# Phase II Environmental Site Assessment Report

## Approximately 10-Acre Portion of
## Map and Taxlot 371W06 TL 2500
## 4677 Industry Drive
## Medford, Oregon 97504

**Prepared by:**

**Alpine Environmental Consultants, LLC**
Mrs. Antonela Vadan and Mr. Jonathan Williams
12210 Antioch Road
White City, Oregon 97503
541.944.4685
jwilliams@alpine-env-llc.com

**Prepared for:**

**RH2 Engineering, Inc.**
Ms. Hannah Farris, PE
3553 Arrowhead Drive, Suite 200
Medford, Oregon 97504

**January 3, 2023**

ALPINE ENVIRONMENTAL CONSULTANTS, LLC

## EXECUTIVE SUMMARY

RH2 Engineering, Inc. (RH2) retained Alpine Environmental Consultants, LLC (AEC) to conduct a Phase II Environmental Site Assessment (ESA) on an approximately 10-acre portion of tax lot (TL) 2500 addressed as 4677 Industry Drive in Medford, Oregon (the Subject Property). TL 2500 is identified as Map and Taxlot 371W06 TL 2500. This Phase II ESA work involved soil investigations. The Phase II ESA was conducted for RH2 on behalf of the Medford Water Commission (MWC).

AEC initiated a Phase I ESA investigation at the Subject Property in September 2022. The preliminary search revealed that subsurface investigations were conducted at the Subject Property (and the northern, western, and eastern adjacent properties as part of the Former Medco Road Orchard property) in 2004 and 2017. DEQ issued a Conditional No Further Remediation (NFA) determination in 2005. Subsequent to additional investigations, another NFA was issued in 2017, which removed the 2005 conditions. The 2017 NFA letter mentions the following: the Former Medco Road Orchard property is currently zoned for industrial and commercial use and is expected to remain so given its proximity to the airport and other surrounding businesses; municipal water is available in the area and expected to supply the Subject Property once it is developed; and soil removed from the property will be placed on agricultural lands with an exclusive farm use zoning, outside of the flood plain, outside of waters of the state, and above seasonal high groundwater levels.

Based on a review of the available environmental documents, a potential recognized environmental condition (REC) was initially identified associated with the historical use of the Subject Property and the adjacent properties for agricultural purposes, specifically as a pear orchard, and the associated pesticide use. Therefore, AEC recommended a Phase II ESA be conducted to determine if the soil at the Subject Property was adversely impacted by orchard pesticide use and to determine if this potential REC remains a REC or could be eliminated from further consideration.

The Phase II ESA field work was conducted on October 3, 2022. The Subsurface investigation included the excavation of eight test pits throughout the Subject Property. Five discrete soil samples were obtained from each test pit from depths of 0.0 to 0.5 feet below ground surface (bgs), 0.5 to 1.0 feet bgs, 1.0 to 1.5 feet bgs, 1.5 to 2.0 feet bgs, and 2.0 to 3.0 feet bgs. The discrete samples from all test pits from the same depth interval were homogenized into five depth discrete composite samples. These were labeled as COMP1 (subsamples from 0.0 to 0.5 feet bgs), COMP2 (subsamples from 0.5 to 1.0 feet bgs), COMP3 (subsamples from 1.0 to 1.5 feet bgs), COMP4 (subsamples from 1.5 to 2.0 feet bgs), and COMP5 (subsamples from 2.0 to 3.0 feet bgs).

The soil samples were submitted for relevant laboratory analyses to determine if the subsurface at the Subject Property has been impacted at constituent concentrations exceeding relevant generic risk-based concentrations (RBCs) developed by the Oregon Department of Environmental

Quality (DEQ). The generic RBCs applicable to the Subject Property are consistent with the planned commercial land use and assume occupational receptors, construction workers, and excavation workers will be present at the Subject Property. The reported concentrations of metals in soil were also compared to the naturally occurring background concentrations developed for the Cascade Range region of Oregon, which includes the Subject Property. All reported concentrations were also compared to the Clean Fill Values listed in DEQ's *Clean Fill Determinations* Internal Management Directive dated February 21, 2019 (DEQ, 2019). Note that the Clean Fill Values for metals equal the naturally occurring background concentrations.

The Phase II ESA analytical data reported several constituents in soil samples at concentrations above the laboratory method reporting limits (MRLs). Overall, the analytical results reported in general a higher concentration of metals and pesticides constituents in the upper 0.5 feet of soil than in the underlying layer from 0.5 to 3.0 feet bgs. These data demonstrate concentrations of pesticides constituents attenuate fairly rapidly with depth.

The analyses conducted and the reported results of the subsurface investigation are the following: total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, mercury, molybdenum, selenium, silver, thallium, vanadium, and zinc); organochlorine pesticides; organophosphorus pesticides; and chlorinated herbicides.

The analytical results reported several constituents at concentrations above the laboratory MRLs. These included the following: all 17 metals; organochlorine pesticides 4,4'-dichlorodiphenyldichloroethane (4,4'-DDD), 4,4'-dichlorodiphenyldichloroethene (4,4'-DDE), 4,4'-dichlorodiphenyltrichloroethane (4,4'-DDT), dieldrin, and endosulfan sulfate; and chlorinated herbicides 4-(2,4-dichlorophenoxy)butyric acid (2,4-DB) and dinoseb. The reported concentrations of arsenic, lead and dieldrin exceeded the relevant generic RBCs, as follows.

- → Arsenic was reported in all five composite soil samples at concentrations above the generic RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for occupational receptors. The concentration of arsenic also exceeded the naturally occurring background concentration in the Cascade Range region, which includes the eastern part of the Medford area and the Subject Property, in composite soil samples COMP1 and COMP2.
- → Arsenic was reported in composite soil samples COMP1 and COMP2 at concentrations above the generic RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for construction workers.
- → Lead was reported in four composite soil samples (COMP1 through COMP4) at concentrations above the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors. The concentration of lead in these four samples also exceeded the naturally occurring background concentration.
- → Dieldrin was reported in composite soil samples COMP1 and COMP2 at concentrations above the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors.

→ In addition, the concentrations of arsenic, lead, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin exceeded DEQ's Clean Fill Values at various depths down to 3 feet bgs.

While generic RBCs for occupational receptors and construction workers were exceeded for the aforementioned constituents and exposure pathways, potential risks to human health associated with these constituents and exposure pathways can be managed, mitigated, and/or eliminated from further concern, as follows:

1. The generic occupational RBC under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes occupational receptors are likely to come into contact with contaminated soils found in the upper 3 feet of soil. The concentrations of arsenic reported in the composite soil samples collected from depths of 0.0 to 3.0 feet bgs exceeded this RBC. Arsenic also exceeded the naturally occurring background concentration in the composite soil samples collected from 0.0 to 1.0 feet bgs. Prior to property development, if the upper 1.0 feet of soil is not excavated and properly disposed of off of the Subject Property during development, AEC recommends institutional and/or engineering controls be implemented throughout the Subject Property. Institutional and/or engineering control options to protect occupational receptors include but are not limited to the following: removal of shallow soil (at least from 0.0 to 1.0 feet bgs); paving; covering the property with a 3-foot layer of clean compacted fill material; additional investigations to delineate arsenic concentrations in shallow soil; developing an asphalt cap maintenance plan; developing a Contaminated Media Management Plan (CMMP) with or without DEQ approval; and/or applying a deed notice (e.g. to ensure the asphalt cap is maintained).
2. The generic construction workers RBC for total arsenic under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes construction workers could be exposed over 1 year to arsenic during construction activities involving the disturbance of impacted-soils. However, it is unlikely construction workers would be working at the Subject Property continuously for 1 year. Furthermore, this risk could be easily mitigated with proper communication to future construction workers requiring they wear appropriate Personal Protective Equipment (PPE) and follow proper decontamination procedures subsequent to working in order to avoid exposure and health risks. The procedures documenting proper communication, appropriate PPE, and proper decontamination could be documented in a CMMP with or with DEQ approval.
3. The generic occupational RBC for lead and dieldrin under the *leaching to groundwater exposure pathway* conservatively assumes that a water supply well is being used at the Subject Property or proximal to it, and that these constituents could be leached from the shallow soil, impact groundwater, and that occupational receptors could subsequently be exposed to these constituents in drinking water. The Subject Property is currently undeveloped vacant land with no current water use. When developed, the Subject Property will be serviced with municipal water by the MWC. The neighboring properties are either undeveloped land with no water use or have commercial/industrial use and utilize private well water and/or municipal water and will likely continue to utilize private well water and/or municipal water in the future. A review of the WRD well records indicates the Subject Property has no water supply wells. Based on a groundwater investigation on the adjacent property to the northeast of the Subject Property, the

groundwater flow direction in the area is to the west-southwest, towards Upton Slough and bedrock is very shallow, from 4.5 feet bgs. Given the current groundwater use status at the Subject Property (i.e. the absence of wells, no current water use, and the future planned municipal water use), it is highly unlikely potentially leached lead and dieldrin from the shallow soil into groundwater at the Subject Property will pose an unacceptable risk to occupational receptors at the Subject Property. To completely eliminate the potential risk that leaching of these constituents to groundwater might pose to occupational receptors at the Subject Property, a groundwater investigation could be conducted and/or a deed notice could be developed and applied that prohibits the installation of wells to supply water to occupational receptors at the Subject Property. It should also be noted the concentrations of lead and dieldrin attenuate to concentrations below their respective generic RBCs for the *leaching to groundwater exposure pathway* for occupational receptors at depths of 2.0 feet and 1.0 feet bgs, respectively. These data indicate that if the upper 2.0 feet of soil are removed during development to meet geotechnical requirements, this potential risk is eliminated.

4. The Clean Fill Values were exceeded by several constituents in the composite samples collected throughout the Subject Property at a depth ranging from 0.0 to 3.0 feet bgs. These constituents included arsenic; lead; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; and dieldrin. If soil from 1.0 to 3.0 feet bgs is excavated throughout the Subject Property, it can be reused on the Subject Property as unrestricted fill. However, if this soil is exported off of the Subject Property, it should be managed appropriately to ensure it does not adversely impact ecological receptors. For example, this soil could be properly disposed of at a quarry under a DEQ-approved Solid Waste Letter of Authorization (SWLA). It should be noted the soil at a depth of 0.0 to 1.0 feet bgs should be addressed as described under bullet #1 to address potential arsenic risks for occupational receptors under the *soil ingestion, dermal contact, and inhalation exposure pathway*.

Based on the available data, AEC concluded that the historical orchard practices at the Subject Property (and the eastern, western, and northern adjacent properties) involving pesticides have adversely impacted the surficial soil and are considered a REC. The available data reflect the adverse impacts are in the soil within the investigated interval of 0.0 to 3.0 feet bgs.

Based on these findings and accounting for the inherent uncertainties associated with any subsurface investigation, AEC recommends the following:

- Consider entering DEQ's Voluntary Cleanup Pathway (VCP) to obtain an updated NFA determination, which will concurrently ensure future occupants are not exposed to unacceptable risks associated with residual pesticides contamination and provide the property owner and associated business entities with liability protection.
- Consider investigating the groundwater and/or developing and applying a deed notice that prohibits the installation of wells to supply water to occupational receptors at the Subject Property.
- During development activities, appropriately manage potential risks associated with residual pesticides concentrations in shallow soil that are above generic RBCs (e.g. arsenic) and/or Clean Fill values in the upper 3.0 feet of soil of the Subject Property. If this

soil is to be excavated during development and moved off of the Subject Property, the soil should be disposed of consistent with DEQ regulations, examples being disposal under a DEQ-approved SWLA, disposal at an approved landfill (e.g. Dry Creek Landfill), or hauling the soil for reuse by placing it on agricultural lands with an exclusive farm use zoning, outside of the flood plain, outside of waters of the state, and above seasonal high groundwater levels on properties identified as Map 351W03 and Taxlot 100, Map 351W02 and Taxlot 100, and/or Map 351W01 and Taxlot 100 as described in the updated 2017 NFA letter.

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AEC | Alpine Environmental Consultants, LLC |
| ALS | ALS Group USA, Corp. dba ALS Environmental |
| bgs | below ground surface |
| CMMP | Contaminated Media Management Plan |
| 4,4'-DDD | 4,4'-Dichlorodiphenyldichloroethane |
| 4,4'-DDE | 4,4'-Dichlorodiphenyldichloroethene |
| 4,4'-DDT | 4,4'-Dichlorodiphenyltrichloroethane |
| DEQ | Department of Environmental Quality |
| 2,4-DB | 4-(2,4-dichlorophenoxy)butyric acid |
| ESA | Environmental Site Assessment |
| MCL | Maximum Contaminant Level |
| MCPA | 2-methyl-4-chlorophenoxyacetic acid |
| mg/kg | milligrams per kilogram |
| MRL | method reporting limit |
| MWC | Medford Water Commission |
| NFA | no further action |
| PPE | personal protective equipment |
| ppm | parts per million |
| RBC | risk-based concentrations |
| REC | recognized environmental condition |
| RH2 | RH2 Engineering, Inc. |
| SOP | Standard Operating Procedure |
| SWLA | Solid Waste Letter of Authorization |
| TL | tax lot |
| USEPA | United States Environmental Protection Agency |
| VCP | Voluntary Cleanup Pathway |
| WRD | Water Resources Department |

# 1 INTRODUCTION

Alpine Environmental Consultants, LLC (AEC) has prepared this report to present the findings of the Phase II Environmental Site Assessment (ESA) conducted on an approximately 10-acre portion of tax lot (TL) 2500 addressed as 4677 Industry Drive in Medford, Oregon (the Subject Property). RH2 Engineering, Inc. (RH2) retained AEC to conduct the Phase II ESA on behalf of the Medford Water Commission (MWC). The Phase II ESA involved soil investigations.

## 1.1 Subject Property Description

The Subject Property occupies an approximately 10-acre portion of TL 2500 and consists of undeveloped vacant and grassy land. TL 2500 occupies approximately 74.39 acres and is identified as Map and Taxlot 371W06 TL 2500. The location of the Subject Property is shown on **Figure 1** and **Figure 2**.

The topography at the Subject Property slopes gently to the north, south, and west. Upton Slough (also known as Midway Creek) is located approximately 0.15-0.30 miles west of the Subject Property and runs in an approximately northwest direction. Based on the general topography in the vicinity of the Subject Property, as well as on groundwater elevation data collected in September 2022 on the adjacent property to the northeast of the Subject Property, it is expected that groundwater at the Subject Property flows to the west-southwest towards Upton Slough.

During the initial visit to the Subject Property when field work was conducted on October 3, 2022, AEC identified an approximately 2-acre mound of soil on the northern portion of the Subject Property. The material in this mound was reportedly soil removed from the former orchard property, specifically from the area where Industry Drive is located now, between TL 2501 and TL 2502. At the time the Industry Drive extension was constructed in this area, the Oregon Department of Environmental Quality (DEQ) restricted the removal of soil from the former orchard property off of TL 2500, and therefore, the excavated soil was placed on the northern portion of the Subject Property (part of TL 2500).

On November 20, 2022, during the Phase I ESA site reconnaissance, AEC noticed this soil mound had been removed from the Subject Property. One of the current owners of the Subject Property stated the soil stockpile had been moved off of the Subject Property and placed on the western portion of TL 2500, in the vicinity of the airport boundary.

According to the City of Medford and Jackson County zoning maps, the Subject Property and the neighboring properties to the north, east, and west are zoned as general industrial. The neighboring properties to the south are zoned as limited light industrial. The Subject Property and the adjacent properties are within an Airport Radar Overlay district.

## 1.2 Subject Property Background

The Subject Property and the adjacent properties to the north, east, and west had been used as a pear orchard from at least the 1930s through the 1980s. The historical use of the Subject Property as an orchard constitutes a potential recognized environmental concern (REC). It is possible historical pesticides use at the Subject Property associated with standard orchard practices has impacted shallow soil at concentrations of environmental concern. Therefore, AEC recommended a Phase II ESA be conducted at the Subject Property.

## 1.3 Objectives

The objectives of this Phase II ESA were the following:

- Collect site-specific soil quality data to determine if the identified potential REC at the Subject Property truly constitutes a REC or if this concern could be eliminated from further consideration.
- Determine if soil management will be necessary during potential future development activities.
- If soil management will be necessary during potential future development activities, provide a preliminary dataset useful in scoping supplementary investigations, evaluating soil remediation options and costs, and manage liability with or without coordinating with DEQ.

The Phase II ESA included soil investigations. The Phase II ESA investigation process is presented in **Section 2**, data evaluation is presented in **Section 3**, and conclusions and recommendations are presented in **Section 4**.

