnaphthalene	0.00580	J	0.00579	0.0271	1	08/16/2024 20:20	WG2344249
2-Chloronaphthalene	U		0.00632	0.0271	1	08/16/2024 20:20	WG2344249
(S) p-Terphenyl-d14	*62.5*			*23.0-120*		*08/16/2024 20:20*	WG2344249
(S) Nitrobenzene-d5	*69.3*			*14.0-149*		*08/16/2024 20:20*	WG2344249
(S) 2-Fluorobiphenyl	*73.5*			*34.0-125*		*08/16/2024 20:20*	WG2344249

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	381		4.40	10.0	1	08/13/2024 23:00	WG2341134
Barium	21.6		0.736	5.00	1	08/13/2024 23:00	WG2341134
Cadmium	U		0.479	2.00	1	08/13/2024 23:00	WG2341134
Chromium	41.8		1.40	10.0	1	08/13/2024 23:00	WG2341134
Selenium	28.2		7.35	10.0	1	08/13/2024 23:00	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	U		760	2500	25	08/14/2024 09:38	WG2342337
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*08/14/2024 09:38*	WG2342337

Sample Narrative:

L1765907-05 WG2342337: Lowest possible dilution due to sample foaming.

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		113	250	10	08/14/2024 01:59	WG2342295
Acrylonitrile	U		6.71	50.0	10	08/14/2024 01:59	WG2342295
Benzene	3.05	J	0.941	5.00	10	08/14/2024 01:59	WG2342295
Bromobenzene	U		1.18	5.00	10	08/14/2024 01:59	WG2342295
Bromodichloromethane	U		1.36	5.00	10	08/14/2024 01:59	WG2342295
Bromochloromethane	U		1.28	5.00	10	08/14/2024 01:59	WG2342295
Bromoform	U		1.29	5.00	10	08/14/2024 01:59	WG2342295
Bromomethane	U		6.05	25.0	10	08/14/2024 01:59	WG2342295
n-Butylbenzene	U		1.57	5.00	10	08/14/2024 01:59	WG2342295
sec-Butylbenzene	U		1.25	5.00	10	08/14/2024 01:59	WG2342295
tert-Butylbenzene	U		1.27	5.00	10	08/14/2024 01:59	WG2342295
Carbon disulfide	U		0.962	5.00	10	08/14/2024 01:59	WG2342295
Carbon tetrachloride	U		1.28	5.00	10	08/14/2024 01:59	WG2342295
Chlorobenzene	U		1.17	5.00	10	08/14/2024 01:59	WG2342295
Chlorodibromomethane	U		1.40	5.00	10	08/14/2024 01:59	WG2342295
Chloroethane	U		1.92	25.0	10	08/14/2024 01:59	WG2342295
2-Chloroethyl vinyl ether	U		5.75	500	10	08/14/2024 01:59	WG2342295
Chloroform	U		1.11	5.00	10	08/14/2024 01:59	WG2342295
Chloromethane	U		9.60	12.5	10	08/14/2024 01:59	WG2342295
2-Chlorotoluene	U		1.06	5.00	10	08/14/2024 01:59	WG2342295
4-Chlorotoluene	U		1.14	5.00	10	08/14/2024 01:59	WG2342295
1,2-Dibromo-3-Chloropropane	U		2.76	25.0	10	08/14/2024 01:59	WG2342295
1,2-Dibromoethane	U		1.26	5.00	10	08/14/2024 01:59	WG2342295
Dibromomethane	U		1.22	5.00	10	08/14/2024 01:59	WG2342295
1,2-Dichlorobenzene	U		1.07	5.00	10	08/14/2024 01:59	WG2342295
1,3-Dichlorobenzene	U		2.99	5.00	10	08/14/2024 01:59	WG2342295
1,4-Dichlorobenzene	U		1.20	5.00	10	08/14/2024 01:59	WG2342295
Dichlorodifluoromethane	U		3.74	25.0	10	08/14/2024 01:59	WG2342295
1,1-Dichloroethane	U		1.00	5.00	10	08/14/2024 01:59	WG2342295
1,2-Dichloroethane	12.5		0.819	5.00	10	08/14/2024 01:59	WG2342295
1,1-Dichloroethene	U		1.88	5.00	10	08/14/2024 01:59	WG2342295
cis-1,2-Dichloroethene	U		1.26	5.00	10	08/14/2024 01:59	WG2342295
trans-1,2-Dichloroethene	U		1.49	5.00	10	08/14/2024 01:59	WG2342295
1,2-Dichloropropane	U		1.49	5.00	10	08/14/2024 01:59	WG2342295
1,1-Dichloropropene	U		1.42	5.00	10	08/14/2024 01:59	WG2342295
1,3-Dichloropropane	U		1.09	10.0	10	08/14/2024 01:59	WG2342295

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
cis-1,3-Dichloropropene	U		1.11	5.00	10	08/14/2024 01:59	WG2342295
trans-1,3-Dichloropropene	U		1.18	5.00	10	08/14/2024 01:59	WG2342295
trans-1,4-Dichloro-2-butene	U		4.67	50.0	10	08/14/2024 01:59	WG2342295
2,2-Dichloropropane	U		1.61	5.00	10	08/14/2024 01:59	WG2342295
Di-isopropyl ether	U		1.05	5.00	10	08/14/2024 01:59	WG2342295
Ethylbenzene	U		1.37	5.00	10	08/14/2024 01:59	WG2342295
Hexachloro-1,3-butadiene	U		3.37	10.0	10	08/14/2024 01:59	WG2342295
2-Hexanone	U		7.87	50.0	10	08/14/2024 01:59	WG2342295
n-Hexane	U		7.49	50.0	10	08/14/2024 01:59	WG2342295
Iodomethane	U		5.54	50.0	10	08/14/2024 01:59	WG2342295
Isopropylbenzene	U		1.05	5.00	10	08/14/2024 01:59	WG2342295
p-Isopropyltoluene	U		1.20	5.00	10	08/14/2024 01:59	WG2342295
2-Butanone (MEK)	U		11.9	50.0	10	08/14/2024 01:59	WG2342295
Methylene Chloride	U		4.30	25.0	10	08/14/2024 01:59	WG2342295
4-Methyl-2-pentanone (MIBK)	4.86	J	4.78	50.0	10	08/14/2024 01:59	WG2342295
Methyl tert-butyl ether	U		1.01	5.00	10	08/14/2024 01:59	WG2342295
Naphthalene	6.62	J	1.74	25.0	10	08/14/2024 01:59	WG2342295
n-Propylbenzene	U		0.993	5.00	10	08/14/2024 01:59	WG2342295
Styrene	U		1.18	5.00	10	08/14/2024 01:59	WG2342295
1,1,1,2-Tetrachloroethane	U		1.47	5.00	10	08/14/2024 01:59	WG2342295
1,1,2,2-Tetrachloroethane	U		1.33	5.00	10	08/14/2024 01:59	WG2342295
1,1,2-Trichlorotrifluoroethane	U		1.80	5.00	10	08/14/2024 01:59	WG2342295
Tetrachloroethene	U		3.00	5.00	10	08/14/2024 01:59	WG2342295
Toluene	U		2.78	5.00	10	08/14/2024 01:59	WG2342295
1,2,3-Trichlorobenzene	U		1.64	5.00	10	08/14/2024 01:59	WG2342295
1,2,4-Trichlorobenzene	U		4.81	10.0	10	08/14/2024 01:59	WG2342295
1,1,1-Trichloroethane	U		1.49	5.00	10	08/14/2024 01:59	WG2342295
1,1,2-Trichloroethane	U		1.58	5.00	10	08/14/2024 01:59	WG2342295
Trichloroethene	U		1.90	5.00	10	08/14/2024 01:59	WG2342295
Trichlorofluoromethane	U		1.60	25.0	10	08/14/2024 01:59	WG2342295
1,2,3-Trichloropropane	U		2.37	25.0	10	08/14/2024 01:59	WG2342295
1,2,4-Trimethylbenzene	U		3.22	5.00	10	08/14/2024 01:59	WG2342295
1,2,3-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:59	WG2342295
1,3,5-Trimethylbenzene	U		1.04	5.00	10	08/14/2024 01:59	WG2342295
Vinyl acetate	U		6.92	50.0	10	08/14/2024 01:59	WG2342295
Vinyl chloride	U		2.34	5.00	10	08/14/2024 01:59	WG2342295
Xylenes, Total	U		1.74	15.0	10	08/14/2024 01:59	WG2342295
(S) Toluene-d8	*97.6*			*80.0-120*		*08/14/2024 01:59*	WG2342295
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*08/14/2024 01:59*	WG2342295
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*08/14/2024 01:59*	WG2342295

