Site Assessment Report

Forest Creek Road Dump Site
DEQ Task Order 067-23-05
ECSI No. 6328

Prepared for:

Oregon Department of Environmental Quality

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The material and data in this report were prepared under the supervision and direction of the undersigned.

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Abbreviations

ACM	asbestos-containing material
bgs	below ground surface
CDL	Clandestine Drug Lab
COPC	chemical of potential concern
the County	Josephine County
CSM	conceptual site model
DEQ	Oregon Department of Environmental Quality
DU	decision unit
ECSI	Environmental Cleanup Site Information
EPA	U.S. Environmental Protection Agency
HASP	health and safety plan
ISM	incremental sampling methodology
LOF	locality of facility
MFA	Maul Foster & Alongi, Inc.
MRL	method reporting limit
OHA	Oregon Health Authority
OWRD	Oregon Water Resources Department
PAH	polycyclic aromatic hydrocarbons
PID	photoionization detector
PPE	personal protective equipment
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RBC	risk-based concentration
SA	site assessment
SOP	standard operating procedure
T&E	threatened and endangered
TCRA	Time Critical Removal Action
TEQ	toxicity equivalence
the Site	the Forest Creek Road Dump Site, 113 Forest Creek Road, Selma, Oregon
TPH	total petroleum hydrocarbons
VOC	volatile organic compound

1 Introduction

Maul Foster & Alongi, Inc. (MFA) prepared this report to present the results of a site assessment (SA) conducted at the Forest Creek Road Dump site located at 113 Forest Creek Road in Selma, Oregon (the Site) (Figure 1-1). The Site is listed in the Oregon Department of Environmental Quality's (DEQ) Your DEQ Online database as Site ID 6328. Cleanup and assessment of the Site for future redevelopment are ongoing as directed by the DEQ. This report was prepared for the DEQ under Task 7 of Task Order 067-23-05.

1.1 Purpose

The SA activities were conducted to evaluate several areas of potential surface soil contamination from historical Site activities and determine if further investigation, subsurface investigation, or remedial action is required at the Site. Specifically, the assessment activities included the collection of: (1) composite soil samples from areas with potential impacts (e.g., former drum storage area, burn areas observed during waste removal); and (2) incremental sampling methodology (ISM) surface soil sampling for the remaining areas of the Site.

Chemical data from the investigation activities described in this report were screened against DEQ's risk-based concentrations (RBCs) (DEQ 2024) to assess whether chemicals of potential concern (COPCs) at the Site pose an unacceptable risk to human or ecological health for current and likely future receptors and exposure pathways.

1.2 Scope of Work

Between December 17 and 19, 2024, SA activities were conducted at the Site in general accordance with the SA Work Plan (MFA 2024). The scope of work consisted of the following general tasks:

- Collect composite surface soil samples from the former drum storage area and two burn areas identified during the solid waste removal activities completed at the Site in 2023
- Conduct ISM sampling to assess surface soil conditions across the remainder of the Site
- Manage investigation-derived waste
- Perform a Level 1 Ecological Scoping Visit and documentation
- Develop a conceptual site model (CSM) for the Site, including a beneficial land and water use survey
- Perform a risk screening of data for potentially complete exposure pathways to evaluate whether unacceptable risks are present
- Prepare an assessment report discussing the above activities, the analytical results, and the potential risks posed by chemical contamination at the Site, if present.

The results of these activities are discussed in further detail in this report.

2 Background

2.1 Property Location, History, and Description

The Site is located in the southwest corner of the southeast corner of section 34, township 38 south, range 7 west of the Willamette Meridian in Selma, Oregon (Figure 1-1). The Site is comprised of one Josephine County (the County) tax parcel designated as Map & Tax lot No. 380734B000010900 TL109.

The property is zoned RR-5 (rural residential, minimum 5-acres) and is approximately 5.05 acres. Forest Creek Road borders the Site on the east, a residence lies to the north, and there is undeveloped property to the west and south of the Site. Thompson Creek, designated as essential salmonid habitat by the Oregon Department of State Lands, and Haven Creek (also known as East Fork Thompson Creek) both pass through the Site prior to their confluence north of the Site. Prior to federal removal actions performed in 2022, there were several structures located on-site, which were demolished with most materials remaining on-site. There were numerous campers, trailers, and boats, some of which occupants of the Site reportedly used as unpermitted dwellings and Clandestine Drug Labs (CDL). A 1,152 square foot residence constructed in 1972 was among the structures demolished during the removal actions.

The Site is rural and is not connected to municipal water or sewer services. At present, there are no known septic systems or water supply wells located on-site. A potential well casing was discovered during removal activities. It was an 8-inch steel casing placed vertically to a depth of approximately 7 feet. The casing did not appear to have been used as an actual well as the casing bottom was dry, and contained sticks, leaves, and rocks. There was no indication that the casing had been used for dumping. Oregon Health Authority (OHA) was made aware of the discovery of the potential well, and approved backfilling the casing with grout to prevent any future potential use. The location of the backfilled casing is shown on Figure 2-1.

During the SA field activities, the Site was unoccupied and there was no evidence of recent illicit property use (i.e. no evidence of habitation or illegal dumping). A chain-link fence and vehicle trench were observed along the eastern portion of the property along Forest Creek Road limiting access to the property.

2.2 Geology and Hydrology

The Site is located in the western portion of the Klamath Mountains. The oldest rocks in the vicinity of the Site are Triassic/Jurassic-aged metamorphic rocks of the Applegate Group, marine-sedimentary rocks of the Sexton Mountain Terrane, and Jurassic-aged marine sedimentary rocks of the Galice Formation of the Western Klamath Terrane. These complexes of exotic terranes were accreted to the western boundary of the ancestral North American Plate and are associated with varying degrees of uplift, deformation, and metamorphoses. Most of the vicinity is dominated by these marine sedimentary, igneous, and metamorphic rocks of Jurassic and Triassic age. Over time, uplift and erosion have carved out deep valleys that have accumulated more recent Quaternary-aged deposits of unconsolidated sediments including alluvial, fluvial, and lacustrine deposits—left by the current and ancestral rivers and streams—and more broadly by the Missoula and Bonneville floods (Murray).

According to nearby water supply well logs listed in the Oregon Water Resources Department (OWRD) well log database, depths to groundwater in the vicinity of Forest Creek Road recorded at the time of drilling ranged between 18 and 80 feet below ground surface (bgs). Static depths to water measured in completed water supply wells ranged from 8 to 50 feet bgs. Site-specific groundwater data are not available or were otherwise not identified during the preparation of this Work Plan.

Topography at the Site and the vicinity is generally flat but gradually slopes down to the north-northwest toward the confluence of Thompson Creek and Haven Creek approximately 500 feet northwest of the Site; Site elevation ranges between approximately 1,630 and 1,650 feet above mean sea level. Both Haven Creek and Thompson Creek bisect the Site property as they flow from the south to the north forming small erosional channels through the middle of the Site. The creeks join just north of the Site and after some distance join the Illinois River (a tributary of the Rogue River) approximately nine miles west-northwest of the Site. Based on the topography of the Site and the flow direction of the creeks that bisect the property, groundwater is expected to flow to the north-northwest.

2.3 Previous Environmental Activities

According to Josephine County Sheriff's Department and Josephine County Code Enforcement accounts, the Site had received solid wastes for decades. The Site has contained various wastes, including automobiles, vehicle parts, waste tires, car batteries, numerous containers with waste oils and automotive fluids, appliances, demolition materials, asbestos-containing materials (ACM), tools, toys, furniture, and household garbage throughout the property.

There have been numerous complaints regarding the property, and because of inaction and the potential risk posed to human health and the environment, the County filed a "Complaint for Injunctive Relief and Penalties" to take possession of the property on February 20, 2019. On July 25, 2019, the General Judgement and Money Award placed the property and all contents into receivership with County staff. DEQ and the County entered into an Access Agreement providing for DEQ's legal access to the Property and for removal of the property's contents.

The Site is assigned No. 6328 in DEQ's Your DEQ Online database. On April 9, 2019, DEQ declared the Site a Solid Waste Orphan Site under Oregon Revised Statute 465.381 and Oregon Administrative Rule 340-122-0530. This designation enabled DEQ to use the Solid Waste Orphan Site Account to fund Site investigation, stabilization, and clean-up activities.

Because the entire Site was considered a CDL by OHA, all waste evaluation and removal activities at the Site were required to be overseen by an OHA-licensed drug lab decontamination contractor, including the preparation of the Removal Action Work Plan and final reporting.

DEQ issued Task Order 73-18-12 to MFA in January 2020 and held a preliminary Site visit with MFA on February 4, 2020. MFA issued a request for bid documents for drug lab clean up and waste removal services in early June 2020 and held a pre-bid Site walk with prospective bidders (licensed drug lab decontamination firms) on June 23, 2020. Three prospective bidders attended the Site walk, but only one submitted a bid.

To reduce project costs, in 2021 DEQ evaluated whether to reduce the scope of the project, focusing only on the portion of the property between the road and Haven Creek (the "front portion"), saving the portion of the property between Haven Creek and Thompson Creek (the "middle portion") and the portion of the property west of Thompson Creek (the "back portion") for the future to avoid stream crossings. DEQ also determined that if the CDL & waste removal subcontractor oversaw all work, it could subcontract some of the Site solid waste removal work (i.e., work that does not involve contact with any waste on the Site) to non-CDL firm(s).

The project was on hold between September 2020 and April 2021 while DEQ, OHA, and the County were in negotiations regarding how to move forward with the project. In July 2021, DEQ determined that the anticipated scope of work would be to remove all drug-lab contaminated materials from only the "front portion" of the property to eliminate stream crossings from the scope of work.

In January 2022, DEQ began coordination with the U.S. Environmental Protection Agency (EPA) Superfund and Emergency Management Division to evaluate the need for a Time Critical Removal Action (TCRA) for hazardous materials at the Site. A Removal Site Evaluation was performed by EPA contractors in February and March 2022, with results identifying ACM, hazardous substances, and contaminated soil. EPA conducted the TCRA in November 2022, which included removal and disposal of ACM, chemicals, petroleum, and other potential hazardous materials. These actions resulted in the removal of 20 cubic yards of ACM and 16 tons of petroleum-contaminated soil from six different locations at the Site. EPA and its contractors also segregated solid waste to the extent practicable and staged materials near the main access off Forest Creek Road for future removal actions by DEQ. The TCRA by EPA changed the scope of work for this Site, with the remaining wastes including only solid wastes such as vehicles, wood waste, construction debris, waste tires, and general household trash, necessitating revision of MFA's subcontractor solicitation approach.

MFA initiated a second subcontractor solicitation in May 2023, and in November and December 2023, MFA coordinated the removal of all remaining solid waste at the property by Anderson Environmental Contracting, LLC of Kelso, Washington, including all building remnants and vehicles. After OHA approved the Removal Action Report and the application for Certificate and Affidavit of Completion and Compliance, it issued a Certificate of Fitness for the Site in a letter dated April 29, 2024. DEQ, however, has subsequently determined that further site assessments are necessary to evaluate the necessity of interim removal action measures. These subsequent environmental investigations (i.e., the surface soil evaluation described in this work plan) and removal of contaminated material from the Site do not need to be overseen by an OHA-licensed drug lab decontamination contractor.

The historical mismanagement of waste and the illicit manufacture of drugs at the property potentially released hazardous substances at the Site, including fuels, lubricants, solvents containing ammonia, benzene, chloroform, ethyl ether, hexane, hydrochloric acid, hydrogen peroxide, hydroiodic acid, lead acetate, lithium aluminum hydride, mercuric chloride, palladium, red phosphorus, sodium cyanide, and sulfuric acid, cadmium, lead, zinc, as well as phthalates into soils. DEQ does not know if tire fires occurred at the property, but if so, they can release harmful emissions into the air that can disperse over a wide area. Such emissions can contain carcinogens, dioxin, heavy metals, sulfur oxides, and volatile organic compounds. Combustion of tires can also result in the generation of pyrolytic oil, which can contain hazardous heavy metals such as arsenic, cadmium, chromium, lead, and carcinogenic compounds such as polycyclic aromatic hydrocarbons.

3 Current and Reasonably Likely Future Uses of Land and Beneficial Uses of Water

To evaluate the potential risks posed by the Site to human health and ecological receptors, the current and reasonably likely future land and water uses within the locality of the facility (LOF) were identified (the "LOF" is defined below). The results of this evaluation are presented below.

3.1 Locality of Facility

The LOF is any point where a human or an ecological receptor contacts or is reasonably likely to come into contact with chemical constituents from the facility (i.e., the Site). The LOF considers the likelihood of the chemical constituents migrating over time. Chemical data from the Site explorations are typically used to approximate the LOF. It is assumed that the LOF includes the entirety of the Site for surface and subsurface soils. Although the majority of stormwater is assumed to infiltrate on the Site, there could be discharge to the two creeks that cross the Site. The extent of LOF downgradient of the Site, through water migration has not been established.

3.2 Land Use

A land use survey was performed for the LOF in general accordance with the DEQ guidance for consideration of land use (DEQ 1998a). The current and reasonably likely future uses of land and water at the Site determine the types of human or ecological receptors that could contact impacted environmental media.

According to the County Assessor's Office, the Site is zoned RR5, which is defined as exclusive to rural residential property use. According to the County, All adjacent properties are also zoned RR5. The County has control of the property through forfeiture and will likely develop the property in the future for public use. The property will likely be rezoned to preclude residential property use, however, until the redevelopment is determined, potential current and future receptors in the LOF include residential, as well as occupational, construction, and excavation workers. Current and reasonable likely future ecological receptors include local birds, mammals, fish, insects, and plants.

3.3 Groundwater Use

A water use survey was performed for the LOF in general accordance with the DEQ guidance for beneficial water use (DEQ 1998b). A search of the OWRD database and OWRD Well Report Mapping Tool (OWRD 2025a) located 70 wells within approximately one-mile distance of the Site. The wells were completed to total drilled depth of between 20 to 500 feet bgs. First water for the wells ranged between 18 and 365 feet bgs. Approximately 16 of the wells are not associated with an address, and are instead tied to the township, range, and section within one-mile distance of the Site.

Locations that could be mapped were reviewed. Five wells are believed to be within 500 feet of the Site. Those wells are detailed below and well logs are presented in Appendix A.

- JOSE 6043—No address provided, mapped based on township, range, section, and quarter-quarter. The domestic water well was drilled to a completed depth of 100 feet bgs, with first water measured at 90 feet bgs. The lithology indicates that clays were encountered from 0 to 22 feet bgs, heavy clay and cracked rock from 22 to 90 feet bgs, and fractured shall from 90 to 100 feet bgs. The well was drilled in October 1976.
- JOSE 59954—Located on a parcel that is present 250 feet north of the Site. The domestic water well was drilled to a completed depth of 100 feet bgs. The well was cased from 2 to 68 feet bgs, with a bentonite seal from 0 to 18 feet bgs. Lithology indicates that clays were present as a significant portion of the soils from 0 to 30 feet bgs, before transitioning to sands and gravels. The well was drilled in November 2016.
- JOSE 60749—Located on a parcel that is present 200 feet east of the Site, across Forest Creek Road. The domestic water well was drilled to a completed depth of 200 feet bgs. The well was cased from 2 to 200 feet bgs, with a bentonite seal from 0 to 18 feet bgs. Lithology indicates that clays were encountered for the first 11 feet before transitioning to shales. The well was drilled in December 2019.
- JOSE 10871—Located on a parcel that is present 300 feet south of the Site. The domestic water well was drilled to a completed depth of 100 feet bgs. The well was cased from 0 to 80 feet, with a bentonite seal from 1 to 18 feet bgs. Lithology indicates that clays with gravel were encountered from 0 to 65 feet, before transitioning to medium gravels. The well was drilled in November 1981.
- JOSE 6046— No address provided, mapped based on township, range, section, and quarter-quarter. The domestic water well was drilled to a completed depth of 60 feet bgs with a casing from 0 to 44 feet bgs. Lithology indicates that clays with boulders or clays with gravel were encountered for the first 45 feet before transitioning to boulders with gravel. The well was drilled in August 1969.

MFA did not conduct a door-to-door water use survey as part of this SA.

3.4 Surface Water

The Site is crossed by two named surface water features, Haven Creek and Thompson Creek. Haven Creek flows south to north, combining with Thompson Creek north of the Site. As described in Section 2.2, both Haven Creek and Thompson Creek are tributaries of the Illinois River, which itself is a tributary of the Rogue River. According to the U.S. Fish and Wildlife Service's National Wetland Inventory, these creeks are riverine habitat where crossing the Site (USFW 2025).

In addition to ecological use of the surface water, five water rights permits are associated with the property adjacent to the south of the Site (OWRD 2025b). An additional three water right permits are on file for use of surface water from Thompson Creek within one-mile downstream of the Site. Certificate 13838 is associated with irrigation use of water from Thompson Creek, approximately 0.25 miles downstream of the Site. A copy of Certificate 13838 is provided in Appendix A.

3.5 Beneficial Water Use Determination

MFA reviewed available water supply well logs and identified a total of 70 wells present within one mile of the Site. A municipal water source was not identified in the surrounding area. Five wells are believed to be within 500 feet of the Site and are registered for domestic use. Ecological and water use rights are identified in Haven Creek and Thompson Creek and are present within the presumed LOF. Based on these findings, beneficial uses of surface/groundwater are present within the LOF.

4 Site Investigation Activities

The SA activities were determined based on data gaps identified during previous Site activities. The planned activities include the collection of surface soil samples from areas of suspected contamination to identify potential contaminant impacts and to screen remaining areas of the Site to inform future cleanup actions (if warranted), development, and reuse. This section presents the scope of work that will be performed to accomplish these activities.

SA activities performed to complete the scope of work identified in Section 1.2 included the collection of composite and ISM soil samples from the surface soils for chemical analysis and assessment of ecological conditions of the Site (see Section 4.4). These assessment activities were performed in general accordance with the DEQ-approved SA Work Plan and DEQ's Brownfield Program Quality Assurance Project Plan (DEQ 2016) and Decision Unit Characterization (DEQ 2020a) guidance document. A photograph log is included as Appendix B. This section presents the scope of work conducted to accomplish these activities.

4.1 Preparatory Activities

Site Health and Safety Plan. MFA prepared a site-specific health and safety plan (HASP) for the SA activities. The HASP was prepared in general accordance with the Occupational Safety and Health Act and Oregon Administrative Rules (OARs). A copy of the HASP maintained onsite for use by MFA staff during the field activities.

Underground Utility Location. A public utility notification request to mark any subsurface structures in the vicinity of the Site was submitted through the Oregon Utility Notification Center.

Property Access and Work Notification. Site access is controlled by the County, who is the current property owner. DEQ and the County have entered into an Access Agreement that provides for DEQ's legal access to the Site property to facilitate the environmental investigation of—and removal or remedial actions at—the property. MFA notified the DEQ and the County of the proposed work schedule, and access to the Site was handled through the Access Agreement.

Site Security and Safety Precautions. For the safety of Site workers, all Site work was conducted by MFA in pairs, where no one person was on-site alone, and field personnel checked in with an in-office member of the project team at the end of each field day. Additionally, MFA was joined by a representative of the Josephine County Sheriff's Office during an initial Site walk on the first day of the field event to assess the current property status and to ensure that no one had been residing at the Site. The Josephine County Sheriff's Office was available to respond to the Site during all Site work.

MFA staff inspected the "tank" trench and associated chain-link fence that had been erected along the eastern Site boundary during prior waste removal activities. The fence remained in-place and in adequate condition to block and deter people from accessing the Site by vehicle from Forest Creek Road. During the SA activities, there was no evidence of recent or ongoing waste dumping, habitation, or illicit activity.

4.2 Assessment Activities

4.2.1 Surface Soil Assessment – Composite Sampling

On December 17 and 18, 2024, composite surface soil samples were collected in general accordance with MFA SOPs 4 and 5 (see Appendix C) and the methods described in the SA Work Plan (MFA 2024). The purpose of the composite surface soil samples were intended to assess the three areas of concern identified during the waste removal activities completed in December 2023. The three areas selected for additional assessment include:

- The former drum storage area near the entrance to the Site along Forest Creek Road
- An area of stained soil (possible burn area) underneath the former tire pile at the Site
- A former burn area observed on the back portion of the property for the characterization of visibly blackened soils from the burning of unknown materials.

Composite surface soil sample locations are shown on Figure 4-1.

Five-point composite soil samples were collected from each of the areas discussed above. A duplicate sample was also collected from the suspected burn area. At each location, the sample was comprised of five subsamples that were collected from similarly spaced locations within the composite sample area. Each subsample was collected from a depth of 0 to 6-inches bgs, comprised of a homogenous soil texture, and with the same approximate volume. All samples were collected using stainless-steel hand tools that were decontaminated between each sampling location to prevent cross-contamination. Decontamination activities were completed in accordance with SOP 1 (Appendix C).

4.2.2 Surface Soil Assessment – ISM Sampling

Between December 17 and December 23, 2024, MFA collected four primary and two duplicative ISM samples at the Site. Surface soil ISM samples were collected in accordance with MFA SOPs 4 and 5 (Appendix C). The ISM approach (DEQ 2020a) was used to collect representative surface soil samples from larger areas of the Site.

ISM is a structured composite sampling and processing protocol that reduces data variability and increases the probability of identifying areas of elevated concentrations, thereby increasing data representativeness. ISM obtains data that are more representative of average concentrations than data from discrete or conventional composite samples and is particularly appropriate when the receptors of concern are expected to be exposed to larger areas (i.e., multiple areas within a property) rather than discrete locations. ISM provides a single sample for analysis with a concentration representative of the mean concentration in a predefined area termed a decision unit (DU).

The Site has been segregated into four areas selected for further evaluation based on historical Site use and observation made during past Site work. The four areas (DUs) selected for ISM sampling are shown on Figure 4-1 and described below:

- DU-1: The "*front portion*" east end of the parcel on the north side of the property, between Haven Creek and Forest Creek Road. This excludes the former drum storage and tire pile storage areas.
- DU-2: The "*front portion*" east end of the parcel on the south side of the property, between Haven Creek and Forest Creek Road.
- DU-3: The "*middle portion*" of the parcel between Thompson Creek and Haven Creek.
- DU-4: The "*back portion*" of the parcel, west of Thompson Creek to the western parcel boundary, excluding the burn area.

Subsamples (called increments) were manually collected from 0 to 6-inches bgs, following removal of the surface vegetation, at multiple locations placed in a systematic random sampling scheme in each DU, as detailed in the SA Work Plan (MFA 2024). The increments were combined into one ISM sample for each DU, processed by the laboratory, and analyzed to obtain representative average contaminant concentrations for COPCs within that DU. Fifty increments were collected for each ISM sample. Sampling was conducted using protocols developed by the Interstate Technology & Regulatory Council and DEQ guidance documents (ITRC 2020, DEQ 2020a).

Increment locations for each DU were selected based on a systematically random sampling scheme. The locations of each DU and the increment locations are shown on Figure 4-1. During the collection of ISM surface soil samples from the front (eastern) portion of the property (i.e., DU-1 and DU-2), significant gravels and cobbles were encountered in the surface soil, making sample collection with hand tools difficult and laborious. Minor adjustments of less than a few feet were made in the field to avoid obstacles (e.g., tree roots, rocks, etc.).

For quality assurance, duplicate and triplicate ISM samples were collected in DU-1. To avoid impacting DU sample concentrations from areas already assessed by the composite samples, ISM increments were not collected from areas detailed in Section 4.2.1.

4.2.3 Soil Sampling for Volatiles Analysis

ISM and composite soil samples collected for analysis of VOCs were collected in accordance with Section 4.1.4 of the Work Plan (MFA 2024). Sample aliquots for volatiles analysis were collected from surface soil in the immediate vicinity of each increment (within one-foot) using a laboratory-supplied Terra Core Sampler™ and collected using the EPA Method 5035 methodology in accordance with MFA SOP 5 (Appendix C). Each aliquot, consisting of a 5-gram plug of soil was added to a larger sample container and preserved with methanol—supplied by the laboratory—added in the field. In addition, a 2-ounce unpreserved laboratory-supplied soil jar was collected from each DU and each composite soil sample location for dry weight.

4.3 Waste Handling and Disposal

Wastes generated during this project consisted of small quantities of excess soil and decontamination water generated during decontamination of non-disposable field equipment. Following composite and ISM sampling, any excess soil was replaced at the sampling location and covered with removed vegetation, if any. Decontamination water was land-applied at the Site. Disposable sampling equipment and personal protective equipment (PPE) was disposed of as solid waste offsite.

4.4 Ecological Scoping

Ecological features were assessed by evaluating the habitat within the ecological risk assessment study area (i.e., the LOF). Appendix D presents the Level 1 Scoping Checklist used in this evaluation, which was obtained from DEQ's Conducting Ecological Risk Assessments (DEQ 2020b). Ecologically important species were not observed at the Site, however habitat to support plants, birds, and mammals was identified. As stated in Section 3.4, the National Wetland Inventory classifies the portions of Thompson and Haven Creek that are present on the Site as riverine habitat (USFW 2025). A map showing wetlands and surface water features in the vicinity of the Site is provided in Appendix D.

5 Chemical Analyses and Results

The soil samples were submitted to Pace Analytical National Laboratory in Mount Juliet, Tennessee, under their Price Agreement with the State of Oregon. The laboratory analytical testing for dioxins and furans were subcontracted by Pace Analytical National to Eurofins Environmental Testing. MFA prepared a data validation memorandum that presents the quality assurance/quality control review of the data. The results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose. Additional discussion regarding the data quality is available in the data validation memorandum. Copies of the laboratory analytical reports and data validation memorandum are presented in Appendix E.

5.1 Analyses Performed

Composite and ISM surface soil samples were analyzed for following COPCs:

- Gasoline-range total petroleum hydrocarbons (TPH) by Northwest Method NWTPH-Gx
- Diesel-range and oil-range TPH by Northwest Method NWTPH-Dx
- Total priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by EPA Method 6010D/7471B
- Pesticides by EPA Method 8081B
- Herbicides by EPA Method 8151A

- VOCs by EPA Method 8260D
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM
- Dioxins and furans by EPA Method 1613.

5.2 Chemical Results

The analytical results are presented in Table 5-1, and laboratory reports and the data validation memorandum are presented in Appendix E.

5.2.1 Composite Soil Results

Diesel-range TPH, metals, VOCs, PAHs, and dioxin/furans were detected above the method reporting limits in the composite soil samples analyzed. Results are summarized as follows:

Gasoline-range TPH—None of the composite samples had detections above the method reporting limits.

Diesel-range TPH—Diesel-range TPH was detected in each of the samples. Concentrations ranged from 12.3 to 56.1 (estimated) milligrams per kilogram (mg/kg) in composite soil samples.

Motor oil-range TPH—Motor oil-range TPH was detected in each of the samples. Concentrations ranged from 46.1 to 173 mg/kg in composite soil samples.

Total metals—Each of the metals analyzed were detected in at least one composite sample. Detections summaries are presented below:

- Antimony was detected in one sample (Burn Area duplicate) at an estimated concentration of 1.28 mg/kg.
- Arsenic was detected in all samples at concentrations ranging from 2.67 (estimated) to 3.54 mg/kg.
- Beryllium was detected in three of the four samples, ranging between 0.101 (estimated) to 0.644 mg/kg.
- Cadmium was detected in two samples at concentrations of 0.597 and 3.79 mg/kg.
- Chromium was detected in all samples at concentrations ranging from 74.5 to 186 mg/kg.
- Copper was detected in all samples at concentrations ranging from 44 to 119 mg/kg.
- Lead was detected in all samples at concentrations ranging from 16.2 to 28.6 mg/kg.
- Nickel was detected in all samples at concentrations ranging from 56.7 to 213 mg/kg.
- Mercury was detected in two samples at concentrations of 0.0545 to 0.0812 mg/kg.
- Selenium was detected in all samples at concentrations ranging from 1.97 (estimated) to 3.02 mg/kg.
- Silver was detected in all samples at concentrations ranging from 1.53 to 2.87 mg/kg.
- Thallium was detected in all samples at concentrations ranging from 1.45 (estimated) to 2.44 (estimated) mg/kg.
- Zinc was detected in all samples at concentrations ranging from 118 to 289 mg/kg.

Chlorinated herbicides—None of the composite samples had detections above the method reporting limits.