# 2 PHASE II ESA INVESTIGATION

The Phase II ESA included a subsurface investigation, specifically soil sampling. The subsurface investigations were conducted in October 3, 2022, and a summary of the field methods and observations is presented in **Section 2.1** and **Section 2.2**. The analytical results of the soil samples and their interpretation are included in **Section 3**. Conclusions and recommendations are presented in **Section 4**. The photographic documentation is included in **Appendix 1**. The complete laboratory results are included in **Appendix 2**. The location of the Subject Property is shown on **Figure 1** and the sampling locations are shown on **Figure 2**. The analytical results of the soil samples are summarized in **Table 1** through **Table 4**.

## 2.1 Pre-Excavation

AEC contacted the Utility Notification Center in order to locate and trace any potential public underground utilities prior to completing any subsurface investigation activities.

## 2.2 Soil Investigations

### 2.2.1 Test Pit Excavation and Soil Sampling

On October 3, 2022, AEC supervised the excavation of eight test pits on the Subject Property. The eight test pit locations are illustrated on **Figure 2** and the photographic documentation is included in **Appendix 1**. The test pits were excavated using a small excavator owned and operated by M&M Services, LLC of Medford, Oregon. Soil samples and lithologic characterization, were logged by Mr. Toby Shallcross (Project Geologist) and checked by Mr. Jonathan Williams (Oregon Registered Geologist) of AEC.

The sampling objective at each test pit was to collect five depth discrete soil subsamples representing the uppermost 0.0 to 3.0 feet of native soil. No non-native fill was observed in any of the test pits. Therefore, the eight test pits were excavated to a depth of approximately 3.0 feet below ground surface (bgs). The five discrete soil subsamples were collected from the following depths at each of the eight test pits:

- 0.0 to 0.5 feet bgs;
- 0.5 to 1.0 feet bgs;
- 1.0 to 1.5 feet bgs;
- 1.5 to 2.0 feet bgs; and
- 2.0 to 3.0 feet bgs.

The soil subsamples from all test pits from the same depth interval were homogenized into five depth discrete composite soil samples. These were labeled as COMP1 (composed of the subsamples collected from test pits TP1 through TP8 from 0.0 to 0.5 feet bgs), COMP2 (composed of the subsamples collected from test pits TP1 through TP8 from 0.5 to 1.0 feet bgs), COMP3

(composed of the subsamples collected from test pits TP1 through TP8 from 1.0 to 1.5 feet bgs), COMP4 (composed of the subsamples collected from test pits TP1 through TP8 from 1.5 to 2.0 feet bgs), and COMP5 (composed of the subsamples collected from test pits TP1 through TP8 from 2.0 to 3.0 feet bgs).

The lithology identified in the eight test pits consisted of medium to dark brown clay to approximately 2.0-2.5 feet bgs, underlain by tan-yellowish silty sand indicative of weathered sandstone. No groundwater was encountered in the test pits.

The rationale for collecting five soil subsamples at each test pit location was that depth discrete analytical results should help characterize the vertical extent and attenuation with depth of potential impacts by pesticide constituents. The concept of depth discrete samples is also documented in DEQ's *Guidance for Evaluating Residual Pesticides on Lands Formerly Used for Agricultural Production* of 2006 that was updated in June 2019 (DEQ, June 2019).

After the eight test pits had been excavated, AEC personnel collected five depth discrete soil samples over the desired depth intervals from each test pit using clean stainless steel trowels and clean stainless steel bowls. Before and between the excavation of each test pit, the small excavator bucket was swept clean with a broom and rinsed with deionized water. The stainless steel trowels and stainless steel bowls were also cleansed prior to each use by scrubbing with a brush and an Alconox solution and rinsed with de-ionized water.

Soil samples representative of the native soil from five depth intervals were collected at each test pit by scraping an equal and representative volume of soil off of the test pit walls over the desired depth intervals to fill plastic labeled Ziploc bags. The soil in the plastic Ziploc bags was then thoroughly homogenized using hands with clean nitrile gloves to develop representative depth discrete soil subsamples. Larger sized material (i.e., gravel greater than approximately ¼ to ½ inch in diameter) was removed by hand. Accordingly, a total of 40 depth discrete soil subsamples were collected (i.e. five samples from each of the eight test pits). After soil sample collection was completed, the test pits were backfilled and compacted using the small excavator as described above.

Once all the soil subsamples were collected, five composite samples were created by homogenizing equal volume of soil from the subsamples collected from the same depth interval in a decontaminated stainless steel bowl. An equal volume of soil from soil subsamples were combined to create the composite soil samples COMP1 through COMP5. The stainless steel bowls were decontaminated before and after each use by scrubbing with deionized water and an alconox soap solution, then thoroughly rinsing with deionized water.

### 2.2.2 Soil Laboratory Analyses

The composite soil samples COMP1 through COMP5 were placed in an iced cooler and submitted to ALS Group USA, Corp. DBA ALS Environmental (ALS) in Kelso, Washington, under standard chain-of-custody protocol. The temperature of the cooler recorded by the laboratory upon receipt was 2.6 °C, which is within the U.S. Environmental Protection Agency's (USEPA's) recommended limit (which is specifically less than or equal to 6°C and above the freezing point).

The analyses conducted on the composite soil samples COMP1 through COMP5 included the following:

- Total metals by USEPA Method 6020A and 7471B (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, mercury, molybdenum, selenium, silver, thallium, vanadium, and zinc).
- Organochlorine pesticides by USEPA Method 8081B;
- Organophosphorus pesticides by ALS Standard Operating Procedure (SOP) Method; and
- Chlorinated herbicides by USEPA Method 8151A.

This list of constituents is consistent with the constituents identified in DEQ's *Guidance for Evaluating Residual Pesticides on Lands Formerly Used for Agricultural Production* of 2006 that was updated in June 2019 (DEQ, June 2019).

Copies of the final analytical laboratory reports for the Subject Property analytical soil results are included in **Appendix 2**. The analytical results for soil samples are summarized in **Table 1** through **Table 4.** The metals results are summarized in **Table 1**, the organochlorine pesticides in **Table 2**, the organophosphorus pesticides in **Table 3**, and the chlorinated herbicides in **Table 4**. In addition to presenting the analytical results, **Table 1** through **Table 4** also identify relevant generic risk-based concentrations (RBCs) for soil developed by DEQ. The generic RBCs identified in these tables are consistent with the anticipated future land use and zoning and assume occupational receptors and construction and excavation workers will be present on the Subject Property. The generic RBCs are described in DEQ's updated *Risk-Based Decision Making for the Remediation of Contaminated Sites* guidance dated October, 2, 2017 (DEQ, 2017).

The soil samples analytical results are included in **Appendix 2** and summarized in **Table 1** through **Table 4.** The analytical results reported several constituents at concentrations that exceed the laboratory method reporting limits (MRLs) in several soil samples. These constituents were further compared to relevant generic RBCs, including the following receptors and exposure pathways: the occupational receptors, construction workers, and excavation workers *ingestion, dermal contact, and inhalation exposure pathway*; the occupational receptors *volatilization to outdoor air exposure pathway*; the occupational receptors *vapor intrusion into buildings exposure pathway*; and the occupational receptors *leaching to groundwater exposure pathway*.

The reported concentrations of total metals were also compared to the naturally occurring background concentrations developed for the Cascade Range region, which includes the eastern Medford area and the Subject Property. The background concentrations are derived from DEQ's Technical Report entitled Development of Oregon Background Metals Concentrations in Soil (DEQ, 2013). The background concentrations are a type of average defined as the 95 percent upper predictive limits.

The reported concentrations of constituents were also compared to the Clean Fill Values listed in the DEQ's Clean Fill Determinations Internal Management Directive dated February 21, 2019 (DEQ, February 2019). Note that the Clean Fill Values for metals equal the naturally occurring background concentrations.

The reported data are summarized in the following paragraphs.

## 3.1 Total Metals

The analytical results of composite soil samples COMP1 through COMP5 reported all 17 metals at concentrations above the laboratory MRLs. Only arsenic and lead were reported at concentrations above the relevant generic RBCs. The RBCs exceedances were as follows:

- → Arsenic was reported in all five composite soil samples (collected from 0.0 to 3.0 feet bgs) at concentrations ranging from 2.13 milligrams per kilogram (mg/kg) to 55.3 mg/kg, which exceeded the RBC for *ingestion, dermal contact, and inhalation exposure pathway* for occupational receptors of 1.9 mg/kg. The concentrations of arsenic in composite soil samples COMP1 and COMP2 at a depth of 0.0 to 1.0 feet bgs also exceeded the naturally occurring background concentration in the Cascade Range region, which includes the Medford area and the Subject Property, of 19 mg/kg.

While arsenic concentrations exceeded the RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for occupational receptors and the naturally occurring background concentration, potential risks to human health associated with this constituent and exposure pathway can be managed, mitigated, and/or eliminated from further concern. The generic occupational RBC for total arsenic under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes occupational receptors are likely to come into contact with contaminated soils found in the upper 3 feet of soil. Prior

to property development, AEC recommends institutional and/or engineering controls be implemented throughout the Subject Property. Institutional and/or engineering control options to protect occupational receptors include but are not limited to the following: removal of shallow soil (from at least 0.0 to 1.0 feet bgs); paving; covering the property with a 3-foot layer of clean compacted fill material; additional investigations to delineate arsenic concentrations in shallow soil; developing an asphalt cap maintenance plan; developing a Contaminated Media Management Plan (CMMP) with or without DEQ approval; and/or applying a deed notice (e.g. to ensure the asphalt cap is maintained).

→ The concentrations of arsenic in composite soil samples COMP1 (55.3 mg/kg) and COMP2 (30.3 mg/kg) exceeded the RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for construction workers of 15 mg/kg.

While arsenic concentrations exceeded the generic RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for construction workers, potential risks to human health associated with this constituent and exposure pathway can be managed, mitigated, and/or eliminated from further concern. The generic construction workers RBC for total arsenic under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes construction workers could be exposed over 1 year to arsenic during construction activities involving the disturbance of impacted-soils. However, it is unlikely construction workers would be working at the Subject Property continuously for 1 year. Furthermore, this risk could be easily mitigated with proper communication to future construction workers requiring they wear appropriate personal protective equipment (PPE) and follow proper decontamination procedures subsequent to working in order to avoid exposure and health risks. The procedures documenting proper communication, appropriate PPE, and proper decontamination could be documented in a CMMP prepared with or without DEQ approval.

→ Lead was reported in composite soil samples COMP1 through COMP4 at concentrations of 367 mg/kg, 127 mg/kg, 39.6 mg/kg, and 45.0 mg/kg, which exceeded the RBC for the *leaching to groundwater exposure pathway* for occupational receptors of 30 mg/kg. The concentration of lead in these four composite soil samples also exceeded the naturally occurring background concentration of 34 mg/kg.

While lead concentrations exceeded the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors, potential risks to human health associated with this constituent and exposure pathway can be managed, mitigated, and/or eliminated from further concern. The generic occupational RBC for total lead under the *leaching to groundwater exposure pathway* conservatively assumes that a water supply well is being used at the Subject Property or proximal to the Subject Property, and that lead could be leached from the shallow soil, impact groundwater, and that occupational receptors could subsequently be exposed to lead in drinking water. The Subject Property is currently undeveloped vacant land with no current water use. When developed, the Subject Property will be serviced with municipal water by the MWC. The neighboring properties are either undeveloped land with no water use or have commercial/industrial use and utilize private well water and/or municipal water and will likely continue to utilize private well water and/or municipal water in the future. A review of the WRD well records indicates the Subject Property has no water supply wells. Based on a groundwater

investigation on the adjacent property to the northeast of the Subject Property, the groundwater flow direction in the area is to the west-southwest, towards Upton Slough and bedrock is very shallow, from 4.5 feet bgs. Given the current groundwater use status at the Subject Property (i.e. the absence of wells, no current water use, and the future planned municipal water use), it is highly unlikely potentially leached lead from the shallow soil into groundwater at the Subject Property will pose an unacceptable risk to occupational receptors at the Subject Property. To completely eliminate the potential risk that leaching of these constituents to groundwater might pose to occupational receptors at the Subject Property, a groundwater investigation could be conducted and/or a deed notice could be developed and applied that prohibits the installation of wells to supply water to occupational receptors at the Subject Property. It should also be noted the concentrations of lead attenuate to concentrations below the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors at a depth of 2.0 feet bgs. These data indicate that if the upper 2.0 feet of soil are removed during development to meet geotechnical requirements, this potential risk is eliminated.

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## 3.2 Organochlorine Pesticides

The analytical results of composite soil samples COMP1 through COMP5 reported several organochlorine pesticides at concentrations above the laboratory MRLs. These organochlorine pesticide included 4,4'-dichlorodiphenyldichloroethane [4,4'-DDD], 4,4'-dichlorodiphenyldichloroethene [4,4'-DDE], 4,4'-dichlorodiphenyltrichloroethane (4,4'-DDT), dieldrin, and endosulfan sulfate. The reported concentrations of dieldrin in composite soil samples COMP1 and COMP2 exceeded the generic RBC for *leaching to groundwater exposure pathway* for occupational receptors of 0.030 mg/kg.

While dieldrin concentrations exceeded the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors, potential risks to human health associated with this constituent and exposure pathway can be managed, mitigated, and/or eliminated from further concern. As mentioned in Section 3.1 regarding lead, given the current groundwater use status at the Subject Property (the absence of wells, no current water use, and the future planned municipal water use), it is highly unlikely potentially leached dieldrin from the shallow soil into groundwater at the Subject Property will pose an unacceptable risk to occupational receptors at the Subject Property. To completely eliminate the potential risk that leaching of this constituent to groundwater might pose to occupational receptors at the Subject Property, groundwater investigations could be conducted and/or a deed notice could be developed and applied that prohibits the installation of wells to supply water to occupational receptors at the Subject Property. It should also be noted the concentrations of dieldrin attenuate to concentrations below the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors at a depth of 1.0 feet bgs. These data indicate that if the upper 1.0 feet of soil is removed during development to meet geotechnical requirements, this potential risk is eliminated.

The concentrations of 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; and dieldrin exceeded the Clean Fill Values in two or more of the composite soil samples.

The organochlorine pesticides MRLs were below the generic applicable RBCs, with the exception of the MRL for total toxaphene. The organochlorine pesticides results are summarized in **Table 2**.

## 3.3 Organophosphorus Pesticides

The analytical results of the composite soil samples reported no organophosphorus pesticides at concentrations above the laboratory MRLs in any analyzed composite soil sample. There are no established RBCs for organophosphorus pesticides. The organophosphorus pesticides MRLs were below the Clean Fill Values, with the exception of the MRL for dichlorvos. The organophosphorus pesticides results are summarized in **Table 3**.

## 3.4 Chlorinated Herbicides

The analytical of the composite soil samples reported two chlorinated herbicides at concentrations above the laboratory MRLs in the composite soil samples analyzed. These included 4-(2,4-dichlorophenoxy)butyric acid (2,4-DB) and dinoseb. Nevertheless, the reported concentrations were below any relevant generic RBCs and below the Clean Fill Values. The organochlorine pesticides MRLs were below the generic applicable RBCs, with the exception of the MRL for 2-methyl-4-chlorophenoxyacetic acid (MCPA). The chlorinated herbicides results are summarized in **Table 4.**

## 3.5 Clean Fill Determination

Based on the analytical results of the discrete and composite soil samples collected throughout the Subject Property, which are presented in **Table 1** through **Table 4**, the soil at the Subject Property within at least the upper 3.0 feet does not qualify as Clean Fill. The constituents reported at concentrations above the Clean Fill Values include the following:

- Arsenic, from 0.0 to 1.0 feet bgs;
- Lead, from 0.0 to 2.0 feet bgs;
- 4,4'-DDD, from 0.0 to 1.0 feet bgs;
- 4,4'-DDE, from 0.0 to 3.0 feet bgs;
- 4,4'-DDT, from 0.0 to 1.0 feet bgs and 1.5 to 3.0 feet bgs, and
- Dieldrin, from 0.0 to 3.0 feet bgs.

Soil within the 0.0 to 3.0 feet bgs at the Subject Property should not be exported off of the Subject Property unless it is managed appropriately (e.g. under a DEQ-approved Solid Waste Letter of Authorization [SWLA]). However, the soil from 01.0 to 3.0 feet bgs can be reused on the Subject Property as fill. It should be noted that per the *Clean Fill Determinations* Internal Management Directive (DEQ, 2019), any soil with petroleum-like staining or a petroleum-like odor does not qualify as Clean Fill and should not be exported from the Subject Property unless it is properly handled (e.g. under a DEQ-approved SWLA).

Note that the soil at a depth of 0.0 to 1.0 feet bgs should be addressed as described in **Section 3.1** to properly manage potential risks associated with arsenic to occupational and construction worker receptors under the *soil ingestion, dermal contact, and inhalation exposure pathway*.

If soil at a depth below 3.0 feet bgs is excavated at the Subject Property, it should be assumed it exceeds the Clean Fill Values for the organochlorine pesticides mentioned above or it should be investigated for organochlorine pesticides.