Sample Narrative:

L1765907-05 WG2342295: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	187		33.0	100	1	08/19/2024 12:12	WG2344603
C22-C32 Hydrocarbons	52.5	J	33.0	100	1	08/19/2024 12:12	WG2344603
C32-C40 Hydrocarbons	67.0	J	33.0	100	1	08/19/2024 12:12	WG2344603
(S) o-Terphenyl	*93.2*			*52.0-156*		*08/19/2024 12:12*	WG2344603

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
2,4-D	U		0.580	2.12	1.06	08/13/2024 16:42	WG2340061
Dalapon	U		0.365	2.12	1.06	08/13/2024 16:42	WG2340061
2,4-DB	U		0.320	2.12	1.06	08/13/2024 16:42	WG2340061
Dicamba	U		0.260	2.12	1.06	08/14/2024 18:11	WG2340061
Dichloroprop	U		1.10	2.12	1.06	08/13/2024 16:42	WG2340061
Dinoseb	U		0.265	2.12	1.06	08/13/2024 16:42	WG2340061
MCPA	U		13.9	106	1.06	08/13/2024 16:42	WG2340061
MCPP	U		70.0	106	1.06	08/13/2024 16:42	WG2340061
2,4,5-T	U		0.273	2.12	1.06	08/13/2024 16:42	WG2340061
2,4,5-TP (Silvex)	U		0.355	2.12	1.06	08/13/2024 16:42	WG2340061
Pentachlorophenol	U		0.118	1.06	1.06	08/13/2024 16:42	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*61.5*			*14.0-158*		*08/14/2024 18:11*	WG2340061
(S) 2,4-Dichlorophenyl Acetic Acid	*79.2*			*14.0-158*		*08/13/2024 16:42*	WG2340061

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	08/15/2024 22:48	WG2342715
Acenaphthene	U		0.0190	0.0500	1	08/15/2024 22:48	WG2342715
Acenaphthylene	U		0.0171	0.0500	1	08/15/2024 22:48	WG2342715
Benzo(a)anthracene	U		0.0203	0.0500	1	08/15/2024 22:48	WG2342715
Benzo(a)pyrene	U		0.0184	0.0500	1	08/15/2024 22:48	WG2342715
Benzo(b)fluoranthene	U		0.0168	0.0500	1	08/15/2024 22:48	WG2342715
Benzo(g,h,i)perylene	U		0.0184	0.0500	1	08/15/2024 22:48	WG2342715
Benzo(k)fluoranthene	U		0.0202	0.0500	1	08/15/2024 22:48	WG2342715
Chrysene	U		0.0179	0.0500	1	08/15/2024 22:48	WG2342715
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	08/15/2024 22:48	WG2342715
Fluoranthene	U		0.0270	0.100	1	08/15/2024 22:48	WG2342715
Fluorene	U		0.0169	0.0500	1	08/15/2024 22:48	WG2342715
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	08/15/2024 22:48	WG2342715
Naphthalene	3.36		0.0917	0.250	1	08/15/2024 22:48	WG2342715
Phenanthrene	U		0.0180	0.0500	1	08/15/2024 22:48	WG2342715
Pyrene	U		0.0169	0.0500	1	08/15/2024 22:48	WG2342715
1-Methylnaphthalene	1.05		0.0687	0.250	1	08/15/2024 22:48	WG2342715
2-Methylnaphthalene	0.169	J	0.0674	0.250	1	08/15/2024 22:48	WG2342715
2-Chloronaphthalene	U		0.0682	0.250	1	08/15/2024 22:48	WG2342715
(S) Nitrobenzene-d5	*139*			*31.0-160*		*08/15/2024 22:48*	WG2342715
(S) 2-Fluorobiphenyl	*133*			*48.0-148*		*08/15/2024 22:48*	WG2342715
(S) p-Terphenyl-d14	*132*			*37.0-146*		*08/15/2024 22:48*	WG2342715

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.5		1	08/13/2024 08:25	WG2340898

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	5.87		0.0452	0.136	1	08/14/2024 15:35	WG2342881
(S) a,a,a-Trifluorotoluene(FID)	*97.7*			*77.0-120*		*08/14/2024 15:35*	WG2342881