Pesticides—None of the composite samples had detections above the method reporting limits.

VOCs—Each of the composite samples had detections of individual VOCs analytes. Detection summaries for VOCs are presented below:

- 4-Isopropyltoluene was detected in three samples ranging between 0.00489 (estimated) to 0.00768 (estimated) mg/kg.
- 4-Methyl-2-pentanone was detected in one sample (Tire Pile) at 0.0258 (estimated) mg/kg.
- Chlorobenzene was detected in one sample (Tire Pile) at 0.000425 (estimated) mg/kg.
- Styrene was detected in one sample (Tire Pile) at 0.000304 (estimated) mg/kg.
- Toluene was detected in all of the samples ranging between 0.00186 (estimated) to 0.00388 (estimated) mg/kg.
- Total xylenes was detected in two samples at 0.0012 (estimated) and 0.00437 (estimated) mg/kg.

PAHs—One analyte was detected in the PAH analysis. Naphthalene was detected at 0.00618 (estimated) mg/kg in the Burn Area duplicate sample. All other analytes were not detected above method reporting limits.

Dioxin/Furans—Each of the composite samples had detections of individual dioxin/furans analytes. Key detection of dioxin/furans are presented below:

- 1,2,3,4,6,7,8-HpCDD was detected in three samples ranging between 14.1 to 251 picograms per gram (pg/g).
- 1,2,3,4,6,7,8-HpCDF was detected in two samples at 20.7 and 429 pg/g.
- 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8-PeCDD, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 2,3,4,7,8-PeCDF, and 2,3,7,8-TCDD were each detected only in the Tire Pile sample. Individual concentrations are shown on Table 5-1.
- 2,3,7,8-TCDF was detected in two samples at 1.05 and 14.3 pg/g.
- OCDD was detected in each of the samples ranging between 41.9 and 1,320 pg/g.
- OCDF was detected in two samples at 33.9 and 244 pg/g.

5.2.2 ISM Soil Results

Gasoline and diesel-range TPH, metals, VOCs, PAHs, and dioxin/furans were detected above the method reporting limits in the ISM soil samples analyzed. Results are summarized as follows:

Gasoline-range TPH—Gasoline-range TPH was detected in three of the six samples, ranging in concentration between 4.35 (estimated) to 8.77 (estimated) mg/kg.

Diesel-range TPH—Diesel-range TPH was detected in each of the samples. Concentrations ranged from 16.6 to 94.2 mg/kg.

Motor oil-range TPH—Motor oil-range TPH was detected in each of the samples. Concentrations ranged from 98.4 to 431 mg/kg.

Total metals—Ten of the thirteen metals were detected in at least one of the ISM samples. Detections summaries are presented below:

- Arsenic was detected in all samples at concentrations ranging from 2.08 (estimated) to 3.28 mg/kg.
- Beryllium was detected in all samples at concentrations ranging from 0.189 (estimated) to 0.623 mg/kg.
- Cadmium was detected in all samples at concentrations ranging from 0.325 (estimated) to 1.9 mg/kg.
- Chromium was detected in all samples at concentrations ranging from 81.9 to 179 mg/kg.
- Copper was detected in all samples at concentrations ranging from 49.6 to 225 mg/kg.
- Lead was detected in all samples at concentrations ranging from 21.3 to 61.2 mg/kg.
- Nickel was detected in all samples at concentrations ranging from 78.2 to 242 mg/kg.
- Mercury was detected in all samples at concentrations ranging from 0.0421 (estimated) to 0.184 mg/kg.
- Silver was detected in all samples at concentrations ranging from 0.156 (estimated) to 0.464 (estimated) mg/kg.
- Zinc was detected in all samples at concentrations ranging from 134 to 1,040 mg/kg.

Chlorinated herbicides—None of the composite samples had detections above the method reporting limits.

Pesticides—None of the composite samples had detections above the method reporting limits.

VOCs—Each of the composite samples had detections of individual VOCs analytes. Detection summaries for VOCs are presented below:

- 1,2,4-Trimethylbenzene was detected in two samples at 0.00288 (estimated) and 0.00363 (estimated) mg/kg.
- 2-Butanone was detected in one sample (DU1 duplicate) at 0.118 (estimated) mg/kg.
- 4-Isopropyltoluene was detected in all samples ranging between 0.00556 (estimated) to 0.0724 (estimated) mg/kg.
- 4-Methyl-2-pentanone was detected in one sample (DU1 primary) at 0.00903 (estimated) mg/kg.
- Acetone was detected in one sample (DU1 primary) at 0.169 (estimated) mg/kg.
- Benzene was detected in four of the six samples at concentrations ranging from 0.000703 (estimated) to 0.00431 mg/kg.
- Chlorobenzene was detected in one sample (DU2) at 0.00148 (estimated) mg/kg.
- Ethylbenzene was detected in two samples at 0.00186 (estimated) and 0.00232 (estimated) mg/kg.

- Styrene was detected in three samples ranging from 0.00037 (estimated) to 0.00119 (estimated) mg/kg.
- Toluene was detected in all of the samples ranging between 0.00263 (estimated) to 0.00617 (estimated) mg/kg.
- Trichlorofluoromethane (Freon 11) was detected in two samples at 0.00345 (estimated) and 0.00437 (estimated) mg/kg.
- Total xylenes was detected in four samples ranging between 0.0033 (estimated) to 0.00766 (estimated) mg/kg.

PAHs—Samples DU1 through DU3 each had a number of PAH detections. DU4 did not have detections above the method reporting limit. Detections are presented below:

- 2-Methylnaphthalene was detected in one sample (DU1 primary) at a concentration of 0.00676 (estimated) mg/kg.
- Benzo(b)fluoranthene was detected in five of the six samples at concentrations ranging from 0.00199 (estimated) to 0.0031 (estimated) mg/kg.
- Benzo(ghi)perylene was detected in four of the six samples at concentrations ranging from 0.00304 (estimated) to 0.00451 (estimated) mg/kg.
- Fluoranthene was detected in five of the six samples at concentrations ranging from 0.00243 (estimated) to 0.0051 (estimated) mg/kg.
- Naphthalene was detected in two of the six samples at concentrations of 0.00833 (estimated) and 0.00894 (estimated) mg/kg.
- Phenanthrene was detected in five of the six samples at concentrations ranging from 0.00339 (estimated) to 0.00749 mg/kg.
- Pyrene was detected in five of the six samples at concentrations ranging from 0.0022 (estimated) to 0.00499 (estimated) mg/kg.

Chlorinated herbicides—None of the ISM samples had detections above the method reporting limits.

Pesticides—None of the ISM soil samples had detections above the method reporting limits.

Dioxin/Furans—Each of the ISM samples had detections of individual dioxin/furans analytes. Key detection of dioxin/furans are presented below:

- 1,2,3,4,6,7,8-HpCDD was detected in all of the samples ranging between 24.2 to 149 pg/g.
- 1,2,3,4,6,7,8-HpCDF was detected in four samples at concentrations ranging from 47.2 to 226 pg/g.
- 1,2,3,4,7,8,9-HpCDF was detected in one sample (DU2) at a concentration of 8.57 pg/g.
- 1,2,3,4,7,8-HxCDF was detected in five samples at concentrations ranging from 6.78 to 45.8 pg/g.
- 1,2,3,6,7,8-HxCDD was detected in four samples at concentrations ranging from 5.15 to 15 pg/g.
- 1,2,3,6,7,8-HxCDF was detected in four samples at concentrations ranging from 7.99 to 38.6 pg/g.

- 1,2,3,7,8,9-HxCDD was detected in three samples at concentrations ranging from 5.79 to 14.7 pg/g.
- 1,2,3,7,8-PeCDD was detected in one sample (DU2) at a concentration of 7.64 pg/g.
- 1,2,3,7,8-PeCDF was detected in two samples at concentrations of 6.58 and 17.9 pg/g.
- 2,3,4,6,7,8-HxCDF was detected in five samples at concentrations ranging from 10.2 to 51.8 pg/g.
- 2,3,4,7,8-PeCDF was detected in five samples at concentrations ranging from 7 to 39.7 pg/g.
- 2,3,7,8-TCDF was detected in five samples at concentrations ranging from 4.08 to 20 pg/g.
- OCDD was detected in all samples at concentrations ranging from 214 to 1,030 pg/g.
- OCDF was detected in all samples at concentrations ranging from 15.1 to 65.8 pg/g.

6 Conceptual Site Model

A conceptual site model summarizes the potential receptors and exposure pathways to contaminants at the Site under current or reasonably anticipated future conditions. To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure, based on current and reasonably likely future use. DEQ publishes RBCs for contaminants commonly encountered for different types of exposure scenarios. RBCs are conservative estimates of protective levels of contaminants in soil, groundwater, and air.

6.1 Sources

The sources of contamination at the Site are due to releases of hazardous substances to the shallow soils from illegal disposal of wastes as detailed in Section 2.3. Dumping of waste products at and burning of materials on the Site appear to have ceased since the acquisition of the Site by the County in 2019 and the waste removal actions completed in 2024.

6.2 Exposure Pathways and Receptors

Current and reasonably likely future land uses (as discussed in Section 3.0) at the Site were used to identify potentially complete current and future exposure pathways at the Site. The zoning defined by the County allows residential and commercial uses of the area, and the Site is currently undergoing redevelopment. Residential and commercial uses associated with agricultural uses are also evident in the surrounding area. Therefore, potential human health receptors present at the Site include residents, occupational workers, construction workers, and excavation workers. Beneficial water uses (as discussed in Section 3.5) are present within, adjacent to, or downgradient of the LOF. Groundwater wells are noted on the adjacent property to the south and at least 4 other groundwater wells are within 500 feet of the Site. Surface water rights are also present to the north and south of the Site.

The table below shows the exposure pathways for the Site:

Pathway	Potential Receptor	Complete Pathway?	Basis for Selection/Exclusion
SOIL			
Ingestion, dermal contact, and inhalation	Residential	Potential	Potential future residents, trespassers, or occupational workers could come in contact with impacted Site surface soil. See Section 3 for additional information.
	Occupational		
	Construction worker	Potential	There is the potential for future construction and/or excavation workers to come in contact with impacted Site soils.
	Excavation worker		
	Ecological	Yes	Ecological receptors could come in contact with impacted Site surface soil.
Volatilization to outdoor air	Residential	Potential	Potential future residents, trespassers, or occupational workers could be exposed to contaminates through outdoor air.
	Occupational		
Leaching to groundwater	Residential	Yes	No on-site wells were identified, however, nearby properties have domestic water wells and future residential and occupational use is allowed under current zoning.
	Occupational		
GROUNDWATER/SURFACE WATER			
Ingestion and inhalation from tap water	Residential	Potential	There is potential that this pathway is complete. There are a number of wells nearby the Site and the LOF for groundwater/surface water has not been established.
	Occupational	Potential	
Vapor intrusion into buildings and volatilization to outdoor air	Residential	Potential	This is a potentially complete pathway, as the groundwater/surface water LOF has not been established.
	Occupational	Potential	
Groundwater in excavation	Construction and excavation worker	Potential	Depth to groundwater is not currently known. There are two surface water bodies that cross the Site. Groundwater well logs for the greater area indicate that productive aquifers typically encounter first water at depths exceeding 18 bgs, however, clays present in the near surface soils (shallower than 18 feet bgs) could cause perching of groundwater.

Notes: Yes = Pathway is complete; No = Pathway is incomplete; Potential = Pathway may be potentially complete in the future

Additionally, based on the findings of ecological scoping (see Section 4.4 and Appendix D), ecological receptors at the Site could include threatened and endangered (T&E) and non-T&E birds and mammals.

6.3 Risk-Based Screening of Analytical Data

The data collected during this scope of work were compared to the following applicable DEQ RBCs (i.e., screening criteria for complete or potentially complete pathways, as discussed above):

- Ingestion, dermal contact, and inhalation (soil direct contact) for residential, occupational, construction, and excavation workers
- Volatilization to outdoor air for residential and occupational receptors (soil)
- Leaching to groundwater (soil) for residential and occupational receptors.

Results were also screened against DEQ's background metal concentrations (DEQ 2013), ecological risk screening for mammals and birds, and direct toxicity to plants and invertebrates (DEQ 2020b).

6.3.1 Soil

Soil analytical results are presented in Table 5-1.

6.3.1.1 Background Metals

Concentrations of metals occur naturally in soil; therefore, the total metals data was compared against the DEQ-established background concentrations for the Klamath Mountain range. Detections above applicable screening levels, but below regional background were not considered exceedances of a screening level.

6.3.1.2 Ingestion, Dermal Contact, and Inhalation (Direct Contact)

Composite Soil—Each of the composite soil samples exceeded the direct contact RBCs for residential receptor exposure to dioxin/furan toxicity equivalence (TEQ). The TEQ, is a calculated value that is the sum of each congener concentration multiplied by a corresponding mammalian toxicity equivalence factor value that is established by World Health Organization (Van den Berg, M. et al. 2006). For this calculation, non-detect values for individual congeners are multiplied by one-half the reporting limit. Additionally, the Tire Pile composite sample also exceeded the occupational exposure RBC.

ISM Soil—Each of the ISM samples exceeded the one or more direct contact RBCs for dioxin/furan TEQ. Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded residential and occupational direct contact RBC. Sample DU4 exceeded the residential direct contact RBC.

6.3.1.3 Volatilization to Outdoor Air

None of the samples exceeded any of the RBCs for volatilization to outdoor air.

6.3.1.4 Leaching to Groundwater

Composite Soil—Samples collected from the Drum Area and Tire Pile areas exceed the residential leaching to groundwater RBC for dioxin/furan TEQ. The Tire Pile sample also exceeded the RBC for occupational leaching to groundwater.

ISM Soil

- Lead—Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded the leaching to groundwater RBC for residential and occupational receptors.

- Dioxin/Furan TEQ—Samples DU1 (primary, duplicate, and triplicate) and DU3 exceeded the residential leaching to groundwater RBC, and DU2 exceeded both residential and occupational leaching to groundwater RBCs.

6.3.1.5 Ecological RBCs for Direct Toxicity to Plants and Invertebrates

Composite Soil—Each of the composite soil samples exceeded the direct toxicity for one or more total metals concentrations. Exceedances are summarized below:

- Copper—The Tire Pile sample exceeded the plant and invertebrates direct toxicity RBCs.
- Selenium—Burn Area (primary and duplicate), Drum Area, and Tire Pile samples exceeded the plant direct toxicity RBC. None of these detections exceeded direct toxicity for invertebrates.
- Thallium—Burn Area (primary and duplicate), Drum Area, and Tire Pile samples exceeded the plant direct toxicity RBC.
- Zinc—Burn Area (primary and duplicate) and Tire Pile samples exceeded the plant and invertebrates direct toxicity RBCs.

ISM Soil

- Diesel+Oil—The diesel+oil ecological RBC is a calculated sum of the detection of diesel-range TPH and motor oil-range TPH values. Samples DU1 (primary), DU2, and DU4 all exceed the plant and invertebrate direct toxicity RBCs.
- Copper—DU2 sample exceeded the plant and invertebrates direct toxicity RBCs.
- Mercury—DU1 (primary) sample exceeded the invertebrates direct toxicity RBC.
- Zinc—DU1 (primary, duplicate, and triplicate), DU2, and DU3 samples exceeded the plant and invertebrates direct toxicity RBCs.

6.3.1.6 Ecological RBCs for Ground Feeding Birds

Composite Soil

- Cadmium—The Drum Area sample exceeded the T&S and non-T&E RBCs, while the Tire Pile sample only exceeded the T&E RBC.
- Copper—Tire Pile sample exceeded the T&E and non-T&E RBCs.
- Selenium—Burn Area (primary and duplicate), Drum Area, and Tire Pile samples exceeded T&E and non-T&E RBCs.
- Silver—The Tire Pile sample exceeded the T&E RBC.
- Zinc—Burn Area (primary and duplicate) and Tire Pile samples exceeded the T&E and non-T&E RBCs.
- Dioxin/furans—All of the composite samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E and non-T&E pathways.

ISM Soil

- Cadmium—Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded the T&E RBC. Sample DU2 also exceeded the non-T&E RBC.
- Copper—DU2 sample exceeded the T&E and non-T&E RBCs.

- Lead— Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded the T&E and non-T&E RBCs.
- Mercury—DU1 (primary) sample exceeded the T&E and non-T&E RBCs.
- Zinc—DU1 (primary, duplicate, and triplicate), DU2, and DU3 samples exceeded the T&E and non-T&E RBCs.
- Dioxin/furans—All of the ISM samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E and non-T&E pathways.

6.3.1.7 Ecological RBCs for Top Consumer Birds

Composite Soil

- Cadmium—The Drum Area sample exceeded the T&E RBC.
- Copper—Tire Pile sample exceeded the T&E RBC.
- Zinc—Tire Pile sample exceeded the T&E RBC.
- Dioxin/furans—All of the composite samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E pathway.

ISM Soil

- Cadmium—Samples DU1 (duplicate) and DU2 exceeded the T&E RBC.
- Copper—DU2 sample exceeded the T&E RBC.
- Mercury—DU1 (primary) sample exceeded the T&E RBC.
- Zinc—DU1 (primary, duplicate, and triplicate), DU2, and DU3 samples exceeded the T&E RBC. DU2 also exceeded the non-T&E RBC.
- Dioxin/furans—All of the ISM samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E pathway.

6.3.1.8 Ecological RBCs for Ground Feeding Mammals

Composite Soil

- Antimony—The Burn Area (duplicate) sample exceeded the T&E RBC.
- Cadmium—The Drum Area and Tire Pile samples exceeded the T&E RBC.
- Copper—Tire Pile sample exceeded the T&E and non-T&E RBCs.
- Selenium—Burn Area (primary and duplicate), Drum Area, and Tire Pile samples exceeded T&E and non-T&E RBCs.
- Thallium— Burn Area (primary and duplicate), Drum Area, and Tire Pile samples exceeded T&E RBC.
- Zinc—Tire Pile sample exceeded the T&E RBC.
- Dioxin/furans—The Tire Pile sample exceeded the T&E and Non-T&E RBCs for all dioxin/furan congeners, except for 1,2,3,7,8,9-HxCDF. All composite soil samples exceeded the T&E and non-T&E RBCs for Dioxin/furan TEQ.

ISM Soil

- Cadmium—Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded the T&E RBC.
- Copper—DU2 sample exceeded the T&E and non-T&E RBCs.
- Lead— Samples DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded the T&E RBC.
- Zinc—DU1 (primary, duplicate, and triplicate), DU2, and DU3 samples exceeded the T&E RBC. DU2 also exceeded the non-T&E RBC.
- Dioxin/furans—All of the ISM samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E pathway. DU1 (primary, duplicate, and triplicate), DU2, and DU3 exceeded several the T&E and non-T&E RBCs, while DU4 exceeded several T&E RBCs.

6.3.1.9 Ecological RBCs for Top Consumer Mammals

Composite Soil

- Dioxin/furans—All composite soil samples exceeded the T&E and non-T&E RBCs for Dioxin/furan TEQ and at least one congener.

ISM Soil

- Dioxin/furans—All of the ISM samples exceeded one or more of the individual congeners or the dioxin/furan TEQ RBCs for T&E and non-T&E pathways.

6.4 Contaminants of Concern

Each of the COPCs were detected in surface soil samples at the Site, with the exception of chlorinated herbicides and pesticides. Additionally, there were no exceedances of applicable screening levels for gasoline-range TPH, VOCs, or PAHs, as noted in Section 6.3. Based on the results of this site assessment, the contaminants of concern for the Site include TPH (diesel- and oil-range), total metals (antimony, cadmium, copper, lead, mercury, selenium, silver, thallium, and zinc), and dioxin/furans.

7 Summary and Conclusions

The SA activities included ecological scoping and collection of shallow soil samples (composite and ISM) for chemical analysis.

A CSM was developed to identify potentially complete exposure pathways whereby site contamination could potentially pose an unacceptable risk to human and ecological receptors. Chemical data from this investigation was screened against DEQ's RBCs for the identified exposure pathways and receptors.

Based on the results of the assessment, there is a potential risk to current and future residential and occupational receptors at the Site through direct contact (dioxin/furans TEQ) and leaching to groundwater pathways (lead and dioxin/furans TEQ). However, groundwater well logs in the vicinity of the Site indicate that clays are typically encountered from the surface to depths exceeding 60 feet bgs and first water for productive aquifers exceeds 18 feet bgs. Therefore, the leaching to groundwater pathway is likely incomplete.

Ecological risks were also identified, with exceedances of ecological RBCs noted for diesel+oil, total metals (cadmium, copper, lead, mercury, selenium, silver, thallium, and zinc), and both individual congeners and TEQ for dioxin/furans. In certain instances, the detected concentrations of these COPCs exceed their respective ecological RBCs by an order of magnitude or more.

The LOF includes the Site, but off-site impacts have not been evaluated (e.g., soil, surface water, and groundwater).

No impacts to the ecological study area and surrounding area attributable to contaminated environmental media were observed.

Soil that exceeds human health and ecological RBCs for potentially complete pathways was identified in the top 6 inches at the Site. Based on the findings of this assessment, MFA identified the following data gaps:

- Surface soils in proximity to the creeks have the potential to be eroded, entrained in surface water, and deposited as sediment. Surface waters and sediment at and downgradient of the Site (Thompson and Haven Creeks) have not been assessed. Surface water rights users are present within 0.25-mile downgradient of the Site and ecological receptors are present in the nearby riverine habitat.
- Soil below a depth of 6 inches has not been evaluated at the Site. This could result in exposure to human and ecological receptors (i.e., burrowing insects and mammals).

References

DEQ. 1998a. *Consideration of Land Use in Environmental Remedial Actions*. Oregon Department of Environmental Quality. July 1. Updated October 2017.

DEQ. 1998b. *Guidance for Conducting Beneficial Water Use Determinations at Environmental Cleanup Sites*. Oregon Department of Environmental Quality. July 1. Updated November 2017.

DEQ. 2013. *Development of Oregon Background Metals Concentrations in Soil*. Oregon Department of Environmental Quality, Land Quality Division Cleanup Program, Portland, Oregon. March.

DEQ. 2016. *Quality Assurance Project Plan, Brownfield Program.* Oregon Department of Environmental Quality: Portland, OR. November.

DEQ. 2020a. *Decision Unit Characterization.* Oregon Department of Environmental Quality. September 14.

DEQ. 2020b. *Conducting Ecological Risk Assessments.* Oregon Department of Environmental Quality. September 14.

DEQ. 2024. Table: Risk-Based Concentrations for Individual Chemicals. Oregon Department of Environmental Quality, Environmental Cleanup Program. March.

ITRC. 2020. *Technical/Regulatory Guidance, Incremental Sampling Methodology (ISM) Update*. The Interstate Technology & Regulatory Council. October.

MFA. 2024. Site Assessment Work Plan. Forest Creek Road Dump Site. Prepared for Oregon DEQ. Maul Foster & Alongi. November 26.

Murray, R.B., unpublished. *Compilation and Synthesis of Geologic Mapping for the Upper Illinois River Basin, Josephine and Curry Counties, Oregon*. Oregon Department of Geology and Mineral Industries.

OWRD. 2025a. Well Report Query. Oregon Water Resources Department. Accessed February. https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx

OWRD. 2025b. Water Rights Information Query. Oregon Water Resources Department. Accessed February. https://apps.wrd.state.or.us/apps/wr/wrinfo/Default.aspx?t=1

USFW. 2025. National Wetland Inventory Surface Waters and Wetlands Mapper. U.S. Department of Fish and Wildlife. Accessed February. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

Van den Berg, M. et al. 2006. T*he 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds.* Toxicological Sciences, 93(2): 223–241

Limitations

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

Figures

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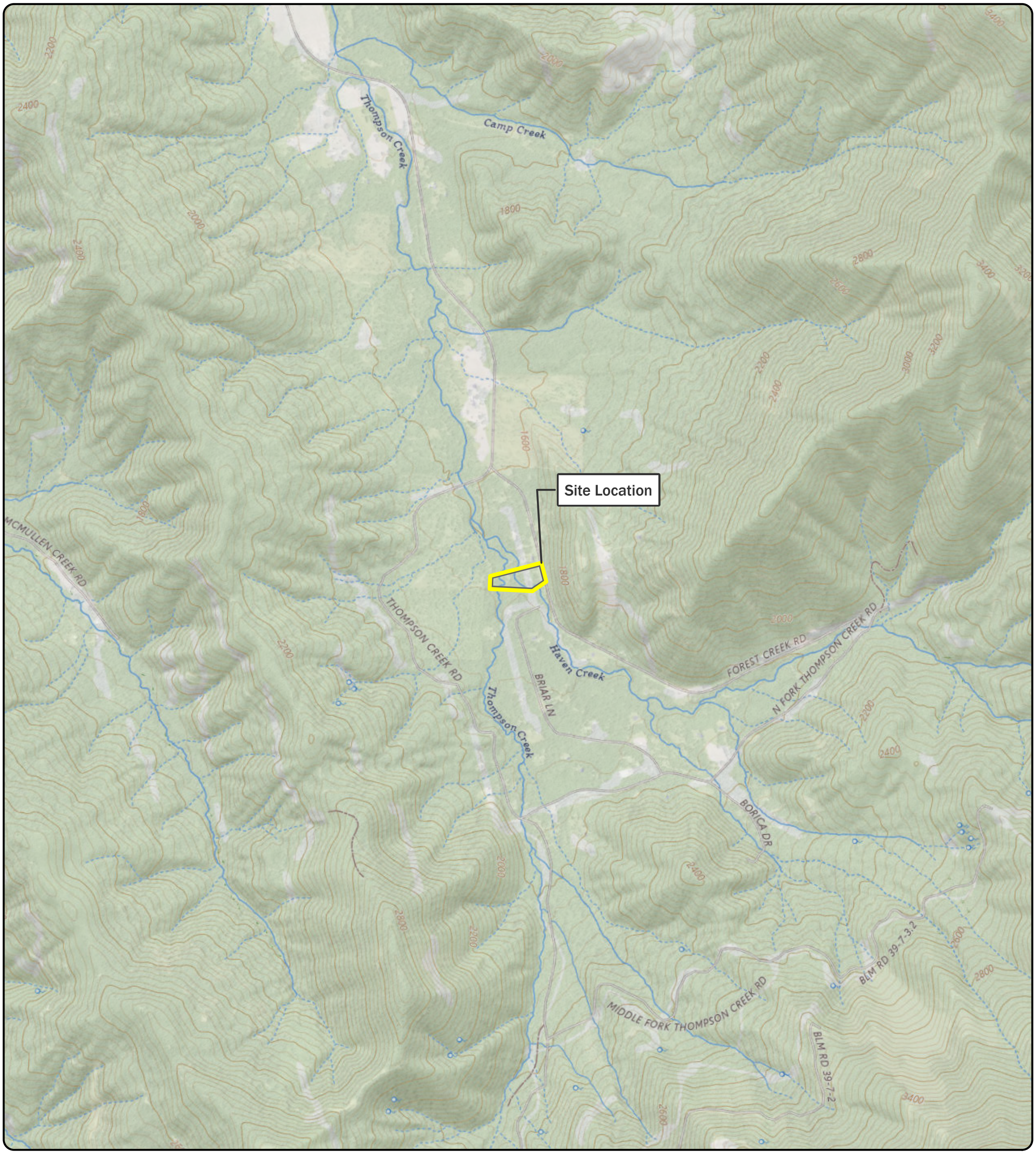

Notes
U.S. Geological Survey 7.5-minute topographic quadrangle (2020): Holland.
Township 38 south, range 7 west, section 34.

Data Source
Property boundary obtained from Josephine County.

Legend

Site Boundary

Figure 1-1
Site Location

Forest Creek Road Dump Site
Site Assessment Report
Oregon Department of Environmental Quality
113 Forest Creek Road
Selma, OR

0 2,000
Feet

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Path: X:\0785.12\001\Pro\M0785_12_001_005.aprx\Fig 1-1 Site Location
Print Date: 10/31/2024
Reviewed By: mwhitson
Produced By: jroberts
Project: M0785.12.001

Figure 2-1
Site Features

Forest Creek Road Dump Site
Site Assessment Report
Oregon Department of
Environmental Quality
113 Forest Creek Road
Selma, OR

Legend

- Field Observations
- Stream
- Property Boundary
- Tax Lot

Note
Field observations logged by MFA staff on December 12, 2023 using real-time kinematic global navigation satellite service receiver.