If soil at a depth of 1.0 to 3.0 feet bgs is excavated at the Subject Property, it can be reused on the Subject Property as unrestricted fill. However, if this soil is excavated and transported off of the Subject Property, it should be managed appropriately consistent with DEQ regulations. Option include disposal under a DEQ-approved SWLA, disposal at a subtitle D municipal waste landfill (e.g. Dry Creek Landfill), or hauling the soil for reuse by placing it on agricultural lands with an exclusive farm use zoning, outside of the flood plain, outside of waters of the state, and above seasonal high groundwater levels on properties identified as Map 351W03 and Taxlot 100, Map 351W02 and Taxlot 100, and/or Map 351W01 and Taxlot 100 as described in the updated 2017 NFA letter. If soil at a depth below 3.0 feet bgs is excavated at the Subject Property, it should be assumed it exceeds the Clean Fill Values for the organochlorine pesticides mentioned above or it should be sampled and analyzed for organochlorine pesticides.

# 4 CONCLUSIONS AND RECOMMENDATIONS

The Phase II ESA investigation conducted at the Subject Property included the excavation of eight test pits (identified as TP1 through TP8), the collection of subsamples from each test pit from five depth discrete intervals (0.0 to 0.5 feet bgs, 0.5 to 1.0 feet bgs, 1.0 to 1.5 feet bgs, 1.5 to 2.0 feet bgs, 2.0 to 3.0 feet bgs), the preparation of five depth discrete composite soil samples (identified as COMP1 through COMP5), and the laboratory analyses of all composite soil samples for the following constitutents:

- Seventeen metals by USEPA Method 6020A and 7471B (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, mercury, molybdenum, selenium, silver, thallium, vanadium, and zinc);
- Organochlorine pesticides by USEPA Method 8081B;
- Organophosphorus pesticides by ALS SOP; and
- Chlorinated herbicides by USEPA Method 8151A.

The Phase II ESA analytical data reported several constituents in soil samples at concentrations above laboratory MRLs. Overall, the analytical results reported in general a higher concentration of pesticides constituents in the upper 0.5-feet of soil than in the underlying layer from 0.5 to 3.0 feet bgs. These data demonstrate concentrations of pesticides constituents attenuate fairly rapidly with depth.

The laboratory analyses of the composite soil samples (COMP1 through COMP5) collected throughout the Subject Property, historically occupied by a pear orchard, reported several constituents at concentrations above the laboratory MRLs. These included all 17 metals, organochlorine pesticides (specifically 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, and endosulfan sulfate), and chlorinated herbicides (specifically 2,4-DB and dinoseb). The concentrations of arsenic, lead, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin exceeded DEQ's Clean Fill Values. Only arsenic, lead, and dieldrin exceeded the relevant generic RBCs. The generic RBCs exceedances were as follows:

→ Arsenic was reported in all five composite soil samples at concentrations above the generic RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for occupational receptors. The concentration of arsenic also exceeded the naturally occurring background concentration in the Cascade Range region, which includes the eastern part of the Medford area and the Subject Property, in composite soil samples COMP1 and COMP2.

→ Arsenic was reported in composite soil samples COMP1 and COMP2 at concentrations above the generic RBC for the *ingestion, dermal contact, and inhalation exposure pathway* for construction workers.

→ Lead was reported in four composite soil samples (COMP1 through COMP4) at concentrations above the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors. The concentration of lead in these four samples also exceeded the naturally occurring background concentration.

→ Dieldrin was reported in composite soil samples COMP1 and COMP2 at concentrations above the generic RBC for the *leaching to groundwater exposure pathway* for occupational receptors.

→ In addition, the concentrations of arsenic, lead, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin exceeded DEQ's Clean Fill Values at various depths down to 3 feet bgs.

While generic RBCs for occupational receptors and construction workers were exceeded for the aforementioned constituents and exposure pathways, potential risks to human health associated with these constituents and exposure pathways can be managed, mitigated, and/or eliminated from further concern, as follows:

1. The generic occupational RBC under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes occupational receptors are likely to come into contact with contaminated soils found in the upper 3 feet of soil. The concentrations of arsenic reported in the composite soil samples collected from depths of 0.0 to 3.0 feet bgs exceeded this RBC. Arsenic also exceeded the naturally occurring background concentration in the composite soil samples collected from 0.0 to 1.0 feet bgs. Prior to property development, if the upper 1.0 feet of soil is not excavated and properly disposed of off of the Subject Property during development, AEC recommends institutional and/or engineering controls be implemented throughout the Subject Property. Institutional and/or engineering control options to protect occupational receptors include but are not limited to the following: removal of shallow soil (at least from 0.0 to 1.0 feet bgs); paving; covering the property with a 3-foot layer of clean compacted fill material; additional investigations to delineate arsenic concentrations in shallow soil; developing an asphalt cap maintenance plan; developing a CMMP with or without DEQ approval; and/or applying a deed notice (e.g. to ensure the asphalt cap is maintained).
2. The generic construction workers RBC for total arsenic under the *soil ingestion, dermal contact, and inhalation exposure pathway* assumes construction workers could be exposed over 1 year to arsenic during construction activities involving the disturbance of impacted-soils. However, it is unlikely construction workers would be working at the Subject Property continuously for 1 year. Furthermore, this risk could be easily mitigated with proper communication to future construction workers requiring they wear appropriate PPE and follow proper decontamination procedures subsequent to working in order to avoid exposure and health risks. The procedures documenting proper communication, appropriate PPE, and proper decontamination could be documented in a CMMP with or with DEQ approval.
3. The generic occupational RBC for lead and dieldrin under the *leaching to groundwater exposure pathway* conservatively assumes that a water supply well is being used at the Subject Property or proximal to it, and that these constituents could be leached from the shallow soil, impact groundwater, and that occupational receptors could subsequently be exposed to these constituents in drinking water. The Subject Property is currently undeveloped vacant land with no current water use. When developed, the Subject Property will be serviced with municipal water by the MWC. The neighboring properties are either undeveloped land with no water use or have commercial/industrial use and utilize private well water and/or municipal water and

will likely continue to utilize private well water and/or municipal water in the future. A review of the WRD well records indicates the Subject Property has no water supply wells. Based on a groundwater investigation on the adjacent property to the northeast of the Subject Property, the groundwater flow direction in the area is to the west-southwest, towards Upton Slough and bedrock is very shallow, from 4.5 feet bgs. Given the current groundwater use status at the Subject Property (i.e. the absence of wells, no current water use, and the future planned municipal water use), it is highly unlikely potentially leached lead and dieldrin from the shallow soil into groundwater at the Subject Property will pose an unacceptable risk to occupational receptors at the Subject Property. To completely eliminate the potential risk that leaching of these constituents to groundwater might pose to occupational receptors at the Subject Property, a groundwater investigation could be conducted and/or a deed notice could be developed and applied that prohibits the installation of wells to supply water to occupational receptors at the Subject Property. It should also be noted the concentrations of lead and dieldrin attenuate to concentrations below their respective generic RBCs for the *leaching to groundwater exposure pathway* for occupational receptors at depths of 2.0 feet and 1.0 feet bgs, respectively. These data indicate that if the upper 2.0 feet of soil are removed during development to meet geotechnical requirements, this potential risk is eliminated.

4. The Clean Fill Values were exceeded by several constituents in the composite samples collected throughout the Subject Property at a depth ranging from 0.0 to 3.0 feet bgs. These constituents included arsenic; lead; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; and dieldrin. If soil from 1.0 to 3.0 feet bgs is excavated throughout the Subject Property, it can be reused on the Subject Property as unrestricted fill. However, if this soil is exported off of the Subject Property, it should be managed appropriately to ensure it does not adversely impact ecological receptors. For example, this soil could be properly disposed of at a quarry under a DEQ-approved Solid Waste Letter of Authorization (SWLA). It should be noted the soil at a depth of 0.0 to 1.0 feet bgs should be addressed as described under bullet #1 to address potential arsenic risks for occupational receptors under the *soil ingestion, dermal contact, and inhalation exposure pathway*.

Based on the available data, AEC concluded that the historical orchard practices at the Subject Property (and the eastern, western, and northern adjacent properties) involving pesticides have adversely impacted the surficial soil and are considered a REC. The available data reflect the adverse impacts are in the soil within the investigated interval of 0.0 to 3.0 feet bgs.

Based on these findings and accounting for the inherent uncertainties associated with any subsurface investigation, AEC recommends the following:

- Consider entering DEQ's VCP to obtain an updated NFA determination, which will concurrently ensure future occupants are not exposed to unacceptable risks associated with residual pesticides contamination and provide the property owner and associated business entities with liability protection.
- Consider investigating the groundwater and/or developing and applying a deed notice that prohibits the installation of wells to supply water to occupational receptors at the Subject Property.

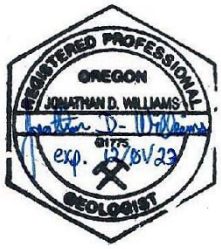
- During development activities, appropriately manage potential risks associated with residual pesticides concentrations in shallow soil that are above generic RBCs (e.g. arsenic) and/or Clean Fill values in the upper 3.0 feet of soil of the Subject Property. If this soil is to be excavated during development and moved off of the Subject Property, the soil should be disposed of consistent with DEQ regulations, examples being disposal under a DEQ-approved SWLA, disposal at an approved landfill (e.g. Dry Creek Landfill), or hauling the soil for reuse by placing it on agricultural lands with an exclusive farm use zoning, outside of the flood plain, outside of waters of the state, and above seasonal high groundwater levels on properties identified as Map 351W03 and Taxlot 100, Map 351W02 and Taxlot 100, and/or Map 351W01 and Taxlot 100 as described in the updated 2017 NFA letter.

Please feel free to contact Jonathan Williams at 541-944-4685 or jwilliams@alpine-env-llc.com if you have any questions about this Phase II ESA report.

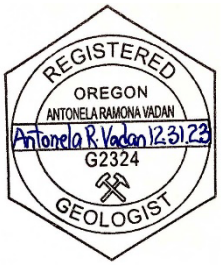
Sincerely,

**Alpine Environmental Consultants, LLC**

Jonathan D. Williams, R.G.
Senior Hydrogeologist




Antonela Vadan, R.G.
Project Geologist



# 5 REFERENCES

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

Oregon DEQ. October 2017. *Risk-Based Decision Making for the Remediation of Contaminated Sites*. Updated on October 17, 2017 (DEQ, 2017).

Oregon DEQ. June 2019. *Guidance for Evaluating Residual Pesticides on Lands Formerly Used for Agricultural Production*. Land Quality Division, Cleanup Program. Developed in January 2006 and Updated in June 2019 (DEQ, June 2019).

Oregon DEQ. February 21, 2019. Clean Fill Determinations. Materials Management Division. (DEQ, February 2019).

# 6 LIMITATIONS

The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given Subject Property area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. This environmental assessment contains professional opinions as to the environmental issues of concern and/or additional actions, which may be addressed to the property. In rendering its professional opinion, we warrant that services provided hereunder were performed, within the limits described, consistent with current generally accepted environmental consulting principles and practices. No other warranty, express or implied, is made. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given Subject Property. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the Subject Property, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Any opinions or recommendations presented apply to Subject Property conditions existing when services were performed. We are unable to report on or accurately predict events that may change the Subject Property conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to investigate, or conditions not generally recognized as environmentally unacceptable when services were performed.

Environmental conditions may exist at the Subject Property that cannot be identified by visual observation. Where the scope of services was limited to observations made during Subject Property reconnaissance, interviews, review of readily available reports and literature or any combination, any conclusions or recommendations or both are necessarily based in part on information supplied by others, the accuracy or sufficiency of which we may not have independently reviewed.

Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

We are not responsible for any potential impact of changes in applicable environmental standards, practices, or regulations following performance of services, on the conclusions or recommendations, or both, of the study.

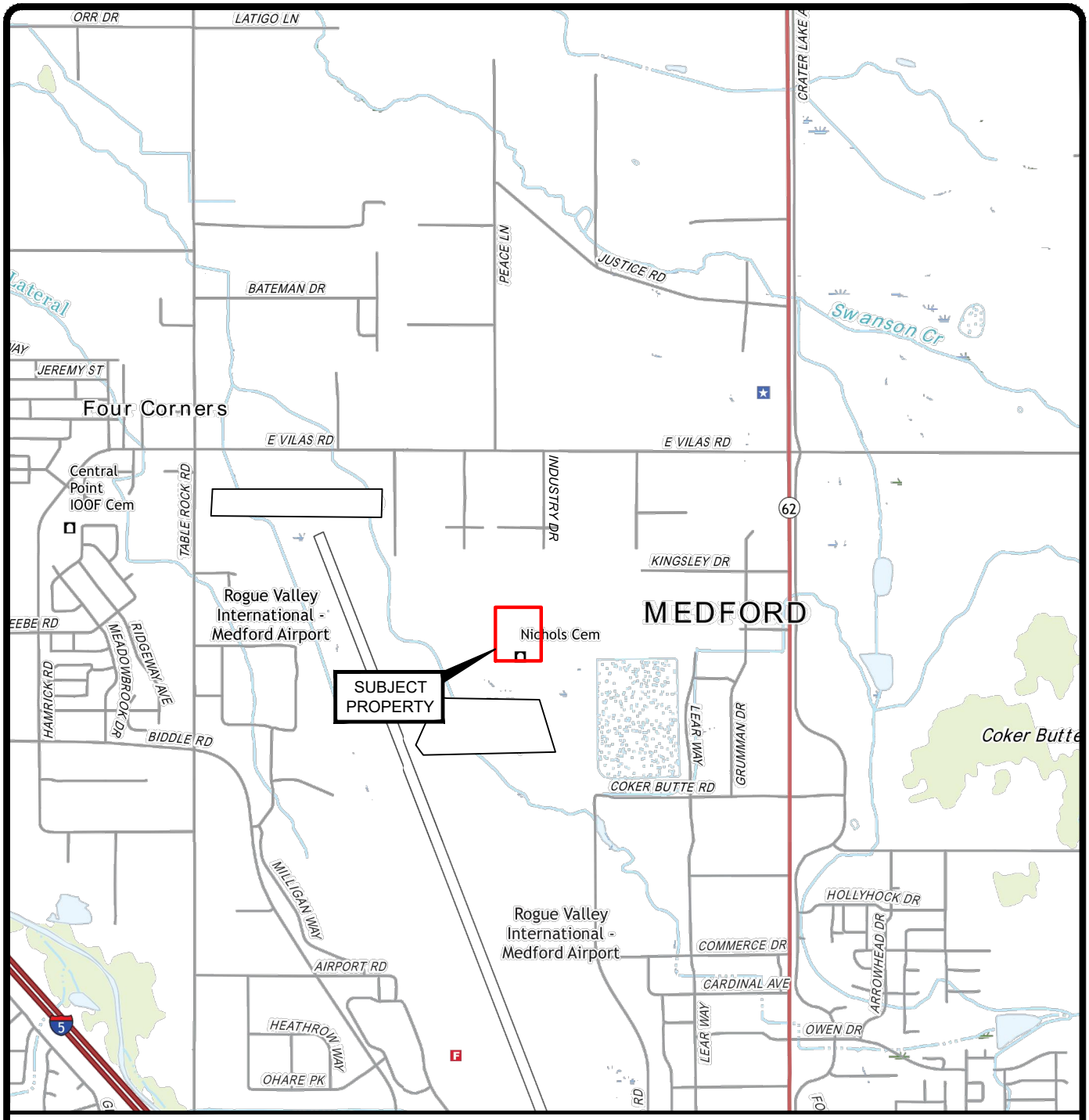
Services hereunder were performed consistent with our agreement and understanding with, and solely for the use of, our client. Opinions and recommendations are intended for the client, purpose, Subject Property, location, time frame, and project parameters indicated. We are not responsible for subsequent separation, detachment, or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

# 7 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Mr. Jonathan Williams received a Bachelor of Science degree in Geology, with honors, from Duke University in 1987. He has over 28 years experience working with geologic and environmental reports, including Phase I ESAs. Mr. Williams has been a Registered Geologist in the State of Oregon since 1996, and has 40-hour HAZWOPER training.

Ms. Antonela Vadan holds a Bachelor of Arts and Science in Earth and Environmental Sciences from the University of Illinois at Chicago. She has over 20 years of experience in both the private and public sector. Ms. Vadan has conducted multiple Phase I ESAs. Additional project activities have included risk assessments, remedial investigations/feasibility studies, soil and groundwater investigations, and indoor air quality investigations. Ms. Vadan is a Registered Geologist in the States of Oregon and Washington and has 40-hour HAZWOPER training.