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.122		0.0629	0.0862	1	08/14/2024 20:46	WG2343189
Acrylonitrile	U		0.00622	0.0215	1	08/14/2024 20:46	WG2343189
Benzene	U		0.000805	0.00172	1	08/14/2024 20:46	WG2343189
Bromobenzene	U		0.00155	0.0215	1	08/14/2024 20:46	WG2343189
Bromodichloromethane	U		0.00125	0.00431	1	08/14/2024 20:46	WG2343189
Bromoform	U		0.00202	0.0431	1	08/14/2024 20:46	WG2343189
Bromomethane	U		0.00339	0.0215	1	08/14/2024 20:46	WG2343189
n-Butylbenzene	U		0.00905	0.0215	1	08/14/2024 20:46	WG2343189
sec-Butylbenzene	U		0.00496	0.0215	1	08/14/2024 20:46	WG2343189
tert-Butylbenzene	U		0.00336	0.00862	1	08/14/2024 20:46	WG2343189
Carbon tetrachloride	U		0.00155	0.00862	1	08/14/2024 20:46	WG2343189
Chlorobenzene	U		0.000362	0.00431	1	08/14/2024 20:46	WG2343189
Chlorodibromomethane	U		0.00105	0.00431	1	08/14/2024 20:46	WG2343189
Chloroethane	U		0.00293	0.00862	1	08/14/2024 20:46	WG2343189
Chloroform	U		0.00177	0.00431	1	08/14/2024 20:46	WG2343189
Chloromethane	U		0.00750	0.0215	1	08/14/2024 20:46	WG2343189
2-Chlorotoluene	U		0.00149	0.00431	1	08/14/2024 20:46	WG2343189
4-Chlorotoluene	U		0.000775	0.00862	1	08/14/2024 20:46	WG2343189
1,2-Dibromo-3-Chloropropane	U		0.00672	0.0431	1	08/14/2024 20:46	WG2343189
1,2-Dibromoethane	U		0.00112	0.00431	1	08/14/2024 20:46	WG2343189
Dibromomethane	U		0.00129	0.00862	1	08/14/2024 20:46	WG2343189
1,2-Dichlorobenzene	U		0.000732	0.00862	1	08/14/2024 20:46	WG2343189
1,3-Dichlorobenzene	U		0.00103	0.00862	1	08/14/2024 20:46	WG2343189
1,4-Dichlorobenzene	U		0.00121	0.00862	1	08/14/2024 20:46	WG2343189
Dichlorodifluoromethane	U		0.00277	0.00862	1	08/14/2024 20:46	WG2343189
1,1-Dichloroethane	U		0.000846	0.00431	1	08/14/2024 20:46	WG2343189
1,2-Dichloroethane	U		0.00112	0.00431	1	08/14/2024 20:46	WG2343189
1,1-Dichloroethene	U		0.00104	0.00431	1	08/14/2024 20:46	WG2343189
cis-1,2-Dichloroethene	U		0.00126	0.00431	1	08/14/2024 20:46	WG2343189
trans-1,2-Dichloroethene	U		0.00179	0.00862	1	08/14/2024 20:46	WG2343189
1,2-Dichloropropane	U		0.00245	0.00862	1	08/14/2024 20:46	WG2343189
1,1-Dichloropropene	U		0.00139	0.00431	1	08/14/2024 20:46	WG2343189
1,3-Dichloropropane	U		0.000863	0.00862	1	08/14/2024 20:46	WG2343189
cis-1,3-Dichloropropene	U		0.00130	0.00431	1	08/14/2024 20:46	WG2343189
trans-1,3-Dichloropropene	U		0.00196	0.00862	1	08/14/2024 20:46	WG2343189
2,2-Dichloropropane	U		0.00238	0.00431	1	08/14/2024 20:46	WG2343189
Di-isopropyl ether	U		0.000707	0.00172	1	08/14/2024 20:46	WG2343189
Ethylbenzene	U		0.00127	0.00431	1	08/14/2024 20:46	WG2343189
Hexachloro-1,3-butadiene	U		0.0103	0.0431	1	08/14/2024 20:46	WG2343189
Isopropylbenzene	U		0.000732	0.00431	1	08/14/2024 20:46	WG2343189
p-Isopropyltoluene	U		0.00439	0.00862	1	08/14/2024 20:46	WG2343189
2-Butanone (MEK)	U		0.109	0.172	1	08/14/2024 20:46	WG2343189
Methylene Chloride	U		0.0114	0.0431	1	08/14/2024 20:46	WG2343189
4-Methyl-2-pentanone (MIBK)	U		0.00393	0.0431	1	08/14/2024 20:46	WG2343189

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Methyl tert-butyl ether	0.000646	B J	0.000603	0.00172	1	08/14/2024 20:46	WG2343189
Naphthalene	0.0257	J4	0.00841	0.0215	1	08/14/2024 20:46	WG2343189
n-Propylbenzene	0.00281	J	0.00164	0.00862	1	08/14/2024 20:46	WG2343189
Styrene	U		0.000395	0.0215	1	08/14/2024 20:46	WG2343189
1,1,1,2-Tetrachloroethane	U		0.00163	0.00431	1	08/14/2024 20:46	WG2343189
1,1,2,2-Tetrachloroethane	U		0.00120	0.00431	1	08/14/2024 20:46	WG2343189
1,1,2-Trichlorotrifluoroethane	U		0.00130	0.00431	1	08/14/2024 20:46	WG2343189
Tetrachloroethene	U		0.00154	0.00431	1	08/14/2024 20:46	WG2343189
Toluene	U		0.00224	0.00862	1	08/14/2024 20:46	WG2343189
1,2,3-Trichlorobenzene	U	J4	0.0126	0.0215	1	08/14/2024 20:46	WG2343189
1,2,4-Trichlorobenzene	U	J4	0.00758	0.0215	1	08/14/2024 20:46	WG2343189
1,1,1-Trichloroethane	U		0.00159	0.00431	1	08/14/2024 20:46	WG2343189
1,1,2-Trichloroethane	U		0.00103	0.00431	1	08/14/2024 20:46	WG2343189
Trichloroethene	U		0.00101	0.00172	1	08/14/2024 20:46	WG2343189
Trichlorofluoromethane	U		0.00143	0.00431	1	08/14/2024 20:46	WG2343189
1,2,3-Trichloropropane	U		0.00279	0.0215	1	08/14/2024 20:46	WG2343189
1,2,4-Trimethylbenzene	U		0.00272	0.00862	1	08/14/2024 20:46	WG2343189
1,2,3-Trimethylbenzene	U		0.00272	0.00862	1	08/14/2024 20:46	WG2343189
1,3,5-Trimethylbenzene	U		0.00345	0.00862	1	08/14/2024 20:46	WG2343189
Vinyl chloride	U		0.00200	0.00431	1	08/14/2024 20:46	WG2343189
Xylenes, Total	U		0.00152	0.0112	1	08/14/2024 20:46	WG2343189
(S) Toluene-d8	*107*			*75.0-131*		*08/14/2024 20:46*	WG2343189
(S) 4-Bromofluorobenzene	*97.6*			*67.0-138*		*08/14/2024 20:46*	WG2343189
(S) 1,2-Dichloroethane-d4	*90.9*			*70.0-130*		*08/14/2024 20:46*	WG2343189

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1.20	J	0.998	5.45	1	08/18/2024 02:42	WG2344595
C22-C32 Hydrocarbons	U		1.81	5.45	1	08/18/2024 02:42	WG2344595
C32-C40 Hydrocarbons	2.75	J	1.81	5.45	1	08/18/2024 02:42	WG2344595
(S) o-Terphenyl	*57.8*			*18.0-148*		*08/18/2024 02:42*	WG2344595