0 60
Feet

Data Sources
Aerial photograph (2022) obtained from the Oregon Geospatial Enterprise Office; lidar topography (2011) obtained from the Oregon Department of Geology and Mineral Industries; tax lot data obtained from Josephine County.

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Project: M0785.12.001 Produced By: sturner Reviewed By: mwhitson Print Date: 11/1/2024 Path: X:\0785.12\001\Pro\M0785_12_001_005.aprx\Fig 2-1 Site Features

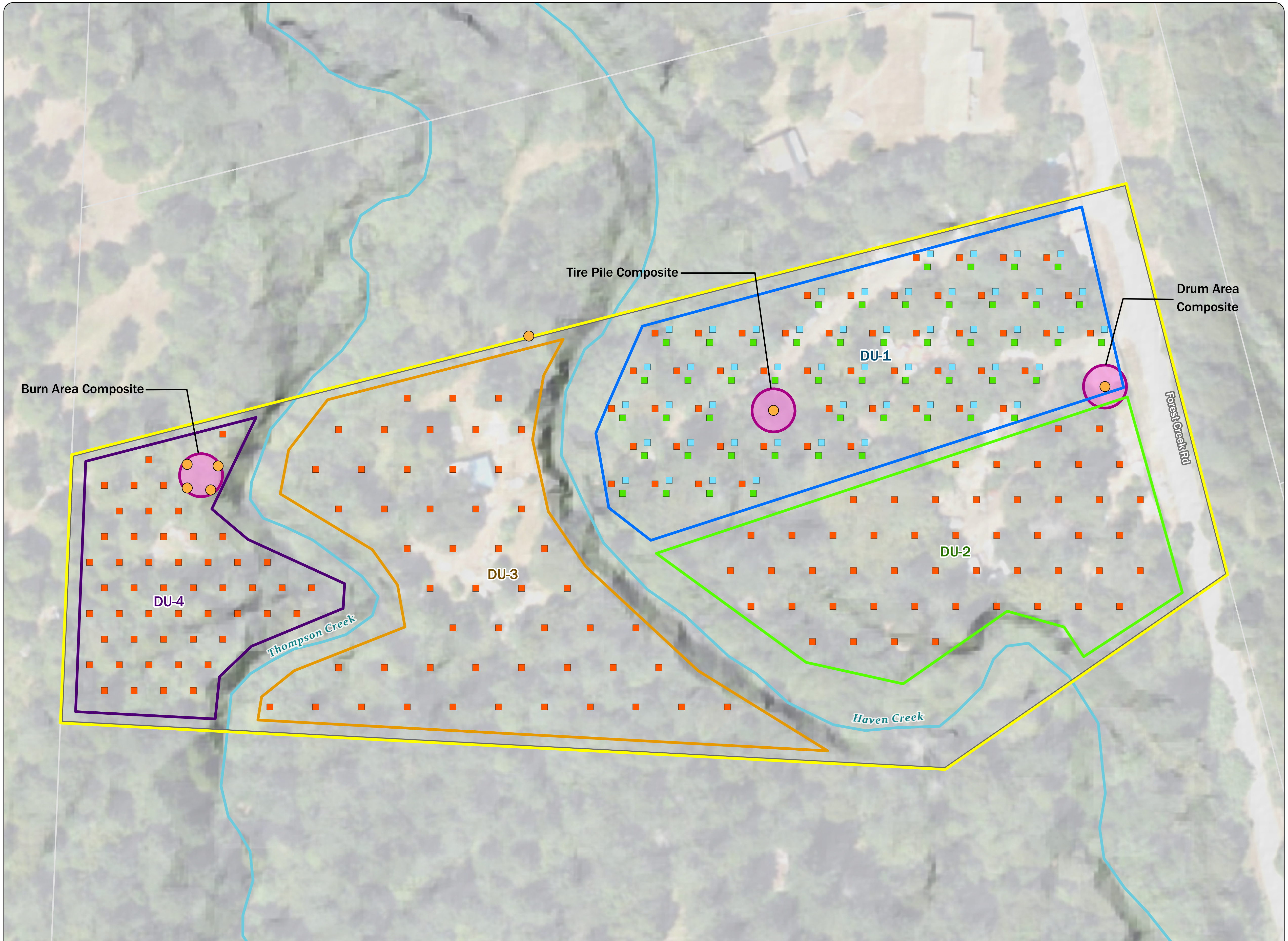

Figure 4-1
Soil Sample Locations

Forest Creek Road Dump Site
Site Assessment Report
Oregon Department of
Environmental Quality
113 Forest Creek Road
Selma, OR

Legend

- Field Observations (See Figure 2-1)
- ISM Sample
- ISM Sample Replicate
- ISM Sample Triplicate
- Five-Point Composite Sample
- Decision Unit 1
- Decision Unit 2
- Decision Unit 3
- Decision Unit 4
- Property Boundary
- Tax Lot
- Stream

0 60
Feet

Data Sources
Aerial photograph (2022) obtained from the Oregon Geospatial Enterprise Office; lidar topography (2011) obtained from the Oregon Department of Geology and Mineral Industries; tax lot data obtained from Josephine County.

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Path: X:\0785.12\001\Pro\M0785_12_001_005.aprx\Fig 3-1 Site Features Proposed Soil Sample Locs
Print Date: 11/1/2024
Reviewed By: mwhitson
Produced By: sturner
Project: M0785.12.001

Tables

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

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Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM	DU1-ISM-DUP
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/20/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
TPH (mg/kg)																					
Gasoline-range hydrocarbons	1,200	20,000	9,700	NV	5,900	69,000	31	130	120	120	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	NV	**8.77 J**	4.03 UJ
Diesel-range hydrocarbons	1,100	14,000	4,600	NV	NV	NV	9,500	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**37.7**	**34.8**
Motor oil-range hydrocarbons	1,100[a]	14,000[a]	4,600[a]	NV	NV	NV	9,500[a]	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**263**	**204**
Diesel+Oil[b]	NV	NV	NV	NV	NV	NV	NV	NV	260	260	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	NV	**301**	**239**
Total Metals (mg/kg)																					
Antimony	NV	NV	NV	NV	NV	NV	NV	NV	11	78	NV	NV	0.27	2.7	NV	NV	4.9	49	0.59	0.739 U	0.74 U
Arsenic	0.43	1.9	15	420	NV	NV	NV	NV	18	6.8	15	32	19	31	100	1,000	170	290	12	**2.08 J**	**2.39**
Beryllium	160	2,300	700	19,000	NV	NV	NV	NV	2.5	40	NV	NV	21	42	NV	NV	90	110	1.4	**0.204 J**	**0.274**
Cadmium	78	1,100	350	9,700	NV	NV	NV	NV	32	140	0.29	1.6	0.27	4	1.3	7.7	84	1,700	0.52	**1.1**	**1.49**
Chromium	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	73	34	1,600	170	560	180	10,000	890	**131**	**179**
Copper	3,100	47,000	14,000	390,000	NV	NV	NV	NV	70	80	14	43	42	70	80	240	560	1,600	110	**98.6**	**108**
Lead	400	800	800	800	NV	NV	30	30	120	1,700	11	23	56	170	83	160	460	1,600	36	**48.7**	**38.9**
Nickel	1,500	22,000	7,000	190,000	NV	NV	NV	NV	38	280	20	81	10	21	110	440	130	580	630	**202**	**242**
Mercury	23	350	110	2,900	NV	NV	NV	NV	34	0.05	0.013	0.13	1.7	17	0.058	0.58	26	130	0.17	**0.184**	**0.104**
Selenium	NV	NV	NV	NV	NV	NV	NV	NV	0.52	4.1	0.71	1.4	0.63	1	3.7	7.5	2.8	33	0.8	1.15 U	1.15 U
Silver	390	5,800	1,800	49,000	NV	NV	NV	NV	560	NV	2.6	26	14	140	13	130	990	10,000	0.16	**0.322 J**	**0.271 J**
Thallium	NV	NV	NV	NV	NV	NV	NV	NV	0.05	NV	4.5	45	0.42	4.2	48	480	5	50	0.31	0.554 U	0.554 U
Zinc	NV	NV	NV	NV	NV	NV	NV	NV	160	120	46	120	79	980	220	590	3,100	30,000	140	**254**	**263**
Chlorinated Herbicides (mg/kg)																					
2,4,5-T	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0253 UJ	0.0253 UJ
2,4-D	630	8,200	2,700	74,000	NV	NV	2.3	16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0275 UJ	0.0275 UJ
2,4-DB	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0199 U	0.0199 U
Dalapon	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0471 U	0.0471 U
Dicamba	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0242 U	0.0242 U
Dichlorprop	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0196 UJ	0.0196 UJ
Dinoseb	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0273 U	0.0273 U
MCPA	32	410	130	3,700	NV	NV	0.097	0.61	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.99 U	1.99 U
MCPP (Mecoprop)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.17 U	2.17 U
Silvex	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.02 U	0.02 U
VOCs (mg/kg)																					
1,1,1,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0014 U	0.00153 U
1,1,1-Trichloroethane	53,000	870,000	470,000	NV	NV	NV	190	880	NV	NV	NV	NV	260	1,300	NV	NV	91,000	450,000	NV	0.00137 U	0.00149 U
1,1,2,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00103 U	0.00112 U
1,1,2-Trichloroethane	3.2	26	54	1,500	5.6	24	0.0063	0.029	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000884 U	0.000962 U
1,1-Dichloroethane	58	260	3,200	89,000	56	240	0.044	0.2	NV	NV	NV	NV	210	2,100	NV	NV	250,000	2,500,000	NV	0.000727 U	0.000791 U

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM	DU1-ISM-DUP
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/20/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
1,1-Dichloroethene	1,800	29,000	13,000	370,000	NV	NV	6.7	32	NV	NV	NV	NV	11	60	NV	NV	320	1,600	NV	0.000897 U	0.000976 U
1,1-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0012 U	0.0013 U
1,2,3-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0109 U	0.0118 UJ
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0024 U	0.00261 U
1,2,3-Trimethylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00234 U	0.00255 U
1,2,4-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	0.27	2.7	NV	NV	110	1,100	NV	0.00652 U	0.00709 U
1,2,4-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	10	48	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00234 U	0.00255 U
1,2-Dibromo-3-chloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00578 U	0.00628 UJ
1,2-Dibromoethane	0.16	0.73	9	250	0.15	0.65	0.00012	0.00056	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00096 U	0.00104 U
1,2-Dichlorobenzene	2,200	36,000	20,000	560,000	NV	NV	36	160	NV	NV	NV	NV	0.92	9.2	NV	NV	480	4,800	NV	0.000629 U	0.000685 U
1,2-Dichloroethane	3.6	16	200	5,600	3.4	15	0.0028	0.013	NV	NV	0.85	1.6	27	270	22	44	8,400	84,000	NV	0.000961 U	0.00105 U
1,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0021 U	0.00229 U
1,3,5-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	11	53	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00296 U	0.00322 U
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.74	7.4	NV	NV	380	3,800	NV	0.000888 U	0.000967 U
1,3-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000742 U	0.000807 U
1,4-Dichlorobenzene	14	64	1,300	36,000	8.1	36	0.057	0.25	NV	1.2	NV	NV	0.89	3.5	NV	NV	470	1,800	NV	0.00104 U	0.00113 U
2,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00204 U	0.00222 U
2-Butanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	920	NV	NV	1,300,000	3,500,000	NV	0.094 U	**0.118 J**
2-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00128 U	0.00139 U
4-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000666 U	0.000725 U
4-Isopropyltoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.0724 J**	**0.00556 J**
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9.7	97	NV	NV	18,000	180,000	NV	**0.00903 J**	0.00367 UJ
Acetone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	75	1.2	6.3	840	8,400	1,800	8,900	NV	**0.169 J**	0.0588 UJ
Acrylonitrile	0.86	4	40	1,100	1.3	5.8	0.00036	0.0017	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00535 U	0.00582 U
Benzene	8.2	37	380	11,000	11	50	0.023	0.1	NV	NV	NV	NV	24	240	NV	NV	4,300	43,000	NV	**0.000703 J**	**0.00109 J**
Bromobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00133 U	0.00145 U
Bromodichloromethane	3.4	15	230	6,300	2.4	11	0.002	0.0088	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00107 U	0.00117 U
Bromoform	57	260	2,700	74,000	81	360	0.046	0.22	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00173 U	0.00189 UJ
Bromomethane	46	750	370	10,000	170	700	0.083	0.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00292 UJ	0.00317 U
Carbon tetrachloride	7.5	34	320	8,900	15	65	0.013	0.058	NV	NV	NV	NV	2	9.8	NV	NV	3	15	NV	0.00133 U	0.00145 U
Chlorobenzene	530	8,700	4,700	130,000	NV	NV	5.8	27	NV	2.4	NV	NV	43	430	NV	NV	25,000	250,000	NV	0.000311 U	0.000338 U
Chloroethane	160,000	NV	NV	NV	NV	NV	310	1,300	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00252 U	0.00274 U
Chloroform	5.8	26	410	11,000	3.9	17	0.0034	0.015	NV	NV	NV	NV	8	21	NV	NV	2,200	6,000	NV	0.00153 U	0.00166 U
Chloromethane	1,400	25,000	25,000	700,000	NV	NV	2.2	9.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00644 U	0.00701 U
cis-1,2-Dichloroethene	160	2,300	710	20,000	NV	NV	0.63	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00109 U	0.00118 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00112 U	0.00122 U

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Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM	DU1-ISM-DUP
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/20/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dibromochloromethane	3.7	17	210	5,800	3.3	14	0.0024	0.011	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000906 U	0.000986 UJ
Dibromomethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00111 U	0.00121 U
Dichlorodifluoromethane (Freon 12)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00238 U	0.00259 U
Diisopropyl ether	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000607 U	0.000661 U
Ethylbenzene	34	150	1,700	49,000	36	160	0.22	0.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00109 U	0.00119 U
Freon 113	400,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00112 U	0.00121 U
Hexachlorobutadiene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00888 U	0.00967 U
Isopropylbenzene	3,500	57,000	27,000	750,000	NV	NV	96	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000629 U	0.000685 U
Methyl tert-butyl ether	250	1,100	12,000	320,000	340	1,500	0.11	0.54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000518 U	0.000564 U
Methylene chloride	76	1,600	2,100	58,000	NV	NV	0.14	2.4	1,600	NV	NV	NV	2.6	22	NV	NV	1,000	8,500	NV	0.00983 U	0.0107 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00723 U	0.00786 UJ
n-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00777 U	0.00846 U
n-Propylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00141 U	0.00153 U
sec-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00426 U	0.00464 U
Styrene	7,900	130,000	56,000	NV	NV	NV	170	800	3.2	1.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00037 J**	**0.000806 J**
tert-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00289 U	0.00314 U
Tetrachloroethene (PCE)	220	1,000	1,800	50,000	NV	NV	0.46	1.9	10	NV	NV	NV	0.18	0.94	NV	NV	42	210	NV	0.00133 U	0.00144 UJ
Toluene	5,800	88,000	28,000	770,000	NV	NV	84	490	200	NV	NV	NV	23	230	NV	NV	3,300	33,000	NV	**0.00344 J**	**0.00263 J**
trans-1,2-Dichloroethene	1,600	23,000	7,100	200,000	NV	NV	7	51	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00154 U	0.00168 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00169 U	0.00184 U
Trichloroethene (TCE)	6.7	51	130	3,700	15	96	0.013	0.087	NV	NV	NV	NV	42	420	NV	NV	11,000	110,000	NV	0.000865 U	0.000941 U
Trichlorofluoromethane (Freon 11)	7,600	130,000	69,000	NV	NV	NV	61	280	NV	NV	NV	NV	52	350	NV	NV	62,000	420,000	NV	**0.00437 J**	0.00133 UJ
Vinyl chloride	0.36	4.4	34	950	5.3	89	0.00057	0.01	NV	NV	NV	NV	0.12	1.2	NV	NV	28	280	NV	0.00172 U	0.00187 U
Xylenes (total)[c]	1,400	25,000	20,000	560,000	5.3	89	23	100	100	NV	41	410	1.4	1.8	190	1,900	210	260	NV	**0.0036 J**	**0.0033 J**
PAHs (mg/kg)																					
1-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00481 U	0.00481 U
2-Chloronaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00499 U	0.00499 U
2-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00676 J**	0.00457 U
Acenaphthene	4,700	70,000	21,000	590,000	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00224 U	0.00224 U
Acenaphthylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00231 U	0.00231 U
Anthracene	23,000	350,000	110,000	NV	NV	NV	NV	NV	6.8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00246 U	0.00246 U
Benzo(a)anthracene	1.1	21	170	4800	NV	NV	1.6	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00185 U	0.00185 U
Benzo(a)pyrene	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00192 U	0.00192 U
Benzo(b)fluoranthene	1.1	21	170	4900	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00258 J**	**0.00248 J**
Benzo(ghi)perylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00451 J**	**0.00368 J**
Benzo(k)fluoranthene	11	210	1,700	49,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0023 U	0.0023 U

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Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/20/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Chrysene	110	2,100	17,000	490,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00248 U	0.00248 U
Dibenzo(a,h)anthracene	0.11	2.1	17	490	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00184 U	0.00184 U
Fluoranthene	2,400	30,000	10,000	280,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00244 J**	**0.00277 J**
Fluorene	3,100	47,000	14,000	390,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00219 U	0.00219 U
Indeno(1,2,3-cd)pyrene	1.1	21	170	4,900	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00194 U	0.00194 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00437 U	0.00437 U
Phenanthrene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00462 J**	**0.00339 J**
Pyrene	1,800	23,000	7,500	210,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00233 J**	**0.00282 J**
cPAH TEQ[d][4]	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00234 JT**	**0.00233 JT**
HPAH[e]	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	0.11	0.55	1.1	5.9	6.4	64	110	550	NV	**0.018 JT**	**0.0179 JT**
LPAH[f]	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	13	67	100	540	7,500	37,000	1,200	59,000	NV	**0.0507 JT**	**0.0498 JT**
Pesticides (mg/kg)																					
4,4'-DDD	2.2	12	9.7	270	NV	NV	1.1	2.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00738 U	0.00739 U
4,4'-DDE	1.8	8.2	66	1,800	NV	NV	1.6	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0072 U	0.0072 U
4,4'-DDT	1.9	8.5	66	1,800	NV	NV	12	70	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.0082 U	0.0082 U
Aldrin	0.031	0.13	1.1	30	NV	NV	0.023	0.1	NV	NV	8.5E-05	0.0043	0.037	0.18	0.062	3.1	4.4	22	NV	0.0069 U	0.0069 U
alpha-BHC	0.086	0.36	3	83	NV	NV	0.0063	0.023	NV	NV	0.21	0.85	0.0096	0.096	120	470	0.88	8.8	NV	0.00682 U	0.00682 U
beta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00674 U	0.00674 U
Chlordane	1.7	7.4	61	1,700	NV	NV	0.45	2.1	NV	NV	0.28	1.4	0.27	1.4	NV	NV	120	590	NV	0.106 U	0.106 U
delta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0068 U	0.0068 U
Dieldrin	0.034	0.14	1.2	33	NV	NV	0.01	0.03	10	NV	0.012	0.64	0.0045	0.009	0.056	3	0.0065	0.013	NV	0.00746 U	0.00746 U
Endosulfan I	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00646 U	0.00647 U
Endosulfan II (beta)	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00707 U	0.00708 U
Endosulfan sulfate	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00687 U	0.00687 U
Endrin	19	250	80	2,200	NV	NV	11	NV	0.0034	NV	0.0014	0.014	0.023	0.23	0.0068	0.068	2.1	21	NV	0.00798 U	0.00798 U
Endrin aldehyde	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00631 U	0.00632 U
Endrin ketone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00744 U	0.00744 U
Heptachlor	0.11	0.45	4	110	18	230	0.017	0.048	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00742 U	0.00742 U
Heptachlor epoxide	0.055	0.24	2	56	28	NV	0.0042	0.016	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00696 U	0.00696 U
Hexachlorobenzene	0.21	0.93	11	320	1	13	0.018	0.084	10	10	0.079	0.79	0.2	2	0.37	3.7	59	590	NV	0.00651 U	0.00651 U
Lindane	0.49	2.1	17	470	NV	NV	0.036	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00723 U	0.00724 U
Methoxychlor	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	92	5.1	10	87	8,800	300	600	NV	0.00863 U	0.00863 U
Toxaphene	0.49	2.1	17	470	NV	NV	0.36	0.93	NV	NV	4.1	21	5.9	30	19	190	430	2,100	NV	0.229 U	0.229 U
DDx[g]	NV	NV	NV	NV	NV	NV	NV	NV	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.0082 UT	0.0082 UT

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Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM	DU1-ISM-DUP
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/20/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dioxin/Furan (pg/g)																					
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	150	1,500	1	7	1,500	15,000	1.6	11	NV	**102**	**123**
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	**52.5**	52.9 UK
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 U	5.00 U
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.1	51	0.18	1.2	50	500	0.27	1.8	NV	5.00 U	5.00 U
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**9.18**	**6.78**
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	19	190	0.13	0.89	190	1,900	0.2	1.4	NV	**5.15**	**5.55**
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**9.77**	**7.99**
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.9	19	0.13	0.89	19	190	0.2	1.4	NV	**5.79**	5.00 U
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	30	0.21	1.4	30	300	0.32	2.2	NV	5.00 U	5.00 U
1,2,3,7,8-PeCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.59	5.9	0.042	0.28	5.9	59	0.064	0.43	NV	5.00 UJ	5.00 UJ
1,2,3,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.1	41	0.97	6.5	40	400	1.5	9.8	NV	5.00 U	5.00 U
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**10.5**	**10.2**
2,3,4,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.41	4.1	0.097	0.65	4	40	0.15	0.98	NV	**8.81**	**7**
2,3,7,8-TCDD	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	1.00 UJK	1.00 U
2,3,7,8-TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.64	6.4	0.45	3	6.3	63	0.69	4.6	NV	**4.08**	**4.33**
OCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,900	19,000	45	300	19,000	190,000	68	460	NV	**797**	**1,030**
OCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,400	14,000	33	220	14,000	140,000	51	340	NV	**40.2**	**49.5**
Total HpCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**183**	**229**
Total HpCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**93.3**	**97.6 K**
Total HxCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**50.1 K**	**44.4**
Total HxCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**84.3 K**	**74.2**
Total PeCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18.5 UK	5.00 U
Total PeCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**72.9 K**	**52.3 K**
Total TCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	10.1 UK	**8.82 K**
Total TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**67.7 K**	**54.5 K**
Dioxin/Furan TEQ[h][5]	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	**12.5 T**	**11.3 T**

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1 (cont.)	DU2
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM-TRIP	DU2-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
TPH (mg/kg)																					
Gasoline-range hydrocarbons	1,200	20,000	9,700	NV	5,900	69,000	31	130	120	120	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	NV	4.10 UJ	**6.91 J+**
Diesel-range hydrocarbons	1,100	14,000	4,600	NV	NV	NV	9,500	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**22.4**	**83**
Motor oil-range hydrocarbons	1,100[a]	14,000[a]	4,600[a]	NV	NV	NV	9,500[a]	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**179**	**431**
Diesel+Oil[b]	NV	NV	NV	NV	NV	NV	NV	NV	260	260	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	NV	**201**	**514**
Total Metals (mg/kg)																					
Antimony	NV	NV	NV	NV	NV	NV	NV	NV	11	78	NV	NV	0.27	2.7	NV	NV	4.9	49	0.59	0.738 U	0.759 U
Arsenic	0.43	1.9	15	420	NV	NV	NV	NV	18	6.8	15	32	19	31	100	1,000	170	290	12	**3.14**	**2.81**
Beryllium	160	2,300	700	19,000	NV	NV	NV	NV	2.5	40	NV	NV	21	42	NV	NV	90	110	1.4	**0.189 J**	**0.234**
Cadmium	78	1,100	350	9,700	NV	NV	NV	NV	32	140	0.29	1.6	0.27	4	1.3	7.7	84	1,700	0.52	**0.847**	**1.9**
Chromium	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	73	34	1,600	170	560	180	10,000	890	**145**	**143**
Copper	3,100	47,000	14,000	390,000	NV	NV	NV	NV	70	80	14	43	42	70	80	240	560	1,600	110	**85.4**	**225**
Lead	400	800	800	800	NV	NV	30	30	120	1,700	11	23	56	170	83	160	460	1,600	36	**31.2**	**61.2**
Nickel	1,500	22,000	7,000	190,000	NV	NV	NV	NV	38	280	20	81	10	21	110	440	130	580	630	**216**	**204**
Mercury	23	350	110	2,900	NV	NV	NV	NV	34	0.05	0.013	0.13	1.7	17	0.058	0.58	26	130	0.17	**0.106**	**0.163**
Selenium	NV	NV	NV	NV	NV	NV	NV	NV	0.52	4.1	0.71	1.4	0.63	1	3.7	7.5	2.8	33	0.8	1.14 U	1.18 U
Silver	390	5,800	1,800	49,000	NV	NV	NV	NV	560	NV	2.6	26	14	140	13	130	990	10,000	0.16	**0.237 J**	**0.464 J**
Thallium	NV	NV	NV	NV	NV	NV	NV	NV	0.05	NV	4.5	45	0.42	4.2	48	480	5	50	0.31	0.553 U	0.569 U
Zinc	NV	NV	NV	NV	NV	NV	NV	NV	160	120	46	120	79	980	220	590	3,100	30,000	140	**351**	**1,040**
Chlorinated Herbicides (mg/kg)																					
2,4,5-T	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0252 UJ	0.0259 U
2,4-D	630	8,200	2,700	74,000	NV	NV	2.3	16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0274 UJ	0.0282 UJ
2,4-DB	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0199 U	0.0204 U
Dalapon	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.047 U	0.0484 U
Dicamba	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0241 U	0.0248 U
Dichlorprop	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0195 UJ	0.0201 UJ
Dinoseb	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0272 U	0.028 U
MCPA	32	410	130	3,700	NV	NV	0.097	0.61	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.99 U	2.04 U
MCPP (Mecoprop)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.17 U	2.23 U
Silvex	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.02 U	0.0205 U
VOCs (mg/kg)																					
1,1,1,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00156 U	0.00156 U
1,1,1-Trichloroethane	53,000	870,000	470,000	NV	NV	NV	190	880	NV	NV	NV	NV	260	1,300	NV	NV	91,000	450,000	NV	0.00151 U	0.00152 U
1,1,2,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00114 U	0.00114 U
1,1,2-Trichloroethane	3.2	26	54	1,500	5.6	24	0.0063	0.029	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000979 U	0.000982 U
1,1-Dichloroethane	58	260	3,200	89,000	56	240	0.044	0.2	NV	NV	NV	NV	210	2,100	NV	NV	250,000	2,500,000	NV	0.000805 U	0.000807 U