# FIGURES

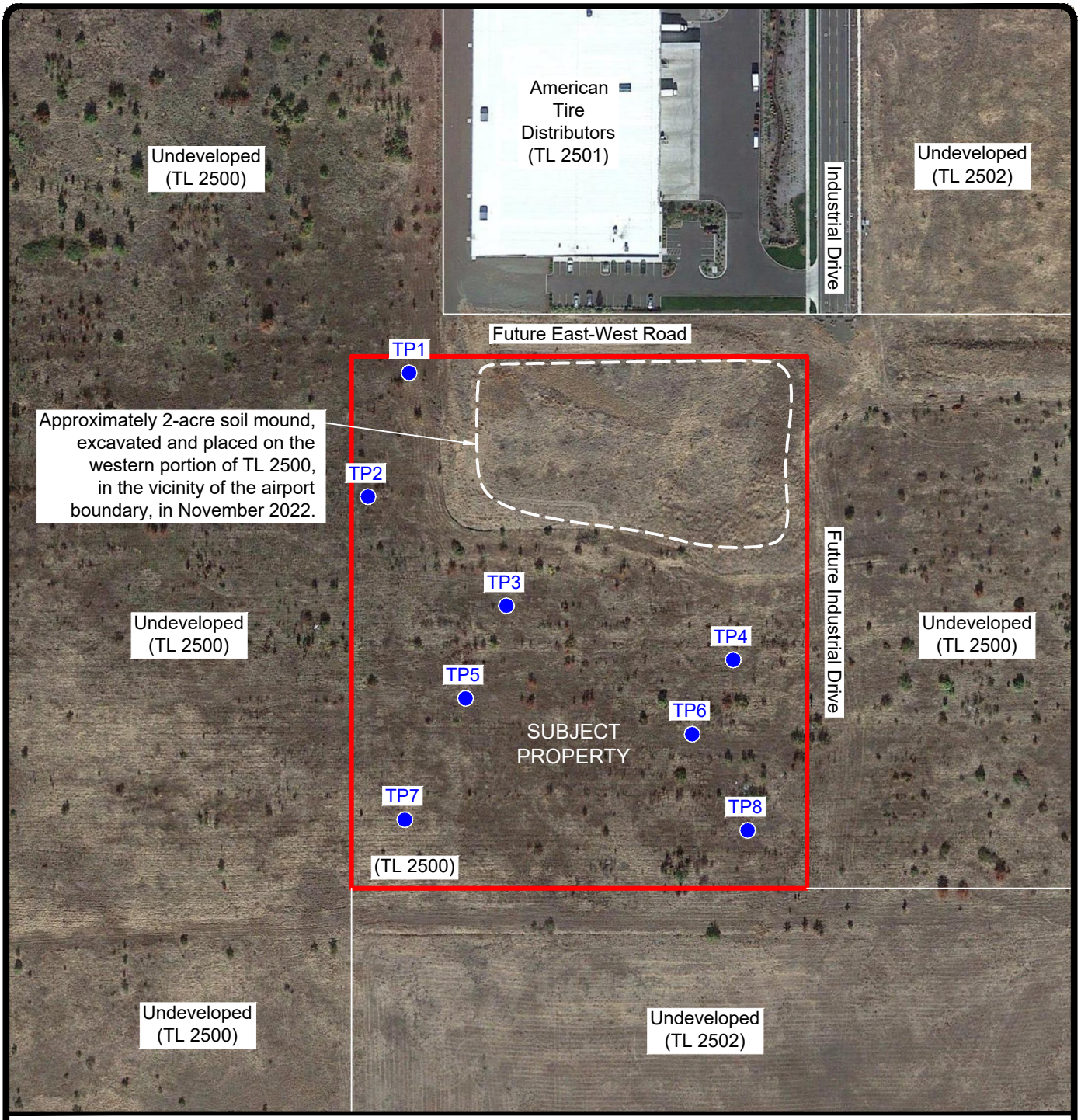



**SOURCE:** U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE EAGLE POINT, SAM'S VALLEY, MEDFORD WEST, MEDFORD WEST, OR (2020)

ALPINE ENVIRONMENTAL CONSULTANTS, LLC

DATE: 12/3/22 | DRAWN BY: SRM

Figure 1
Subject Property Location Map
Phase I/II ESA
Approximately 10 Acres of Taxmap 371W06 Taxlot 2500
4677 Industry Drive, Medford, Oregon




**SOURCE:** GOOGLE EARTH (2020)

## LEGEND

TP1 ● Test Pit Location

Approximate Subject Property Boundary

N
W E
S

SCALE FEET

0 200 400

ALPINE ENVIRONMENTAL CONSULTANTS, LLC

DATE: 12/3/22 DRAWN BY: SRM

Figure 2
Test Pit Location Map
Phase I/II ESA
Approximately 10 Acres of Taxmap 371W06 Taxlot 2500
4677 Industry Drive, Medford, Oregon

# TABLES

# Table 1. Soil Samples Analytical Results - Total Metals
## Phase II Environmental Site Assessment
## Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

| | DEQ Risk-Based Concentrations for Soil (a) | | | | | | DEQ's clean fill screening levels for Klamath Mountains province and background metals in Soil (f), (g) | Test Pit Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ingestion, Dermal Contact and Inhalation (b) | | | Volatilization to Outdoor Air (c) | Vapor Intrusion into Buildings (d) | Leaching to Groundwater (e) | | COMP1-0.0-0.5 | COMP2-0.5-1.0 | COMP3-1.0-1.5 | COMP4-1.5-2.0 | COMP5-2.0-3.0 |
| | | | | | | | | Composite sample of subsamples collected from test pits TP1 through TP8 | | | | |
| | | | | | | | | 0-0.5 ft bgs | 0.5-1.0 ft bgs | 1.0-1.5 ft bgs | 1.5-2.0 ft bgs | 2.0-3.0 ft bgs |
| **Parameter** | OCC. | C. W. | E. W. | OCC. | OCC. | OCC. | | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 |
| **Total Metals (mg/kg) USEPA 6020A and 7471B** | | | | | | | | | | | | |
| Antimony | NE | NE | NE | NE | NE | NE | 0.59 | **0.262** | **0.156** | **0.060** | **0.070** | **0.052 J** |
| Arsenic | 1.9 | 15 | 420 | NV | NV | * | 12 | **55.3** | **30.3** | **8.69** | **8.51** | **2.13** |
| Barium | 220,000 | 69,000 | >Max | NV | NV | * | 630 | **259** | **278** | **300** | **328** | **252** |
| Beryllium | 2,300 | 700 | 19,000 | NV | NV | * | 1.4 | **0.683** | **0.664** | **0.639** | **0.655** | **0.633** |
| Cadmium | 1,100 | 350 | 9,700 | NV | NV | * | 0.52 | **0.146** | **0.131** | **0.096** | **0.103** | **0.090** |
| Chromium (III) | >Max | 530,000 | >Max | NV | NV | * | 890 | **49.2** | **49.9** | **40.0** | **43.2** | **55.8** |
| Cobalt | NE | NE | NE | NE | NE | NE | NE | **23.8** | **27.1** | **25.1** | **26.3** | **24.0** |
| Copper | 47,000 | 14,000 | 390,000 | NV | NV | * | 110 | **28.1** | **23.6** | **19.6** | **22.2** | **20.0** |
| Lead | 800 | 800 | 800 | NV | NV | 30 | 36 | **367** | **127** | **39.6** | **45.0** | **8.51** |
| Mercury | 350 | 110 | 2,900 | NV | NV | * | 0.17 | **0.020 J** | **0.019 J** | **0.017 J** | **0.011 J** | **0.014 J** |
| Molybdenum | NE | NE | NE | NE | NE | NE | NE | **0.198** | **0.199** | **0.119** | **0.095** | **0.067** |
| Nickel | 22,000 | 7,000 | 190,000 | NV | NV | * | 630 | **27.2** | **29.3** | **23.5** | **28.6** | **28.7** |
| Selenium | NE | NE | NE | NE | NE | NE | 0.80 | 1.0U | **0.18 J** | 1.2U | 0.96U | 1.1U |
| Silver | 5,800 | 1,800 | 49,000 | NV | NV | * | 0.16 | **0.066** | **0.068** | **0.1** | **0.058** | **0.044** |
| Thallium | NE | NE | NE | NE | NE | NE | 0.31 | **0.119** | **0.255** | **0.131** | **0.097** | **0.078** |
| Vanadium | NE | NE | NE | NE | NE | NE | 290 | **49.8** | **52.4** | **42.3** | **46.8** | **62.7** |
| Zinc | NE | NE | NE | NE | NE | NE | 140 | **47.7** | **33.9** | **26.4** | **28.8** | **29.9** |

See notes on next page.

# Table 1. Soil Samples Analytical Results - Total Metals
# Phase II Environmental Site Assessment
# Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

***Notes:***

Analytical data in bold font indicates that the value exceeds the laboratory method reporting limit.

Analytical data highlighted in yellow indicates the value exceeded a generic RBC.

Analytical data highlighted in both yellow and blue indicates the value exceeded one or more generic RBCs and the Clean Fill Value.

* - Leaching to groundwater RBCs are not provided for inorganic chemicals. If this pathway is of concern, then site-specific leaching tests must be performed.

***Data Qualifiers:***

J - The result is an estimated value.

U - The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

***Footnotes:***

(a) Risk-Based Concentrations are referenced from the May 2018 update to the DEQ's Risk-Based Decision Making (RBDM) for the Remediation of Petroleum-Contaminated Sites guidance document dated September 2003.

(b) This pathway is applicable anytime someone is likely to come into contact with contaminated soil. For the occupational scenario, exposure to contaminated soils should be considered for all contaminants found in the top three feet of soil.

(c) This pathway is applicable whenever vadose zone soils are contaminated with volatile compounds.

(d) This pathway is applicable whenever vadose zone soils contaminated with volatile compounds are located beneath or within 10 feet of a commercial building or beneath or within 50 feet of a residential building.

(e) This pathway is applicable whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used in the future for drinking water.

(f) DEQ's Background Concentrations in Soil are referenced from the DEQ's Development of Oregon Background Metals Concentrations in Soil technical report dated March 2013. The background concentrations included in this table are 95% Upper Prediction Limit (UPL) for the Cascade Range region, which includes the Medford area and the Site.

(g) Clean Fill Values are referenced from the DEQ's Clean Fill Determinations guidance document dated February 2019.

***Symbols/Acronyms:***

bgs - below ground surface

C.W. - construction worker receptors

DEQ - Department of Environmental Quality

E. W. - excavation worker receptors

ft - feet

MDL - Method Detection Limit

mg/kg - milligrams per kilogram

MRL - Method Reporting Limit

NA - Sample was not analyzed for this analyte.

NE - No RBC levels are established for this chemical.

NV - The chemical is considered "nonvolatile" for the purposes of the exposure calculations.

OCC. - occupational receptors

RBC - risk-based concentration

USEPA - United States Environmental Protection Agency

## Table 2. Soil Samples Analytical Results - Organochlorine Pesticides
## Phase II Environmental Site Assessment
## Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

| | DEQ Risk-Based Concentrations for Soil (a) | | | | | | DEQ's clean fill screening levels (f) | Test Pit Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ingestion, Dermal Contact and Inhalation (b) | | | Volatilization to Outdoor Air (c) | Vapor Intrusion into Buildings (d) | Leaching to Groundwater (e) | | COMP1-0.0-0.5 | COMP2-0.5-1.0 | COMP3-1.0-1.5 | COMP4-1.5-2.0 | COMP5-2.0-3.0 |
| | | | | | | | | Composite sample of subsamples collected from test pits TP1 through TP8 | | | | |
| | | | | | | | | 0-0.5 ft bgs | 0.5-1.0 ft bgs | 1.0-1.5 ft bgs | 1.5-2.0 ft bgs | 2.0-3.0 ft bgs |
| **Parameter** | OCC. | C. W. | E. W. | OCC. | OCC. | OCC. | | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 |
| **Organochlorine Pesticides (mg/kg) USEPA 8081B** | | | | | | | | | | | | |
| Aldrin | 0.13 | 1.1 | 30 | >Csat | >Csat | 0.1 | 0.023 | 0.0020U* | 0.0020U* | 0.0024U* | 0.0023U* | 0.0021U* |
| alpha-Hexachlorocyclohexane (alpha-BHC) | 0.36 | 3 | 83 | NV | NV | 0.023 | 0.0063 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| beta-BHC | NE | NE | NE | NE | NE | NE | 0.009 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| delta-BHC | NE | NE | NE | NE | NE | NE | NE | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| gamma-BHC (Lindane) | 2.1 | 17 | 470 | NV | NV | 0.13 | 0.0095 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| Chlordane | 7.4 | 61 | 1700 | >Csat | >Csat | 2.1 | 0.91 | 0.010U* | 0.010U* | 0.012U* | 0.012U* | 0.012U |
| cis-Chlordane (Chlordane RBCs) | 7.4 | 61 | 1700 | >Csat | >Csat | 2.1 | 0.91 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| trans-Chlordane (Chlordane RBCs) | 7.4 | 61 | 1700 | >Csat | >Csat | 2.1 | 0.91 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| 4,4'-Dichlorodiphenyldichloroethane (4,4'-DDD) | 12 | 94 | 2,600 | NV | NV | 2.6 | 0.0063 | **0.0095*** | **0.0050*** | 0.0024U* | **0.0021 J*** | **0.0023*** |
| 4,4'-Dichlorodiphenyldichloroethene (4,4'-DDE) | 8.2 | 66 | 1,800 | >Csat | >Csat | 7.5 | 0.01 | **0.550*** | **0.340*** | **0.054*** | **0.130*** | **0.140*** |
| 4,4'-Dichlorodiphenyltrichloroethane (4,4'-DDT) | 8.5 | 66 | 1,800 | NV | NV | 70 | 0.01 | **0.096*** | **0.069*** | 0.0037Ui* | **0.022 P*** | **0.012*** |
| Dieldrin | 0.14 | 1.2 | 33 | NV | NV | 0.030 | 0.0045 | **0.043*** | **0.056*** | **0.0062*** | **0.011*** | **0.012*** |
| Endosulfan I (Endosulfan alpha-beta RBC) | 4900 | 1600 | 45,000 | >Max | >Max | >Csat | 0.64 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| Endosulfan II (Endosulfan alpha-beta RBC) | 4900 | 1600 | 45,000 | >Max | >Max | >Csat | 0.64 | 0.0020U* | 0.0020U* | 0.0024U* | 0.0023U* | 0.0021U* |
| Endosulfan Sulfate (Endosulfan alpha-beta RBC) | 4900 | 1600 | 45,000 | >Max | >Max | >Csat | 0.64 | **0.010 P*** | **0.0088*** | 0.0024U* | 0.0023U* | **0.0036*** |
| Endrin | 250 | 80 | 2200 | NV | NV | >Csat | 0.0014 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| Endrin Aldehyde (Endrin RBC) | 250 | 80 | 2200 | NV | NV | >Csat | 0.0014 | 0.0020U* | 0.0020Ui* | 0.0024U* | 0.0024U* | 0.0021U* |
| Endrin Ketone (Endrin RBC) | 250 | 80 | 2200 | NV | NV | >Csat | 0.0014 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| Heptachlor | 0.45 | 4 | 110 | 230 | 230 | 0.048 | 0.017 | 0.0010U* | 0.0010U* | 0.0012U* | 0.0012U* | 0.0010U* |
| Heptachlor expoxide | 0.24 | 2 | 56 | >Csat | >Csat | 0.016 | 0.0042 | 0.0020U* | 0.0020U* | 0.0024U* | 0.0023U* | 0.0021U* |
| Methoxychlor | NE | NE | NE | NE | NE | NE | 5.1 | 0.0020U* | 0.0020U* | 0.0024U* | 0.0023U* | 0.0021U* |
| Toxaphene (Total) | 2.1 | 17 | 470 | NV | NV | 0.093 | 0.36 | **0.180Ui*** | **0.100U*** | **0.120U*** | **0.120U*** | **0.100U*** |

See notes on next page.

# Table 2. Soil Samples Analytical Results - Organochlorine Pesticides
# Phase II Environmental Site Assessment
# Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

***Notes:***

Analytical data in bold font indicates that the value exceeds the laboratory method reporting limit.

Analytical data highlighted in blue indicates the value exceeded the Clean Fill Value.

Analytical data highlighted in both yellow and blue indicates the value exceeded one or more generic RBCs and the Clean Fill Value.

***Data Qualifiers:***

* - The result is an outlier. According to the Case Narrative, "the analysis of all samples was initially performed within the recommended holding time. Due to high batch QC recoveries and detections in the samples, the project manager requested the samples be re-extracted and re-analyzed. The reextraction was performed outside holding time. The data was flagged to indicate the holding time violation."

i - The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.

J - The result is an estimated value.

P - The Gas Chromatography or High-performance liquid chromatography confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.