Chlorinated Acid Herbicides (GC) by Method 8151

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4-D	U		0.00956	0.0953	1	08/15/2024 02:54	WG2340069
Dalapon	U		0.0154	0.0953	1	08/15/2024 02:54	WG2340069
2,4-DB	U		0.0404	0.0953	1	08/15/2024 02:54	WG2340069
Dicamba	U		0.0214	0.0953	1	08/15/2024 02:54	WG2340069
Dichloroprop	U		0.0334	0.0953	1	08/15/2024 02:54	WG2340069
Dinoseb	U		0.00949	0.0953	1	08/15/2024 02:54	WG2340069
MCPA	U		0.603	8.85	1	08/15/2024 02:54	WG2340069
MCPP	U		0.500	8.85	1	08/15/2024 02:54	WG2340069
2,4,5-T	U		0.0116	0.0953	1	08/15/2024 02:54	WG2340069
2,4,5-TP (Silvex)	U		0.0146	0.0953	1	08/15/2024 02:54	WG2340069
(S) 2,4-Dichlorophenyl Acetic Acid	*69.3*			*22.0-132*		*08/15/2024 02:54*	WG2340069

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00313	0.00817	1	08/16/2024 20:38	WG2344249
Acenaphthene	U		0.00285	0.00817	1	08/16/2024 20:38	WG2344249
Acenaphthylene	U		0.00294	0.00817	1	08/16/2024 20:38	WG2344249
Benzo(a)anthracene	U		0.00236	0.00817	1	08/16/2024 20:38	WG2344249

1 Cp
2 Tc
3 Ss
4 Cn
5 Ds
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	U		0.00244	0.00817	1	08/16/2024 20:38	WG2344249
Benzo(b)fluoranthene	0.00252	J	0.00208	0.00817	1	08/16/2024 20:38	WG2344249
Benzo(g,h,i)perylene	U		0.00241	0.00817	1	08/16/2024 20:38	WG2344249
Benzo(k)fluoranthene	U		0.00293	0.00817	1	08/16/2024 20:38	WG2344249
Chrysene	U		0.00316	0.00817	1	08/16/2024 20:38	WG2344249
Dibenz(a,h)anthracene	U		0.00234	0.00817	1	08/16/2024 20:38	WG2344249
Fluoranthene	U		0.00309	0.00817	1	08/16/2024 20:38	WG2344249
Fluorene	U		0.00279	0.00817	1	08/16/2024 20:38	WG2344249
Indeno(1,2,3-cd)pyrene	U		0.00246	0.00817	1	08/16/2024 20:38	WG2344249
Naphthalene	0.0314		0.00555	0.0272	1	08/16/2024 20:38	WG2344249
Phenanthrene	U		0.00314	0.00817	1	08/16/2024 20:38	WG2344249
Pyrene	U		0.00272	0.00817	1	08/16/2024 20:38	WG2344249
1-Methylnaphthalene	0.0249	J	0.00611	0.0272	1	08/16/2024 20:38	WG2344249
2-Methylnaphthalene	U		0.00581	0.0272	1	08/16/2024 20:38	WG2344249
2-Chloronaphthalene	U		0.00634	0.0272	1	08/16/2024 20:38	WG2344249
(S) p-Terphenyl-d14	*64.8*			*23.0-120*		*08/16/2024 20:38*	WG2344249
(S) Nitrobenzene-d5	*69.9*			*14.0-149*		*08/16/2024 20:38*	WG2344249
(S) 2-Fluorobiphenyl	*76.8*			*34.0-125*		*08/16/2024 20:38*	WG2344249

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic	18.0		4.40	10.0	1	08/13/2024 23:02	WG2341134
Barium	129		0.736	5.00	1	08/13/2024 23:02	WG2341134
Cadmium	0.962	J	0.479	2.00	1	08/13/2024 23:02	WG2341134
Chromium	9.49	J	1.40	10.0	1	08/13/2024 23:02	WG2341134
Selenium	19.5		7.35	10.0	1	08/13/2024 23:02	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHG C5 - C12	U		760	2500	25	08/14/2024 10:00	WG2342337
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*08/14/2024 10:00*	WG2342337

Sample Narrative:

L1765907-07 WG2342337: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	1050		33.0	100	1	08/19/2024 12:54	WG2344603
C22-C32 Hydrocarbons	220		33.0	100	1	08/19/2024 12:54	WG2344603
C32-C40 Hydrocarbons	106		33.0	100	1	08/19/2024 12:54	WG2344603
(S) o-Terphenyl	*78.4*			*52.0-156*		*08/19/2024 12:54*	WG2344603

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.6		1	08/13/2024 08:25	WG2340898

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	4.28		0.0434	0.131	1	08/14/2024 15:59	WG2342881
(S) a,a,a-Trifluorotoluene(FID)	*98.0*			*77.0-120*		*08/14/2024 15:59*	WG2342881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	1.40	J	0.957	5.22	1	08/18/2024 02:57	WG2344595
C22-C32 Hydrocarbons	U		1.74	5.22	1	08/18/2024 02:57	WG2344595
C32-C40 Hydrocarbons	U		1.74	5.22	1	08/18/2024 02:57	WG2344595
(S) o-Terphenyl	*57.6*			*18.0-148*		*08/18/2024 02:57*	WG2344595

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic	U		4.40	10.0	1	08/13/2024 23:03	WG2341134
Barium	142		0.736	5.00	1	08/13/2024 23:03	WG2341134
Cadmium	8.42		0.479	2.00	1	08/13/2024 23:03	WG2341134
Chromium	19.9		1.40	10.0	1	08/13/2024 23:03	WG2341134
Selenium	38.8		7.35	10.0	1	08/13/2024 23:03	WG2341134

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHG C5 - C12	U		760	2500	25	08/14/2024 10:22	WG2342337
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*78.0-120*		*08/14/2024 10:22*	WG2342337

Sample Narrative:

L1765907-09 WG2342337: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	255		33.0	100	1	08/19/2024 13:15	WG2344603
C22-C32 Hydrocarbons	36.2	J	33.0	100	1	08/19/2024 13:15	WG2344603
C32-C40 Hydrocarbons	71.0	J	33.0	100	1	08/19/2024 13:15	WG2344603
(S) o-Terphenyl	*75.3*			*52.0-156*		*08/19/2024 13:15*	WG2344603

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.0		1	08/13/2024 08:15	WG2340899