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Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM-TRIP	DU2-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/20/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
1,1-Dichloroethene	1,800	29,000	13,000	370,000	NV	NV	6.7	32	NV	NV	NV	NV	11	60	NV	NV	320	1,600	NV	0.000994 U	0.000997 U
1,1-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00133 U	0.00133 U
1,2,3-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.012 U	0.0121 U
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00266 U	0.00266 U
1,2,3-Trimethylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00259 U	0.0026 U
1,2,4-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	0.27	2.7	NV	NV	110	1,100	NV	0.00722 U	0.00724 U
1,2,4-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	10	48	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00259 U	**0.00288 J**
1,2-Dibromo-3-chloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0064 U	0.00641 U
1,2-Dibromoethane	0.16	0.73	9	250	0.15	0.65	0.00012	0.00056	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00106 U	0.00107 U
1,2-Dichlorobenzene	2,200	36,000	20,000	560,000	NV	NV	36	160	NV	NV	NV	NV	0.92	9.2	NV	NV	480	4,800	NV	0.000697 U	0.000699 U
1,2-Dichloroethane	3.6	16	200	5,600	3.4	15	0.0028	0.013	NV	NV	0.85	1.6	27	270	22	44	8,400	84,000	NV	0.00106 U	0.00107 U
1,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00233 U	0.00234 U
1,3,5-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	11	53	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00328 U	0.00329 U
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.74	7.4	NV	NV	380	3,800	NV	0.000984 U	0.000987 U
1,3-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000822 U	0.000824 U
1,4-Dichlorobenzene	14	64	1,300	36,000	8.1	36	0.057	0.25	NV	1.2	NV	NV	0.89	3.5	NV	NV	470	1,800	NV	0.00115 U	0.00115 U
2,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00226 UJ	0.00227 UJ
2-Butanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	920	NV	NV	1,300,000	3,500,000	NV	0.104 U	0.104 U
2-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00142 U	0.00142 U
4-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000738 U	0.00074 U
4-Isopropyltoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.0131 J**	**0.0237**
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9.7	97	NV	NV	18,000	180,000	NV	0.00374 UJ	0.00375 U
Acetone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	75	1.2	6.3	840	8,400	1,800	8,900	NV	0.0599 UJ	0.06 U
Acrylonitrile	0.86	4	40	1,100	1.3	5.8	0.00036	0.0017	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00592 U	0.00594 U
Benzene	8.2	37	380	11,000	11	50	0.023	0.1	NV	NV	NV	NV	24	240	NV	NV	4,300	43,000	NV	0.000766 U	**0.00411**
Bromobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00148 U	0.00148 U
Bromodichloromethane	3.4	15	230	6,300	2.4	11	0.002	0.0088	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00119 U	0.00119 U
Bromoform	57	260	2,700	74,000	81	360	0.046	0.22	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00192 U	0.00192 U
Bromomethane	46	750	370	10,000	170	700	0.083	0.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00323 U	0.00324 U
Carbon tetrachloride	7.5	34	320	8,900	15	65	0.013	0.058	NV	NV	NV	NV	2	9.8	NV	NV	3	15	NV	0.00147 U	0.00148 U
Chlorobenzene	530	8,700	4,700	130,000	NV	NV	5.8	27	NV	2.4	NV	NV	43	430	NV	NV	25,000	250,000	NV	0.000344 U	**0.00148 J**
Chloroethane	160,000	NV	NV	NV	NV	NV	310	1,300	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00279 U	0.0028 U
Chloroform	5.8	26	410	11,000	3.9	17	0.0034	0.015	NV	NV	NV	NV	8	21	NV	NV	2,200	6,000	NV	0.00169 U	0.00169 U
Chloromethane	1,400	25,000	25,000	700,000	NV	NV	2.2	9.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00714 U	0.00715 U
cis-1,2-Dichloroethene	160	2,300	710	20,000	NV	NV	0.63	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0012 U	0.00121 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00124 U	0.00124 U

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Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]												Background Metals, Klamath Mountains[3]	DU1 (cont.)	DU2
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers							DU1-ISM-TRIP	DU2-ISM
Sample Type:																						ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals					12/20/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E				0-0.5	0-0.5
Dibromochloromethane	3.7	17	210	5,800	3.3	14	0.0024	0.011	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.001 U	0.00101 U
Dibromomethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00123 U	0.00123 U
Dichlorodifluoromethane (Freon 12)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00264 U	0.00265 U
Diisopropyl ether	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.000673 U	0.000674 U
Ethylbenzene	34	150	1,700	49,000	36	160	0.22	0.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00121 U	**0.00186 J**
Freon 113	400,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00124 U	0.00124 U
Hexachlorobutadiene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00984 U	0.00987 U
Isopropylbenzene	3,500	57,000	27,000	750,000	NV	NV	96	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.000697 U	0.000699 U
Methyl tert-butyl ether	250	1,100	12,000	320,000	340	1,500	0.11	0.54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.000574 U	0.000576 U
Methylene chloride	76	1,600	2,100	58,000	NV	NV	0.14	2.4	1,600	NV	NV	NV	2.6	22	NV	NV	1,000	8,500			NV	0.0109 U	0.0109 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00801 U	0.00803 U
n-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00861 U	0.00863 U
n-Propylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00156 U	0.00156 U
sec-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00472 U	0.00474 U
Styrene	7,900	130,000	56,000	NV	NV	NV	170	800	3.2	1.2	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.000376 UJ	**0.00119 J**
tert-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.0032 U	0.00321 U
Tetrachloroethene (PCE)	220	1,000	1,800	50,000	NV	NV	0.46	1.9	10	NV	NV	NV	0.18	0.94	NV	NV	42	210			NV	0.00147 U	0.00147 U
Toluene	5,800	88,000	28,000	770,000	NV	NV	84	490	200	NV	NV	NV	23	230	NV	NV	3,300	33,000			NV	**0.00271 J**	**0.00617 J**
trans-1,2-Dichloroethene	1,600	23,000	7,100	200,000	NV	NV	7	51	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00171 U	0.00171 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00187 U	0.00187 U
Trichloroethene (TCE)	6.7	51	130	3,700	15	96	0.013	0.087	NV	NV	NV	NV	42	420	NV	NV	11,000	110,000			NV	0.000958 U	0.00096 U
Trichlorofluoromethane (Freon 11)	7,600	130,000	69,000	NV	NV	NV	61	280	NV	NV	NV	NV	52	350	NV	NV	62,000	420,000			NV	0.00136 UJ	**0.00345 J**
Vinyl chloride	0.36	4.4	34	950	5.3	89	0.00057	0.01	NV	NV	NV	NV	0.12	1.2	NV	NV	28	280			NV	0.0019 U	0.00191 U
Xylenes (total)[c]	1,400	25,000	20,000	560,000	5.3	89	23	100	100	NV	41	410	1.4	1.8	190	1,900	210	260			NV	0.00144 U	**0.00671 J**
PAHs (mg/kg)																							
1-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00479 U	0.00493 U
2-Chloronaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00497 U	0.00512 U
2-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00456 U	0.00469 U
Acenaphthene	4,700	70,000	21,000	590,000	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00223 U	0.0023 U
Acenaphthylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00231 U	0.00237 U
Anthracene	23,000	350,000	110,000	NV	NV	NV	NV	NV	6.8	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00245 U	0.00253 U
Benzo(a)anthracene	1.1	21	170	4800	NV	NV	1.6	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00185 U	0.0019 J
Benzo(a)pyrene	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00191 U	0.00197 U
Benzo(b)fluoranthene	1.1	21	170	4900	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	**0.00231 J**	**0.0031 J**
Benzo(ghi)perylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	**0.00304 J**	**0.00358 J**
Benzo(k)fluoranthene	11	210	1,700	49,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV			NV	0.00229 U	0.00236 U

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Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1 (cont.)	DU2
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM-TRIP	DU2-ISM
Sample Type:											Birds		Mammals		Birds		Mammals			ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts										12/20/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Chrysene	110	2,100	17,000	490,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00248 U	0.00255 U
Dibenzo(a,h)anthracene	0.11	2.1	17	490	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00184 U	0.00189 U
Fluoranthene	2,400	30,000	10,000	280,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00243 J**	**0.0051 J**
Fluorene	3,100	47,000	14,000	390,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00219 U	0.00225 U
Indeno(1,2,3-cd)pyrene	1.1	21	170	4,900	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00193 U	0.00199 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00435 U	**0.00833 J**
Phenanthrene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00433 J**	**0.00749**
Pyrene	1,800	23,000	7,500	210,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.0022 J**	**0.00499 J**
cPAH TEQ[d][4]	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00231 JT**	**0.00254 JT**
HPAH[e]	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	0.11	0.55	1.1	5.9	6.4	64	110	550	NV	**0.0161 JT**	**0.0241 JT**
LPAH[f]	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	13	67	100	540	7,500	37,000	1,200	59,000	NV	**0.0465 JT**	**0.0747 JT**
Pesticides (mg/kg)																					
4,4'-DDD	2.2	12	9.7	270	NV	NV	1.1	2.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00736 U	0.00758 U
4,4'-DDE	1.8	8.2	66	1,800	NV	NV	1.6	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00718 U	0.0074 U
4,4'-DDT	1.9	8.5	66	1,800	NV	NV	12	70	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00818 U	0.00842 U
Aldrin	0.031	0.13	1.1	30	NV	NV	0.023	0.1	NV	NV	8.5E-05	0.0043	0.037	0.18	0.062	3.1	4.4	22	NV	0.00688 U	0.00709 U
alpha-BHC	0.086	0.36	3	83	NV	NV	0.0063	0.023	NV	NV	0.21	0.85	0.0096	0.096	120	470	0.88	8.8	NV	0.0068 U	0.007 U
beta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00672 U	0.00692 U
Chlordane	1.7	7.4	61	1,700	NV	NV	0.45	2.1	NV	NV	0.28	1.4	0.27	1.4	NV	NV	120	590	NV	0.106 U	0.109 U
delta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00678 U	0.00698 U
Dieldrin	0.034	0.14	1.2	33	NV	NV	0.01	0.03	10	NV	0.012	0.64	0.0045	0.009	0.056	3	0.0065	0.013	NV	0.00744 U	0.00766 U
Endosulfan I	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00645 U	0.00664 U
Endosulfan II (beta)	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00705 U	0.00726 U
Endosulfan sulfate	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00685 U	0.00705 U
Endrin	19	250	80	2,200	NV	NV	11	NV	0.0034	NV	0.0014	0.014	0.023	0.23	0.0068	0.068	2.1	21	NV	0.00796 U	0.0082 U
Endrin aldehyde	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0063 U	0.00648 U
Endrin ketone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00742 U	0.00764 U
Heptachlor	0.11	0.45	4	110	18	230	0.017	0.048	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0074 U	0.00762 U
Heptachlor epoxide	0.055	0.24	2	56	28	NV	0.0042	0.016	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00694 U	0.00714 U
Hexachlorobenzene	0.21	0.93	11	320	1	13	0.018	0.084	10	10	0.079	0.79	0.2	2	0.37	3.7	59	590	NV	0.00649 U	0.00668 U
Lindane	0.49	2.1	17	470	NV	NV	0.036	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00722 U	0.00743 U
Methoxychlor	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	92	5.1	10	87	8,800	300	600	NV	0.0086 U	0.00886 U
Toxaphene	0.49	2.1	17	470	NV	NV	0.36	0.93	NV	NV	4.1	21	5.9	30	19	190	430	2,100	NV	0.228 U	0.235 U
DDx[g]	NV	NV	NV	NV	NV	NV	NV	NV	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00818 UT	0.00842 UT

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Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

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Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU1 (cont.)	DU2
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU1-ISM-TRIP	DU2-ISM
Sample Type:											Birds		Mammals		Birds		Mammals			ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts										12/20/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dioxin/Furan (pg/g)																					
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	150	1,500	1	7	1,500	15,000	1.6	11	NV	**90.7**	**149**
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	**61.9**	**226**
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 U	**8.57**
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.1	51	0.18	1.2	50	500	0.27	1.8	NV	5.00 U	6.78 UK
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**11.9**	**45.8**
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	19	190	0.13	0.89	190	1,900	0.2	1.4	NV	5.00 U	**15**
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**10.1**	**38.6**
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.9	19	0.13	0.89	19	190	0.2	1.4	NV	5.00 U	**14.7**
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	30	0.21	1.4	30	300	0.32	2.2	NV	5.00 U	5 U
1,2,3,7,8-PeCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.59	5.9	0.042	0.28	5.9	59	0.064	0.43	NV	5.00 UJ	**7.64**
1,2,3,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.1	41	0.97	6.5	40	400	1.5	9.8	NV	5.00 U	**17.9**
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**11**	**51.8**
2,3,4,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.41	4.1	0.097	0.65	4	40	0.15	0.98	NV	**7.77**	**39.7**
2,3,7,8-TCDD	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	1.00 U	1.95 UK
2,3,7,8-TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.64	6.4	0.45	3	6.3	63	0.69	4.6	NV	**5.12**	**20**
OCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,900	19,000	45	300	19,000	190,000	68	460	NV	**685**	**702**
OCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,400	14,000	33	220	14,000	140,000	51	340	NV	**41.5**	**65.8**
Total HpCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**165**	**299**
Total HpCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**97.8**	**308**
Total HxCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**30.2**	244 UK
Total HxCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**78.2 K**	**376 K**
Total PeCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 U	**146 K**
Total PeCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**38.8**	**351 K**
Total TCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.2 UK	138 UK
Total TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**59.7**	**375**
Dioxin/Furan TEQ[h][5]	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	**12 T**	**44.3 T**

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU3	DU4
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU3-ISM	DU4-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/23/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
TPH (mg/kg)																					
Gasoline-range hydrocarbons	1,200	20,000	9,700	NV	5,900	69,000	31	130	120	120	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	NV	3.95 U	**4.35 J+**
Diesel-range hydrocarbons	1,100	14,000	4,600	NV	NV	NV	9,500	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**16.6**	**94.2**
Motor oil-range hydrocarbons	1,100[a]	14,000[a]	4,600[a]	NV	NV	NV	9,500[a]	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**98.4**	**263**
Diesel+Oil[b]	NV	NV	NV	NV	NV	NV	NV	NV	260	260	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	NV	**115**	**357**
Total Metals (mg/kg)																					
Antimony	NV	NV	NV	NV	NV	NV	NV	NV	11	78	NV	NV	0.27	2.7	NV	NV	4.9	49	0.59	0.731 U	0.743 U
Arsenic	0.43	1.9	15	420	NV	NV	NV	NV	18	6.8	15	32	19	31	100	1,000	170	290	12	**2.45**	**3.28**
Beryllium	160	2,300	700	19,000	NV	NV	NV	NV	2.5	40	NV	NV	21	42	NV	NV	90	110	1.4	**0.445**	**0.623**
Cadmium	78	1,100	350	9,700	NV	NV	NV	NV	32	140	0.29	1.6	0.27	4	1.3	7.7	84	1,700	0.52	**0.877**	**0.325 J**
Chromium	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	73	34	1,600	170	560	180	10,000	890	**108**	**81.9**
Copper	3,100	47,000	14,000	390,000	NV	NV	NV	NV	70	80	14	43	42	70	80	240	560	1,600	110	**94.5**	**49.6**
Lead	400	800	800	800	NV	NV	30	30	120	1,700	11	23	56	170	83	160	460	1,600	36	**44.6**	**21.3**
Nickel	1,500	22,000	7,000	190,000	NV	NV	NV	NV	38	280	20	81	10	21	110	440	130	580	630	**125**	**78.2**
Mercury	23	350	110	2,900	NV	NV	NV	NV	34	0.05	0.013	0.13	1.7	17	0.058	0.58	26	130	0.17	**0.0638**	**0.0421 J**
Selenium	NV	NV	NV	NV	NV	NV	NV	NV	0.52	4.1	0.71	1.4	0.63	1	3.7	7.5	2.8	33	0.8	1.13 U	1.15 U
Silver	390	5,800	1,800	49,000	NV	NV	NV	NV	560	NV	2.6	26	14	140	13	130	990	10,000	0.16	**0.268 J**	**0.156 J**
Thallium	NV	NV	NV	NV	NV	NV	NV	NV	0.05	NV	4.5	45	0.42	4.2	48	480	5	50	0.31	0.548 U	0.557 U
Zinc	NV	NV	NV	NV	NV	NV	NV	NV	160	120	46	120	79	980	220	590	3,100	30,000	140	**285**	**134**
Chlorinated Herbicides (mg/kg)																					
2,4,5-T	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.025 UJ	0.0254 U
2,4-D	630	8,200	2,700	74,000	NV	NV	2.3	16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0272 UJ	0.0276 U
2,4-DB	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0197 U	0.02 U
Dalapon	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0466 U	0.0473 U
Dicamba	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0239 U	0.0243 U
Dichlorprop	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0194 UJ	0.0197 U
Dinoseb	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.027 U	0.0274 U
MCPA	32	410	130	3,700	NV	NV	0.097	0.61	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.97 U	2 U
MCPP (Mecoprop)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.15 U	2.18 U
Silvex	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0198 U	0.0201 U
VOCs (mg/kg)																					
1,1,1,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0015 U	0.00163 U
1,1,1-Trichloroethane	53,000	870,000	470,000	NV	NV	NV	190	880	NV	NV	NV	NV	260	1,300	NV	NV	91,000	450,000	NV	0.00146 U	0.00159 U
1,1,2,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0011 U	0.0012 U
1,1,2-Trichloroethane	3.2	26	54	1,500	5.6	24	0.0063	0.029	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000943 U	0.00103 U
1,1-Dichloroethane	58	260	3,200	89,000	56	240	0.044	0.2	NV	NV	NV	NV	210	2,100	NV	NV	250,000	2,500,000	NV	0.000775 U	0.000844 U

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Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU3-ISM	DU4-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/23/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
1,1-Dichloroethene	1,800	29,000	13,000	370,000	NV	NV	6.7	32	NV	NV	NV	NV	11	60	NV	NV	320	1,600	NV	0.000957 U	0.00104 U
1,1-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00128 U	0.00139 U
1,2,3-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0116 UJ	0.0126 U
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00256 U	0.00279 U
1,2,3-Trimethylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00249 U	0.00272 U
1,2,4-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	0.27	2.7	NV	NV	110	1,100	NV	0.00695 U	0.00757 U
1,2,4-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	10	48	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00363 J**	0.00272 U
1,2-Dibromo-3-chloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00616 UJ	0.00671 U
1,2-Dibromoethane	0.16	0.73	9	250	0.15	0.65	0.00012	0.00056	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00102 U	0.00111 U
1,2-Dichlorobenzene	2,200	36,000	20,000	560,000	NV	NV	36	160	NV	NV	NV	NV	0.92	9.2	NV	NV	480	4,800	NV	0.000671 U	0.000731 U
1,2-Dichloroethane	3.6	16	200	5,600	3.4	15	0.0028	0.013	NV	NV	0.85	1.6	27	270	22	44	8,400	84,000	NV	0.00102 U	0.00112 U
1,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00224 U	0.00244 U
1,3,5-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	11	53	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00316 U	0.00344 U
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.74	7.4	NV	NV	380	3,800	NV	0.000947 U	0.00103 U
1,3-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000791 U	0.000862 U
1,4-Dichlorobenzene	14	64	1,300	36,000	8.1	36	0.057	0.25	NV	1.2	NV	NV	0.89	3.5	NV	NV	470	1,800	NV	0.00111 U	0.0012 U
2,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00218 U	0.00237 UJ
2-Butanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	920	NV	NV	1,300,000	3,500,000	NV	0.1 U	0.109 U
2-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00137 U	0.00149 U
4-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00071 U	0.000774 U
4-Isopropyltoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00703 J**	**0.0147**
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9.7	97	NV	NV	18,000	180,000	NV	0.0036 U	0.00392 U
Acetone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	75	1.2	6.3	840	8,400	1,800	8,900	NV	0.0576 U	0.0628 U
Acrylonitrile	0.86	4	40	1,100	1.3	5.8	0.00036	0.0017	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0057 U	0.00621 U
Benzene	8.2	37	380	11,000	11	50	0.023	0.1	NV	NV	NV	NV	24	240	NV	NV	4,300	43,000	NV	**0.00431**	0.000803 U
Bromobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00142 U	0.00155 U
Bromodichloromethane	3.4	15	230	6,300	2.4	11	0.002	0.0088	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00114 U	0.00125 U
Bromoform	57	260	2,700	74,000	81	360	0.046	0.22	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00185 UJ	0.00201 U
Bromomethane	46	750	370	10,000	170	700	0.083	0.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00311 U	0.00339 U
Carbon tetrachloride	7.5	34	320	8,900	15	65	0.013	0.058	NV	NV	NV	NV	2	9.8	NV	NV	3	15	NV	0.00142 U	0.00154 U
Chlorobenzene	530	8,700	4,700	130,000	NV	NV	5.8	27	NV	2.4	NV	NV	43	430	NV	NV	25,000	250,000	NV	0.000332 U	0.000361 U
Chloroethane	160,000	NV	NV	NV	NV	NV	310	1,300	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00268 U	0.00292 U
Chloroform	5.8	26	410	11,000	3.9	17	0.0034	0.015	NV	NV	NV	NV	8	21	NV	NV	2,200	6,000	NV	0.00163 U	0.00177 U
Chloromethane	1,400	25,000	25,000	700,000	NV	NV	2.2	9.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00687 U	0.00748 U
cis-1,2-Dichloroethene	160	2,300	710	20,000	NV	NV	0.63	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00116 U	0.00126 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0012 U	0.0013 U

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Oregon Department of Environment Quality

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Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]												Background Metals, Klamath Mountains[3]	DU3	DU4
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU3-ISM	DU4-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/23/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dibromochloromethane	3.7	17	210	5,800	3.3	14	0.0024	0.011	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000966 UJ	0.00105 U
Dibromomethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00118 U	0.00129 U
Dichlorodifluoromethane (Freon 12)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00254 U	0.00277 U
Diisopropyl ether	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000647 U	0.000705 U
Ethylbenzene	34	150	1,700	49,000	36	160	0.22	0.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00232 J**	0.00127 U
Freon 113	400,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00119 U	0.0013 U
Hexachlorobutadiene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00947 U	0.0103 U
Isopropylbenzene	3,500	57,000	27,000	750,000	NV	NV	96	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000671 U	0.000731 U
Methyl tert-butyl ether	250	1,100	12,000	320,000	340	1,500	0.11	0.54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000553 U	0.000602 U
Methylene chloride	76	1,600	2,100	58,000	NV	NV	0.14	2.4	1,600	NV	NV	NV	2.6	22	NV	NV	1,000	8,500	NV	0.0105 U	0.0114 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0077 UJ	0.00839 U
n-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00829 U	0.00903 U
n-Propylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0015 U	0.00163 U
sec-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00455 U	0.00495 U
Styrene	7,900	130,000	56,000	NV	NV	NV	170	800	3.2	1.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000362 U	0.000394 U
tert-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00308 U	0.00335 U
Tetrachloroethene (PCE)	220	1,000	1,800	50,000	NV	NV	0.46	1.9	10	NV	NV	NV	0.18	0.94	NV	NV	42	210	NV	0.00141 UJ	0.00154 U
Toluene	5,800	88,000	28,000	770,000	NV	NV	84	490	200	NV	NV	NV	23	230	NV	NV	3,300	33,000	NV	**0.00489 J**	**0.00425 J**
trans-1,2-Dichloroethene	1,600	23,000	7,100	200,000	NV	NV	7	51	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00164 U	0.00179 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0018 U	0.00196 U
Trichloroethene (TCE)	6.7	51	130	3,700	15	96	0.013	0.087	NV	NV	NV	NV	42	420	NV	NV	11,000	110,000	NV	0.000922 U	0.001 U
Trichlorofluoromethane (Freon 11)	7,600	130,000	69,000	NV	NV	NV	61	280	NV	NV	NV	NV	52	350	NV	NV	62,000	420,000	NV	0.00131 U	0.00142 U
Vinyl chloride	0.36	4.4	34	950	5.3	89	0.00057	0.01	NV	NV	NV	NV	0.12	1.2	NV	NV	28	280	NV	0.00183 U	0.00199 U
Xylenes (total)[c]	1,400	25,000	20,000	560,000	5.3	89	23	100	100	NV	41	410	1.4	1.8	190	1,900	210	260	NV	**0.00766 J**	0.00151 U
PAHs (mg/kg)																					
1-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00475 U	0.00483 U
2-Chloronaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00493 U	0.00501 U
2-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00452 U	0.00459 U
Acenaphthene	4,700	70,000	21,000	590,000	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00221 U	0.00225 U
Acenaphthylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00229 U	0.00232 U
Anthracene	23,000	350,000	110,000	NV	NV	NV	NV	NV	6.8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00243 U	0.00247 U
Benzo(a)anthracene	1.1	21	170	4800	NV	NV	1.6	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00183 U	0.00186 U
Benzo(a)pyrene	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00189 U	0.00193 U
Benzo(b)fluoranthene	1.1	21	170	4900	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00199 J**	0.00165 U
Benzo(ghi)perylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00187 U	0.0019 U
Benzo(k)fluoranthene	11	210	1,700	49,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00228 U	0.00231 U

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Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU3-ISM	DU4-ISM
Sample Type:																				ISM	ISM
Collection Date:											Birds		Mammals		Birds		Mammals			12/23/2024	12/18/2024
Collection Depth (ft bgs):	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Chrysene	110	2,100	17,000	490,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00246 U	0.0025 U
Dibenzo(a,h)anthracene	0.11	2.1	17	490	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00182 U	0.00185 U
Fluoranthene	2,400	30,000	10,000	280,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00403 J**	0.00244 U
Fluorene	3,100	47,000	14,000	390,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00217 U	0.0022 U
Indeno(1,2,3-cd)pyrene	1.1	21	170	4,900	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00192 U	0.00195 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00894 J**	0.00439 U
Phenanthrene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00711**	0.00248 U
Pyrene	1,800	23,000	7,500	210,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.0031 J**	0.00215 U
cPAH TEQ[d][4]	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00225 JT**	0.0025 UT
HPAH[e]	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	0.11	0.55	1.1	5.9	6.4	64	110	550	NV	**0.0162 JT**	0.0025 UT
LPAH[f]	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	13	67	100	540	7,500	37,000	1,200	59,000	NV	**0.057 JT**	0.00439 UT
Pesticides (mg/kg)																					
4,4'-DDD	2.2	12	9.7	270	NV	NV	1.1	2.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0073 U	0.00742 U
4,4'-DDE	1.8	8.2	66	1,800	NV	NV	1.6	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00712 U	0.00724 U
4,4'-DDT	1.9	8.5	66	1,800	NV	NV	12	70	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00811 U	0.00824 U
Aldrin	0.031	0.13	1.1	30	NV	NV	0.023	0.1	NV	NV	8.5E-05	0.0043	0.037	0.18	0.062	3.1	4.4	22	NV	0.00683 U	0.00694 U
alpha-BHC	0.086	0.36	3	83	NV	NV	0.0063	0.023	NV	NV	0.21	0.85	0.0096	0.096	120	470	0.88	8.8	NV	0.00674 U	0.00685 U
beta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00667 U	0.00678 U
Chlordane	1.7	7.4	61	1,700	NV	NV	0.45	2.1	NV	NV	0.28	1.4	0.27	1.4	NV	NV	120	590	NV	0.105 U	0.106 U
delta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00672 U	0.00683 U
Dieldrin	0.034	0.14	1.2	33	NV	NV	0.01	0.03	10	NV	0.012	0.64	0.0045	0.009	0.056	3	0.0065	0.013	NV	0.00738 U	0.0075 U
Endosulfan I	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00639 U	0.0065 U
Endosulfan II (beta)	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.007 U	0.00711 U
Endosulfan sulfate	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0068 U	0.0069 U
Endrin	19	250	80	2,200	NV	NV	11	NV	0.0034	NV	0.0014	0.014	0.023	0.23	0.0068	0.068	2.1	21	NV	0.0079 U	0.00802 U
Endrin aldehyde	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00625 U	0.00635 U
Endrin ketone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00736 U	0.00747 U
Heptachlor	0.11	0.45	4	110	18	230	0.017	0.048	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00734 U	0.00745 U
Heptachlor epoxide	0.055	0.24	2	56	28	NV	0.0042	0.016	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00688 U	0.00699 U
Hexachlorobenzene	0.21	0.93	11	320	1	13	0.018	0.084	10	10	0.079	0.79	0.2	2	0.37	3.7	59	590	NV	0.00644 U	0.00654 U
Lindane	0.49	2.1	17	470	NV	NV	0.036	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00716 U	0.00727 U
Methoxychlor	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	92	5.1	10	87	8,800	300	600	NV	0.00853 U	0.00867 U
Toxaphene	0.49	2.1	17	470	NV	NV	0.36	0.93	NV	NV	4.1	21	5.9	30	19	190	430	2,100	NV	0.227 U	0.23 U
DDx[g]	NV	NV	NV	NV	NV	NV	NV	NV	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00811 UT	0.00824 UT