U - The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

***Footnotes:***

(a) Risk-Based Concentrations are referenced from the November 1, 2015 update to the DEQ's Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites guidance document dated September 2003.

(b) This pathway is applicable anytime someone is likely to come into contact with contaminated soil. For the occupational scenario, exposure to contaminated soils should be considered for all

(c) This pathway is applicable whenever vadose zone soils are contaminated with volatile compounds.

(d) This pathway is applicable whenever vadose zone soils contaminated with volatile compounds are located beneath or within 10 feet of a commercial building or beneath or within 50 feet of a residential building.

(e) This pathway is applicable whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used in the future.

(f) Clean Fill Values are referenced from the DEQ's Clean Fill Determinations guidance document dated February 2019.

***Symbols/Acronyms:***

bgs - below ground surface

C. W. - construction worker receptors

>Csat - The soil RBC exceeds the limit of three-phase equilibrium partitioning. Soil concentrations in excess of this value indicate free product might be present.

DEQ - Department of Environmental Quality

E. W. - excavation worker receptors

ft - feet

LOD - Limit of Detection

LOQ - Limit of Quantitation

>Max - The constituent RBC for this pathway is greater than 1,000,000 mg/Kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown.

MDL - Method Detection Limit

mg/kg - milligrams per kilogram

MRL - Method Reporting Limit

NA - Sample was not analyzed for this analyte.

NE - No RBC levels are established for this chemical.

OCC. - occupational receptors

RBC - risk-based concentration

USEPA - United States Environmental Protection Agency

## Table 3. Soil Samples Analytical Results - Organophosporus Pesticides
## Phase II Environmental Site Assessment
## Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

| | DEQ Risk-Based Concentrations for Soil (a) | | | | | | DEQ's clean fill screening levels (f) | Test Pit Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ingestion, Dermal Contact and Inhalation (b) | | | Volatilization to Outdoor Air (c) | Vapor Intrusion into Buildings (d) | Leaching to Groundwater (e) | | COMP1-0.0-0.5 | COMP2-0.5-1.0 | COMP3-1.0-1.5 | COMP4-1.5-2.0 | COMP5-2.0-3.0 |
| | | | | | | | | Composite sample of subsamples collected from test pits TP1 through TP8 | | | | |
| | | | | | | | | 0-0.5 ft bgs | 0.5-1.0 ft bgs | 1.0-1.5 ft bgs | 1.5-2.0 ft bgs | 2.0-3.0 ft bgs |
| **Parameter** | OCC. | C. W. | E. W. | OCC. | OCC. | OCC. | | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 |
| **Organophosphorus Pesticides (mg/kg) ALS SOP** | | | | | | | | | | | | |
| Azinphos methyl (Guthion) | NE | NE | NE | NE | NE | NE | 1 | 0.011U* | 0.012U* | 0.012U* | 0.012U* | 0.012U* |
| Bolstar (Sulprofos) | NE | NE | NE | NE | NE | NE | NE | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Chlorpyrifos | NE | NE | NE | NE | NE | NE | 7.2 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Coumaphos | NE | NE | NE | NE | NE | NE | NE | 0.011U* | 0.012U* | 0.012U* | 0.012U* | 0.012U* |
| Demeton-O,S | NE | NE | NE | NE | NE | NE | 2.5 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Diazinon | NE | NE | NE | NE | NE | NE | 3.9 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Dichlorvos | NE | NE | NE | NE | NE | NE | 0.0049 | **0.011U*** | **0.012U*** | **0.012U*** | **0.012U*** | **0.012U*** |
| Dimethoate | NE | NE | NE | NE | NE | NE | 0.59 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Disulfoton | NE | NE | NE | NE | NE | NE | 0.056 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Ethoprop | NE | NE | NE | NE | NE | NE | NE | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Fensulfothion | NE | NE | NE | NE | NE | NE | NE | 0.011U* | 0.012U* | 0.012U* | 0.012U* | 0.012U* |
| Ronnel (Fenchlorphos) | NE | NE | NE | NE | NE | NE | 220 | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Stirophos | NE | NE | NE | NE | NE | NE | NE | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Tokuthion (Prothiofos) | NE | NE | NE | NE | NE | NE | NE | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |
| Trichloronate | NE | NE | NE | NE | NE | NE | NE | 0.0056U* | 0.0060U* | 0.0058U* | 0.0059U* | 0.0060U* |

See notes on next page.

# Table 3. Soil Samples Analytical Results - Organophosporus Pesticides
# Phase II Environmental Site Assessment
# Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

***Notes:***

The laboratory method reporting limit that exceed the Clean Fill Value is indicated with bold blue font.

***Data Qualifiers:***

* - The result is an outlier. According to the Case Narrative, "The analysis of samples was initially performed past the recommended holding time. Efforts were made to analyze the samples as soon as the error was identified. The data was flagged to indicate the holding time violation."

U - The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

***Footnotes:***

(a) Risk-Based Concentrations are referenced from the November 1, 2015 update to the DEQ's Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites guidance document dated September 2003.

(b) This pathway is applicable anytime someone is likely to come into contact with contaminated soil. For the occupational scenario, exposure to contaminated soils should be considered for all contaminants found in the top three feet of soil.

(c) This pathway is applicable whenever vadose zone soils are contaminated with volatile compounds.

(d) This pathway is applicable whenever vadose zone soils contaminated with volatile compounds are located beneath or within 10 feet of a commercial building or beneath or within 50 feet of a residential building.

(e) This pathway is applicable whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used in the future.

(f) Clean Fill Values are referenced from the DEQ's Clean Fill Determinations guidance document dated February 2019.

***Symbols/Acronyms:***

bgs - below ground surface

C. W. - construction worker receptors

DEQ - Department of Environmental Quality

E. W. - excavation worker receptors

ft - feet

>Max - The constituent RBC for this pathway is greater than 1,000,000 mg/Kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown.

MDL - Method Detection Limit

mg/kg - miligrams per kilogram

MRL - Method Reporting Limit

NA - Sample was not analyzed for this analyte.

NE - No RBC levels are established for this chemical.

OCC. - occupational receptors

RBC - risk-based concentration

SOP - Standard Operating Procedure

USEPA - United States Environmental Protection Agency

## Table 4. Soil Samples Analytical Results - Chlorinated Herbicides
## Phase II Environmental Site Assessment
## Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

| | DEQ Risk-Based Concentrations for Soil (a) | | | | | | DEQ's clean fill screening levels (f) | Test Pit Samples | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ingestion, Dermal Contact and Inhalation (b) | | | Volatilization to Outdoor Air (c) | Vapor Intrusion into Buildings (d) | Leaching to Groundwater (e) | | COMP1-0.0-0.5 | COMP2-0.5-1.0 | COMP3-1.0-1.5 | COMP4-1.5-2.0 | COMP5-2.0-3.0 |
| | | | | | | | | Composite sample of subsamples collected from test pits TP1 through TP8 | | | | |
| | | | | | | | | 0-0.5 ft bgs | 0.5-1.0 ft bgs | 1.0-1.5 ft bgs | 1.5-2.0 ft bgs | 2.0-3.0 ft bgs |
| **Parameter** | OCC. | C. W. | E. W. | OCC. | OCC. | OCC. | | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 | 10/3/2022 |
| **Chlorinated Herbicides (mg/kg)**<br>**USEPA 8151A** | | | | | | | | | | | | |
| 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) | NE | NE | NE | NE | NE | NE | 4.1 | 0.058U* | 0.061U* | 0.060U* | 0.061U* | 0.061U* |
| 2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex) | NE | NE | NE | NE | NE | NE | 3.7 | 0.058Ui* | 0.061U* | 0.060U* | 0.061U* | 0.061U* |
| 2,4-Dichlorophenoxyacetic acid (2,4-D) | 8,200 | 2,700 | 74,000 | NV | NV | 16 | 2.3 | 0.058U* | 0.061U* | 0.060U* | 0.061U* | 0.061U* |
| 4-(2,4-dichlorophenoxy)butyric acid (2,4-DB) | NE | NE | NE | NE | NE | NE | 25 | 0.058U* | 0.061U* | 0.060Ui* | 0.061U* | **0.027 J*** |
| Dalapon | NE | NE | NE | NE | NE | NE | 7.2 | 0.058U | 0.061U | 0.060U | 0.061U | 0.061U* |
| Dicamba | NE | NE | NE | NE | NE | NE | 9 | 0.058U* | 0.061U* | 0.060U* | 0.061U* | 0.061U* |
| Dichloroprop | NE | NE | NE | NE | NE | NE | NE | 0.058U* | 0.061U* | 0.060U* | 0.061U* | 0.061U* |
| Dinoseb | NE | NE | NE | NE | NE | NE | 7.8 | **0.0070 JP*** | 0.061U* | **0.0050 J*** | 0.061U* | **0.0036 JP*** |
| 2-Methyl-4-chlorophenoxyacetic acid (MCPA) | 410 | 130 | 3,700 | NV | NV | 0.61 | 0.097 | **5.8Ui*** | **6.1U*** | **6.0U*** | **6.1U*** | **6.1U*** |
| Methylchlorophenoxypropionic acid (MCPP) | NE | NE | NE | NE | NE | NE | NE | 5.8U* | 6.1U* | 6.0U* | 6.1U* | 6.1Ui* |

See notes on next page.

# Table 4. Soil Samples Analytical Results - Chlorinated Herbicides
# Phase II Environmental Site Assessment
# Approximately 10-Acre Portion of Map and Taxlot 371W06 TL 2500, 4677 Industry Dr., Medford, Oregon

***Notes:***

Analytical data in bold font indicates that the value exceeds the laboratory method reporting limit.

Analytical data highlighted in both yellow and blue indicates the value exceeded one or more generic RBCs and the Clean Fill Value.

The laboratory method reporting limits that exceed one or more RBCs are indicated with bold blue font.

***Data Qualifiers:***

* - The result is an outlier. See case narrative.

i - The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.

U - The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

***Footnotes:***

(a) Risk-Based Concentrations are referenced from the November 1, 2015 update to the DEQ's Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites guidance document dated September 2003.

(b) This pathway is applicable anytime someone is likely to come into contact with contaminated soil. For the occupational scenario, exposure to contaminated soils should be considered for all contaminants found in the top three feet of soil.

(c) This pathway is applicable whenever vadose zone soils are contaminated with volatile compounds.

(d) This pathway is applicable whenever vadose zone soils contaminated with volatile compounds are located beneath or within 10 feet of a commercial building or beneath or within 50 feet of a residential building.

(e) This pathway is applicable whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used in the future for drinking water.

(f) Clean Fill Values are referenced from the DEQ's Clean Fill Determinations guidance document dated February 2019.

***Symbols/Acronyms:***

bgs - below ground surface

C. W. - construction worker receptors

DEQ - Department of Environmental Quality

E. W. - excavation worker receptors

ft - feet

LOD - Limit of Detection

LOQ - Limit of Quantitation

>Max - The constituent RBC for this pathway is greater than 1,000,000 mg/Kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown.

MDL - Method Detection Limit

mg/kg - milligrams per kilogram

MRL - Method Reporting Limit

NA - Sample was not analyzed for this analyte.

NE - No RBC levels are established for this chemical.

OCC. - occupational receptors

RBC - risk-based concentration

USEPA - United States Environmental Protection Agency

# APPENDIX 1

Photographic Documentation

1. Test pit TP1, north sidewall.

4. Test pit TP2, north sidewall.

2. Test pit TP1, south sidewall.

5. Test pit TP3, facing north.

3. Test pit TP2, south sidewall.

6. Test pit TP3, north sidewall.

7. Test pit TP3, south sidewall.

10. Test pit TP5, facing east.

8. Test pit TP4, west sidewall.

11. Test pit TP5, west sidewall.

9. Test pit TP4, east sidewall.

12. Test pit TP5, east sidewall.

13. Test pit TP6, east sidewall.

16. Test pit TP7, north sidewall.

14. Test pit TP6, west sidewall.

17. Test pit TP7, south sidewall.

15. Test pit TP6, south sidewall.

18. Test pit TP8, north sidewall.

19. Test pit TP8, south sidewall.

# APPENDIX 3

Complete Laboratory Results

November 30, 2022 Service Request No:K2211581

Jonathan Williams
Alpine Environmental Consultants, LLC
12210 Antioch Road
White City, OR 97503

**Laboratory Results for: Medford Water Commission Phase II**

Dear Jonathan,

Enclosed are the results of the sample(s) submitted to our laboratory October 05, 2022
For your reference, these analyses have been assigned our service request number **K2211581.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Howard Holmes
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

ALS Environmental

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

**Service Request:** K2211581
**Date Received:** 10/05/2022

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

**Sample Receipt:**

Five soil samples were received for analysis at ALS Environmental on 10/05/2022. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

**Semivolatiles by GC/MS:**

Method ALS SOP, 10/27/2022:The analysis of samples was initially performed past the recommended holding time. Efforts were made to analyze the samples as soon as the error was identified. The data was flagged to indicate the holding time violation.

Method ALS SOP, 10/27/2022:The upper control criterion was exceeded for Coumaphos, Azinphos-methyl and Dimethoate in Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte in question. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

**Semivoa GC:**

Method 8081B:The upper control criterion was exceeded for Endosulfan II in Initial Calibration Verification (ICV). The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.
Method 8081B, 11/22/2022:The upper control criterion was exceeded for Toxaphene in Laboratory Control Sample (LCS) KQ2220158-06. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.
Method 8081B, 11/18/2022:The upper control criterion was exceeded for Toxaphene in Continuing Calibration Verification (CCV) KQ2220579-02, -05 and for trans-Chlordane and cis-Chlordane in Continuing Calibration Verification (CCV) KQ2220579-02. The analytes in question were not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.
Method 8081B:The analysis of all samples was initially performed within the recommended holding time. Due to high batch QC recoveries and detections in the samples, the project manager requested the samples be re-extracted and re-analyzed. The re-extraction was performed outside holding time. The data was flagged to indicate the holding time violation.

Method 8151A, 11/01/2022:The upper control criterion was exceeded for all target analytes in Continuing Calibration Verification (CCV) KQ2219282-01, -03 The field samples analyzed in this sequence did not contain the analytes in question above the MRL. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

**Metals:**

Method 6020A, 10/24/2022:The Relative Percent Difference (RPD) for the replicate analysis of Lead and Zinc in sample COMP1-0.0-0.5 was outside the normal ALS control limits. The variability in the results was attributed to the heterogeneous character of

Approved by _____ Date 11/30/2022

the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.
Method 6020A, 10/24/2022:Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recovery of Antimony for sample COMP1-0.0-0.5 was below the ALS control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

Method 6020A, 10/24/2022:The matrix spike recovery of Arsenic for sample COMP1-0.0-0.5 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

Approved by  Date 11/30/2022

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

| CLIENT ID: COMP5-2.0-3.0 | | | Lab ID: K2211581-005 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| 2,4-DB | 27 | J | 6.6 | 61 | ug/Kg | 8151A |
| 4,4'-DDD | 2.3 | | 0.63 | 2.1 | ug/Kg | 8081B |
| 4,4'-DDE | 140 | | 4.2 | 10 | ug/Kg | 8081B |
| 4,4'-DDT | 12 | | 0.64 | 2.1 | ug/Kg | 8081B |
| Antimony | 0.052 | J | 0.021 | 0.053 | mg/Kg | 6020A |
| Arsenic | 2.13 | | 0.06 | 0.53 | mg/Kg | 6020A |
| Barium | 252 | | 0.021 | 0.053 | mg/Kg | 6020A |
| Beryllium | 0.633 | | 0.006 | 0.021 | mg/Kg | 6020A |
| Cadmium | 0.090 | | 0.007 | 0.042 | mg/Kg | 6020A |
| Chromium | 55.8 | | 0.06 | 0.21 | mg/Kg | 6020A |
| Cobalt | 24.0 | | 0.006 | 0.021 | mg/Kg | 6020A |
| Copper | 20.0 | | 0.04 | 0.11 | mg/Kg | 6020A |
| Dieldrin | 12 | | 0.23 | 1.0 | ug/Kg | 8081B |
| Dinoseb | 3.6 | JP | 3.3 | 61 | ug/Kg | 8151A |
| Endosulfan Sulfate | 3.6 | | 1.1 | 2.1 | ug/Kg | 8081B |
| Lead | 8.51 | | 0.021 | 0.053 | mg/Kg | 6020A |
| Mercury | 0.014 | J | 0.002 | 0.024 | mg/Kg | 7471B |
| Molybdenum | 0.067 | | 0.021 | 0.053 | mg/Kg | 6020A |
| Nickel | 28.7 | | 0.03 | 0.21 | mg/Kg | 6020A |
| Silver | 0.044 | | 0.004 | 0.021 | mg/Kg | 6020A |
| Solids, Total | 82.3 | | | | Percent | 160.3 Modified |
| Thallium | 0.078 | | 0.004 | 0.021 | mg/Kg | 6020A |
| Vanadium | 62.7 | | 0.03 | 0.21 | mg/Kg | 6020A |
| Zinc | 29.9 | | 0.21 | 0.53 | mg/Kg | 6020A |

| CLIENT ID: COMP1-0.0-0.5 | | | Lab ID: K2211581-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| 4,4'-DDD | 9.5 | | 0.61 | 2.0 | ug/Kg | 8081B |
| 4,4'-DDE | 550 | | 8.1 | 20 | ug/Kg | 8081B |
| 4,4'-DDT | 96 | | 6.2 | 20 | ug/Kg | 8081B |
| Antimony | 0.262 | | 0.021 | 0.052 | mg/Kg | 6020A |
| Arsenic | 55.3 | | 0.06 | 0.52 | mg/Kg | 6020A |
| Barium | 259 | | 0.021 | 0.052 | mg/Kg | 6020A |
| Beryllium | 0.683 | | 0.006 | 0.021 | mg/Kg | 6020A |
| Cadmium | 0.146 | | 0.007 | 0.042 | mg/Kg | 6020A |
| Chromium | 49.2 | | 0.06 | 0.21 | mg/Kg | 6020A |
| Cobalt | 23.8 | | 0.006 | 0.021 | mg/Kg | 6020A |
| Copper | 28.1 | | 0.04 | 0.10 | mg/Kg | 6020A |
| Dieldrin | 43 | | 0.23 | 1.0 | ug/Kg | 8081B |
| Dinoseb | 7.0 | JP | 3.2 | 58 | ug/Kg | 8151A |
| Endosulfan Sulfate | 10 | P | 1.1 | 2.0 | ug/Kg | 8081B |