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.33		0.0449	0.135	1	08/14/2024 16:22	WG2342881
(S) a,a,a-Trifluorotoluene(FID)	*98.8*			*77.0-120*		*08/14/2024 16:22*	WG2342881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	1.69	J	0.991	5.41	1	08/18/2024 04:39	WG2344595
C22-C32 Hydrocarbons	2.06	J	1.80	5.41	1	08/18/2024 04:39	WG2344595
C32-C40 Hydrocarbons	U		1.80	5.41	1	08/18/2024 04:39	WG2344595
(S) o-Terphenyl	*49.4*			*18.0-148*		*08/18/2024 04:39*	WG2344595

Method Blank (MB)

(MB) R4106163-1 08/13/24 08:25

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1765901-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1765901-12 08/13/24 08:25 • (DUP) R4106163-3 08/13/24 08:25

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	99.5	99.5	1	0.00523		10

Laboratory Control Sample (LCS)

(LCS) R4106163-2 08/13/24 08:25

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	49.9	99.9	90.0-110	

Method Blank (MB)

(MB) R4106159-1 08/13/24 08:15

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1765914-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1765914-01 08/13/24 08:15 • (DUP) R4106159-3 08/13/24 08:15

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.4	85.3	1	1.28		10

Laboratory Control Sample (LCS)

(LCS) R4106159-2 08/13/24 08:15

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4106395-1 08/13/24 22:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		4.40	10.0
Barium	U		0.736	5.00
Cadmium	U		0.479	2.00
Chromium	U		1.40	10.0
Selenium	U		7.35	10.0

Laboratory Control Sample (LCS)

(LCS) R4106395-2 08/13/24 22:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	1000	1040	104	80.0-120	
Barium	1000	1060	106	80.0-120	
Cadmium	1000	1070	107	80.0-120	
Chromium	1000	1090	109	80.0-120	
Selenium	1000	999	99.9	80.0-120	

L1765835-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1765835-09 08/13/24 22:32 • (MS) R4106395-4 08/13/24 22:36 • (MSD) R4106395-5 08/13/24 22:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	1000	U	1060	1060	106	106	1	75.0-125			0.814	20
Barium	1000	24.8	1070	1060	104	104	1	75.0-125			0.359	20
Cadmium	1000	U	1090	1070	109	107	1	75.0-125			1.46	20
Chromium	1000	2.10	1090	1080	108	108	1	75.0-125			0.586	20
Selenium	1000	U	1040	1060	104	106	1	75.0-125			2.13	20

Method Blank (MB)

(MB) R4106799-2 08/14/24 02:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C5 - C12	U		30.4	100
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R4106799-1 08/14/24 01:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5000	4720	94.4	71.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*102*	*78.0-120*	

Method Blank (MB)

(MB) R4107817-2 08/14/24 13:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	0.0442	J	0.0332	0.100
(S) a,a,a-Trifluorotoluene(FID)	*99.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4107817-1 08/14/24 12:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5.00	5.32	106	72.0-125	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	

Method Blank (MB)

(MB) R4107231-3 08/13/24 23:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
2-Chloroethyl vinyl ether	U		0.575	50.0
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
2,2-Dichloropropane	U		0.161	0.500

Method Blank (MB)

(MB) R4107231-3 08/13/24 23:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Di-isopropyl ether	U		0.105	0.500
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	0.500
1,2,3-Trimethylbenzene	U		0.104	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*95.1*			*80.0-120*
(S) 4-Bromofluorobenzene	*90.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4107231-1 08/13/24 22:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	23.5	94.0	19.0-160	J
Acrylonitrile	25.0	21.5	86.0	55.0-149	
Benzene	5.00	4.69	93.8	70.0-123	
Bromobenzene	5.00	4.21	84.2	73.0-121	
Bromodichloromethane	5.00	4.98	99.6	75.0-120	
Bromochloromethane	5.00	4.75	95.0	76.0-122	
Bromoform	5.00	4.56	91.2	68.0-132	
Bromomethane	5.00	5.08	102	10.0-160	
n-Butylbenzene	5.00	3.89	77.8	73.0-125	
sec-Butylbenzene	5.00	4.21	84.2	75.0-125	
tert-Butylbenzene	5.00	4.29	85.8	76.0-124	
Carbon disulfide	5.00	4.03	80.6	61.0-128	
Carbon tetrachloride	5.00	5.18	104	68.0-126	
Chlorobenzene	5.00	4.29	85.8	80.0-121	
Chlorodibromomethane	5.00	4.30	86.0	77.0-125	
Chloroethane	5.00	4.08	81.6	47.0-150	
2-Chloroethyl vinyl ether	25.0	23.1	92.4	51.0-160	J
Chloroform	5.00	5.28	106	73.0-120	
Chloromethane	5.00	3.83	76.6	41.0-142	
2-Chlorotoluene	5.00	4.42	88.4	76.0-123	
4-Chlorotoluene	5.00	4.19	83.8	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	3.71	74.2	58.0-134	
1,2-Dibromoethane	5.00	4.25	85.0	80.0-122	
Dibromomethane	5.00	4.55	91.0	80.0-120	
1,2-Dichlorobenzene	5.00	4.16	83.2	79.0-121	
1,3-Dichlorobenzene	5.00	4.36	87.2	79.0-120	
1,4-Dichlorobenzene	5.00	4.22	84.4	79.0-120	
Dichlorodifluoromethane	5.00	4.50	90.0	51.0-149	
1,1-Dichloroethane	5.00	4.90	98.0	70.0-126	
1,2-Dichloroethane	5.00	5.15	103	70.0-128	
1,1-Dichloroethene	5.00	4.75	95.0	71.0-124	
cis-1,2-Dichloroethene	5.00	4.89	97.8	73.0-120	
trans-1,2-Dichloroethene	5.00	4.64	92.8	73.0-120	
1,2-Dichloropropane	5.00	4.89	97.8	77.0-125	
1,1-Dichloropropene	5.00	4.74	94.8	74.0-126	
1,3-Dichloropropane	5.00	4.42	88.4	80.0-120	
cis-1,3-Dichloropropene	5.00	4.81	96.2	80.0-123	
trans-1,3-Dichloropropene	5.00	4.51	90.2	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	1.91	38.2	33.0-144	J
2,2-Dichloropropane	5.00	5.22	104	58.0-130	

Laboratory Control Sample (LCS)