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	DU3	DU4
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DU3-ISM	DU4-ISM
Sample Type:																				ISM	ISM
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/23/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dioxin/Furan (pg/g)																					
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	150	1,500	1	7	1,500	15,000	1.6	11	NV	**80.4**	**24.2**
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	**47.2**	5.00 U
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 U	5.00 U
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.1	51	0.18	1.2	50	500	0.27	1.8	NV	5.00 U	5.00 U
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**13.4**	5.00 U
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	19	190	0.13	0.89	190	1,900	0.2	1.4	NV	**5.68**	5.00 U
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	9.32 UK	5.00 U
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.9	19	0.13	0.89	19	190	0.2	1.4	NV	**6.64**	5.00 U
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	30	0.21	1.4	30	300	0.32	2.2	NV	5 U	5.00 U
1,2,3,7,8-PeCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.59	5.9	0.042	0.28	5.9	59	0.064	0.43	NV	5 U	5.00 U
1,2,3,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.1	41	0.97	6.5	40	400	1.5	9.8	NV	6.58	5.00 U
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	**10.8**	5.00 U
2,3,4,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.41	4.1	0.097	0.65	4	40	0.15	0.98	NV	**10.8**	5.00 U
2,3,7,8-TCDD	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	1.00 UJK	1.00 U
2,3,7,8-TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.64	6.4	0.45	3	6.3	63	0.69	4.6	NV	**9.14**	1.00 U
OCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,900	19,000	45	300	19,000	190,000	68	460	NV	**668**	**214**
OCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,400	14,000	33	220	14,000	140,000	51	340	NV	**19.8**	**15.1**
Total HpCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**158**	**40.9**
Total HpCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**71.4 K**	**8.07**
Total HxCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**72.4**	5.00 U
Total HxCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	84.9 UK	5.00 U
Total PeCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**29.6**	5.00 U
Total PeCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**80.3**	5.00 U
Total TCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	29 UK	**1.29**
Total TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**97.6**	7.33 UJK
Dioxin/Furan TEQ[h][5]	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	**13.5 T**	**5.99 T**

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Burn Area	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					BURNAREA-COMP-S	BURNAREA-COMP-S-DUP
Sample Type:											Birds		Mammals		Birds		Mammals			Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts										12/18/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
TPH (mg/kg)																					
Gasoline-range hydrocarbons	1,200	20,000	9,700	NV	5,900	69,000	31	130	120	120	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	NV	4.92 U	5.12 U
Diesel-range hydrocarbons	1,100	14,000	4,600	NV	NV	NV	9,500	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**41**	**51.9**
Motor oil-range hydrocarbons	1,100[a]	14,000[a]	4,600[a]	NV	NV	NV	9,500[a]	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**82.5**	**83**
Diesel+Oil[b]	NV	NV	NV	NV	NV	NV	NV	NV	260	260	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	NV	**124**	**135**
Total Metals (mg/kg)																					
Antimony	NV	NV	NV	NV	NV	NV	NV	NV	11	78	NV	NV	0.27	2.7	NV	NV	4.9	49	0.59	0.99 U	**1.28 J**
Arsenic	0.43	1.9	15	420	NV	NV	NV	NV	18	6.8	15	32	19	31	100	1,000	170	290	12	**2.67 J**	**3.54**
Beryllium	160	2,300	700	19,000	NV	NV	NV	NV	2.5	40	NV	NV	21	42	NV	NV	90	110	1.4	**0.463**	**0.644**
Cadmium	78	1,100	350	9,700	NV	NV	NV	NV	32	140	0.29	1.6	0.27	4	1.3	7.7	84	1,700	0.52	0.0936 U	0.0929 U
Chromium	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	73	34	1,600	170	560	180	10,000	890	**74.5**	**88.7**
Copper	3,100	47,000	14,000	390,000	NV	NV	NV	NV	70	80	14	43	42	70	80	240	560	1,600	110	**44**	**46.5**
Lead	400	800	800	800	NV	NV	30	30	120	1,700	11	23	56	170	83	160	460	1,600	36	**16.2**	**18.8**
Nickel	1,500	22,000	7,000	190,000	NV	NV	NV	NV	38	280	20	81	10	21	110	440	130	580	630	**56.7**	**68.9**
Mercury	23	350	110	2,900	NV	NV	NV	NV	34	0.05	0.013	0.13	1.7	17	0.058	0.58	26	130	0.17	0.0295 U	0.0293 U
Selenium	NV	NV	NV	NV	NV	NV	NV	NV	0.52	4.1	0.71	1.4	0.63	1	3.7	7.5	2.8	33	0.8	**2.12 J**	**3.02**
Silver	390	5,800	1,800	49,000	NV	NV	NV	NV	560	NV	2.6	26	14	140	13	130	990	10,000	0.16	**1.53**	**2.19**
Thallium	NV	NV	NV	NV	NV	NV	NV	NV	0.05	NV	4.5	45	0.42	4.2	48	480	5	50	0.31	**1.45 J**	**2.44 J**
Zinc	NV	NV	NV	NV	NV	NV	NV	NV	160	120	46	120	79	980	220	590	3,100	30,000	140	**162**	**194**
Chlorinated Herbicides (mg/kg)																					
2,4,5-T	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0338 U	0.0336 U
2,4-D	630	8,200	2,700	74,000	NV	NV	2.3	16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0368 U	0.0366 U
2,4-DB	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0267 U	0.0265 U
Dalapon	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0631 U	0.0626 U
Dicamba	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0324 U	0.0322 U
Dichlorprop	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0262 U	0.026 U
Dinoseb	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0365 U	0.0363 U
MCPA	32	410	130	3,700	NV	NV	0.097	0.61	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.67 U	2.65 U
MCPP (Mecoprop)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.91 U	BURNAREA U
Silvex	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0268 U	0.0266 U
VOCs (mg/kg)																					
1,1,1,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00186 U	0.00195 U
1,1,1-Trichloroethane	53,000	870,000	470,000	NV	NV	NV	190	880	NV	NV	NV	NV	260	1,300	NV	NV	91,000	450,000	NV	0.00181 U	0.00189 U
1,1,2,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00136 U	0.00142 U
1,1,2-Trichloroethane	3.2	26	54	1,500	5.6	24	0.0063	0.029	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00117 U	0.00122 U
1,1-Dichloroethane	58	260	3,200	89,000	56	240	0.044	0.2	NV	NV	NV	NV	210	2,100	NV	NV	250,000	2,500,000	NV	0.000965 U	0.00101 U

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Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Burn Area	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					BURNAREA-COMP-S	BURNAREA-COMP-S-DUP
Sample Type:																				Composite	Composite
Collection Date:											Birds		Mammals		Birds		Mammals			12/18/2024	12/18/2024
Collection Depth (ft bgs):	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
1,1-Dichloroethene	1,800	29,000	13,000	370,000	NV	NV	6.7	32	NV	NV	NV	NV	11	60	NV	NV	320	1,600	NV	0.00119 U	0.00124 U
1,1-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00159 U	0.00165 U
1,2,3-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0143 U	0.0151 U
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00318 U	0.00332 U
1,2,3-Trimethylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0031 U	0.00324 U
1,2,4-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	0.27	2.7	NV	NV	110	1,100	NV	0.00864 U	0.00902 U
1,2,4-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	10	48	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0031 U	0.00324 U
1,2-Dibromo-3-chloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00765 U	0.008 U
1,2-Dibromoethane	0.16	0.73	9	250	0.15	0.65	0.00012	0.00056	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00127 U	0.00133 U
1,2-Dichlorobenzene	2,200	36,000	20,000	560,000	NV	NV	36	160	NV	NV	NV	NV	0.92	9.2	NV	NV	480	4,800	NV	0.000834 U	0.000871 U
1,2-Dichloroethane	3.6	16	200	5,600	3.4	15	0.0028	0.013	NV	NV	0.85	1.6	27	270	22	44	8,400	84,000	NV	0.00127 U	0.00133 U
1,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00279 U	0.0029 U
1,3,5-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	11	53	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00393 U	0.0041 U
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.74	7.4	NV	NV	380	3,800	NV	0.00118 U	0.00123 U
1,3-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000983 U	0.00103 U
1,4-Dichlorobenzene	14	64	1,300	36,000	8.1	36	0.057	0.25	NV	1.2	NV	NV	0.89	3.5	NV	NV	470	1,800	NV	0.00137 U	0.00144 U
2,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00271 UJ	0.00283 UJ
2-Butanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	920	NV	NV	1,300,000	3,500,000	NV	0.125 U	0.13 U
2-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00171 U	0.00178 U
4-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000884 U	0.000922 U
4-Isopropyltoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**0.00737 J**	**0.00768 J**
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9.7	97	NV	NV	18,000	180,000	NV	0.00447 U	0.00467 U
Acetone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	75	1.2	6.3	840	8,400	1,800	8,900	NV	0.0717 U	0.0749 U
Acrylonitrile	0.86	4	40	1,100	1.3	5.8	0.00036	0.0017	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00709 U	0.0074 U
Benzene	8.2	37	380	11,000	11	50	0.023	0.1	NV	NV	NV	NV	24	240	NV	NV	4,300	43,000	NV	0.000917 U	0.000956 U
Bromobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00176 U	0.00185 U
Bromodichloromethane	3.4	15	230	6,300	2.4	11	0.002	0.0088	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00142 U	0.00148 U
Bromoform	57	260	2,700	74,000	81	360	0.046	0.22	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00229 U	0.00239 U
Bromomethane	46	750	370	10,000	170	700	0.083	0.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00387 U	0.00404 U
Carbon tetrachloride	7.5	34	320	8,900	15	65	0.013	0.058	NV	NV	NV	NV	2	9.8	NV	NV	3	15	NV	0.00176 U	0.00184 U
Chlorobenzene	530	8,700	4,700	130,000	NV	NV	5.8	27	NV	2.4	NV	NV	43	430	NV	NV	25,000	250,000	NV	0.000413 U	0.00043 U
Chloroethane	160,000	NV	NV	NV	NV	NV	310	1,300	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00334 U	0.00349 U
Chloroform	5.8	26	410	11,000	3.9	17	0.0034	0.015	NV	NV	NV	NV	8	21	NV	NV	2,200	6,000	NV	0.00202 U	0.00211 U
Chloromethane	1,400	25,000	25,000	700,000	NV	NV	2.2	9.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00854 U	0.00891 U
cis-1,2-Dichloroethene	160	2,300	710	20,000	NV	NV	0.63	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00145 U	0.00151 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00149 U	0.00155 U

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Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Burn Area	
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					BURNAREA-COMP-S	BURNAREA-COMP-S-DUP
Sample Type:																				Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/18/2024	12/18/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dibromochloromethane	3.7	17	210	5,800	3.3	14	0.0024	0.011	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0012 U	0.00125 U
Dibromomethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00148 U	0.00154 U
Dichlorodifluoromethane (Freon 12)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00317 U	0.0033 U
Diisopropyl ether	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000805 U	0.00084 U
Ethylbenzene	34	150	1,700	49,000	36	160	0.22	0.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00145 U	0.00151 U
Freon 113	400,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00148 U	0.00155 U
Hexachlorobutadiene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0118 U	0.0123 U
Isopropylbenzene	3,500	57,000	27,000	750,000	NV	NV	96	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000834 U	0.000871 U
Methyl tert-butyl ether	250	1,100	12,000	320,000	340	1,500	0.11	0.54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000688 U	0.000717 U
Methylene chloride	76	1,600	2,100	58,000	NV	NV	0.14	2.4	1,600	NV	NV	NV	2.6	22	NV	NV	1,000	8,500	NV	0.0492 U	0.0512 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00959 U	0.01 U
n-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0103 U	0.0108 U
n-Propylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00186 U	0.00195 U
sec-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00566 U	0.00591 U
Styrene	7,900	130,000	56,000	NV	NV	NV	170	800	3.2	1.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00045 U	0.00047 U
tert-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00383 U	0.004 U
Tetrachloroethene (PCE)	220	1,000	1,800	50,000	NV	NV	0.46	1.9	10	NV	NV	NV	0.18	0.94	NV	NV	42	210	NV	0.00176 U	0.00184 U
Toluene	5,800	88,000	28,000	770,000	NV	NV	84	490	200	NV	NV	NV	23	230	NV	NV	3,300	33,000	NV	**0.00388 J**	**0.00307 J**
trans-1,2-Dichloroethene	1,600	23,000	7,100	200,000	NV	NV	7	51	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00204 U	0.00213 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00224 U	0.00233 U
Trichloroethene (TCE)	6.7	51	130	3,700	15	96	0.013	0.087	NV	NV	NV	NV	42	420	NV	NV	11,000	110,000	NV	0.00115 U	0.0012 U
Trichlorofluoromethane (Freon 11)	7,600	130,000	69,000	NV	NV	NV	61	280	NV	NV	NV	NV	52	350	NV	NV	62,000	420,000	NV	0.00162 U	0.00169 U
Vinyl chloride	0.36	4.4	34	950	5.3	89	0.00057	0.01	NV	NV	NV	NV	0.12	1.2	NV	NV	28	280	NV	0.00228 U	0.00238 U
Xylenes (total)[c]	1,400	25,000	20,000	560,000	5.3	89	23	100	100	NV	41	410	1.4	1.8	190	1,900	210	260	NV	0.00173 U	0.00181 U
PAHs (mg/kg)																					
1-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00643 U	0.00639 U
2-Chloronaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00668 U	0.00663 U
2-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00612 U	0.00608 U
Acenaphthene	4,700	70,000	21,000	590,000	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.003 U	0.00297 U
Acenaphthylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0031 U	0.00307 U
Anthracene	23,000	350,000	110,000	NV	NV	NV	NV	NV	6.8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0033 U	0.00327 U
Benzo(a)anthracene	1.1	21	170	4800	NV	NV	1.6	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00248 U	0.00246 U
Benzo(a)pyrene	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00257 U	0.00255 U
Benzo(b)fluoranthene	1.1	21	170	4900	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00219 U	0.00218 U
Benzo(ghi)perylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00254 U	0.00252 U
Benzo(k)fluoranthene	11	210	1,700	49,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00308 U	0.00306 U

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Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					BURNAREA-COMP-S	BURNAREA-COMP-S-DUP
Sample Type:																				Composite	Composite
Collection Date:											Birds		Mammals		Birds		Mammals			12/18/2024	12/18/2024
Collection Depth (ft bgs):	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Chrysene	110	2,100	17,000	490,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00332 U	0.0033 U
Dibenzo(a,h)anthracene	0.11	2.1	17	490	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00247 U	0.00245 U
Fluoranthene	2,400	30,000	10,000	280,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00325 U	0.00323 U
Fluorene	3,100	47,000	14,000	390,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00294 U	0.00292 U
Indeno(1,2,3-cd)pyrene	1.1	21	170	4,900	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00259 U	0.00258 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00585 U	**0.00618 J**
Phenanthrene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00331 U	0.00329 U
Pyrene	1,800	23,000	7,500	210,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00287 U	0.00285 U
cPAH TEQ[d][4]	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00332 UT	0.0033 UT
HPAH[e]	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	0.11	0.55	1.1	5.9	6.4	64	110	550	NV	0.00332 UT	0.0033 UT
LPAH[f]	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	13	67	100	540	7,500	37,000	1,200	59,000	NV	0.00585 UT	**0.0172 JT**
Pesticides (mg/kg)																					
4,4'-DDD	2.2	12	9.7	270	NV	NV	1.1	2.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00989 U	0.00982 U
4,4'-DDE	1.8	8.2	66	1,800	NV	NV	1.6	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00965 U	0.00958 U
4,4'-DDT	1.9	8.5	66	1,800	NV	NV	12	70	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.011 U	0.0109 U
Aldrin	0.031	0.13	1.1	30	NV	NV	0.023	0.1	NV	NV	8.5E-05	0.0043	0.037	0.18	0.062	3.1	4.4	22	NV	0.00924 U	0.00918 U
alpha-BHC	0.086	0.36	3	83	NV	NV	0.0063	0.023	NV	NV	0.21	0.85	0.0096	0.096	120	470	0.88	8.8	NV	0.00913 U	0.00906 U
beta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00903 U	0.00897 U
Chlordane	1.7	7.4	61	1,700	NV	NV	0.45	2.1	NV	NV	0.28	1.4	0.27	1.4	NV	NV	120	590	NV	0.142 U	0.141 U
delta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0091 U	0.00904 U
Dieldrin	0.034	0.14	1.2	33	NV	NV	0.01	0.03	10	NV	0.012	0.64	0.0045	0.009	0.056	3	0.0065	0.013	NV	0.00999 U	0.00992 U
Endosulfan I	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00866 U	0.0086 U
Endosulfan II (beta)	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00947 U	0.00941 U
Endosulfan sulfate	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0092 U	0.00914 U
Endrin	19	250	80	2,200	NV	NV	11	NV	0.0034	NV	0.0014	0.014	0.023	0.23	0.0068	0.068	2.1	21	NV	0.0107 U	0.0106 U
Endrin aldehyde	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00846 U	0.0084 U
Endrin ketone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00996 U	0.00989 U
Heptachlor	0.11	0.45	4	110	18	230	0.017	0.048	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00993 U	0.00986 U
Heptachlor epoxide	0.055	0.24	2	56	28	NV	0.0042	0.016	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00932 U	0.00925 U
Hexachlorobenzene	0.21	0.93	11	320	1	13	0.018	0.084	10	10	0.079	0.79	0.2	2	0.37	3.7	59	590	NV	0.00871 U	0.00865 U
Lindane	0.49	2.1	17	470	NV	NV	0.036	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00969 U	0.00962 U
Methoxychlor	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	92	5.1	10	87	8,800	300	600	NV	0.0116 U	0.0115 U
Toxaphene	0.49	2.1	17	470	NV	NV	0.36	0.93	NV	NV	4.1	21	5.9	30	19	190	430	2,100	NV	0.307 U	0.305 U
DDx[g]	NV	NV	NV	NV	NV	NV	NV	NV	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.011 UT	0.0109 UT

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Sample Type:																				Composite	Composite
Collection Date:											Birds		Mammals		Birds		Mammals			12/18/2024	12/18/2024
Collection Depth (ft bgs):	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dioxin/Furan (pg/g)																					
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	150	1,500	1	7	1,500	15,000	1.6	11	NV	**14.1**	15.1 UK
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 UJK	5.00 U
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 U	5.00 U
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.1	51	0.18	1.2	50	500	0.27	1.8	NV	5.00 U	5.00 UJ
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	5.00 UJ
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	19	190	0.13	0.89	190	1,900	0.2	1.4	NV	5.00 U	5.00 UJK
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	5.00 U
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.9	19	0.13	0.89	19	190	0.2	1.4	NV	5.00 U	5.00 UJK
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	30	0.21	1.4	30	300	0.32	2.2	NV	5.00 U	5.00 UJ
1,2,3,7,8-PeCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.59	5.9	0.042	0.28	5.9	59	0.064	0.43	NV	5.00 U	5.00 UJ
1,2,3,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.1	41	0.97	6.5	40	400	1.5	9.8	NV	5.00 U	5.00 UJ
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	5.00 U
2,3,4,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.41	4.1	0.097	0.65	4	40	0.15	0.98	NV	5.00 U	5.00 U
2,3,7,8-TCDD	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	1.00 U	1.00 UJ
2,3,7,8-TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.64	6.4	0.45	3	6.3	63	0.69	4.6	NV	1.00 U	1.00 UJ
OCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,900	19,000	45	300	19,000	190,000	68	460	NV	**41.9**	**44.3**
OCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,400	14,000	33	220	14,000	140,000	51	340	NV	10.0 UJK	10.0 U
Total HpCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**23.6**	27.5 UK
Total HpCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 UJK	5.00 U
Total HxCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13.5 UK	11.1 UK
Total HxCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 U	5.00 U
Total PeCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 U	5.00 U
Total PeCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 U	5.00 U
Total TCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.00 U	1.00 U
Total TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.00 UJK	1.00 U
Dioxin/Furan TEQ[h][5]	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	**5.83 T**	**5.77 T**

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Drum Area	Tire Pile
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DRUMAREA-COMP-S	TIREPILE-COMP-S
Sample Type:																				Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/17/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
TPH (mg/kg)																					
Gasoline-range hydrocarbons	1,200	20,000	9,700	NV	5,900	69,000	31	130	120	120	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	NV	3.33 U	3.04 U
Diesel-range hydrocarbons	1,100	14,000	4,600	NV	NV	NV	9,500	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**56.1 J**	**12.3**
Motor oil-range hydrocarbons	1,100[a]	14,000[a]	4,600[a]	NV	NV	NV	9,500[a]	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**173**	**46.1**
Diesel+Oil[b]	NV	NV	NV	NV	NV	NV	NV	NV	260	260	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	NV	**229**	**58**
Total Metals (mg/kg)																					
Antimony	NV	NV	NV	NV	NV	NV	NV	NV	11	78	NV	NV	0.27	2.7	NV	NV	4.9	49	0.59	0.853 U	0.799 U
Arsenic	0.43	1.9	15	420	NV	NV	NV	NV	18	6.8	15	32	19	31	100	1,000	170	290	12	**3.41**	**3.46**
Beryllium	160	2,300	700	19,000	NV	NV	NV	NV	2.5	40	NV	NV	21	42	NV	NV	90	110	1.4	**0.101 J**	0.0551 U
Cadmium	78	1,100	350	9,700	NV	NV	NV	NV	32	140	0.29	1.6	0.27	4	1.3	7.7	84	1,700	0.52	**3.79**	**0.597**
Chromium	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	73	34	1,600	170	560	180	10,000	890	**121**	**186**
Copper	3,100	47,000	14,000	390,000	NV	NV	NV	NV	70	80	14	43	42	70	80	240	560	1,600	110	**91.7**	**119**
Lead	400	800	800	800	NV	NV	30	30	120	1,700	11	23	56	170	83	160	460	1,600	36	**28.1**	**28.6**
Nickel	1,500	22,000	7,000	190,000	NV	NV	NV	NV	38	280	20	81	10	21	110	440	130	580	630	**213**	**207**
Mercury	23	350	110	2,900	NV	NV	NV	NV	34	0.05	0.013	0.13	1.7	17	0.058	0.58	26	130	0.17	**0.0545**	**0.0812**
Selenium	NV	NV	NV	NV	NV	NV	NV	NV	0.52	4.1	0.71	1.4	0.63	1	3.7	7.5	2.8	33	0.8	**1.97 J**	**2.21 J**
Silver	390	5,800	1,800	49,000	NV	NV	NV	NV	560	NV	2.6	26	14	140	13	130	990	10,000	0.16	**1.83**	**2.87**
Thallium	NV	NV	NV	NV	NV	NV	NV	NV	0.05	NV	4.5	45	0.42	4.2	48	480	5	50	0.31	**1.86 J**	**1.81 J**
Zinc	NV	NV	NV	NV	NV	NV	NV	NV	160	120	46	120	79	980	220	590	3,100	30,000	140	**118**	**289**
Chlorinated Herbicides (mg/kg)																					
2,4,5-T	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0291 U	0.0273 U
2,4-D	630	8,200	2,700	74,000	NV	NV	2.3	16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0317 U	0.0297 U
2,4-DB	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.023 U	0.0215 U
Dalapon	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0543 U	0.0509 U
Dicamba	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0279 U	0.0261 U
Dichlorprop	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0226 U	0.0212 U
Dinoseb	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0315 U	0.0295 U
MCPA	32	410	130	3,700	NV	NV	0.097	0.61	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3 U	2.15 U
MCPP (Mecoprop)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.5 U	2.35 U
Silvex	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0231 U	0.0216 U
VOCs (mg/kg)																					
1,1,1,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00126 U	0.00115 U
1,1,1-Trichloroethane	53,000	870,000	470,000	NV	NV	NV	190	880	NV	NV	NV	NV	260	1,300	NV	NV	91,000	450,000	NV	0.00123 U	0.00112 U
1,1,2,2-Tetrachloroethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000927 U	0.000844 U
1,1,2-Trichloroethane	3.2	26	54	1,500	5.6	24	0.0063	0.029	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000796 U	0.000725 U
1,1-Dichloroethane	58	260	3,200	89,000	56	240	0.044	0.2	NV	NV	NV	NV	210	2,100	NV	NV	250,000	2,500,000	NV	0.000654 U	0.000597 U

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Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DRUMAREA-COMP-S	TIREPILE-COMP-S
Sample Type:																				Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/17/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
1,1-Dichloroethene	1,800	29,000	13,000	370,000	NV	NV	6.7	32	NV	NV	NV	NV	11	60	NV	NV	320	1,600	NV	0.000807 U	0.000735 U
1,1-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00108 U	0.000982 U
1,2,3-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00977 U	0.0089 U
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00216 U	0.00197 U
1,2,3-Trimethylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00211 U	0.00192 U
1,2,4-Trichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	0.27	2.7	NV	NV	110	1,100	NV	0.00586 U	0.00534 U
1,2,4-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	10	48	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00211 U	0.00192 U
1,2-Dibromo-3-chloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00519 U	0.00473 U
1,2-Dibromoethane	0.16	0.73	9	250	0.15	0.65	0.00012	0.00056	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000864 U	0.000786 U
1,2-Dichlorobenzene	2,200	36,000	20,000	560,000	NV	NV	36	160	NV	NV	NV	NV	0.92	9.2	NV	NV	480	4,800	NV	0.000566 U	0.000516 U
1,2-Dichloroethane	3.6	16	200	5,600	3.4	15	0.0028	0.013	NV	NV	0.85	1.6	27	270	22	44	8,400	84,000	NV	0.000865 U	0.000787 U
1,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00189 U	0.00172 U
1,3,5-Trimethylbenzene	430	6,900	2,900	81,000	NV	NV	11	53	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00267 U	0.00243 U
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.74	7.4	NV	NV	380	3,800	NV	0.0008 U	0.000728 U
1,3-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000668 U	0.000608 U
1,4-Dichlorobenzene	14	64	1,300	36,000	8.1	36	0.057	0.25	NV	1.2	NV	NV	0.89	3.5	NV	NV	470	1,800	NV	0.000933 U	0.00085 U
2,2-Dichloropropane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00184 UJ	0.00168 UJ
2-Butanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	920	NV	NV	1,300,000	3,500,000	NV	0.0846 U	0.0771 U
2-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00115 U	0.00105 U
4-Chlorotoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0006 U	0.000547 U
4-Isopropyltoluene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00339 U	**0.00489 J**
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9.7	97	NV	NV	18,000	180,000	NV	0.00304 U	**0.0258 J**
Acetone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	75	1.2	6.3	840	8,400	1,800	8,900	NV	0.0486 U	0.0443 U
Acrylonitrile	0.86	4	40	1,100	1.3	5.8	0.00036	0.0017	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00481 U	0.00438 U
Benzene	8.2	37	380	11,000	11	50	0.023	0.1	NV	NV	NV	NV	24	240	NV	NV	4,300	43,000	NV	0.000622 U	0.000566 U
Bromobenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0012 U	0.00109 U
Bromodichloromethane	3.4	15	230	6,300	2.4	11	0.002	0.0088	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000966 U	0.00088 U
Bromoform	57	260	2,700	74,000	81	360	0.046	0.22	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00155 U	0.00142 U
Bromomethane	46	750	370	10,000	170	700	0.083	0.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00263 U	0.00239 U
Carbon tetrachloride	7.5	34	320	8,900	15	65	0.013	0.058	NV	NV	NV	NV	2	9.8	NV	NV	3	15	NV	0.0012 U	0.00109 U
Chlorobenzene	530	8,700	4,700	130,000	NV	NV	5.8	27	NV	2.4	NV	NV	43	430	NV	NV	25,000	250,000	NV	0.00028 U	**0.000425 J**
Chloroethane	160,000	NV	NV	NV	NV	NV	310	1,300	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00227 U	0.00207 U
Chloroform	5.8	26	410	11,000	3.9	17	0.0034	0.015	NV	NV	NV	NV	8	21	NV	NV	2,200	6,000	NV	0.00137 U	0.00125 U
Chloromethane	1,400	25,000	25,000	700,000	NV	NV	2.2	9.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0058 U	0.00528 U
cis-1,2-Dichloroethene	160	2,300	710	20,000	NV	NV	0.63	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000979 U	0.000891 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00101 U	0.000919 U