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

| CLIENT ID: COMP1-0.0-0.5 | | | Lab ID: K2211581-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Lead | 367 | | 0.021 | 0.052 | mg/Kg | 6020A |
| Mercury | 0.020 | J | 0.002 | 0.023 | mg/Kg | 7471B |
| Molybdenum | 0.198 | | 0.021 | 0.052 | mg/Kg | 6020A |
| Nickel | 27.2 | | 0.03 | 0.21 | mg/Kg | 6020A |
| Silver | 0.066 | | 0.004 | 0.021 | mg/Kg | 6020A |
| Solids, Total | 85.1 | | | | Percent | 160.3 Modified |
| Thallium | 0.119 | | 0.004 | 0.021 | mg/Kg | 6020A |
| Vanadium | 49.8 | | 0.03 | 0.21 | mg/Kg | 6020A |
| Zinc | 47.7 | | 0.21 | 0.52 | mg/Kg | 6020A |

| CLIENT ID: COMP2-0.5-1.0 | | | Lab ID: K2211581-002 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| 4,4'-DDD | 5.0 | | 0.60 | 2.0 | ug/Kg | 8081B |
| 4,4'-DDE | 340 | | 4.0 | 10 | ug/Kg | 8081B |
| 4,4'-DDT | 69 | | 6.1 | 20 | ug/Kg | 8081B |
| Antimony | 0.156 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Arsenic | 30.3 | | 0.06 | 0.48 | mg/Kg | 6020A |
| Barium | 278 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Beryllium | 0.664 | | 0.006 | 0.019 | mg/Kg | 6020A |
| Cadmium | 0.131 | | 0.007 | 0.039 | mg/Kg | 6020A |
| Chromium | 49.9 | | 0.06 | 0.19 | mg/Kg | 6020A |
| Cobalt | 27.1 | | 0.006 | 0.019 | mg/Kg | 6020A |
| Copper | 23.6 | | 0.039 | 0.097 | mg/Kg | 6020A |
| Dieldrin | 56 | | 2.2 | 10 | ug/Kg | 8081B |
| Endosulfan Sulfate | 8.8 | | 0.99 | 2.0 | ug/Kg | 8081B |
| Lead | 127 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Mercury | 0.019 | J | 0.002 | 0.021 | mg/Kg | 7471B |
| Molybdenum | 0.199 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Nickel | 29.3 | | 0.03 | 0.19 | mg/Kg | 6020A |
| Selenium | 0.18 | J | 0.09 | 0.97 | mg/Kg | 6020A |
| Silver | 0.068 | | 0.004 | 0.019 | mg/Kg | 6020A |
| Solids, Total | 80.5 | | | | Percent | 160.3 Modified |
| Thallium | 0.255 | | 0.004 | 0.019 | mg/Kg | 6020A |
| Vanadium | 52.4 | | 0.03 | 0.19 | mg/Kg | 6020A |
| Zinc | 33.9 | | 0.19 | 0.48 | mg/Kg | 6020A |

| CLIENT ID: COMP4-1.5-2.0 | | | Lab ID: K2211581-004 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| 4,4'-DDD | 2.1 | J | 0.70 | 2.3 | ug/Kg | 8081B |
| 4,4'-DDE | 130 | | 4.7 | 12 | ug/Kg | 8081B |
| 4,4'-DDT | 22 | P | 0.71 | 2.3 | ug/Kg | 8081B |

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

| CLIENT ID: COMP4-1.5-2.0 | | | Lab ID: K2211581-004 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Antimony | 0.070 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Arsenic | 8.51 | | 0.06 | 0.48 | mg/Kg | 6020A |
| Barium | 328 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Beryllium | 0.655 | | 0.006 | 0.019 | mg/Kg | 6020A |
| Cadmium | 0.103 | | 0.007 | 0.038 | mg/Kg | 6020A |
| Chromium | 43.2 | | 0.06 | 0.19 | mg/Kg | 6020A |
| Cobalt | 26.3 | | 0.006 | 0.019 | mg/Kg | 6020A |
| Copper | 22.2 | | 0.038 | 0.096 | mg/Kg | 6020A |
| Dieldrin | 11 | | 0.26 | 1.2 | ug/Kg | 8081B |
| Lead | 45.0 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Mercury | 0.011 | J | 0.002 | 0.024 | mg/Kg | 7471B |
| Molybdenum | 0.095 | | 0.019 | 0.048 | mg/Kg | 6020A |
| Nickel | 28.6 | | 0.03 | 0.19 | mg/Kg | 6020A |
| Silver | 0.058 | | 0.004 | 0.019 | mg/Kg | 6020A |
| Solids, Total | 81.4 | | | | Percent | 160.3 Modified |
| Thallium | 0.097 | | 0.004 | 0.019 | mg/Kg | 6020A |
| Vanadium | 46.8 | | 0.03 | 0.19 | mg/Kg | 6020A |
| Zinc | 28.8 | | 0.19 | 0.48 | mg/Kg | 6020A |

| CLIENT ID: COMP3-1.0-1.5 | | | Lab ID: K2211581-003 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| 4,4'-DDE | 54 | | 2.4 | 6.0 | ug/Kg | 8081B |
| Antimony | 0.060 | | 0.023 | 0.058 | mg/Kg | 6020A |
| Arsenic | 8.69 | | 0.07 | 0.58 | mg/Kg | 6020A |
| Barium | 300 | | 0.023 | 0.058 | mg/Kg | 6020A |
| Beryllium | 0.639 | | 0.007 | 0.023 | mg/Kg | 6020A |
| Cadmium | 0.096 | | 0.008 | 0.046 | mg/Kg | 6020A |
| Chromium | 40.0 | | 0.07 | 0.23 | mg/Kg | 6020A |
| Cobalt | 25.1 | | 0.007 | 0.023 | mg/Kg | 6020A |
| Copper | 19.6 | | 0.05 | 0.12 | mg/Kg | 6020A |
| Dieldrin | 6.2 | | 0.27 | 1.2 | ug/Kg | 8081B |
| Dinoseb | 5.0 | J | 3.3 | 60 | ug/Kg | 8151A |
| Lead | 39.6 | | 0.023 | 0.058 | mg/Kg | 6020A |
| Mercury | 0.017 | J | 0.002 | 0.022 | mg/Kg | 7471B |
| Molybdenum | 0.119 | | 0.023 | 0.058 | mg/Kg | 6020A |
| Nickel | 23.5 | | 0.03 | 0.23 | mg/Kg | 6020A |
| Silver | 0.060 | | 0.005 | 0.023 | mg/Kg | 6020A |
| Solids, Total | 82.6 | | | | Percent | 160.3 Modified |
| Thallium | 0.131 | | 0.005 | 0.023 | mg/Kg | 6020A |
| Vanadium | 42.3 | | 0.03 | 0.23 | mg/Kg | 6020A |
| Zinc | 26.4 | | 0.23 | 0.58 | mg/Kg | 6020A |

## SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

| CLIENT ID: COMP3-1.0-1.5 | | | Lab ID: K2211581-003 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** Alpine Environmental Consultants, LLC **Service Request:**K2211581
**Project:** Medford Water Commission Phase II

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2211581-001 | COMP1-0.0-0.5 | 10/3/2022 | 1000 |
| K2211581-002 | COMP2-0.5-1.0 | 10/3/2022 | 1015 |
| K2211581-003 | COMP3-1.0-1.5 | 10/3/2022 | 1030 |
| K2211581-004 | COMP4-1.5-2.0 | 10/3/2022 | 1045 |
| K2211581-005 | COMP5-2.0-3.0 | 10/3/2022 | 1100 |

☑ ALS Environmental
1317 South 13th Ave
Kelso, WA 98626
(Tel) 360.577.7222
(Fax) 360.636.1068

# Chain of Custody Form

Page 1 of 1

K2211581

| ALS Project Manager: | | ALS Work Order #: | |
|---|---|---|---|

| Customer Information | | Project Information | | Parameter/Method | |
|---|---|---|---|---|---|
| Purchase Order | | Project Name | Medford Water Commission Phase II | A | |
| Work Order | | Project Number | | B | Metals (17) - Ag 17 |
| Company Name | Alpine Env. Consultants, LLC | Bill To Company | Alpine Env. Consultants, LLC | C | Low level Organochlorine Pesticides by USEPA Method 8081B |
| Send Report To | Jonathan Williams | Invoice Attn. | | D | Organophosphorus pesticides by GC/MS ALS SOP |
| Address | 12210 Antioch Road | Address | | E | Chlorinated herbicides by GC USEPA Method 8151A |
| | | | | F | |
| City/State/Zip | White City, Oregon, 97503 | City/State/Zip | | G | |
| Phone | 541.944.4685 | Phone | | H | |
| Fax | | Fax | | I | |
| e-Mail Address | jwilliams@alpine-env-llc.com | | | J | |

| No. | Sample Description | Date | Time | Matrix | Pres. Key Numbers | # Bottles | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | COMP1-0.0-0.5 | 10/3/2022 | 1000 | S | | 1 | | x | x | x | x | | | | | |
| 2 | COMP2-0.5-1.0 | 10/3/2022 | 1015 | S | | 1 | | x | x | x | x | | | | | |
| 3 | COMP3-1.0-1.5 | 10/3/2022 | 1030 | S | | 1 | | x | x | x | x | | | | | |
| 4 | COMP4-1.5-2.0 | 10/3/2022 | 1045 | S | | 1 | | x | x | x | x | | | | | |
| 5 | COMP5-2.0-3.0 | 10/3/2022 | 1100 | S | | 1 | | x | x | x | x | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |

| Sampler(s): Please Print & Sign | Shipment Method: | Required Turnaround Time: (Check Box) | Results Due Date: |
|---|---|---|---|
| Toby Shallcross | FEDEX | ☑ 10 Wk Days ☐ 5 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other | |

| Relinquished by: | Date: | Time: | Received by: | Date: | Time: | Notes: |
|---|---|---|---|---|---|---|
| Toby Shallcross | | | | | | |
| Relinquished by: | Date: 10/4/22 | Time: 1000 | Received by (Laboratory): Josh McPherson | Date: 10.5.22 | Time: 1010 | |
| Logged by (Laboratory): | Date: | Time: | Checked by (Laboratory): | | | |

| ALS Cooler ID | Cooler Temp | QC Package: (Check Box Below) | |
|---|---|---|---|
| | | ☑ Level II: Standard QC | ☐ Level III: Raw Da |
| | | ☐ TRRP LRC | ☐ TRRP Level IV |
| | | ☐ Level IV: SW846 Methods/CLP like | |
| | | ☐ Other: | |

**Preservative Key:** 1-HCl 2-$HNO_3$ 3-$H_2SO_4$ 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samp

1

PM 1+2

## Cooler Receipt and Preservation Form

Client ALPINE ENV CONSULTANTS Service Request K22 11581

Received: 10.5.22 Opened: 10.5.22 By: YM Unloaded: 10.5.22 By: YM

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 2.6 | | IR01 | | | | 2787 3785 5567 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Under filled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

| Sample ID | Bottle Count Bottle Type | Head-space | Broke | pH | Reagent | Volume added | Reagent Lot Number | Initials | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Notes, Discrepancies, Resolutions: _____

_____

# Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

## Inorganic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated value. |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.<br>*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a matrix interference. |
| X | See case narrative. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |
| H | The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory. |

## Metals Data Qualifiers

| | |
|---|---|
| # | The control limit criteria is not applicable. |
| J | The result is an estimated value. |
| E | The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample. |
| M | The duplicate injection precision was not met. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.<br>*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a matrix interference. |
| X | See case narrative. |
| + | The correlation coefficient for the MSA is less than 0.995. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |

## Organic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| A | A tentatively identified compound, a suspected aldol-condensation product. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards. |
| C | The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data. |
| D | The reported result is from a dilution. |
| E | The result is an estimated value. |
| J | The result is an estimated value. |
| N | The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed. |
| P | The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results. |
| U | The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.<br>*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference. |
| X | See case narrative. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |

## Additional Petroleum Hydrocarbon Specific Qualifiers

| | |
|---|---|
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| Y | The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard. |
| Z | The chromatographic fingerprint does not resemble a petroleum product. |

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso**
**State Certifications, Accreditations, and Licenses**

| Agency | Web Site | Number |
|---|---|---|
| Alaska DEH | http://dec.alaska.gov/eh/lab/cs/csapproval.htm | UST-040 |
| Arizona DHS | http://www.azdhs.gov/lab/license/env.htm | AZ0339 |
| Arkansas - DEQ | http://www.adeq.state.ar.us/techsvs/labcert.htm | 88-0637 |
| California DHS (ELAP) | http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx | 2795 |
| DOD ELAP | http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm | L16-58-R4 |
| Florida DOH | http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm | E87412 |
| Hawaii DOH | http://health.hawaii.gov/ | - |
| ISO 17025 | http://www.pjlabs.com/ | L16-57 |
| Louisiana DEQ | http://www.deq.louisiana.gov/page/la-lab-accreditation | 03016 |
| Maine DHS | http://www.maine.gov/dhhs/ | WA01276 |
| Minnesota DOH | http://www.health.state.mn.us/accreditation | 053-999-457 |
| Nevada DEP | http://ndep.nv.gov/bsdw/labservice.htm | WA01276 |
| New Jersey DEP | http://www.nj.gov/dep/enforcement/oqa.html | WA005 |
| New York - DOH | https://www.wadsworth.org/regulatory/elap | 12060 |
| North Carolina DEQ | https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification | 605 |
| Oklahoma DEQ | http://www.deq.state.ok.us/CSDnew/labcert.htm | 9801 |
| Oregon – DEQ (NELAP) | http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx | WA100010 |
| South Carolina DHEC | http://www.scdhec.gov/environment/EnvironmentalLabCertification/ | 61002 |
| Texas CEQ | http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html | T104704427 |
| Washington DOE | http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html | C544 |
| Wyoming (EPA Region 8) | https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water- | - |
| Kelso Laboratory Website | www.alsglobal.com | NA |

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

| | |
|---|---|
| ASTM | American Society for Testing and Materials |
| A2LA | American Association for Laboratory Accreditation |
| CARB | California Air Resources Board |
| CAS Number | Chemical Abstract Service registry Number |
| CFC | Chlorofluorocarbon |
| CFU | Colony-Forming Unit |
| DEC | Department of Environmental Conservation |
| DEQ | Department of Environmental Quality |
| DHS | Department of Health Services |
| DOE | Department of Ecology |
| DOH | Department of Health |
| EPA | U. S. Environmental Protection Agency |
| ELAP | Environmental Laboratory Accreditation Program |
| GC | Gas Chromatography |
| GC/MS | Gas Chromatography/Mass Spectrometry |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| LUFT | Leaking Underground Fuel Tank |
| M | Modified |
| MCL | Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA. |
| MDL | Method Detection Limit |
| MPN | Most Probable Number |
| MRL | Method Reporting Limit |
| NA | Not Applicable |
| NC | Not Calculated |
| NCASI | National Council of the Paper Industry for Air and Stream Improvement |
| ND | Not Detected |
| NIOSH | National Institute for Occupational Safety and Health |
| PQL | Practical Quantitation Limit |
| RCRA | Resource Conservation and Recovery Act |
| SIM | Selected Ion Monitoring |
| TPH | Total Petroleum Hydrocarbons |
| tr | Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-001 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 160.3 Modified | | NPATTERSON |
| 6020A | MSOLADEY | EMCALLISTER |
| 7471B | JHINSON | JHINSON |
| 8081B | VWILSON | SMURRAY |
| 8151A | JMOORE | BBRIGHT |
| ALS SOP | VWILSON | EBRUNO |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-001.R01 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | MJONES |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-001.R02 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-001.R03 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