(LCS) R4107231-1 08/13/24 22:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Di-isopropyl ether	5.00	4.45	89.0	58.0-138	
Ethylbenzene	5.00	4.37	87.4	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.24	84.8	54.0-138	
2-Hexanone	25.0	20.9	83.6	67.0-149	
n-Hexane	5.00	4.23	84.6	57.0-133	J
Iodomethane	25.0	22.7	90.8	33.0-147	
Isopropylbenzene	5.00	4.09	81.8	76.0-127	
p-Isopropyltoluene	5.00	4.01	80.2	76.0-125	
2-Butanone (MEK)	25.0	22.0	88.0	44.0-160	
Methylene Chloride	5.00	4.94	98.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	20.0	80.0	68.0-142	
Methyl tert-butyl ether	5.00	5.33	107	68.0-125	
Naphthalene	5.00	2.81	56.2	54.0-135	
n-Propylbenzene	5.00	4.23	84.6	77.0-124	
Styrene	5.00	4.18	83.6	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.64	92.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.29	85.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.53	90.6	69.0-132	
Tetrachloroethene	5.00	4.82	96.4	72.0-132	
Toluene	5.00	4.34	86.8	79.0-120	
1,2,3-Trichlorobenzene	5.00	3.54	70.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	3.71	74.2	57.0-137	
1,1,1-Trichloroethane	5.00	5.68	114	73.0-124	
1,1,2-Trichloroethane	5.00	4.52	90.4	80.0-120	
Trichloroethene	5.00	5.19	104	78.0-124	
Trichlorofluoromethane	5.00	5.62	112	59.0-147	
1,2,3-Trichloropropane	5.00	4.79	95.8	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.09	81.8	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.03	80.6	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.36	87.2	76.0-122	
Vinyl acetate	25.0	15.0	60.0	11.0-160	
Vinyl chloride	5.00	4.07	81.4	67.0-131	
Xylenes, Total	15.0	12.4	82.7	79.0-123	
(S) Toluene-d8			*94.5*	*80.0-120*	
(S) 4-Bromofluorobenzene			*91.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*102*	*70.0-130*	

Method Blank (MB)

(MB) R4107736-2 08/14/24 19:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00500
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R4107736-2 08/14/24 19:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	0.000350	J	0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*108*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4107736-1 08/14/24 18:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.526	84.2	10.0-160	
Acrylonitrile	0.625	0.519	83.0	45.0-153	
Benzene	0.125	0.106	84.8	70.0-123	
Bromobenzene	0.125	0.139	111	73.0-121	
Bromodichloromethane	0.125	0.124	99.2	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R4107736-1 08/14/24 18:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.151	121	64.0-132	
Bromomethane	0.125	0.102	81.6	56.0-147	
n-Butylbenzene	0.125	0.135	108	68.0-135	
sec-Butylbenzene	0.125	0.134	107	74.0-130	
tert-Butylbenzene	0.125	0.130	104	75.0-127	
Carbon tetrachloride	0.125	0.107	85.6	66.0-128	
Chlorobenzene	0.125	0.126	101	76.0-128	
Chlorodibromomethane	0.125	0.135	108	74.0-127	
Chloroethane	0.125	0.0940	75.2	61.0-134	
Chloroform	0.125	0.104	83.2	72.0-123	
Chloromethane	0.125	0.0829	66.3	51.0-138	
2-Chlorotoluene	0.125	0.112	89.6	75.0-124	
4-Chlorotoluene	0.125	0.133	106	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.162	130	59.0-130	
1,2-Dibromoethane	0.125	0.138	110	74.0-128	
Dibromomethane	0.125	0.125	100	75.0-122	
1,2-Dichlorobenzene	0.125	0.140	112	76.0-124	
1,3-Dichlorobenzene	0.125	0.141	113	76.0-125	
1,4-Dichlorobenzene	0.125	0.140	112	77.0-121	
Dichlorodifluoromethane	0.125	0.109	87.2	43.0-156	
1,1-Dichloroethane	0.125	0.104	83.2	70.0-127	
1,2-Dichloroethane	0.125	0.107	85.6	65.0-131	
1,1-Dichloroethene	0.125	0.0894	71.5	65.0-131	
cis-1,2-Dichloroethene	0.125	0.106	84.8	73.0-125	
trans-1,2-Dichloroethene	0.125	0.0984	78.7	71.0-125	
1,2-Dichloropropane	0.125	0.119	95.2	74.0-125	
1,1-Dichloropropene	0.125	0.105	84.0	73.0-125	
1,3-Dichloropropane	0.125	0.134	107	80.0-125	
cis-1,3-Dichloropropene	0.125	0.129	103	76.0-127	
trans-1,3-Dichloropropene	0.125	0.144	115	73.0-127	
2,2-Dichloropropane	0.125	0.104	83.2	59.0-135	
Di-isopropyl ether	0.125	0.114	91.2	60.0-136	
Ethylbenzene	0.125	0.120	96.0	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.153	122	57.0-150	
Isopropylbenzene	0.125	0.127	102	72.0-127	
p-Isopropyltoluene	0.125	0.143	114	72.0-133	
2-Butanone (MEK)	0.625	0.749	120	30.0-160	
Methylene Chloride	0.125	0.105	84.0	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.774	124	56.0-143	
Methyl tert-butyl ether	0.125	0.120	96.0	66.0-132	

Laboratory Control Sample (LCS)

(LCS) R4107736-1 08/14/24 18:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.173	138	59.0-130	J4
n-Propylbenzene	0.125	0.132	106	74.0-126	
Styrene	0.125	0.133	106	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.132	106	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.146	117	68.0-128	
1,1,2-Trichlorotrifluoroethane	0.125	0.0998	79.8	61.0-139	
Tetrachloroethene	0.125	0.120	96.0	70.0-136	
Toluene	0.125	0.117	93.6	75.0-121	
1,2,3-Trichlorobenzene	0.125	0.199	159	59.0-139	J4
1,2,4-Trichlorobenzene	0.125	0.176	141	62.0-137	J4
1,1,1-Trichloroethane	0.125	0.113	90.4	69.0-126	
1,1,2-Trichloroethane	0.125	0.136	109	78.0-123	
Trichloroethene	0.125	0.106	84.8	76.0-126	
Trichlorofluoromethane	0.125	0.0966	77.3	61.0-142	
1,2,3-Trichloropropane	0.125	0.149	119	67.0-129	
1,2,4-Trimethylbenzene	0.125	0.137	110	70.0-126	
1,2,3-Trimethylbenzene	0.125	0.141	113	74.0-124	
1,3,5-Trimethylbenzene	0.125	0.133	106	73.0-127	
Vinyl chloride	0.125	0.0999	79.9	63.0-134	
Xylenes, Total	0.375	0.372	99.2	72.0-127	
(S) Toluene-d8			*108*	*75.0-131*	
(S) 4-Bromofluorobenzene			*95.5*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R4108869-1 08/19/24 08:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C12-C22 Hydrocarbons	U		33.0	100
C22-C32 Hydrocarbons	U		33.0	100
C32-C40 Hydrocarbons	U		33.0	100
(S) o-Terphenyl	*53.5*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4108869-2 08/19/24 08:27 • (LCSD) R4108869-3 08/19/24 08:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	750	915	761	122	101	50.0-150			18.4	20
C22-C32 Hydrocarbons	750	786	654	105	87.2	50.0-150			18.3	20
(S) o-Terphenyl				*90.0*	*65.5*	*52.0-156*				

Method Blank (MB)