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Sample Type:																				Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/17/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dibromochloromethane	3.7	17	210	5,800	3.3	14	0.0024	0.011	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000816 U	0.000743 U
Dibromomethane	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.001 U	0.000911 U
Dichlorodifluoromethane (Freon 12)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00215 U	0.00195 U
Diisopropyl ether	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000547 U	0.000498 U
Ethylbenzene	34	150	1,700	49,000	36	160	0.22	0.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000982 U	0.000895 U
Freon 113	400,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.001 U	0.000916 U
Hexachlorobutadiene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.008 U	0.00728 U
Isopropylbenzene	3,500	57,000	27,000	750,000	NV	NV	96	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000566 U	0.000516 U
Methyl tert-butyl ether	250	1,100	12,000	320,000	340	1,500	0.11	0.54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000466 U	0.000425 U
Methylene chloride	76	1,600	2,100	58,000	NV	NV	0.14	2.4	1,600	NV	NV	NV	2.6	22	NV	NV	1,000	8,500	NV	0.0333 U	0.0304 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0065 U	0.00592 U
n-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.007 U	0.00637 U
n-Propylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00127 U	0.00115 U
sec-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00384 U	0.00349 U
Styrene	7,900	130,000	56,000	NV	NV	NV	170	800	3.2	1.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.000305 U	**0.000304 J**
tert-Butylbenzene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0026 U	0.00237 U
Tetrachloroethene (PCE)	220	1,000	1,800	50,000	NV	NV	0.46	1.9	10	NV	NV	NV	0.18	0.94	NV	NV	42	210	NV	0.00119 U	0.00109 U
Toluene	5,800	88,000	28,000	770,000	NV	NV	84	490	200	NV	NV	NV	23	230	NV	NV	3,300	33,000	NV	**0.00186 J**	**0.00249 J**
trans-1,2-Dichloroethene	1,600	23,000	7,100	200,000	NV	NV	7	51	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00138 U	0.00126 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00152 U	0.00139 U
Trichloroethene (TCE)	6.7	51	130	3,700	15	96	0.013	0.087	NV	NV	NV	NV	42	420	NV	NV	11,000	110,000	NV	0.000779 U	0.000709 U
Trichlorofluoromethane (Freon 11)	7,600	130,000	69,000	NV	NV	NV	61	280	NV	NV	NV	NV	52	350	NV	NV	62,000	420,000	NV	0.0011 U	0.001 U
Vinyl chloride	0.36	4.4	34	950	5.3	89	0.00057	0.01	NV	NV	NV	NV	0.12	1.2	NV	NV	28	280	NV	0.00154 U	0.00141 U
Xylenes (total)[c]	1,400	25,000	20,000	560,000	5.3	89	23	100	100	NV	41	410	1.4	1.8	190	1,900	210	260	NV	**0.0012 J**	**0.00437 J**
PAHs (mg/kg)																					
1-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00554 U	0.00519 U
2-Chloronaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00575 U	0.00539 U
2-Methylnaphthalene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00527 U	0.00494 U
Acenaphthene	4,700	70,000	21,000	590,000	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00258 U	0.00242 U
Acenaphthylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00267 U	0.0025 U
Anthracene	23,000	350,000	110,000	NV	NV	NV	NV	NV	6.8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00284 U	0.00266 U
Benzo(a)anthracene	1.1	21	170	4800	NV	NV	1.6	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00213 U	0.002 U
Benzo(a)pyrene	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00221 U	0.00207 U
Benzo(b)fluoranthene	1.1	21	170	4900	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00189 U	0.00177 U
Benzo(ghi)perylene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00218 U	0.00205 U
Benzo(k)fluoranthene	11	210	1,700	49,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00265 U	0.00249 U

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Drum Area	Tire Pile
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DRUMAREA-COMP-S	TIREPILE-COMP-S
Sample Type:											Birds		Mammals		Birds		Mammals			Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts										12/17/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Chrysene	110	2,100	17,000	490,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00286 U	0.00268 U
Dibenzo(a,h)anthracene	0.11	2.1	17	490	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00212 U	0.00199 U
Fluoranthene	2,400	30,000	10,000	280,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0028 U	0.00262 U
Fluorene	3,100	47,000	14,000	390,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00253 U	0.00237 U
Indeno(1,2,3-cd)pyrene	1.1	21	170	4,900	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00223 U	0.00209 U
Naphthalene	5.3	23	580	16,000	6.4	83	0.077	0.34	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00503 U	0.00472 U
Phenanthrene	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00285 U	0.00267 U
Pyrene	1,800	23,000	7,500	210,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00247 U	0.00231 U
cPAH TEQ[d][4]	0.11	2.1	17	490	NV	NV	4.4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00286 UT	0.00268 UT
HPAH[e]	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	0.11	0.55	1.1	5.9	6.4	64	110	550	NV	0.00286 UT	0.00268 UT
LPAH[f]	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	13	67	100	540	7,500	37,000	1,200	59,000	NV	0.00503 UT	0.00472 UT
Pesticides (mg/kg)																					
4,4'-DDD	2.2	12	9.7	270	NV	NV	1.1	2.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00851 U	0.00798 U
4,4'-DDE	1.8	8.2	66	1,800	NV	NV	1.6	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.0083 U	0.00778 U
4,4'-DDT	1.9	8.5	66	1,800	NV	NV	12	70	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00945 U	0.00886 U
Aldrin	0.031	0.13	1.1	30	NV	NV	0.023	0.1	NV	NV	8.5E-05	0.0043	0.037	0.18	0.062	3.1	4.4	22	NV	0.00796 U	0.00746 U
alpha-BHC	0.086	0.36	3	83	NV	NV	0.0063	0.023	NV	NV	0.21	0.85	0.0096	0.096	120	470	0.88	8.8	NV	0.00786 U	0.00736 U
beta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00777 U	0.00728 U
Chlordane	1.7	7.4	61	1,700	NV	NV	0.45	2.1	NV	NV	0.28	1.4	0.27	1.4	NV	NV	120	590	NV	0.122 U	0.114 U
delta-BHC	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00784 U	0.00734 U
Dieldrin	0.034	0.14	1.2	33	NV	NV	0.01	0.03	10	NV	0.012	0.64	0.0045	0.009	0.056	3	0.0065	0.013	NV	0.0086 U	0.00806 U
Endosulfan I	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00745 U	0.00698 U
Endosulfan II (beta)	380	4,900	1,600	45,000	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00816 U	0.00764 U
Endosulfan sulfate	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00792 U	0.00742 U
Endrin	19	250	80	2,200	NV	NV	11	NV	0.0034	NV	0.0014	0.014	0.023	0.23	0.0068	0.068	2.1	21	NV	0.00921 U	0.00862 U
Endrin aldehyde	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00728 U	0.00682 U
Endrin ketone	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00858 U	0.00803 U
Heptachlor	0.11	0.45	4	110	18	230	0.017	0.048	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00855 U	0.00801 U
Heptachlor epoxide	0.055	0.24	2	56	28	NV	0.0042	0.016	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00802 U	0.00751 U
Hexachlorobenzene	0.21	0.93	11	320	1	13	0.018	0.084	10	10	0.079	0.79	0.2	2	0.37	3.7	59	590	NV	0.0075 U	0.00703 U
Lindane	0.49	2.1	17	470	NV	NV	0.036	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.00834 U	0.00782 U
Methoxychlor	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	92	5.1	10	87	8,800	300	600	NV	0.00995 U	0.00932 U
Toxaphene	0.49	2.1	17	470	NV	NV	0.36	0.93	NV	NV	4.1	21	5.9	30	19	190	430	2,100	NV	0.264 U	0.247 U
DDx[g]	NV	NV	NV	NV	NV	NV	NV	NV	4.1	NV	0.041	0.41	0.047	0.24	0.12	1.2	0.02	0.099	NV	0.00945 UT	0.00886 UT

Table 5-1
Forest Creek Soil Analytical Results
Oregon Department of Environment Quality

MAUL FOSTER ALONGI

Location:	RBC, Soil, Soil Ingestion, Dermal Contact, and Inhalation[1]				RBC, Soil, Volatilization to Outdoor Air[1]		RBC, Soil, Leaching to Groundwater[1]		Eco Risk-Based Concentrations[2]										Background Metals, Klamath Mountains[3]	Drum Area	Tire Pile
Sample Name:									Direct Toxicity		Ground Feeding				Top Consumers					DRUMAREA-COMP-S	TIREPILE-COMP-S
Sample Type:																				Composite	Composite
Collection Date:	Res.	Occ.	Con. Worker	Exc. Worker	Res.	Occ.	Res.	Occ.	Plants	Inverts	Birds		Mammals		Birds		Mammals			12/17/2024	12/17/2024
Collection Depth (ft bgs):											T&E	Non T&E	T&E	Non T&E	T&E	Non T&E	T&E	Non T&E		0-0.5	0-0.5
Dioxin/Furan (pg/g)																					
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	150	1,500	1	7	1,500	15,000	1.6	11	NV	**199**	**251**
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	**20.7**	**429**
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	230	1.6	11	230	2,300	2.5	17	NV	5.00 U	**20.7**
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.1	51	0.18	1.2	50	500	0.27	1.8	NV	5.00 U	**7.19**
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	**59.9**
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	19	190	0.13	0.89	190	1,900	0.2	1.4	NV	5.00 U	**13.3**
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	**44.1**
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.9	19	0.13	0.89	19	190	0.2	1.4	NV	5.00 UJK	**10.8**
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	30	0.21	1.4	30	300	0.32	2.2	NV	5.00 U	5.00 U
1,2,3,7,8-PeCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.59	5.9	0.042	0.28	5.9	59	0.064	0.43	NV	5.00 UJK	**5.31**
1,2,3,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.1	41	0.97	6.5	40	400	1.5	9.8	NV	5.00 UJK	**19.2**
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	23	0.16	1.1	23	230	0.25	1.7	NV	5.00 U	**53.5**
2,3,4,7,8-PeCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.41	4.1	0.097	0.65	4	40	0.15	0.98	NV	5.00 U	**33.5**
2,3,7,8-TCDD	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	1.00 U	**1.45**
2,3,7,8-TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.64	6.4	0.45	3	6.3	63	0.69	4.6	NV	**1.05**	**14.3**
OCDD	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,900	19,000	45	300	19,000	190,000	68	460	NV	**1,180**	**1,320**
OCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1,400	14,000	33	220	14,000	140,000	51	340	NV	**33.9**	**244**
Total HpCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**365**	**473**
Total HpCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**55.2**	**595**
Total HxCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	34.1 UK	**141 K**
Total HxCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	15.1 UK	**397**
Total PeCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5.00 UJK	**60 K**
Total PeCDFs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	11.6 UK	**265 K**
Total TCDDs	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.00 UJK	**34 K**
Total TCDF	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	**10.8 K**	**208 K**
Dioxin/Furan TEQ[h][5]	4.7	16	170	4,800	10,000	130,000	6.8	31	NV	5,000,000	0.52	5.2	0.037	0.25	5.2	52	0.057	0.38	NV	**8.27 T**	**45.4 T**

Table 5-1
Soil Analytical Results
Oregon Deparment of Environment Forest Creek

MAUL FOSTER ALONGI

Notes

Data summation rules are as follows: non-detect results are multiplied by one-half when used for sums or TEQ calculations. When all results are non-detect, the highest reporting limit is provided as the sum or TEQ.

Shading (color key below) indicates values that exceed RBCs; non-detects (U, UJ, UJK, UK) were not compared with screening criteria. When multiple criteria are exceeded, results are shaded based on the highest value. When multiple criteria of the same value are exceeded, the result is shaded based on the criterion presented to the left.

Metals results screened to RBCs only if results are above Oregon DEQ Background Metals values (if available). Background metals values are shown for reference only and are not shaded for exceedances.

RBC, Soil, Ingestion, Dermal Contact, and Inhalation, Residential	Eco RBC, Soil, Ground-Feeding Non-Threatened and Endangered Birds
RBC, Soil, Ingestion, Dermal Contact, and Inhalation, Occupational	Eco RBC, Soil, Ground-Feeding Threatened and Endangered Mammals
RBC, Soil, Leaching to Groundwater, Residential	Eco RBC, Soil, Ground-Feeding Non-Threatened and Endangered Mammals
RBC, Soil, Leaching to Groundwater, Occupational	Eco RBC, Soil, Top Consumers Threatened and Endangered Birds
Eco RBC, Soil, Direct Toxicity, Plants	Eco RBC, Soil, Top Consumer Non-Threatened and Endangered Birds
Eco RBC, Soil, Direct Toxicity, Inverts	Eco RBC, Soil, Top Consumers Threatened and Endangered Mammals
Eco RBC, Soil, Ground-Feeding Threatened and Endangered Birds	Eco RBC, Soil, Top Consumer Non-Threatened and Endangered Mammals

Bold = result was detected above method detection limit.
Con. = construction.
cPAH = carcinogenic polycyclic aromatic hydrocarbon.
Exc. = excavation.
ft bgs = feet below ground surface.
HPAH = high-molecular-weight polycyclic aromatic hydrocarbon.
J = result is estimated.
J+ = result is estimated, but the result may be biased high.
K = result is an estimated maximum potential concentration.
LPAH = low-molecular-weight polycyclic aromatic hydrocarbon.
mg/kg = milligrams per kilogram.
NV = no value.
Occ. = occupational.
pg/g = picograms per gram.
RBC = risk-based concentration.
Res. = residential.
T = result is calculated.
T&E = threatened and endangered.
TEF = toxicity equivalence factor.
TEQ = toxicity equivalence.
TPH = total petroleum hydrocarbons.
U = result is non-detect at the method detection limit or method reporting limit.
UJ = result is non-detect with an estimated detection limit.
UJK = result is non-detect, an estimated value, and an estimated maximum potential concentration.
UK = result is non-detect and an estimated maximum potential concentration
VOC = volatile organic compound.

[a]Value is for generic diesel/heating oil, since generic residual-range hydrocarbon values are not available.
[b]Diesel+Oil is the sum of diesel- and residual-range hydrocarbons. Non-detect results are summed at one-half the detection limit. When both results are non-detect the highest detection limit is shown.
[c]Total xylenes are reported by the laboratory.
[d]cPAH TEQ calculated as the sum of each cPAH multiplied by the corresponding TEF with non-detect results also multiplied by one-half. When all cPAHs are non-detect, the highest detection limit is shown.
[e]HPAH is the sum of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene.
[f]LPAH is the sum of acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene.
[g]Total DDx is the sum of detected 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT results.
[h]Dioxin/furan TEQ calculated as the sum of each congener concentration multiplied by the corresponding mammalian TEF value. Non-detect values are multiplied by one-half.

References

[1]DEQ. 2023. Table: *Risk-Based Concentrations for Individual Chemicals.* Oregon Department of Environmental Quality, Environmental Cleanup Program. August.
[2]DEQ. 2020. *Conducting Ecological Risk Assessments* . Table 1a: Risk Based Concentrations for Plants, Invertebrates, and Wildlife Exposed to Soil. Oregon Department of Environmental Quality, Land Quality Division. September.
[3]DEQ. 2013. *Development of Oregon Background Metals Concentrations in Soil.* Oregon Department of Environmental Quality, Land Quality Division Cleanup Program, Portland, Oregon. March.
[4]EPA. 1993. *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* . 600/R-93/089. U.S. Environmental Protection Agency. July.
[5]Van den Berg, M. et al. 2006. "The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds." *Toxicological Sciences,* 93(2): 223–241. [doi:10.1093/toxsci/kfl055]

Appendix A

OWRD Documentation

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

Jose
6043

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
OCT 13 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 38s/7w-34cc
State Permit No.

(1) OWNER:
Name John Palonis
Address Last Resort campground
Selma, Or

(2) TYPE OF WORK (check):
New Well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☑ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED: Threaded ☐ Welded ☑
6" Diam. from 0 ft. to 90 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS: Perforated? ☐ Yes ☑ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☑ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " "
" " "
Air ~~Bailer~~ test 15 gal./min. with 60 ft. drawdown after 1 hrs.
Artesian flow g.p.m.
perature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used cement grout
Well sealed from land surface to 40 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 11 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☑ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☑ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Josephine Driller's well number
SW ¼ NW ¼ Section 34 T. 38s R. 7w W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 90 ft.
Static level 25 ft. below land surface. Date 10-5-76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 6
Depth drilled 100 ft. Depth of completed well 100 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Brown clay	0	22	
Heavy clay, Cract rock	22	90	
Shale, Fract.	90	100	25

Work started 10-4 1976 Completed 10-5 1976
Date well drilling machine moved off of well 10-5 1976

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] [illegible] (Drilling Machine Operator) Date 10-6, 1976
Drilling Machine Operator's License No. 695

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name McClanahan Well Drilling (Person, firm or corporation) (Type or print)
Address 141 NE Beacon Grants Pass, Or
[Signed] [illegible] (Water Well Contractor)
Contractor's License No. 614 Date 10-13, 1976

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

11/28/2016

WELL I.D. LABEL# L 124095
START CARD # 1032880
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name DALE/GARRY Last Name LOCKE/DONNA WOLLAN
Company
Address 201 FORREST CR. RD 165 Forest
City SELMA State OR Zip 97538

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion
[ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

Casing: Dia + From To Gauge Stl Plstc Wld Thrd
Seal: Material From To Amt sacks/lbs

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 100.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
10	0	18	Bentonite Chips	0	18	10	S
6	18	100			Calculated	8.22	
					Calculated		

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other POURED BENTONITE
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
(●)	( )	6	[X]	2	68	.250	(●)	( )	[X]	[ ]

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 68
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type Material

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

( ) Pump ( ) Bailer (●) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
20		99	1

Temperature 52 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount 280 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County JOSEPHINE Twp 38.00 S N/S Range 7.00 W E/W WM
Sec 34 NW 1/4 of the NW Tax Lot 108
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
(●) Street address of well ( ) Nearest address
201 FOREST CR. RD
SELMA, OR 97538
165 Forest cr. rd Selma Or. 97538 BP

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	11/4/2016			30

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 40.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
11/4/2016	40	50	3			30
11/4/2016	70	100	17			30

(11) WELL LOG

Ground Elevation

Material	From	To
brn clay with gravel and boulders	0	20
gray clay with gravel and sand	20	30
gray sand and gravel	30	100

RECEIVED BY OWRD
MAR 02 2017
SALEM, OR

Date Started 11/4/2016 Completed 11/4/2016

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number Date
Signed

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1648 Date 11/28/2016
Signed BARRY PELKEY (E-filed)
Contact Info (optional) Barry Pelkey

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

JOSE 60749
12/12/2019

WELL I.D. LABEL# L 135591
START CARD # 1045852
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D.
First Name JESSE Last Name CARDOZA
Company
Address 539 MUSKRAT CIRCLE
City WHITETHORNE State CA Zip 95589

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion
[ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

Casing: Dia + From To Gauge Stl Plstc Wld Thrd
Seal: Material From To Amt sacks/lbs

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 200.00 ft.

BORE HOLE

Dia	From	To
10	0	18
6	18	200

SEAL

Material	From	To	Amt	sacks/ lbs
Bentonite Chips	0	18	23	S
		Calculated	8.22	
		Calculated		

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other DRY POURED
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
(•)	( )	6	[X]	2	38	.250	(•)	( )	[ ]	[ ]
( )	(•)	4	[ ]	2	200	SCH40	( )	(•)	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 38
Temp casing [ ] Yes Dia From + [ ] To

(7) PERFORATIONS/SCREENS

Perforations Method AIR/SAW CUT
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Casing	6	19	38	.188	1	456	
Perf	Liner	4	180	200	.188	4	60	

(8) WELL TESTS: Minimum testing time is 1 hour

( ) Pump ( ) Bailer (•) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
5		198	1

Temperature 56 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount 194 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County JOSEPHINE Twp 38.00 S N/S Range 7.00 W E/W WM
Sec 34 NW 1/4 of the NW 1/4 Tax Lot 118
Tax Map Number Lot
Lat ° ' " or 42.22472000 DMS or DD
Long ° ' " or -123.52037000 DMS or DD
( ) Street address of well (•) Nearest address
FOREST CREEK RD. TL 118 SELMA, OR 97538

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration			[ ]	
Completed Well	12/4/2019		[ ]	14

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 18.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
12/4/2019	18	44	3.5		[ ]	14
12/4/2019	87	88	1.5		[ ]	14
					[ ]	
					[ ]	
					[ ]	

(11) WELL LOG

Ground Elevation

Material	From	To
BROWN CLAY BOULDER	0	11
BROWN SHALE MEDIUM	11	16
GREY SHALE MEDIUM HARD	16	62
LT GREY SHALE MEDIUM HARD	62	123
GREY SHALE MEDIUM HARD	123	200

Date Started 12/3/2019 Completed 12/4/2019

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1945 Date 12/9/2019

Signed JUSTIN SPLIETHOF (E-filed)

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1835 Date 12/12/2019

Signed KEVIN GILL (E-filed)

Contact Info (optional) CLOUSER DRILLING INC.

WATER WELL REPORT
STATE OF OREGON

Jose
10871

RECEIVED
APR 7 1982
WATER RESOURCES DEPT
SALE OREGON

State Well No. 38S/7W-34bc
State Permit No.

DUPLICATE

(1) OWNER:
Name MR. EDWARD E. WALKER
Address 140 BRIAR LANE
City SELMA State OR.

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
ry Mud ☐ Dug ☐
☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:
Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 80 ft. Gauge .250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:
Perforated? ☒ Yes ☐ No
Type of perforator used TORCH
Size of perforations 3/16 in. by 6 in.
60 perforations from 60 ft. to 80 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level

pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Air test 12 gal./min. with drill stem at 80 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
sian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Special standards: Yes ☐ No ☒
Well seal—Material used CEMENT GROUT
Well sealed from land surface to 18 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 5 sacks
How was cement grout placed?
METHOD 'C'

Was pump installed? Type HP Depth ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County JOSEPHINE Driller's well number 11231
SW¼ NW¼ Section 34 T. 38 R. 7 W.M.
Tax Lot # 112 Lot Blk Subdivision
Address at well location: SAME

(11) WATER LEVEL: Completed well.
Depth at which water was first found 66' ft.
Static level 12 ft. below land surface. Date Nov. 13, 81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 100 ft. Depth of completed well 80 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
BROWN CLAY w/ MEDIUM GRAVEL	0	65	
MEDIUM GRAVEL	65	100	12

Work started NOV. 23 1981 Completed NOV. 23 1981
Date well drilling machine moved off of well NOV. 23 1981

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] (signature) (Drilling Machine Operator) Date Nov. 30, 1981
Drilling Machine Operator's License No. 773

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name LEROY CLOUSER DRILLING (Person, firm or corporation) (Type or print)
Address P.O. BOX 235 Selma 97538
[Signed] (signature) (Water Well Contractor)
Contractor's License No. 700 Date November 30, 1981

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

Gryzkowski

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED
OCT 28 1969
STATE ENGINEER
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

Jose
6046

State Well No. 38/7W-34 bC
State Permit No.

TL 1 11

(1) OWNER:
Name F V Gryczkowski
Address 3550 Ruby St c 53 San Diego Calif 92110

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED: Threaded ☐ Welded ☒
6 " Diam. from 0 ft. to 44 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: Perforated? ☐ Yes ☒ No.
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.
Static level 15' ft. below land surface Date 8-19-69
Artesian pressure lbs. per square inch Date

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Driller
Yield: 9 gal./min. with 31 ft. drawdown after 1 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 51° Was a chemical analysis made? ☐ Yes ☒ No

(10) CONSTRUCTION:
Well seal—Material used Cement
Depth of seal 30 ft.
Diameter of well bore to bottom of seal 10 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth
Was a drive shoe used? ☒ Yes ☐ No
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(11) LOCATION OF WELL:
County Josephine Driller's well number
¼ ¼ Section 34 T. 38S R. 7W W.M.
Bearing and distance from section or subdivision corner

(12) WELL LOG: Diameter of well below casing 6"
Depth drilled 60' ft. Depth of completed well 60' ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Clay Brn Boulders Med	0	34'	—
Clay Brn – gravel Med.	34	45'	—
Boulders Sm – gravel Med	45'	60'	15'
Water bearing 45'-55'			

Work started 8-19 1969 Completed 8-19 1969
Date well drilling machine moved off of well 8-19 1969

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] C L Orcutt (Drilling Machine Operator) Date 8-22, 1969
Drilling Machine Operator's License No. 427

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R F Paquin Drilling Co (Person, firm or corporation) (Type or print)
Address 2820 So River Rd Grants Pass Ore
[Signed] R F Paquin (Water Well Contractor)
Contractor's License No. 375 Date Oct 25, 1969

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE OF OREGON

COUNTY OF JOSEPHINE

CERTIFICATE OF WATER RIGHT

This Is to Certify, *That* L. J. BUELL

of Selma *, State of* Oregon *, has a right to the use of*

the waters of Thompson Creek, tributary of Deer Creek,

for the purpose of irrigation

and that said right has been confirmed by decree of the Circuit Court of the State of Oregon for Josephine *County, and the said decree entered of record at Salem, in the Order Record of the STATE ENGINEER, in Volume* 13 *, at page* 70 *; that the priority of the right thereby confirmed dates from* 1905;

that the amount of water to which such right is entitled, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed one cubic foot per second for each 50 acres of land irrigated during the irrigation season from April 1 to November 1 of each year.

A description of the lands irrigated under such right, and to which the water is appurtenant (or, if for other purposes, the place where such water is put to beneficial use), is as follows:

5.9 acres in NE¼ SE¼
10.1 acres in SE¼ SE¼
Section 28,
T. 38 S., R. 7 W., W. M.

And said right shall be subject to all other conditions and limitations contained in said decree.

The right to the use of the water for irrigation purposes is restricted to the lands or place of use herein described.

WITNESS the signature of the State Engineer,

affixed this 1st *day*

of September *, 1940*1

CHAS. E. STRICKLIN
State Engineer.

Recorded in State Record of Water Right Certificates, Volume 12 *, page* 13838 .

Appendix B

Photograph Log

MAUL
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Photographs

Project Name: Forest Creek Site Assessment
Project Number: M0785.12.003
Location: Selma, Oregon

Photo No. 1.

Description

View of Haven Creek, looking west.

Photo No. 2.

Description

View of Thompson Creek, looking west. Both creeks had steep banks and rocky stream beds.

Photographs

Project Name: Forest Creek Site Assessment
Project Number: M0785.12.003
Location: Selma, Oregon

Photo No. 3.

Description

View of composite soil sample DRUMAREA-COMP-S, looking northeast. Note the chain-link fence and vehicle trench present along the eastern portion of the property along Forest Creek Road.

Photo No. 4.

Description

View of typical increment sample hole. Samples were collected 0 to 6-inches deep.

Photographs

Project Name: Forest Creek Site Assessment
Project Number: M0785.12.003
Location: Selma, Oregon

Photo No. 5.

Description

View of sample location flag placement in Decision Unit 1.

Photo No. 6.

Description

View of Haven Creek, looking east.

Photographs

Project Name: Forest Creek Site Assessment
Project Number: M0785.12.003
Location: Selma, Oregon

Photo No. 7.

Description

Typical view of forested areas of the Site.

Photo No. 8.

Description

Typical view of forested areas of the Site.

Photographs

Project Name: Forest Creek Site Assessment
Project Number: M0785.12.003
Location: Selma, Oregon

Photo No. 9.

Description

Typical view of the former removal areas on the Site, looking east.

Photo No. 10.

Description

Typical view of the former removal areas on the Site, looking southeast.

Appendix C

Standard Operating Procedures

MAUL
FOSTER
ALONGI

Scope and Application

This standard operating procedure (SOP) describes the decontamination procedure for field equipment that may come in contact with contaminated media and that Maul Foster & Alongi, Inc. (MFA) staff may reuse at multiple sample locations or sites. Decontamination is performed to reduce the potential for cross-contamination of samples that will be collected with multiuse equipment and that will undergo physical or chemical analyses. Other equipment that is multiuse—not used specifically for sample collection (e.g., water level meter, pump used for well development)—also requires decontamination. Finally, decontamination is necessary to minimize the potential for MFA staff's exposure to chemicals.

Typically, decontamination is not necessary for field equipment that is disposable and intended to be used only once (e.g., disposable bailer). Additionally, this SOP does not apply to equipment used by subcontractors, such as drilling equipment. However, MFA staff should confirm that subcontractors are implementing appropriate decontamination procedures to minimize the potential for cross-contamination of samples or MFA staff's exposure to chemicals.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Nonphosphate detergent solution (e.g., Alconox, Liquinox)
- Distilled and potable water
- Personal protective equipment (as specified in the site-specific health and safety plan)
- Buckets to contain rinsate, brushes, paper towels

Depending on the site conditions and the types of contaminants that may be present, the use of other decontamination materials, such as deionized water, methanol, hexane, or isopropyl alcohol, may be necessary. The need for other materials should be determined prior to fieldwork. The decontamination procedures using other materials should be described in a site-specific sampling and analysis plan (SAP).