**Client:** Alpine Environmental Consultants, LLC **Service Request:** K2211581
**Project:** Medford Water Commission Phase II/

**Sample Name:** COMP2-0.5-1.0 **Date Collected:** 10/3/22
**Lab Code:** K2211581-002 **Date Received:** 10/5/22
**Sample Matrix:** Soil

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 160.3 Modified | | NPATTERSON |
| 6020A | MSOLADEY | EMCALLISTER |
| 7471B | JHINSON | JHINSON |
| 8081B | VWILSON | SMURRAY |
| 8151A | JMOORE | BBRIGHT |
| ALS SOP | VWILSON | EBRUNO |

**Sample Name:** COMP2-0.5-1.0 **Date Collected:** 10/3/22
**Lab Code:** K2211581-002.R01 **Date Received:** 10/5/22
**Sample Matrix:** Soil

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | MJONES |

**Sample Name:** COMP2-0.5-1.0 **Date Collected:** 10/3/22
**Lab Code:** K2211581-002.R02 **Date Received:** 10/5/22
**Sample Matrix:** Soil

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

**Sample Name:** COMP3-1.0-1.5 **Date Collected:** 10/3/22
**Lab Code:** K2211581-003 **Date Received:** 10/5/22
**Sample Matrix:** Soil

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 160.3 Modified | | NPATTERSON |
| 6020A | MSOLADEY | EMCALLISTER |
| 7471B | JHINSON | JHINSON |
| 8081B | VWILSON | SMURRAY |
| 8151A | JMOORE | BBRIGHT |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP3-1.0-1.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-003 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| ALS SOP | VWILSON | EBRUNO |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP3-1.0-1.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-003.R01 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | MJONES |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP3-1.0-1.5 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-003.R02 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP4-1.5-2.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-004 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 160.3 Modified | | NPATTERSON |
| 6020A | MSOLADEY | EMCALLISTER |
| 7471B | JHINSON | JHINSON |
| 8081B | VWILSON | SMURRAY |
| 8151A | JMOORE | BBRIGHT |
| ALS SOP | VWILSON | EBRUNO |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP4-1.5-2.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-004.R01 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | MJONES |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP4-1.5-2.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-004.R02 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP5-2.0-3.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-005 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 160.3 Modified | | NPATTERSON |
| 6020A | MSOLADEY | EMCALLISTER |
| 7471B | JHINSON | JHINSON |
| 8081B | VWILSON | SMURRAY |
| 8151A | JMOORE | BBRIGHT |
| ALS SOP | VWILSON | EBRUNO |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP5-2.0-3.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-005.R01 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | MJONES |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP5-2.0-3.0 | **Date Collected:** | 10/3/22 |
| **Lab Code:** | K2211581-005.R02 | **Date Received:** | 10/5/22 |
| **Sample Matrix:** | Soil | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 8081B | VWILSON | SMURRAY |

# Sample Results

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

# Semivolatile Organic Compounds by GC/MS

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 11 | 4.6 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Bolstar (Sulprofos) | ND U | 5.6 | 3.1 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Chlorpyrifos | ND U | 5.6 | 2.0 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Coumaphos | ND U | 11 | 4.3 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Demeton-O,S | ND U | 5.6 | 2.5 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Diazinon | ND U | 5.6 | 3.2 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Dichlorvos | ND U | 11 | 5.0 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Dimethoate | ND U | 5.6 | 4.5 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Disulfoton | ND U | 5.6 | 0.91 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Ethoprop (Prophos) | ND U | 5.6 | 2.1 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Fensulfothion | ND U | 11 | 8.0 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Ronnel | ND U | 5.6 | 1.8 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Stirophos | ND U | 5.6 | 3.4 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Tokuthion | ND U | 5.6 | 2.7 | 1 | 10/27/22 08:53 | 10/20/22 | * |
| Trichloronate | ND U | 5.6 | 2.1 | 1 | 10/27/22 08:53 | 10/20/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 97 | 70 - 130 | 10/27/22 08:53 | |
| Diazinon-d10 | 104 | 70 - 130 | 10/27/22 08:53 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:15 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP2-0.5-1.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-002 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 12 | 5.0 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Bolstar (Sulprofos) | ND U | 6.0 | 3.4 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Chlorpyrifos | ND U | 6.0 | 2.2 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Coumaphos | ND U | 12 | 4.7 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Demeton-O,S | ND U | 6.0 | 2.7 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Diazinon | ND U | 6.0 | 3.5 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Dichlorvos | ND U | 12 | 5.4 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Dimethoate | ND U | 6.0 | 4.8 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Disulfoton | ND U | 6.0 | 0.99 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Ethoprop (Prophos) | ND U | 6.0 | 2.3 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Fensulfothion | ND U | 12 | 8.6 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Ronnel | ND U | 6.0 | 1.9 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Stirophos | ND U | 6.0 | 3.7 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Tokuthion | ND U | 6.0 | 2.9 | 1 | 10/27/22 09:26 | 10/20/22 | * |
| Trichloronate | ND U | 6.0 | 2.2 | 1 | 10/27/22 09:26 | 10/20/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 93 | 70 - 130 | 10/27/22 09:26 | |
| Diazinon-d10 | 97 | 70 - 130 | 10/27/22 09:26 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP3-1.0-1.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-003 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 12 | 4.8 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Bolstar (Sulprofos) | ND U | 5.8 | 3.2 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Chlorpyrifos | ND U | 5.8 | 2.1 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Coumaphos | ND U | 12 | 4.5 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Demeton-O,S | ND U | 5.8 | 2.5 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Diazinon | ND U | 5.8 | 3.3 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Dichlorvos | ND U | 12 | 5.2 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Dimethoate | ND U | 5.8 | 4.6 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Disulfoton | ND U | 5.8 | 0.94 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Ethoprop (Prophos) | ND U | 5.8 | 2.2 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Fensulfothion | ND U | 12 | 8.2 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Ronnel | ND U | 5.8 | 1.9 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Stirophos | ND U | 5.8 | 3.5 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Tokuthion | ND U | 5.8 | 2.8 | 1 | 10/27/22 09:59 | 10/20/22 | * |
| Trichloronate | ND U | 5.8 | 2.1 | 1 | 10/27/22 09:59 | 10/20/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 96 | 70 - 130 | 10/27/22 09:59 | |
| Diazinon-d10 | 89 | 70 - 130 | 10/27/22 09:59 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:45 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP4-1.5-2.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-004 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 12 | 4.9 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Bolstar (Sulprofos) | ND U | 5.9 | 3.3 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Chlorpyrifos | ND U | 5.9 | 2.2 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Coumaphos | ND U | 12 | 4.6 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Demeton-O,S | ND U | 5.9 | 2.6 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Diazinon | ND U | 5.9 | 3.4 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Dichlorvos | ND U | 12 | 5.3 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Dimethoate | ND U | 5.9 | 4.7 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Disulfoton | ND U | 5.9 | 0.97 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Ethoprop (Prophos) | ND U | 5.9 | 2.2 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Fensulfothion | ND U | 12 | 8.4 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Ronnel | ND U | 5.9 | 1.9 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Stirophos | ND U | 5.9 | 3.6 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Tokuthion | ND U | 5.9 | 2.9 | 1 | 10/27/22 10:33 | 10/20/22 | * |
| Trichloronate | ND U | 5.9 | 2.2 | 1 | 10/27/22 10:33 | 10/20/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 100 | 70 - 130 | 10/27/22 10:33 | |
| Diazinon-d10 | 101 | 70 - 130 | 10/27/22 10:33 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 11:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP5-2.0-3.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-005 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 12 | 5.0 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Bolstar (Sulprofos) | ND U | 6.0 | 3.4 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Chlorpyrifos | ND U | 6.0 | 2.2 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Coumaphos | ND U | 12 | 4.7 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Demeton-O,S | ND U | 6.0 | 2.7 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Diazinon | ND U | 6.0 | 3.5 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Dichlorvos | ND U | 12 | 5.4 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Dimethoate | ND U | 6.0 | 4.8 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Disulfoton | ND U | 6.0 | 0.99 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Ethoprop (Prophos) | ND U | 6.0 | 2.3 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Fensulfothion | ND U | 12 | 8.6 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Ronnel | ND U | 6.0 | 1.9 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Stirophos | ND U | 6.0 | 3.7 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Tokuthion | ND U | 6.0 | 2.9 | 1 | 10/27/22 11:07 | 10/20/22 | * |
| Trichloronate | ND U | 6.0 | 2.2 | 1 | 10/27/22 11:07 | 10/20/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 107 | 70 - 130 | 10/27/22 11:07 | |
| Diazinon-d10 | 107 | 70 - 130 | 10/27/22 11:07 | |

# Semivolatile Organic Compounds by GC

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.0 | 0.60 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| alpha-BHC | ND U | 1.0 | 0.30 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| beta-BHC | ND U | 1.0 | 0.28 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| delta-BHC | ND U | 1.0 | 0.29 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| gamma-BHC (Lindane) | ND U | 1.0 | 0.32 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Chlordane | ND U | 10 | 4.9 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| cis-Chlordane | ND U | 1.0 | 0.42 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| trans-Chlordane | ND U | 1.0 | 0.39 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| 4,4'-DDD | **9.5** | 2.0 | 0.61 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| 4,4'-DDE | **550** | 20 | 8.1 | 20 | 11/22/22 18:46 | 11/16/22 | * |
| 4,4'-DDT | **96** | 20 | 6.2 | 10 | 11/22/22 18:01 | 11/16/22 | * |
| Dieldrin | **43** | 1.0 | 0.23 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endosulfan I | ND U | 1.0 | 0.38 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endosulfan II | ND U | 2.0 | 0.70 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endosulfan Sulfate | **10 P** | 2.0 | 1.1 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endrin | ND U | 1.0 | 0.33 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endrin Aldehyde | ND U | 2.0 | 0.91 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Endrin Ketone | ND U | 1.0 | 0.46 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Heptachlor | ND U | 1.0 | 0.40 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Heptachlor Epoxide | ND U | 2.0 | 0.67 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Methoxychlor | ND U | 2.0 | 0.72 | 1 | 11/18/22 12:06 | 11/16/22 | * |
| Toxaphene | ND Ui | 180 | 180 | 1 | 11/18/22 12:06 | 11/16/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 110 | 10 - 134 | 11/18/22 12:06 | |
| Tetrachloro-m-xylene | 89 | 10 - 121 | 11/18/22 12:06 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:15 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP2-0.5-1.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-002 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.0 | 0.59 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| alpha-BHC | ND U | 1.0 | 0.29 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| beta-BHC | ND U | 1.0 | 0.27 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| delta-BHC | ND U | 1.0 | 0.28 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| gamma-BHC (Lindane) | ND U | 1.0 | 0.31 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Chlordane | ND U | 10 | 4.8 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| cis-Chlordane | ND U | 1.0 | 0.41 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| trans-Chlordane | ND U | 1.0 | 0.38 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| 4,4'-DDD | **5.0** | 2.0 | 0.60 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| 4,4'-DDE | **340** | 10 | 4.0 | 10 | 11/22/22 19:32 | 11/16/22 | * |
| 4,4'-DDT | **69** | 20 | 6.1 | 10 | 11/22/22 19:32 | 11/16/22 | * |
| Dieldrin | **56** | 10 | 2.2 | 10 | 11/22/22 19:32 | 11/16/22 | * |
| Endosulfan I | ND U | 1.0 | 0.37 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Endosulfan II | ND U | 2.0 | 0.69 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Endosulfan Sulfate | **8.8** | 2.0 | 0.99 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Endrin | ND U | 1.0 | 0.32 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Endrin Aldehyde | ND Ui | 2.0 | 1.6 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Endrin Ketone | ND U | 1.0 | 0.45 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Heptachlor | ND U | 1.0 | 0.39 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Heptachlor Epoxide | ND U | 2.0 | 0.66 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Methoxychlor | ND U | 2.0 | 0.71 | 1 | 11/18/22 18:15 | 11/16/22 | * |
| Toxaphene | ND U | 100 | 34 | 1 | 11/18/22 18:15 | 11/16/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 125 | 10 - 134 | 11/18/22 18:15 | |
| Tetrachloro-m-xylene | 101 | 10 - 121 | 11/18/22 18:15 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP3-1.0-1.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-003 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.4 | 0.71 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| alpha-BHC | ND U | 1.2 | 0.35 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| beta-BHC | ND U | 1.2 | 0.33 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| delta-BHC | ND U | 1.2 | 0.34 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| gamma-BHC (Lindane) | ND U | 1.2 | 0.38 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Chlordane | ND U | 12 | 5.8 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| cis-Chlordane | ND U | 1.2 | 0.49 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| trans-Chlordane | ND U | 1.2 | 0.46 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| 4,4'-DDD | ND U | 2.4 | 0.72 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| 4,4'-DDE | **54** | 6.0 | 2.4 | 5 | 11/22/22 20:18 | 11/16/22 | * |
| 4,4'-DDT | ND Ui | 3.7 | 3.7 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Dieldrin | **6.2** | 1.2 | 0.27 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endosulfan I | ND U | 1.2 | 0.45 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endosulfan II | ND U | 2.4 | 0.83 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endosulfan Sulfate | ND U | 2.4 | 1.2 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endrin | ND U | 1.2 | 0.39 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endrin Aldehyde | ND U | 2.4 | 1.1 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Endrin Ketone | ND U | 1.2 | 0.54 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Heptachlor | ND U | 1.2 | 0.47 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Heptachlor Epoxide | ND U | 2.4 | 0.79 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Methoxychlor | ND U | 2.4 | 0.85 | 1 | 11/18/22 19:01 | 11/16/22 | * |
| Toxaphene | ND U | 120 | 41 | 1 | 11/18/22 19:01 | 11/16/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 124 | 10 - 134 | 11/18/22 19:01 | |
| Tetrachloro-m-xylene | 100 | 10 - 121 | 11/18/22 19:01 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:45 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP4-1.5-2.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-004 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | U | 2.3 | 0.68 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| alpha-BHC | ND | U | 1.2 | 0.34 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| beta-BHC | ND | U | 1.2 | 0.32 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| delta-BHC | ND | U | 1.2 | 0.33 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| gamma-BHC (Lindane) | ND | U | 1.2 | 0.36 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Chlordane | ND | U | 12 | 5.6 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| cis-Chlordane | ND | U | 1.2 | 0.48 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| trans-Chlordane | ND | U | 1.2 | 0.44 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| 4,4'-DDD | **2.1** | **J** | 2.3 | 0.70 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| 4,4'-DDE | **130** | | 12 | 4.7 | 10 | 11/22/22 21:04 | 11/16/22 | * |
| 4,4'-DDT | **22** | **P** | 2.3 | 0.71 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Dieldrin | **11** | | 1.2 | 0.26 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endosulfan I | ND | U | 1.2 | 0.43 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endosulfan II | ND | U | 2.3 | 0.80 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endosulfan Sulfate | ND | U | 2.3 | 1.2 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endrin | ND | U | 1.2 | 0.37 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endrin Aldehyde | ND | U | 2.3 | 1.1 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Endrin Ketone | ND | U | 1.2 | 0.52 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Heptachlor | ND | U | 1.2 | 0.45 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Heptachlor Epoxide | ND | U | 2.3 | 0.76 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Methoxychlor | ND | U | 2.3 | 0.82 | 1 | 11/18/22 19:48 | 11/16/22 | * |
| Toxaphene | ND | U | 120 | 40 | 1 | 11/18/22 19:48 | 11/16/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 113 | 10 - 134 | 11/18/22 19:48 | |
| Tetrachloro-m-xylene | 91 | 10 - 121 | 11/18/22 19:48 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 11:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP5-2.0-3.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-005 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.1 | 0.62 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| alpha-BHC | ND U | 1.0 | 0.31 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| beta-BHC | ND U | 1.0 | 0.29 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| delta-BHC | ND U | 1.0 | 0.30 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| gamma-BHC (Lindane) | ND U | 1.0 | 0.33 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Chlordane | ND U | 10 | 5.0 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| cis-Chlordane | ND U | 1.0 | 0.43 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| trans-Chlordane | ND U | 1.0 | 0.40 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| 4,4'-DDD | **2.3** | 2.1 | 0.63 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| 4,4'-DDE | **140** | 10 | 4.2 | 10 | 11/22/22 21:50 | 11/16/22 | * |
| 4,4'-DDT | **12** | 2.1 | 0.64 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Dieldrin | **12** | 1.0 | 0.23 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endosulfan I | ND U | 1.0 | 0.39 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endosulfan II | ND U | 2.1 | 0.72 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endosulfan Sulfate | **3.6** | 2.1 | 1.1 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endrin | ND U | 1.0 | 0.34 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endrin Aldehyde | ND U | 2.1 | 0.93 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Endrin Ketone | ND U | 1.0 | 0.47 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Heptachlor | ND U | 1.0 | 0.41 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Heptachlor Epoxide | ND U | 2.1 | 0.69 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Methoxychlor | ND U | 2.1 | 0.74 | 1 | 11/18/22 20:34 | 11/16/22 | * |
| Toxaphene | ND U | 100 | 36 | 1 | 11/18/22 20:34 | 11/16/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 127 | 10 - 134 | 11/18/22 20:34 | |
| Tetrachloro-m-xylene | 104 | 10 - 121 | 11/18/22 20:34 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND U | 58 | 4.7 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| 2,4,5-TP (Silvex) | ND Ui | 58 | 3.3 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| 2,4-D | ND U | 58 | 9.1 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| 2,4-DB | ND U | 58 | 6.4 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| Dalapon | ND U | 58 | 6.5 | 1 | 11/01/22 00:20 | 10/17/22 | |
| Dicamba | ND U | 58 | 5.1 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| Dichlorprop | ND U | 58 | 4.0 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| Dinoseb | **7.0 JP** | 58 | 3.2 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| MCPA | ND Ui | 5800 | 1200 | 1 | 11/01/22 00:20 | 10/17/22 | * |
| MCPP | ND U | 5800 | 540 | 1 | 11/01/22 00:20 | 10/17/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 76 | 26 - 127 | 11/01/22 00:20 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:15 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP2-0.5-1.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-002 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND U | 61 | 4.9 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| 2,4,5-TP (Silvex) | ND U | 61 | 3.0 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| 2,4-D | ND U | 61 | 9.4 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| 2,4-DB | ND U | 61 | 6.6 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| Dalapon | ND U | 61 | 6.7 | 1 | 11/01/22 01:32 | 10/17/22 | |
| Dicamba | ND U | 61 | 5.3 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| Dichlorprop | ND U | 61 | 4.2 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| Dinoseb | ND U | 61 | 3.3 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| MCPA | ND U | 6100 | 390 | 1 | 11/01/22 01:32 | 10/17/22 | * |
| MCPP | ND U | 6100 | 560 | 1 | 11/01/22 01:32 | 10/17/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 78 | 26 - 127 | 11/01/22 01:32 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP3-1.0-1.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-003 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND U | 60 | 4.8 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| 2,4,5-TP (Silvex) | ND U | 60 | 2.9 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| 2,4-D | ND U | 60 | 9.2 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| 2,4-DB | ND Ui | 60 | 38 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| Dalapon | ND U | 60 | 6.6 | 1 | 11/01/22 01:55 | 10/17/22 | |
| Dicamba | ND U | 60 | 5.2 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| Dichlorprop | ND U | 60 | 4.1 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| Dinoseb | **5.0 J** | 60 | 3.3 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| MCPA | ND U | 6000 | 390 | 1 | 11/01/22 01:55 | 10/17/22 | * |
| MCPP | ND U | 6000 | 550 | 1 | 11/01/22 01:55 | 10/17/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 75 | 26 - 127 | 11/01/22 01:55 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:45 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP4-1.5-2.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-004 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND U | 61 | 4.9 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| 2,4,5-TP (Silvex) | ND U | 61 | 3.0 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| 2,4-D | ND U | 61 | 9.4 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| 2,4-DB | ND U | 61 | 6.6 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| Dalapon | ND U | 61 | 6.8 | 1 | 11/01/22 02:19 | 10/17/22 | |
| Dicamba | ND U | 61 | 5.3 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| Dichlorprop | ND U | 61 | 4.2 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| Dinoseb | ND U | 61 | 3.3 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| MCPA | ND U | 6100 | 400 | 1 | 11/01/22 02:19 | 10/17/22 | * |
| MCPP | ND U | 6100 | 570 | 1 | 11/01/22 02:19 | 10/17/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 74 | 26 - 127 | 11/01/22 02:19 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 11:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP5-2.0-3.0 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-005 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | U | 61 | 4.9 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| 2,4,5-TP (Silvex) | ND | U | 61 | 3.0 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| 2,4-D | ND | U | 61 | 9.4 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| 2,4-DB | **27** | **J** | 61 | 6.6 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| Dalapon | ND | U | 61 | 6.7 | 1 | 11/01/22 02:43 | 10/17/22 | |
| Dicamba | ND | U | 61 | 5.3 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| Dichlorprop | ND | U | 61 | 4.2 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| Dinoseb | **3.6** | **JP** | 61 | 3.3 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| MCPA | ND | U | 6100 | 390 | 1 | 11/01/22 02:43 | 10/17/22 | * |
| MCPP | ND | Ui | 6100 | 1300 | 1 | 11/01/22 02:43 | 10/17/22 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 76 | 26 - 127 | 11/01/22 02:43 | |