(MB) R4109319-1 08/18/24 01:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*66.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4109245-2 08/18/24 01:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	24.8	99.2	50.0-150	
C22-C32 Hydrocarbons	25.0	19.3	77.2	50.0-150	
(S) o-Terphenyl			*62.6*	*18.0-148*	

Method Blank (MB)

(MB) R4106335-1 08/13/24 13:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2,4-D	U		0.547	2.00
Dalapon	U		0.344	2.00
2,4-DB	U		0.302	2.00
Dicamba	U		0.245	2.00
Dichloroprop	U		1.04	2.00
Dinoseb	U		0.250	2.00
MCPA	U		13.1	100
MCPP	U		66.0	100
2,4,5-T	U		0.258	2.00
2,4,5-TP (Silvex)	U		0.335	2.00
Pentachlorophenol	U		0.111	1.00
(S) 2,4-Dichlorophenyl Acetic Acid	*95.2*			*14.0-158*

Laboratory Control Sample (LCS)

(LCS) R4106335-2 08/13/24 13:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	2.50	2.12	84.8	50.0-120	P
Dalapon	2.50	2.04	81.6	32.0-120	P
2,4-DB	2.50	1.86	74.4	53.0-140	
Dicamba	2.50	2.03	81.2	51.0-120	
Dichloroprop	2.50	2.09	83.6	55.0-127	
Dinoseb	2.50	2.08	83.2	36.0-134	P
MCPA	250	259	104	10.0-160	
MCPP	250	202	80.8	10.0-160	
2,4,5-T	2.50	1.97	78.8	54.0-120	
2,4,5-TP (Silvex)	2.50	1.95	78.0	50.0-125	
Pentachlorophenol	0.500	0.288	57.6	41.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*81.8*	*14.0-158*	

L1766137-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1766137-03 08/13/24 15:00 • (MS) R4106335-3 08/13/24 15:10 • (MSD) R4106335-4 08/13/24 15:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	2.50	U	7.88	6.24	315	250	1	50.0-120	E J5 P	E J3 J5	23.2	20
Dalapon	2.50	U	2.16	2.04	86.4	81.6	1	32.0-120			5.71	20

L1766137-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1766137-03 08/13/24 15:00 • (MS) R4106335-3 08/13/24 15:10 • (MSD) R4106335-4 08/13/24 15:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-DB	2.50	U	3.03	3.86	121	154	1	53.0-140		J3 J5 P	24.1	20
Dicamba	2.50	U	2.69	2.53	108	101	1	51.0-120	P		6.13	20
Dichloroprop	2.50	U	9.52	9.66	381	386	1	55.0-127	E J5 P	E J5 P	1.46	20
Dinoseb	2.50	U	2.58	2.13	103	85.2	1	36.0-134	P	P	19.1	20
MCPA	250	U	410	297	164	119	1	10.0-160	J5	P	32.0	40
MCPP	250	U	257	208	103	83.2	1	10.0-160		P	21.1	23
2,4,5-T	2.50	U	2.59	2.34	104	93.6	1	54.0-120		P	10.1	20
2,4,5-TP (Silvex)	2.50	U	2.48	2.13	99.2	85.2	1	50.0-125		P	15.2	20
Pentachlorophenol	0.500	U	0.348	0.297	69.6	59.4	1	41.0-120			15.8	20
(S) 2,4-Dichlorophenyl Acetic Acid					*90.4*	*71.6*		*14.0-158*				

Method Blank (MB)

(MB) R4107083-1 08/14/24 12:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*73.1*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4107083-2 08/14/24 12:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0724	86.9	40.0-120	
Dalapon	0.0833	0.0662	79.5	15.0-120	J
2,4-DB	0.0833	0.0710	85.2	25.0-143	
Dicamba	0.0833	0.0616	73.9	43.0-120	J
Dichloroprop	0.0833	0.0675	81.0	32.0-129	J
Dinoseb	0.0833	0.0302	36.3	10.0-120	J
MCPA	8.33	6.21	74.5	31.0-121	J
MCPP	8.33	5.73	68.8	28.0-133	J
2,4,5-T	0.0833	0.0749	89.9	41.0-120	
2,4,5-TP (Silvex)	0.0833	0.0659	79.1	42.0-120	J
(S) 2,4-Dichlorophenyl Acetic Acid			*71.3*	*22.0-132*	

Method Blank (MB)

(MB) R4107899-3 08/15/24 21:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0190	0.0500
Acenaphthene	U		0.0190	0.0500
Acenaphthylene	U		0.0171	0.0500
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(g,h,i)perylene	U		0.0184	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Fluoranthene	U		0.0270	0.100
Fluorene	U		0.0169	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
Phenanthrene	U		0.0180	0.0500
Pyrene	U		0.0169	0.0500
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
2-Chloronaphthalene	U		0.0682	0.250
(S) Nitrobenzene-d5	*135*			*31.0-160*
(S) 2-Fluorobiphenyl	*127*			*48.0-148*
(S) p-Terphenyl-d14	*139*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4107899-1 08/15/24 20:29 • (LCSD) R4107899-2 08/15/24 20:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	2.09	2.26	104	113	67.0-150			7.82	20
Acenaphthene	2.00	2.04	2.18	102	109	65.0-138			6.64	20
Acenaphthylene	2.00	2.14	2.29	107	115	66.0-140			6.77	20
Benzo(a)anthracene	2.00	2.21	2.32	111	116	61.0-140			4.86	20
Benzo(a)pyrene	2.00	2.19	2.30	109	115	60.0-143			4.90	20
Benzo(b)fluoranthene	2.00	2.37	2.49	118	124	58.0-141			4.94	20
Benzo(g,h,i)perylene	2.00	2.40	2.44	120	122	52.0-153			1.65	20
Benzo(k)fluoranthene	2.00	2.26	2.38	113	119	58.0-148			5.17	20
Chrysene	2.00	2.33	2.48	117	124	64.0-144			6.24	20
Dibenz(a,h)anthracene	2.00	2.36	2.42	118	121	52.0-155			2.51	20
Fluoranthene	2.00	2.36	2.55	118	128	69.0-153			7.74	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4107899-1 08/15/24 20:29 • (LCSD) R4107899-2 08/15/24 20:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	2.00	2.23	2.51	111	126	64.0-136			11.8	20
Indeno(1,2,3-cd)pyrene	2.00	2.27	2.34	114	117	54.0-153			3.04	20
Naphthalene	2.00	2.19	2.32	109	116	61.0-137			5.76	20
Phenanthrene	2.00	2.26	2.44	113	122	62.0-137			7.66	20
Pyrene	2.00	2.18	2.34	109	117	60.0-142			7.08	20
1-Methylnaphthalene	2.00	2.34	2.46	117	123	66.0-142			5.00	20
2-Methylnaphthalene	2.00	2.26	2.40	113	120	62.0-136			6.01	20
2-Chloronaphthalene	2.00	2.19	2.32	109	116	64.0-140			5.76	20
(S) Nitrobenzene-d5				*133*	*141*	*31.0-160*				
(S) 2-Fluorobiphenyl				*128*	*138*	*48.0-148*				
(S) p-Terphenyl-d14				*136*	*140*	*37.0-146*				