Methodology

When the site-specific SAP specifies additional or different requirements for decontamination, it takes precedence over this SOP. In the absence of a SAP, the following procedures shall be used.

General Sampling Procedure:

1. Rinse the equipment with potable water to remove visible soil, petroleum sheen, or contamination.

2. Scrub the equipment with a brush and solution of distilled water and nonphosphate detergent.

3. Rinse the equipment with distilled water.

4. Allow equipment to air dry, or dry it with paper towels.

5. At all times, ensure that the decontaminated equipment is stored so as to prevent it from becoming contaminated while not in use. Depending on the size of the equipment, it can be wrapped with new aluminum foil or placed in a new plastic bag.

Rinsate Storage:

All fluids resulting from equipment decontamination shall initially be contained in a bucket and then transferred to a Department of Transportation-approved container (e.g., 55-gallon drum) stored on site at a location that does not interfere with on-site activities (e.g., vehicle traffic, pedestrian areas). Place a label on each container and include the following information:

- The date on which fluids were placed in the container
- Contents (e.g., “water from equipment decontamination”)
- Contact information, including MFA staff or client phone number

Note that labels on containers exposed to sunlight or precipitation are prone to fading. Use a waterproof, indelible ink pen (e.g., Sharpie®) whenever possible. In the field notebook, keep a detailed inventory of all containers, including the number of containers, the approximate quantity of liquids generated, and a description of the source of the fluids. Provide this information to the MFA project manager. For future reference, take photographs of (1) each drum label, (2) the drum(s), and (3) the drum storage vicinity on site.

Note that some clients and site owners have specific requirements for labeling and storage of containers. The requirements should be determined in advance of the fieldwork.

Scope and Application

This standard operating procedure (SOP) describes the use of a photoionization detector (PID) to field screen soil for evidence of organic vapors. The PID measures the organic vapor concentration in parts per million, is not compound-specific.

Never rely on a stand-alone PID reading to identify organic chemical contamination in soil. Always collect multiple PID readings (e.g., at multiple depths along the length of a soil core), since it is the relative difference in concentration between multiple readings (e.g., a sudden increase in concentration at a certain depth interval) that is the typical indictor of contamination. Additionally, PID readings should always be accompanied by observation of the soil samples for other indictors of contamination, such as soil staining or chemical odors, so that these multiple lines of evidence can be used together to identify potential organic chemical contamination in the field.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Personal protective equipment (as specified in the health and safety plan)
- PID with calibration gas
- Ziploc®-type bags
- Field forms or notebook for documenting PID readings

Methodology

When the project-specific sampling and analysis plan (SAP) specifies additional or different requirements for organic vapor field screening, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

The electron volt (eV) rating for the PID lamp (e.g., 9.8, 10.6, 11.7) must be greater than the ionization potential (in eV) of a compound in order for the PID to detect the compound. A lamp of at least 9.8 eV should be used for petroleum hydrocarbons. A lamp of at least 10.6 eV should be used for typical chlorinated alkenes. If the project health and safety plan does not specify the lamp size, verify the compatibility of the lamp size with the anticipated compounds expected to be present in soil prior to the field activities, and confirm with the project manager.

General Sampling Procedure (Heading 3 No Number Style):

Calibration:

- The PID should be calibrated daily (or more frequently, as needed).
- Calibrate the PID according to the manufacturer's instructions.

- Document the calibration activities and results in the field notebook.

Measuring organic vapor content:

- Place a representative volume (generally, a "handful") of freshly exposed soil into a Ziploc-type bag.
- Seal the bag and gently knead the bag to loosen the soil.
- Let the bag set for several minutes to allow organic vapors, if present, to volatilize from the soil into the headspace of the bag.
- Partially open the bag so that the tip of the PID intake tube can be inserted into the bag but is not in contact with the soil, then close the bag seal around the intake tube.
- Record the PID measurement and document results in the field notes or boring log.

Static Sheen Test Procedure and Observations:

Sheen Test Procedure:

- Following the PID screen discussed above, add enough water to cover the soil in the container.
- Observe the water for signs of discoloration/sheen and characterize per the table below.

When static sheen testing is required or when making observations of a water surface the following table presents descriptions to be used (consistent with Department of Ecology Guidance)[1].

No Sheen (NS)	No visible sheen on the water surface
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid. Natural organic oils or iron bacteria in the soil may produce a slight sheen.
Moderate Sheen (MS)	Pronounced sheen over limited area; probably has some color/iridescence; spread is irregular, may be rapid; sheen does not spread over entire water surface.
Heavy Sheen (HS)	Heavy sheen with pronounced color/iridescence; spread is rapid; the entire water surface is covered with sheen.
Biogenic Film (BF)	False positive results may be generated by the presence of decaying organic matter and iron bacteria, which can produce a rainbow-like sheen similar to an oil sheen. These sheens, unlike oil sheens, can typically be broken up creating platy or blocky fragments when agitated or disturbed. Biogenic films can also be foamy.

[1] Department of Ecology. 2016. Guidance for remediation of petroleum contaminated sites. June.

Scope and Application

This standard operating procedure (SOP) describes the use of hand tools for obtaining surface and subsurface soil samples for physical and/or chemical analysis.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Personal protective equipment (as specified in the Health and Safety Plan)
- Tools appropriate for the conditions that may be encountered (e.g., spoon, trowel, shovel, hand auger); tools constructed of stainless steel are preferred.
- Stainless steel bowls
- Tape measure with increments in feet and tenths of a foot.
- Laboratory-supplied sample containers
- Laboratory chain-of-custody form and cooler with ice.
- Equipment decontamination supplies if sampling equipment will be reused between sample locations (see SOP 1 for equipment decontamination procedures).
- Field forms or notebook for documenting the sampling procedures.

Methodology

When the project-specific sampling and analysis plan (SAP) specifies additional or other requirements for soil sampling, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

General Sampling Procedure:

- Don gloves as specified in the Health and Safety Plan; replace gloves with new gloves after each sample is collected.
- Clear the ground surface of brush, root mat, grass, leaves, and other debris.
- Use the selected hand tool to remove soil to the targeted sample depth. Use a measuring tape to verify that the sample depth is correct and record the depth in the field notebook or boring log.
- Describe and document the soil lithology in accordance with SOP 2.
- Use the selected hand tool to collect soil and homogenize in a decontaminated stainless-steel bowl or a dedicated Ziploc® bag and then transfer the sample to the sample container using hand tools.

- Before sample collection, and to the extent possible, use the selected hand tool to remove organic debris, anthropogenic material (e.g., brick, metal, glass), and gravels larger than 4 millimeters, unless a project-specific SAP directs otherwise.
- When sampling for gasoline-range total petroleum hydrocarbons (gasoline) or volatile organic compounds (VOCs), a subsample will be obtained from a discrete portion of the collected sample. To minimize the potential loss of volatiles during sampling, the subsample shall not be composited or homogenized. The sample container for gasoline and/or VOC analysis will be filled first if additional containers are necessary for other analysis. Specific procedures for collecting samples for gasoline and/or VOC analysis using the U.S. Environmental Protection Agency Method 5035 are specified in SOP 5.
- The sampling device and field equipment will be decontaminated between sample locations in accordance with SOP 1. Alternatively, new, disposable equipment can be used to collect each sample to preclude the need for equipment decontamination.

Backfilling Sample Locations:

Backfill in accordance with federal and state regulations (e.g., Oregon bentonite requirements per OAR 690-240-0035). Otherwise, manual excavations can be backfilled with excess soil remaining after sample collection, unless the project-specific SAP requires a different backfill procedure.

Scope and Application

This standard operating procedure (SOP) describes the methods for obtaining soil samples for chemical analysis for gasoline-range petroleum hydrocarbons (gasoline) and volatile organic compounds (VOCs) by U.S. Environmental Protection Agency Method 5035A. Please see note in general sampling procedure regarding container labeling.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Sampling equipment (e.g., Terra Core Sampler™ or similar sampler capable of collecting a 5-gram soil sample).
- Laboratory-supplied sample containers:
  - Preweighed and labeled 40-milliliter volatile organic analysis (VOA) vials, including preservative (typically methanol)
  - Two-ounce jar for percent total solids/moisture (if required, confirm with the laboratory)
- Laboratory chain-of-custody form and cooler with ice.
- Equipment decontamination supplies if sampling equipment will be reused between sample locations (see SOP 1 for equipment decontamination procedures).
- Field forms or notebook for documenting the sampling procedures.

Methodology

When the site-specific sampling and analysis plan (SAP) specifies additional or different requirements for soil sampling, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

Laboratory Analytical Considerations:

- VOCs must be analyzed within 14 days of sample collection.
- Samples must be maintained at less than 4°±2°C.
- Discrete VOC samples may be composited at the laboratory.

General Procedure:

- When using the Terra Core Sampler, seat the plunger in the handle.
- Collect the sample by pushing the sampler into the soil until the soil has filled the sampler.
- Remove the sampler and confirm that the soil in it is flush with the mouth of the sampler.

- Wipe all debris from the outside of the sampler. Remove any excess collected soil that extends beyond the mouth of the sampler.
- Rotate the plunger handle 90 degrees until it is aligned with the slots in the body of the sampler. Place the mouth of the sampler into the sample container and extrude the sample into the sample container by pushing the plunger down. Hold the sample at an angle when extruding to minimize splashing of the preservative.
- Immediately remove any soil or debris from the threads of the vial and place the lid on the vial.
- Gently swirl the vial (do not shake) to allow the preservative to uniformly penetrate and wet the soil.
- Repeat process for each additional sample container.
- If required by the laboratory, fill a 2-ounce container to capacity for percent total solids determination.
- **Please note that the tare weight is recorded on the vial or is digitally recorded for that specific container using a bar code. Do not obscure the laboratory-provided tare weight or bar code. Do not place any labels, stickers, tape, etc., on the pre-weighed sample vials.**

Scope and Application

This standard operating procedure (SOP) describes the practices for locating underground utilities. Refer to the MFA health and safety plan (HASP) for additional information regarding communication procedures to be followed when an inadvertent utility strike occurs, as well as regarding methods for mitigating hazards during a utility strike.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Personal protective equipment (as specified in the HASP)
- Marking materials (e.g., marking paint, stakes, flags)
- Field documentation materials

Methodology

When the project-specific sampling and analysis plan (SAP) specifies additional or different requirements for underground utility locates, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

Before Conducting Utility Locates:

- Ensure that the locate will be conducted reasonably soon before the excavation work begins, e.g., within 48 hours. There may be project-specific conditions, e.g., weather and/or ground features that could cause markings to fade, which would require scheduling of the excavation work sooner than 48 hours after the locate.
- Clearly define the boundary of the work and the locations of all proposed excavations. Prepare a map of the project area showing the excavation locations.
- Interview site managers/property owners and obtain plans or drawings, if available, showing on-site utilities.
- For project work that will not take place in the public right-of-way, ensure that the public rights-of-way nearest to the project are identified and communicated during the one-call notification.
- Identify the township and range of the project area. This information can be easily attained by a quick email to MFA's GIS Exchange.
- If feasible, conduct a site visit to identify site conditions that could cause fading or disruption of marking paint. Such conditions could include gravel or ground sensitive to erosion and high traffic.
- Check the weather forecast to assess the potential for snow or rain to make marking utilities difficult or cause the markings to fade.

One-Call Utility Notification:

- If possible, initiate the one-call utility notification at least one week before the proposed work begins.
- Include a map or GPS coordinates when submitting the notification.
- Before conducting any excavation activities, confirm with each public utility that the utility locate has been completed.
- On remote or complicated sites, consider meeting public locators on site.
- Document the one-call ticket number and results in the project files.
- Provide the one-call ticket number to subcontractors who will be doing the excavations.

Private Utility Locate:

- Conduct the private utility locate only after confirmation that the public utility locate has been completed and all public utilities have been marked and the results reviewed by MFA staff who will be overseeing the excavations.
- Meet the private locator on site and participate in the entire private utility locate. Be engaged in the process, ask questions, and take time to walk the site thoroughly with the locator.
- Bring a copy of the one-call utility ticket and results of the one-call utility locater to check against the utility markings on the ground.
- If possible, have a site/property representative knowledgeable of on-site utilities participate in the private utility locate.
- If paint alone may not suffice to ensure clear marking of utilities, add vertical markers such as stakes or flags.
- Visually assess the area of the proposed excavation(s) to identify features potentially indicative of buried utilities. Have the private utility locator examine each feature identified below to assess the presence of buried utilities.
  - Examine adjacent public rights-of-way where public utilities have been marked for evidence of utilities that may extend onto the project site.
  - Identify nearby light poles, telephone poles, electrical utility poles, or other overhead utility poles with wires or conductors that run from the overhead utility, down the pole, and into the ground.
  - Identify the location of gas meters, water meters, or other aboveground junction boxes for evidence of utilities extending from these features into the ground.
  - Examine asphalt and concrete ground surfaces for discontinuities in the surface indicative of utility installations. Discontinuities may include recent patches of asphalt or concrete inlaid within older concrete or asphalt surfaces.
  - Identify manholes and catch basins indicative of buried storm or sanitary sewer pipes. Open manholes to examine the orientation of associated pipes to assess whether the utilities may be present near proposed excavations.
  - Identify tank ports and vent pipes.

- Identify irrigation systems and associated features such as valve boxes and controllers.
- Identify any other signs indicating the presence of buried utilities.
- Be wary of utility marks that suddenly begin or dead end.

Preparing to Perform Subsurface Activities after a Locate:

- Ensure that the markings are still visible when the work begins.
- Adjust locations, as needed, to avoid identified utilities, or use alternative methods such as nonmechanical excavation means (i.e., manual excavation or air-knifing) to a minimum depth of 5 feet.

Table
APWA UNIFORM COLOR CODE

	WHITE—Proposed Excavation
	PINK—Temporary Survey Markings
	RED—Electric Power Lines, Cables, Conduit and Lighting Cables
	YELLOW—Gas, Oil, Steam, Petroleum or Gaseous Materials
	ORANGE—Communication, Alarm or Signal Lines, Cables or Conduit
	BLUE—Potable Water
	PURPLE—Reclaimed Water, Irrigation and Slurry Lines
	GREEN—Sewers and Drain Lines
Source: Uniform Color Codes, ANSI Standard Z535.1. American Public Works Association. Revised 1999.	

Appendix D

Level 1 Ecological Scoping Checklist

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ATTACHMENT 1
Ecological Scoping Checklist

Site Name	Forest Creek
Date of Site Visit	December 16-20, 2024
Site Location	113 Forest Creek Road, Selma, Oregon
Site Visit Conducted by	Connor Anderson of Maul Foster and Alongi, Inc.

Part ❶

CONTAMINANTS OF INTEREST **Types, Classes, Or Specific Hazardous Substances ‡** **Known Or Suspected**	**Onsite**	**Adjacent to or in locality of the facility †**
Petroleum hydrocarbons	Yes	Yes
Volatile organic compounds	Yes	Yes
Total priority pollutant metals	Yes	Yes
Pesticides and herbicides	Yes	Yes
Polycyclic aromatic hydrocarbons	Yes	Yes
Dioxins and furans	Yes	Yes

‡ As defined by OAR 340-122-115(30) † As defined by OAR 340-122-115(34)

Part ❷

OBSERVED IMPACTS ASSOCIATED WITH THE SITE	**Finding**
Onsite vegetation (**N**one, **L**imited, **E**xtensive)	E
Vegetation in the locality of the site (**N**one, **L**imited, **E**xtensive)	E
Onsite wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other (**N**one, **L**imited, **E**xtensive)	L
Wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other in the locality of the site (**N**one, **L**imited, **E**xtensive)	L
Other readily observable impacts (**N**one, **D**iscuss below)	D

Discussion:

The site is a former residence, with a mixture of cleared gravel areas, heavily wooded land, and two creeks with established vegetation. On site vegetation is comprised mostly of tree cover, grasses and shrubby cover. Nearby area outside of the property is characterized by rural residential structures and extensive wooded land. Wildlife observed on site is limited to birds, small mammals, and fish. It is possible that there are other species of ecological relevance present, however no observations of other species were noted during the site visits.

ATTACHMENT 1
Ecological Scoping Checklist (cont'd)

Part ❸

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	**Finding**

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Terrestrial - Wooded	
Percentage of site that is wooded	50%
Dominant vegetation type (**E**vergreen, **D**eciduous, **M**ixed)	M
Prominent tree size at breast height, i.e., four feet (<6", 6" to 12", >12")	>12"
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	B, M
Terrestrial - Scrub/Shrub/Grasses	
Percentage of site that is scrub/shrub	7%
Dominant vegetation type (**Sc**rub, **Sh**rub, **G**rasses, **O**ther)	G
Prominent height of vegetation (<2', 2' to 5', >5')	<2'
Density of vegetation (**D**ense, **P**atchy, **S**parse)	P
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	B, M
Terrestrial - Ruderal	
Percentage of site that is ruderal	40%
Dominant vegetation type (**L**andscaped, **A**griculture, **B**are ground)	B
Prominent height of vegetation (0', >0' to <2', 2' to 5', >5')	>0' to <2'
Density of vegetation (**D**ense, **P**atchy, **S**parse)	S
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	None
Aquatic - Non-flowing (lentic)	
Percentage of site that is covered by lakes or ponds	0
Type of water bodies (**L**akes, **P**onds, **V**ernal pools, **I**mpoundments, **Lag**oon, **R**eservoir, **C**anal)	NA
Size (acres), average depth (feet), trophic status of water bodies	NA
Source water (**R**iver, **St**ream, **G**roundwater, **I**ndustrial discharge, **Su**rface water runoff)	NA
Water discharge point (**N**one, **R**iver, **St**ream, **G**roundwater, **W**etlands impoundment)	NA
Nature of bottom (**M**uddy, **R**ocky, **S**and, **C**oncrete, **O**ther)	NA
Vegetation present (**S**ubmerged, **E**mergent, **F**loating)	NA
Obvious wetlands present (**Y**es / **N**o)	NA
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	NA
Aquatic - Flowing (lotic)	
Percentage of site that is covered by rivers, streams (brooks, creeks), intermittent streams, dry wash, arroyo, ditches, or channel waterway	3%
Type of water bodies (**R**ivers, **S**treams, **I**ntermittent Streams, **D**ry wash, **A**rroyo, **D**itches, **C**hannel waterway)	S
Size (acres), average depth (feet), approximate flow rate (cfs) of water bodies	Unknown
Bank environment (cover: **V**egetated, **B**are / slope: **S**teep, **G**radual / height (in feet))	V/S/10'
Source water (**R**iver, **St**ream, **G**roundwater, **I**ndustrial discharge, **Su**rface water runoff)	S, G, Su
Tidal influence (**Y**es / **N**o)	No
Water discharge point (**N**one, **R**iver, **St**ream, **G**roundwater, **W**etlands impoundment)	S
Nature of bottom (**M**uddy, **R**ocky, **S**and, **C**oncrete, **O**ther)	R
Vegetation present (**S**ubmerged, **E**mergent, **F**loating)	E
Obvious wetlands present (**Y**es / **N**o)	No
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds,	

***See part 4**

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Mammals, **O**ther)	O
Aquatic - Wetlands	
Obvious or designated wetlands present (**Y**es / **N**o)	No
Wetlands suspected as site is/has (**A**djacent to water body, in **F**loodplain, **S**tanding water, **D**ark wet soils, **M**ud cracks, **D**ebris line, **W**ater marks)	NA
Vegetation present (**S**ubmerged, **E**mergent, **S**crub/shrub, **W**ooded)	NA
Size (acres) and depth (feet) of suspected wetlands	NA
Source water (**R**iver, **St**ream, **G**roundwater, **I**ndustrial discharge, **Su**rface water runoff)	NA
Water discharge point (**N**one, **R**iver, **St**ream, **G**roundwater, **I**mpoundment)	NA
Tidal influence (**Y**es / **N**o)	NA
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	NA

*** P**: Photographic documentation of these features is highly recommended.

Part ❹

ECOLOGICALLY IMPORTANT SPECIES / HABITATS OBSERVED
No ecologically important species were observed on site. Observations of species were limited to birds, fish, and small mammals.
The parcel is primarily comprised of wooded land with mixed varieties of evergreen and deciduous trees. The front, middle, and
back portions of the property have patches of ruderal land with sparse grass cover where previous piles of debris
and vehicles were located. The center and eastern sections of the property contains a section of Haven Creek and
Thompson Creek, which are classified as wetlands according to the National Wetland Inventory. Despite the technical classification,
the creek portions of the property does not have obvious wetland characteristics, such as standing water or submerged vegetation.
They instead have steep, vegetated banks with tree cover and moving water. The sections of Haven Creek and
Thompson Creek would represent low-quality wetland habitiats, and would be unlikely to support ecologically
important species associated with typical wetland habitiat.

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surface waters? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via surface water?**			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surface waters. • Ability of hazardous substances to migrate to surface waters. • Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters. Aquatic receptors may be exposed through osmotic exchange, respiration or ventilation of surface waters. • Contaminants may be taken-up by terrestrial plants whose roots are in contact with surface waters. • Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source.			
Are hazardous substances present or potentially present in groundwater? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via groundwater?**			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in groundwater. • Ability of hazardous substances to migrate to groundwater. • Potential for hazardous substances to migrate via groundwater and discharge into habitats and/or surface waters. • Contaminants may be taken-up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone (~1m depth). • Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in sediments? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via contact with sediments?**			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in sediment. • Ability of hazardous substances to leach or erode from surface soils and be carried into sediment via surface runoff. • Potential for contaminated groundwater to upwell through, and deposit contaminants in, sediments. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may be dermally exposed during dry periods. Aquatic receptors may be directly exposed to sediments or may be exposed through osmotic exchange, respiration or ventilation of sediment pore waters. • Terrestrial plants may be exposed to sediment in an area that is only periodically inundated with water. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may have direct access to sediments for the purposes of incidental ingestion. Aquatic receptors may regularly or incidentally ingest sediment while foraging.			
Are hazardous substances present or potentially present in prey or food items of ecologically important receptors? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via consumption of food items?**			X
When answering the above questions, consider the following: • Higher trophic level terrestrial and aquatic consumers and predators may be exposed through consumption of contaminated food sources. • In general, organic contaminants with log K_{ow} > 3.5 may accumulate in terrestrial mammals and those with a log K_{ow} > 5 may accumulate in aquatic vertebrates.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surficial soils? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via incidental ingestion of or dermal contact with surficial soils?**			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surficial (~1m depth) soils. • Ability of hazardous substances to migrate to surficial soils. • Significant exposure via dermal contact would generally be limited to organic contaminants which are lipophilic and can cross epidermal barriers. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash). • Contaminants in bulk soil may partition into soil solution, making them available to roots. • Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil or while grooming themselves clean of soil.			
Are hazardous substances present or potentially present in soils? **AND** **Are ecologically important species or habitats present?** **AND** **Could hazardous substances reach these receptors via vapors or fugitive dust carried in surface air or confined in burrows?**			X
When answering the above questions, consider the following: • Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant > 10^{-5} atm-m^3/mol and molecular weight < 200 g/mol). • Exposure via inhalation is most important to organisms that burrow in contaminated soils, given the limited amounts of air present to dilute vapors and an absence of air movement to disperse gases. • Exposure via inhalation of fugitive dust is particularly applicable to ground-dwelling species that could be exposed to dust disturbed by their foraging or burrowing activities or by wind movement. • Foliar uptake of organic vapors would be limited to those contaminants with relatively high vapor pressures. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

Photograph 1 - Former removal area.

Photograph 2 - Haven Creek, looking east.

Photograph 3 - Both on site creeks have vegetated banks, rocky bottoms, and swift moving water.

Photograph 4 - The majority of the site is forested land with mixed varieties of evergreen and deciduous trees.

Photograph 5 - Large portions of the site are cleared, where structures, refuse, and debris have been removed during prior cleanup actions.

Photograph 6 - Large portions of the site are cleared, where structures, refuse, and debris have been removed during prior cleanup actions.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Forest Creek Surface Water and Wetlands

February 26, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix E

Analytical Laboratory Reports and Data Validation Memorandum

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Data Validation Memorandum

Project No. M0785.12.003 | February 5, 2025 | Oregon Department of Environmental Quality

Maul Foster & Alongi, Inc. (MFA), conducted an independent Stage 2A review of the quality of analytical results for soil and associated quality control samples collected in December 2024, at the Forest Creek Road Dump site located at 113 Forest Creek Road in Selma, Oregon.

Pace Analytical National (Pace-N) and Eurofins Environmental Testing (Eurofins) performed the analyses. MFA reviewed Pace-N report numbers L1812652, L1812675, L1812653, L1812779, L1812686, L1812777, L1812692, and L1812727. EPA Method 1613B analysis was subcontracted to Eurofins. The Eurofins lab reports were processed through Pace-N's Laboratory Information Management System and were given a Pace-N laboratory report number. MFA reviewed Eurofins report numbers L1812670, L1813317, L1813314, L1813321, L1813318, L1813320, L1813319, and L1812728. The analyses performed and the samples analyzed are listed in the following tables.

Analysis	Reference
Diesel- and oil-range hydrocarbons	NWTPH-Dx NWTPH-Dx-NO SGT
Dioxins and furans	EPA 1613B
Gasoline-range hydrocarbons	NWTPH-Gx
Herbicides	EPA 8151A
Semivolatile organic compounds	EPA 8270E-SIM
Total metals	EPA 6020B/7471B EPA 6010D/7470A
Total solids	SM 2540 G-2011 ASTM D2216
Pesticides	EPA 8081B
Volatile organic compounds[(a)]	EPA 8260D

Notes
ASTM = ASTM International.
EPA = U.S. Environmental Protection Agency.
NWTPH = Northwest Total Petroleum Hydrocarbons.
SGT = silica gel treatment.
SM = Standard Methods for the Examination of Water and Wastewater.
[(a)]Benzene, ethylbenzene, toluene, and xylenes are reported for the Trip Blanks.

Samples Analyzed	
Report L1812652/L1812670	
DRUMAREA-COMP-S	BURNAREA-COMP-S-DUP
TIREPILE-COMP-S	TRIP BLANK(a)
BURNAREA-COMP-S	--
Report L1812675/L1813317	**Report L1812686/L1813318**
DU1-ISM	DU2-ISM
TRIP BLANK[(a)]	TRIP BLANK[(a)]
Report L1812653/L1813314	**Report L1812777/L1813320**
DU1-ISM-DUP	DU3-ISM
TRIP BLANK[(a)]	TRIP BLANK[(a)]
Report L1812779/L1813221	**Report L1812692/L1813319**

Samples Analyzed	
DU1-ISM-TRIP	DU4-ISM
TRIP BLANK[a]	TRIP BLANK[a]
Report L1812727/L1812728	
Equipment Blank	Trip Blank[a]

[a]The trip blanks were not included in the Eurofins reports.

Data Validation Procedures

Analytical results were evaluated according to applicable sections of U.S. Environmental Protection Agency (EPA) guidelines for data review (EPA 2020a, 2020b) and appropriate laboratory- and method-specific guidelines (EPA 1986, Eurofins 2023, Pace-N, 2024).

Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods that EPA data review guidelines do not specifically address (e.g., Northwest Total Petroleum Hydrocarbons [NWTPH]-Dx).

SM 2540 G-2011 and ASTM D 2216 percent solids results reported by the laboratory for dry-weight correction were reviewed for completeness but were not included in Stage 2A data validation. Both Eurofins and Pace-N analyzed for percent solids and these results were compared by the reviewer. The ASTM D2216 sample results from L1812670 were analyzed outside of hold time, but the sample results matched the corresponding SM 2540 G-2011 sample results from L1812652, thus qualifications were not necessary.

Based on the data quality assurance/quality control review described herein, the data, with the appropriate final data qualifiers assigned, are considered acceptable for their intended use. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, and data qualifiers assigned by the reviewer during validation.

Final data qualifiers:

- J = result is estimated.
- K = result is an estimated maximum potential concentration.
- U = result is non-detect at the method detection limit (MDL) or method reporting limit (MRL).
- UJ = result is non-detect with an estimated MDL.
- UK = result is non-detect and an estimated maximum potential concentration.
- UJK = result is non-detect, an estimated value, and an estimated maximum potential concentration.