Method Blank (MB)

(MB) R4108091-2 08/16/24 17:40

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*62.5*			*23.0-120*
(S) Nitrobenzene-d5	*54.1*			*14.0-149*
(S) 2-Fluorobiphenyl	*67.7*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4108091-1 08/16/24 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0601	75.1	50.0-126	
Acenaphthene	0.0800	0.0595	74.4	50.0-120	
Acenaphthylene	0.0800	0.0613	76.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0611	76.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0526	65.8	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0556	69.5	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0566	70.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0518	64.8	49.0-125	
Chrysene	0.0800	0.0627	78.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0580	72.5	47.0-125	
Fluoranthene	0.0800	0.0654	81.8	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4108091-1 08/16/24 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0648	81.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0553	69.1	46.0-125	
Naphthalene	0.0800	0.0586	73.3	50.0-120	
Phenanthrene	0.0800	0.0614	76.8	47.0-120	
Pyrene	0.0800	0.0586	73.3	43.0-123	
1-Methylnaphthalene	0.0800	0.0613	76.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0581	72.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0646	80.7	50.0-120	
(S) p-Terphenyl-d14			*70.0*	*23.0-120*	
(S) Nitrobenzene-d5			*67.5*	*14.0-149*	
(S) 2-Fluorobiphenyl			*81.9*	*34.0-125*	

L1765730-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1765730-04 08/16/24 19:09 • (MS) R4108091-3 08/16/24 19:27 • (MSD) R4108091-4 08/16/24 19:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0780	U	0.0572	0.0544	73.3	69.7	1	10.0-145			5.02	30
Acenaphthene	0.0780	U	0.0555	0.0559	71.2	71.7	1	14.0-127			0.718	27
Acenaphthylene	0.0780	U	0.0566	0.0572	72.6	73.3	1	21.0-124			1.05	25
Benzo(a)anthracene	0.0780	U	0.0538	0.0508	69.0	65.1	1	10.0-139			5.74	30
Benzo(a)pyrene	0.0780	U	0.0507	0.0465	65.0	59.6	1	10.0-141			8.64	31
Benzo(b)fluoranthene	0.0780	U	0.0508	0.0456	65.1	58.5	1	10.0-140			10.8	36
Benzo(g,h,i)perylene	0.0780	U	0.0529	0.0476	67.8	61.0	1	10.0-140			10.5	33
Benzo(k)fluoranthene	0.0780	U	0.0508	0.0469	65.1	60.1	1	10.0-137			7.98	31
Chrysene	0.0780	U	0.0578	0.0545	74.1	69.9	1	10.0-145			5.88	30
Dibenz(a,h)anthracene	0.0780	U	0.0540	0.0502	69.2	64.4	1	10.0-132			7.29	31
Fluoranthene	0.0780	U	0.0600	0.0575	76.9	73.7	1	10.0-153			4.26	33
Fluorene	0.0780	U	0.0612	0.0604	78.5	77.4	1	11.0-130			1.32	29
Indeno(1,2,3-cd)pyrene	0.0780	U	0.0514	0.0453	65.9	58.1	1	10.0-137			12.6	32
Naphthalene	0.0780	U	0.0570	0.0677	73.1	86.8	1	10.0-135			17.2	27
Phenanthrene	0.0780	U	0.0582	0.0572	74.6	73.3	1	10.0-144			1.73	31
Pyrene	0.0780	U	0.0538	0.0516	69.0	66.2	1	10.0-148			4.17	35
1-Methylnaphthalene	0.0780	U	0.0578	0.0637	74.1	81.7	1	10.0-142			9.71	28
2-Methylnaphthalene	0.0780	U	0.0548	0.0728	70.3	93.3	1	10.0-137		J3	28.2	28
2-Chloronaphthalene	0.0780	U	0.0609	0.0608	78.0	77.9	1	29.0-120			0.164	24
(S) p-Terphenyl-d14					*24.1*	*61.3*		*23.0-120*				
(S) Nitrobenzene-d5					*66.5*	*73.3*		*14.0-149*				
(S) 2-Fluorobiphenyl					*31.6*	*71.2*		*34.0-125*	J2			

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
P	RPD between the primary and confirmatory analysis exceeded 40%.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

PH-10BDH6021

TRC-4072A202R

F016

ALL SHADED AREAS are for LAB USE ONLY

Company: PRIMA Env	Billing Information: Same, Attn Chris Brooks
Address: 5070 Robert J Mathews Pkwy, Ste 300 el Dorado Hills, CA 95762	
Report To: Cindy Schreier	Email To: data@primaenvironmental.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Geosyntec-Simplot	State: CA / County/City: El Dorado / Time Zone Collected: [✓] PT [ ] MT [ ] CT [ ] ET
Phone: 916-939-7300 Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [✓] No
Collected By (print):	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: 5 days / Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [✓] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [✓] Yes [ ] No / Analysis: Metals

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO	DRO/ORO	Herbicides	PAHs-SIM	VOCs	Metals (As, Ba, Cd, Cr, Se)	Lab Sample # / Comments
Geosyn-Sim PC-B	Water		8-8-24	11:00				11	X	X	X	X	X	X	-01
Geosyn-Sim PC-B (so)	Soil		8-8-24	11:00				1	X	X	X	X	X		-02
Geosyn-Sim AP-pH Low B	Water		8-8-24	11:00				11	X	X	X	X	X	X	-03
Geosyn-Sim AP-pH Low B(SO)	Soil		8-8-24	11:00				1	X	X	X	X	X		-04
Geosyn-Sim AP-pH High B	Water		8-8-24	11:00				11	X	X	X	X	X	X	-05
Geosyn-Sim AP-pH High B (SO)	Soil		8-8-24	11:00				1	X	X	X	X	X		-06
Geosyn-Sim AP-HP Low B	Water		8-8-24	11:00				5	X	X				X	-07
Geosyn-Sim AP-HP Low B (SO)	Soil		8-8-24	11:00				1	X	X					-08
Geosyn-Sim AP-HP High B	Water		8-8-24	11:00				5	X	X				X	-09
Geosyn-Sim AP-HP High B (SO)	Soil		8-8-24	11:00				1	X	X					-10

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY: L1765907

Lab Sample # / Comments:

3.4+0.3=3.7mrAB

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 4041 0471 9458

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: _____oC

Cooler 1 Therm Corr. Factor: _____oC

Cooler 1 Corrected Temp: _____oC

Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
PRIMA	8/8/24 ~1700	FedEx	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
		Charles Stevenson	8-9-24 8:45
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____