Dioxins and Furans

Second Column Confirmation

Positive identification of 2,3,7,8-TCDF cannot be achieved using typical EPA Method 1613B columns; therefore, analysis using a second column is required to confirm and quantify any detections above the MRL. The TCDF results were confirmed by secondary analysis and primary analysis was not reported.

Estimated Maximum Potential Concentration Results

In accordance with EPA Region 10 guidance for data validation of polychlorinated dibenzodioxins and polychlorinated dibenzofurans (PCDDs/PCDFs) (EPA 2014) and EPA national functional guidelines for high-resolution Superfund methods data review (EPA 2020a), the reviewer qualified EPA Method 1613B results because of laboratory EMPC detections. The reviewer accepted some qualifications from the laboratory without additional qualifications.

EPA Method 1613B results reported by Eurofins as EMPCs that were also associated with method blank detections requiring qualification are discussed in the method blank section of this validation report and are not discussed in the EMPC qualification tables below.

Where Eurofins flagged congener results below MRLs as EMPCs, the reviewer qualified the results at the reported concentration with UJK, as non-detect, an estimated value, and an EMPC.

Where Eurofins flagged congener results above MRLs as EMPCs, the reviewer qualified the results at the reported concentration with UK, as non-detect and an EMPC.

Where Eurofins flagged detected total homolog results below MRLs as EMPCs, and all associated congeners were either EMPCs or non-detect, the reviewer qualified the total homolog result at the reported concentration with UJK, as non-detect, an estimated value, and an EMPC.

Where Eurofins flagged detected total homolog results above MRLs as EMPCs, and all associated congeners were either EMPCs or non-detect, the reviewer qualified the total homolog result at the reported concentration with UK, as non-detect and an EMPC.

Where Eurofins flagged total homolog results above or below MRLs as EMPCs and one or more associated congeners were detected without an EMPC flag, the reviewer accepted laboratory qualifiers and did not apply additional qualification. Final qualification for these results is either JK, as an estimated value and an EMPC or K as an EMPC.

Final data qualifiers for EPA Method 1613B EMPC results are as follows:

Report	Sample	Analyte	Original Result (pg/g)	Qualified Result (pg/g)
L1812670	DRUMAREA-COMP-S	1,2,3,7,8-PeCDD	5.00 UK	5.00 UJK
		1,2,3,7,8-PeCDF	5.00 UK	5.00 UJK
		1,2,3,7,8,9-HxCDD	5.00 UK	5.00 UJK
		Total TCDD	1.00 UK	1.00 UJK
		Total TCDF	10.8 K	10.8 K
		Total PeCDD	5.00 UK	5.00 UJK
		Total PeCDF	11.6 K	11.6 UK
		Total HxCDD	34.1 K	34.1 UK
		Total HxCDF	15.1 K	15.1 UK
	TIREPILE-COMP-S	Total TCDD	34.0 K	34.0 K
		Total TCDF	208 K	208 K
		Total PeCDD	60.0 K	60.0 K
		Total PeCDF	265 K	265 K
		Total HxCDD	141 K	141 K
	BURNAREA-COMP-S	1,2,3,4,6,7,8-HpCDF	5.00 UK	5.00 UJK
		OCDF	10.0 UK	10.0 UJK

Report	Sample	Analyte	Original Result (pg/g)	Qualified Result (pg/g)
L1812670	BURNAREA-COMP-S	Total TCDF	1.00 UK	1.00 UJK
		Total HxCDD	13.5 K	13.5 UK
		Total HpCDF	5.00 UK	5.00 UJK
	BURNAREA-COMP-S-DUP	1,2,3,6,7,8-HxCDD	5.00 UK	5.00 UJK
		1,2,3,7,8,9-HxCDD	5.00 UK	5.00 UJK
		1,2,3,4,6,7,8-HpCDD	15.1 K	15.1 UK
		Total HxCDD	11.1 K	11.1 UK
		Total HpCDD	27.5 K	27.5 UK
L1813317	DU1-ISM	2,3,7,8-TCDD	1.00 UK	1.00 UJK
		Total TCDD	10.1 K	10.1 UK
		Total TCDF	67.7 K	67.7 K
		Total PeCDD	18.5 K	18.5 UK
		Total PeCDF	72.9 K	72.9 K
		Total HxCDD	50.1 K	50.1 K
		Total HxCDF	84.3 K	84.3 K
L1813314	DU1-ISM-DUP	1,2,3,4,6,7,8-HpCDF	52.9 K	52.9 UK
		Total TCDD	8.82 K	8.82 K
		Total TCDF	54.5 K	54.5 K
		Total PeCDF	52.3 K	52.3 K
		Total HpCDF	97.6 K	97.6 K
L1813321	DU1-ISM-TRIP	Total TCDD	6.20 K	6.20 UK
		Total HxCDF	78.2 K	78.2 K
L1813318	DU2-ISM	2,3,7,8-TCDD	1.95 K	1.95 UK
		1,2,3,4,7,8-HxCDD	6.78 K	6.78 UK
		Total TCDD	138 K	138 UK
		Total PeCDD	146 K	146 K
		Total PeCDF	351 K	351 K
		Total HxCDD	244 K	244 UK
		Total HxCDF	376 K	376 K
L1813320	DU3-ISM	2,3,7,8-TCDD	1.00 UK	1.00 UJK
		1,2,3,6,7,8-HxCDF	9.32 K	9.32 UK
		Total TCDD	29.0 K	29.0 UK
		Total HxCDF	84.9 K	84.9 UK
		Total HpCDF	71.4 K	71.4 K
L1813319	DU4-ISM	Total TCDF	7.33 K	7.33 UJK

Notes
JK = result is estimated and an estimated maximum potential concentration.
K = result is an estimated maximum potential concentration.
pg/g = picograms per gram.
UJK = result is non-detect, an estimated value, and an estimated maximum potential concentration.
UK = result is non-detect and an estimated maximum potential concentration.

General Qualifications

According to reports L1812652, L1812675, L1812653, L1812779, L1812686, L1812777, L1812692, and L1812727, Pace-N noted what the NWTPH-Dx chromatogram resembled specific fuel patterns. The results were as oil-range or diesel-range hydrocarbons instead of specific fuel products; thus, qualification was not required.

Sample Conditions

Sample Custody

Sample custody was appropriately documented on the chain-of-custody (COC) form accompanying the reports. The reviewer confirmed that the gap in custody on the COC forms accompanying all reports are due to shipment via a third-party service.

Holding Times

Extractions and analyses were performed within the recommended holding times.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Incremental sampling methodology (ISM) samples were collected and named according to decision units (DUs). Pace-N processed and composited ISM samples prior to analysis consistent with industry standard procedures for reports L1812675, L1812653, L1812779, L1812686, L1812777, L1812692, L1812727, L1813317, L1813314, L1813321, L1813318, L1813320, L1813319, and L1812728. The reviewer confirmed that NWTPH-Gx and EPA Method 8260D analyses were performed on the sample container without ISM processing.

Reporting Limits

Pace-N evaluated results to MDLs and Eurofins evaluated results to MRLs. Samples that required dilutions because of high analyte concentrations, matrix interferences, and/or dilutions necessary for preparation and/or analysis were reported with raised MDLs and MRLs.

Pace-N qualified results between the MDL and the MRL with J, as estimated.

Blank Results

Method Blanks

Laboratory method blanks are used to evaluate whether laboratory contamination was introduced during sample preparation and analysis. Laboratory method blank analyses were performed at the required frequencies, in accordance with laboratory- and method-specific requirements.

According to report L1812652, the NWTPH-Gx batch WG2426165 laboratory method blank had a gasoline range-hydrocarbons detection between the MDL and MRL, at a concentration of 1.80 milligram per kilogram (mg/kg). The associated sample results had detections less than five times the concentration detected in the blank and have been qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812652	DRUMAREA-COMP-S	Gasoline-range hydrocarbons	3.28 J	3.33 U
	TIREPILE-COMP-S		2.51 J	3.04 U
	BURNAREA-COMP-S		2.59 J	4.92 U
	BURNAREA-COMP-S-DUP		4.97 J	5.12 U

Notes

J = result is estimated.
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.

According to report L1812652, the EPA Method 8260D batch WG2425137 laboratory method blank had a methylene chloride detection between the MDL and MRL, at a concentration of 0.0107 mg/kg. Methylene chloride is a common laboratory detection, thus the associated sample results that had detections less than ten times the concentration detected in the blank and have been qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812652	DRUMAREA-COMP-S	Methylene chloride	0.0157 J	0.0333 U
	TIREPILE-COMP-S		0.0168 J	0.0304 U
	BURNAREA-COMP-S		0.0258 J	0.0492 U
	BURNAREA-COMP-S-DUP		0.0250 J	0.0512 U

Notes
J = result is estimated.
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.

According to report L1812670, the EPA Method 1613B batch 826876 laboratory method blank had multiple results flagged as not detect and an EMPC. No qualifications were necessary due to the results being non-detect.

According to reports L1812653, L1812779, L1812777, and L1812692 the NWTPH-Gx batch WG2426606 laboratory method blank had a gasoline range-hydrocarbons detection between the MDL and MRL, at a concentration of 1.26 mg/kg. The associated sample results had detections less than five times the concentration detected in the blank and have been qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812653	DU1-ISM-DUP	Gasoline-range hydrocarbons	1.89 J	4.03 UJ[(a)]
L1812779	DU1-ISM-TRIP		2.26 J	4.10 UJ[(a)]
L1812777	DU3-ISM		2.87 J	3.95 U
L1812692	DU4-ISM		4.35	4.35 J+

Notes
J = result is estimated.
J+ = result is estimated, but the result may be biased high.
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.
[(a)]Result is also qualified in the Incremental Sampling Methodology Results Section.

According to reports L1812779 and L1812686, the EPA Method 8260D batch WG2425137 laboratory method blank had a methylene chloride detection between the MDL and MRL, at a concentration of 0.0107 mg/kg. The associated sample results were non-detect; thus, qualifications were not necessary.

According to report L1812686, the NWTPH-Gx batch WG2426165 laboratory method blank had a gasoline range-hydrocarbon detection between the MDL and MRL, at a concentration of 1.80 mg/kg. The associated sample result was qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812686	DU2-ISM	Gasoline-range hydrocarbons	6.91	6.91 J+

Notes
J+ = result is estimated, but the result may be biased high.
mg/kg = milligrams per kilogram.

According to report L1812727, the EPA Method 6010D batch WG2426131 laboratory method blank had a cadmium detection between the MDL and MRL, at a concentration of 0.618 ug/L. The associated sample result was qualified, as shown in the table below.

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1812727	EQUIPMENT BLANK	Cadmium	0.983 J	2.00 U

Notes
J = result is estimated.
U = result is non-detect at the method reporting limit.
ug/L = micrograms per liter.

According to report L1812727, the NWTPH-Dx batch WG2426192 laboratory method blank gasoline-range hydrocarbon detection between the MDL and MRL, at a concentration of 45.4 ug/L. The associated sample result was non-detect; thus, qualifications were not necessary.

All remaining laboratory method blank results were non-detect to MDLs or MRLs.

Equipment Rinsate Blanks

Equipment rinsate blanks are used to evaluate the adequacy of the field equipment decontamination process when decontaminated sampling equipment is used to collect samples.

One equipment blank was submitted with reports L1812727 and L1812728. The equipment rinsate blank had multiple detections and are listed below.

<table>
<tr><th>Report</th><th>Analytical Method</th><th>Analyte</th><th>Equipment Rinsate Blank Result (ug/L)</th></tr>
<tr><td rowspan="6">L1812727</td><td rowspan="2">EPA 6010D</td><td>Cadmium</td><td>0.983 J</td></tr>
<tr><td>Nickel</td><td>2.54 J</td></tr>
<tr><td rowspan="3">EPA 8260D</td><td>Benzene</td><td>0.122 J</td></tr>
<tr><td>Toluene</td><td>0.299 J</td></tr>
<tr><td>Total xylene</td><td>0.227 J</td></tr>
<tr><td>NWTPH-Dx</td><td>Diesel-range hydrocarbons</td><td>78.1 J</td></tr>
</table>

Notes
EPA = U.S. Environmental Protection Agency.
J = result is estimated.
NWTPH = Northwest Total Petroleum Hydrocarbons.
ug/L = micrograms per liter.

All associated sample results are greater than ten times the concentrations detected in the blank; thus, qualifications were not necessary.

The remaining equipment rinsate results were non-detect to the MRLs or MDLs.

Trip Blanks

Trip blanks are used to evaluate whether volatile organic compound contamination was introduced during shipping and field handling procedures.

Trip blanks were submitted with all sample delivery groups for benzene, toluene, ethylbenzene, and total xylenes analysis by EPA Method 8260D. The trip blanks were not dated, and the laboratory used the sample date and time from the associated sample.

The trip blank associated with report L1812777 had a benzene detection between the MDL and MRL, at a concentration of 0.197 micrograms per liter. The associated sample result was greater than ten times the concentration detected in the blank; thus, qualifications were not necessary.

The remaining trip blanks were non-detect to MDLs for all remaining target analytes.

Laboratory Control Sample and Laboratory Control Sample Duplicate Results

Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) results are used to evaluate laboratory precision and accuracy. All LCS and LCSD were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

According to report L1812652, the EPA Method 8260D batch WG2425137 LCSD results for 2-chlorotoluene and 4-chlorotoluene were above the upper percent recovery acceptance limit of 124 percent, at 126 percent and 128 percent, respectively. The associated sample results were non-detect; thus, qualifications were not necessary.

According to reports L1812675, L1812653, L1812779, and L1812777, the EPA Method 8151A batch WG2426593 LCS result for dichloroprop was above the upper percent recovery acceptance limit of 129 percent, at 146 percent. Additionally, the dichloroprop, 2,4-D, and 2,4,5-T results were flagged due to the RPD between primary and confirmation analysis exceeding 40 percent. The MS and MSD analyses were performed on a non-project related sample and had many RPD exceedances between the primary and confirmation analysis. The associated sample results were qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812675	DU1-ISM	Dichloroprop	0.0196 U	0.0196 UJ
L1812653	DU1-ISM-DUP		0.0196 U	0.0196 UJ
L1812779	DU1-ISM-TRIP		0.0195 U	0.0195 UJ
L1812777	DU3-ISM		0.0194 U	0.0194 UJ
L1812675	DU1-ISM	2,4-D	0.0275 U	0.0275 UJ
L1812653	DU1-ISM-DUP		0.0275 U	0.0275 UJ
L1812779	DU1-ISM-TRIP		0.0274 U	0.0274 UJ
L1812777	DU3-ISM		0.0272 U	0.0272 UJ
L1812675	DU1-ISM	2,4,5-T	0.0253 U	0.0253 UJ
L1812653	DU1-ISM-DUP		0.0253 U	0.0253 UJ
L1812779	DU1-ISM-TRIP		0.0252 U	0.0252 UJ
L1812777	DU3-ISM		0.0250 U	0.0250 UJ

Notes
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.
UJ = result is non-detect with an estimated reporting limit.

According to reports L1812653 and L1812777, the EPA Method 8260D batch WG2426184 LCS results for chloromethane and 1,1-dichloroethene were above the upper percent recovery acceptance limits, at 145 percent and 132 percent, respectively. The associated sample results were non-detect; thus, qualifications were not necessary.

According to reports L1812779, L1812686 and L1812692, the EPA Method 8260D batch WG2425137 LCS results for 2-chlorotoluene and 4-chlorotoluene were above the upper percent recovery acceptance limit of 124 percent, at 126 percent and 128 percent, respectively. The associated sample results were non-detect; thus, qualifications were not necessary.

According to report L1812686, the EPA Method 8151A batch WG2425581 LCS result for 2,4-DB and dichloroprop were flagged due to the RPD between the primary and confirmation analysis exceeding 40 percent. The MS and MSD analyses were performed on a non-project related sample and had many RPD exceedances between the primary and confirmation analysis. The associated sample results were qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812686	DU2-ISM	2,4-D	0.0282 U	0.0282 UJ
		Dichloroprop	0.0201 U	0.0201 UJ

Notes
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.
UJ = result is non-detect with an estimated reporting limit.

According to report L1812692, the EPA Method 8151A batch WG2427260 LCS result for 2,4-DB was flagged due to the RPD between the primary and confirmation analysis exceeding 40 percent. The associated sample results were qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812692	DU4-ISM	2,4-D	0.0276 U	0.0276 UJ

Notes
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit.
UJ = result is non-detect with an estimated reporting limit.

According to report L1812727, the EPA Method 8151A batch WG2425575 LCS result for dichloroprop exceeded the upper percent recovery acceptance limit of 127 percent, at 138 percent. Additionally, the RPD between the LCS and LCSD exceeded the RPD limit of 20 percent, at 27.9 percent for Dalapon. The associated sample result was non-detect, thus, qualification was not necessary.

All remaining LCS and LCSD results were within acceptance limits for percent recovery and relative percent difference (RPD).

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision and sample homogeneity. All laboratory duplicate samples were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

Eurofins used LCS and LCSD results to evaluate laboratory precision and laboratory duplicate results were not reported.

Laboratory duplicate results greater than five times the MRL were evaluated using laboratory RPD control limits. A secondary criterion was used when laboratory duplicate results were non-detect or less than five times the MRL. Results meet the secondary criterion if the absolute difference of the laboratory duplicate sample result and the parent sample result, or the MRL for non-detects, is equal to or less than the MRL value of the parent sample.

All laboratory duplicate results met the acceptance criteria.

Matrix Spike and Matrix Spike Duplicate Results

Matrix spike (MS) and matrix spike duplicate (MSD) results are used to evaluate laboratory precision, accuracy, and the effect of the sample matrix on sample preparation and target analyte recovery. All MS and MSD samples were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

Eurofins used LCS and LCSDs to evaluate laboratory precision and MS and MSD results were not reported.

When MS and MSD were prepared from samples with high concentrations of target analytes, associated MS and/or MSD percent recovery and/or RPD control limit exceedances did not require qualification because spike concentrations could not be accurately quantified. High concentrations of target analytes are defined as four times the spike amount for all analyses.

When MS and MSD were prepared with samples from unrelated projects, the MS and/or MSD percent recovery and/or RPD control limit exceedances did not require qualification because these sample matrices were not representative of project sample matrices.

According to report L1812652, the NWTPH-Dx batch WG2425643 MSD prepared with sample DRUMAREA-COMP-S had a diesel-range hydrocarbons result below the lower percent recovery acceptance limit of 50 percent, at 34.9 percent. The laboratory noted that this sample resembled the laboratory standard for motor oil. The associated sample result was qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812652	DRUMAREA-COMP-S	Diesel-range hydrocarbons	56.1	56.1 J

Notes
J = result is estimated.
mg/kg = milligrams per kilogram.

All remaining MS and MSD results were within acceptance limits for percent recovery and RPD.

Surrogate Results

Surrogate results are used to evaluate laboratory performance of target organic compounds for individual samples.

When surrogate results were outside percent recovery acceptance limits because of dilutions necessary to quantify high concentrations of target analytes, qualification by the reviewer was not required because surrogate concentrations could not be accurately quantified.

When batch quality control samples had surrogate percent recovery exceedances, qualification by the reviewer was not required when batch quality control target analyte results were within percent recovery acceptance limits.

All surrogate results were within percent recovery acceptance limits.

Labeled Analog Results

EPA Method 1613B samples were spiked with carbon-13 labeled standards to quantify the relative response of analytes in each sample, and with a chlorine-37 labeled cleanup standard to measure the efficiency of the cleanup process.

According to report L1812670, the EPA Method 1613B carbon-13 labeled standards 13C-2,3,7,8-TCDD, 13C-2,3,7,8-TCDF, 13C-1,2,3,7,8-PeCDD, 13C-1,2,3,7,8-PeCDF, 13C-1,2,3,4,7,8-HxCDD, 13C-1,2,3,4,7,8-HxCDF, and 13C-1,2,3,7,8,9-HxCDF were below their respective lower percent acceptance limits, ranging from 21 percent to 27 percent, for sample BURNAREA-COMP-S-DUP. The associated sample results were qualified, as shown in the following table.

Report	Sample	Analyte	Original Result (pg/g)	Qualified Result (pg/g)
L1812670	BURNAREA-COMP-S-DUP	2,3,7,8-TCDD	1.00 U	1.00 UJ
		2,3,7,8-TCDF	1.00 U	1.00 UJ
		1,2,3,7,8-PeCDD	5.00 U	5.00 UJ
		1,2,3,7,8-PeCDF	5.00 U	5.00 UJ
		1,2,3,4,7,8-HxCDD	5.00 U	5.00 UJ
		1,2,3,4,7,8-HxCDF	5.00 U	5.00 UJ
		1,2,3,7,8,9-HxCDF	5.00 U	5.00 UJ

Notes
pg/g = picograms per gram.
U = result is non-detect at the method reporting limit.
UJ = result is non-detect with an estimated reporting limit.

All remaining carbon-13 labeled standard recoveries were within acceptance limits.

Continuing Calibration Verification Results

Continuing calibration verification (CCV) results are used to demonstrate instrument precision and accuracy through the end of the sample batch. The laboratory did not report CCV results, but appropriately flagged results associated with CCV exceedances. Surrogate or batch quality control results flagged by the laboratory based on CCV exceedances but meeting percent recovery and/or RPD acceptance criteria required no action from the reviewer.

Pace-N flagged some EPA Method 8260D results as estimated due to an associated CCV results that responded low. Pace-N noted that the method sensitivity checks were acceptable. The reviewer qualified associated flagged sample results as shown in the following table. Results qualified by the laboratory for a result between the MDL and the MRL did not require additional qualification and are noted below.

Report	Sample	Analyte	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812652	DRUMAREA-COMP-S	2,2-Dichloropropane	0.00184 U	0.00184 UJ
	TIREPILE-COMP-S		0.00168 U	0.00168 UJ
	BURNAREA-COMP-S		0.00271 U	0.00271 UJ
	BURNAREA-COMP-S-DUP		0.00283 U	0.00283 UJ
L1812675	DU1-ISM	Bromomethane	0.00292 U	0.00292 UJ
L1812653	DU1-ISM-DUP	Bromoform	0.00189 U	0.00189 UJ
		Chlorodibromomethane	0.000986 U	0.000986 UJ
		1,2-Dibromo-3-Chloropropane	0.00628 U	0.00628 UJ
		Naphthalene	0.00786 U	0.00786 UJ
		Tetrachloroethene	0.00144 U	0.00144 UJ
		Toluene	0.00209 J	0.00209 J[(a)]
		1,2,3-Trichlorobenzene	0.0118 U	0.0118 UJ
L1812779	DU1-ISM-TRIP	2,2-Dichloropropane	0.00226 U	0.00226 UJ
L1812686	DU2-ISM	2,2-Dichloropropane	0.00227 U	0.00227 UJ
L1812777	DU3-ISM	Bromoform	0.00185 U	0.00185 UJ
		Chlorodibromomethane	0.000966 U	0.000966 UJ
		1,2-Dibromo-3-Chloropropane	0.00616 U	0.00616 UJ
		Naphthalene	0.00770 U	0.00770 UJ
		Tetrachloroethene	0.00141 U	0.00141 UJ
		Toluene	0.00489 J	0.00489 J[(a)]
		1,2,3-Trichlorobenzene	0.0116 U	0.0116 UJ
L1812692	DU4-ISM	2,2-Dichloropropane	0.00237 U	0.00237 UJ

Notes
J = result is estimated.
mg/kg = milligrams per kilogram.
U = result is non-detect at the method detection limit.
UJ = result is non-detect with an estimated method detection limit.
[(a)]Laboratory qualification was accepted by the reviewer

Pace-N flagged the EPA Method 8260D bromomethane result as estimated due to an associated CCV results that responded low. Pace-N noted that the method sensitivity checks were acceptable. The reviewer qualified associated flagged sample results as shown in the following table.

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1812727	EQUIPMENT RINSATE	Bromomethane	0.605 U	0.605 UJ

Notes
U = result is non-detect at the method detection limit.
UJ = result is non-detect with an estimated method detection limit.
ug/L = micrograms per liter.

All remaining results associated with CCV exceedances did not require qualification by the reviewer.

Incremental Sampling Methodology Results

One ISM sample was collected in triplicate, and the replicate set included samples DU1-ISM, DU1-ISM-DUP, and DU1-ISM-TRIP.

Triplicate sets were compared to acceptance criteria of 35 percent relative standard deviation (RSD) for analytes with one or more detected results (DEQ 2020). When all analytical results in a replicate set were non-detect or detected below MRLs, RSD was not evaluated. Where one result in a replicate set was non-detect, RSD was evaluated using the value of the MDL.

Triplicate ISM results that exceeded the RSD criterion were qualified by the reviewer as shown in the table below.

Report	Sample	Analyte	RSD (%)	Original Result (mg/kg)	Qualified Result (mg/kg)
L1812675	DU1-ISM	Gasoline range hydrocarbons	73.3	8.77	8.77 J
L1812653	DU1-ISM-DUP			1.89 J	4.03 UJ[(a)]
L1812779	DU1-ISM-TRIP			2.26 J	4.10 UJ[(a)]
L1812675	DU1-ISM	Styrene	39.5	0.00037 J	0.00037 J[(b)]
L1812653	DU1-ISM-DUP			0.000806 J	0.000806 J[(b)]
L1812779	DU1-ISM-TRIP			0.000376 U	0.000376 UJ
L1812675	DU1-ISM	Trichlorofluoromethane	60.6	0.00437	0.00437 J
L1812653	DU1-ISM-DUP			0.00133 U	0.00133 UJ
L1812779	DU1-ISM-TRIP			0.00136 U	0.00136 UJ
L1812675	DU1-ISM	4-Methyl-2-pentanone	45.8	0.00903 J	0.00903 J[(b)]
L1812653	DU1-ISM-DUP			0.00367 U	0.00367 UJ
L1812779	DU1-ISM-TRIP			0.00374 U	0.00374 UJ
L1812675	DU1-ISM	4-Isopropyltoluene	98.5	0.0724	0.0724 J
L1812653	DU1-ISM-DUP			0.00556 J	0.00556 J[(b)]
L1812779	DU1-ISM-TRIP			0.0131	0.0131 J
L1812675	DU1-ISM	Acetone	53.9	0.169	0.169 J
L1812653	DU1-ISM-DUP			0.0588 U	0.0588 UJ
L1812779	DU1-ISM-TRIP			0.0599 U	0.0599 UJ
L1813317	DU1-ISM	Total PeCDD	67.0	0.0000185	0.0000185 J
L1813314	DU1-ISM-DUP			0.000005 U	0.000005 UJ
L1813221	DU1-ISM-TRIP			0.000005 U	0.000005 UJ

Notes
% = percent.
J = result is estimated.
mg/kg = milligrams per kilogram.
U = result is non-detect at the method reporting limit or method detection limit.
UJ = result is non-detect with an estimated detection limit.
[(a)]Result is qualified in the Method Blank Section. The RSD between the samples with the results at the MRL still exceeds the 35 percent criteria. Final qualification is based on the Method Blank detection.
[(b)]Laboratory qualification was accepted by the reviewer.

Field Duplicate Results

Field duplicate results are used to evaluate field precision and sample homogeneity. The following field duplicate and parent sample pair was submitted for analysis:

Reports	Parent Sample	Field Duplicate Sample
L1812652/L1812670	BURNAREA-COMP-S	BURNAREA-COMP-S-DUP

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL or 50 percent RPD for results that are greater than five times the MRL. RPD was not evaluated when both results in the sample pair were non-detect.

All field duplicate results met the RPD acceptance criteria.

Data Package

The data packages were reviewed for transcription errors, omissions, and anomalies.

None were found.

References

EPA. 1986. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* EPA publication SW-846. 3rd ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), VI phase III (2019), VII phase I (2019), and VII phase II (2020).

EPA. 2020a. *National Functional Guidelines for Inorganic Superfund Methods Data Review.* EPA 542-R-20-006. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.

EPA. 2020b. *National Functional Guidelines for Organic Superfund Methods Data Review.* EPA 540-R-20-005. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.

EPA. 2020c. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. EPA 542-R-20-007. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. November.

Eurofins-WS. 2023. *Quality Assurance Manual.* Rev. 6.3. Eurofins Environment Testing Northern California, LLC: West Sacramento, CA. November 14.

Pace-N. 2024. *Quality Manual*. Version 04. Pace Analytical Services, LLC: Mt. Juliet, TN. March 7.