# Metals

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP1-0.0-0.5 | **Basis:** | Dry |
| **Lab Code:** | K2211581-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **0.262** | mg/Kg | 0.052 | 0.021 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Arsenic | 6020A | **55.3** | mg/Kg | 0.52 | 0.06 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Barium | 6020A | **259** | mg/Kg | 0.052 | 0.021 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Beryllium | 6020A | **0.683** | mg/Kg | 0.021 | 0.006 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Cadmium | 6020A | **0.146** | mg/Kg | 0.042 | 0.007 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Chromium | 6020A | **49.2** | mg/Kg | 0.21 | 0.06 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Cobalt | 6020A | **23.8** | mg/Kg | 0.021 | 0.006 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Copper | 6020A | **28.1** | mg/Kg | 0.10 | 0.04 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Lead | 6020A | **367** | mg/Kg | 0.052 | 0.021 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Mercury | 7471B | **0.020 J** | mg/Kg | 0.023 | 0.002 | 1 | 10/20/22 15:36 | 10/20/22 | |
| Molybdenum | 6020A | **0.198** | mg/Kg | 0.052 | 0.021 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Nickel | 6020A | **27.2** | mg/Kg | 0.21 | 0.03 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Selenium | 6020A | ND U | mg/Kg | 1.0 | 0.09 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Silver | 6020A | **0.066** | mg/Kg | 0.021 | 0.004 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Thallium | 6020A | **0.119** | mg/Kg | 0.021 | 0.004 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Vanadium | 6020A | **49.8** | mg/Kg | 0.21 | 0.03 | 5 | 10/24/22 16:31 | 10/19/22 | |
| Zinc | 6020A | **47.7** | mg/Kg | 0.52 | 0.21 | 5 | 10/24/22 16:31 | 10/19/22 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:15 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP2-0.5-1.0 | **Basis:** | Dry |
| **Lab Code:** | K2211581-002 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **0.156** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Arsenic | 6020A | **30.3** | mg/Kg | 0.48 | 0.06 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Barium | 6020A | **278** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Beryllium | 6020A | **0.664** | mg/Kg | 0.019 | 0.006 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Cadmium | 6020A | **0.131** | mg/Kg | 0.039 | 0.007 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Chromium | 6020A | **49.9** | mg/Kg | 0.19 | 0.06 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Cobalt | 6020A | **27.1** | mg/Kg | 0.019 | 0.006 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Copper | 6020A | **23.6** | mg/Kg | 0.097 | 0.039 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Lead | 6020A | **127** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Mercury | 7471B | **0.019** | mg/Kg | 0.021 | 0.002 | 1 | 10/20/22 15:41 | 10/20/22 | **J** |
| Molybdenum | 6020A | **0.199** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Nickel | 6020A | **29.3** | mg/Kg | 0.19 | 0.03 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Selenium | 6020A | **0.18** | mg/Kg | 0.97 | 0.09 | 5 | 10/24/22 16:44 | 10/19/22 | **J** |
| Silver | 6020A | **0.068** | mg/Kg | 0.019 | 0.004 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Thallium | 6020A | **0.255** | mg/Kg | 0.019 | 0.004 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Vanadium | 6020A | **52.4** | mg/Kg | 0.19 | 0.03 | 5 | 10/24/22 16:44 | 10/19/22 | |
| Zinc | 6020A | **33.9** | mg/Kg | 0.48 | 0.19 | 5 | 10/24/22 16:44 | 10/19/22 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP3-1.0-1.5 | **Basis:** | Dry |
| **Lab Code:** | K2211581-003 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **0.060** | mg/Kg | 0.058 | 0.023 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Arsenic | 6020A | **8.69** | mg/Kg | 0.58 | 0.07 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Barium | 6020A | **300** | mg/Kg | 0.058 | 0.023 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Beryllium | 6020A | **0.639** | mg/Kg | 0.023 | 0.007 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Cadmium | 6020A | **0.096** | mg/Kg | 0.046 | 0.008 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Chromium | 6020A | **40.0** | mg/Kg | 0.23 | 0.07 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Cobalt | 6020A | **25.1** | mg/Kg | 0.023 | 0.007 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Copper | 6020A | **19.6** | mg/Kg | 0.12 | 0.05 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Lead | 6020A | **39.6** | mg/Kg | 0.058 | 0.023 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Mercury | 7471B | **0.017 J** | mg/Kg | 0.022 | 0.002 | 1 | 10/20/22 15:43 | 10/20/22 | |
| Molybdenum | 6020A | **0.119** | mg/Kg | 0.058 | 0.023 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Nickel | 6020A | **23.5** | mg/Kg | 0.23 | 0.03 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Selenium | 6020A | ND U | mg/Kg | 1.2 | 0.1 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Silver | 6020A | **0.060** | mg/Kg | 0.023 | 0.005 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Thallium | 6020A | **0.131** | mg/Kg | 0.023 | 0.005 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Vanadium | 6020A | **42.3** | mg/Kg | 0.23 | 0.03 | 5 | 10/24/22 16:47 | 10/19/22 | |
| Zinc | 6020A | **26.4** | mg/Kg | 0.58 | 0.23 | 5 | 10/24/22 16:47 | 10/19/22 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:45 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP4-1.5-2.0 | **Basis:** | Dry |
| **Lab Code:** | K2211581-004 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **0.070** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Arsenic | 6020A | **8.51** | mg/Kg | 0.48 | 0.06 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Barium | 6020A | **328** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Beryllium | 6020A | **0.655** | mg/Kg | 0.019 | 0.006 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Cadmium | 6020A | **0.103** | mg/Kg | 0.038 | 0.007 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Chromium | 6020A | **43.2** | mg/Kg | 0.19 | 0.06 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Cobalt | 6020A | **26.3** | mg/Kg | 0.019 | 0.006 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Copper | 6020A | **22.2** | mg/Kg | 0.096 | 0.038 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Lead | 6020A | **45.0** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Mercury | 7471B | **0.011 J** | mg/Kg | 0.024 | 0.002 | 1 | 10/20/22 15:45 | 10/20/22 | |
| Molybdenum | 6020A | **0.095** | mg/Kg | 0.048 | 0.019 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Nickel | 6020A | **28.6** | mg/Kg | 0.19 | 0.03 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Selenium | 6020A | ND U | mg/Kg | 0.96 | 0.09 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Silver | 6020A | **0.058** | mg/Kg | 0.019 | 0.004 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Thallium | 6020A | **0.097** | mg/Kg | 0.019 | 0.004 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Vanadium | 6020A | **46.8** | mg/Kg | 0.19 | 0.03 | 5 | 10/24/22 16:50 | 10/19/22 | |
| Zinc | 6020A | **28.8** | mg/Kg | 0.48 | 0.19 | 5 | 10/24/22 16:50 | 10/19/22 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 11:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP5-2.0-3.0 | **Basis:** | Dry |
| **Lab Code:** | K2211581-005 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **0.052 J** | mg/Kg | 0.053 | 0.021 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Arsenic | 6020A | **2.13** | mg/Kg | 0.53 | 0.06 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Barium | 6020A | **252** | mg/Kg | 0.053 | 0.021 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Beryllium | 6020A | **0.633** | mg/Kg | 0.021 | 0.006 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Cadmium | 6020A | **0.090** | mg/Kg | 0.042 | 0.007 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Chromium | 6020A | **55.8** | mg/Kg | 0.21 | 0.06 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Cobalt | 6020A | **24.0** | mg/Kg | 0.021 | 0.006 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Copper | 6020A | **20.0** | mg/Kg | 0.11 | 0.04 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Lead | 6020A | **8.51** | mg/Kg | 0.053 | 0.021 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Mercury | 7471B | **0.014 J** | mg/Kg | 0.024 | 0.002 | 1 | 10/20/22 15:46 | 10/20/22 | |
| Molybdenum | 6020A | **0.067** | mg/Kg | 0.053 | 0.021 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Nickel | 6020A | **28.7** | mg/Kg | 0.21 | 0.03 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Selenium | 6020A | ND U | mg/Kg | 1.1 | 0.10 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Silver | 6020A | **0.044** | mg/Kg | 0.021 | 0.004 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Thallium | 6020A | **0.078** | mg/Kg | 0.021 | 0.004 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Vanadium | 6020A | **62.7** | mg/Kg | 0.21 | 0.03 | 5 | 10/24/22 17:11 | 10/19/22 | |
| Zinc | 6020A | **29.9** | mg/Kg | 0.53 | 0.21 | 5 | 10/24/22 17:11 | 10/19/22 | |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP1-0.0-0.5 | **Basis:** | As Received |
| **Lab Code:** | K2211581-001 | | |

## Inorganic Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | **85.1** | Percent | - | - | 1 | 10/17/22 16:06 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:15 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP2-0.5-1.0 | **Basis:** | As Received |
| **Lab Code:** | K2211581-002 | | |

## Inorganic Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | **80.5** | Percent | - | - | 1 | 10/17/22 16:06 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP3-1.0-1.5 | **Basis:** | As Received |
| **Lab Code:** | K2211581-003 | | |

## Inorganic Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | **82.6** | Percent | - | - | 1 | 10/17/22 16:06 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:45 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP4-1.5-2.0 | **Basis:** | As Received |
| **Lab Code:** | K2211581-004 | | |

## Inorganic Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | **81.4** | Percent | - | - | 1 | 10/17/22 16:06 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 11:00 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 10:10 |
| **Sample Name:** | COMP5-2.0-3.0 | **Basis:** | As Received |
| **Lab Code:** | K2211581-005 | | |

## Inorganic Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | **82.3** | Percent | - | - | 1 | 10/17/22 16:06 | |

# QC Summary Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

# Semivolatile Organic Compounds by GC/MS

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** Alpine Environmental Consultants, LLC **Service Request:** K2211581
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

## SURROGATE RECOVERY SUMMARY
## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Extraction Method:** EPA 3541

| Sample Name | Lab Code | Chlorpyrifos-d10 70-130 | Diazinon-d10 70-130 |
|---|---|---|---|
| COMP1-0.0-0.5 | K2211581-001 | 97 | 104 |
| COMP2-0.5-1.0 | K2211581-002 | 93 | 97 |
| COMP3-1.0-1.5 | K2211581-003 | 96 | 89 |
| COMP4-1.5-2.0 | K2211581-004 | 100 | 101 |
| COMP5-2.0-3.0 | K2211581-005 | 107 | 107 |
| Method Blank | KQ2218127-04 | 97 | 102 |
| Lab Control Sample | KQ2218127-03 | 114 | 104 |
| COMP1-0.0-0.5 | KQ2218127-01 | 103 | 100 |
| COMP1-0.0-0.5 | KQ2218127-02 | 101 | 108 |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 10/27/22 |
| | | **Date Extracted:** | 10/20/22 |

## Duplicate Matrix Spike Summary
## Organophosphorus Pesticides by GC/MS/MS

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |
| **Analysis Method:** | ALS SOP | | |
| **Prep Method:** | EPA 3541 | | |

| | | Matrix Spike KQ2218127-01 | | | Duplicate Matrix Spike KQ2218127-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Azinphos-methyl | ND U | 143 | 116 | 123 | 136 | 109 | 125 | 70-130 | 5 | 40 |
| Bolstar (Sulprofos) | ND U | 109 | 116 | 94 | 104 | 109 | 95 | 70-130 | 5 | 40 |
| Chlorpyrifos | ND U | 116 | 116 | 100 | 114 | 109 | 105 | 70-130 | 1 | 40 |
| Coumaphos | ND U | 150 | 116 | 129 | 143 | 109 | 132 * | 70-130 | 4 | 40 |
| Demeton-O,S | ND U | 199 | 232 | 86 | 189 | 218 | 87 | 70-130 | 5 | 40 |
| Diazinon | ND U | 116 | 116 | 100 | 118 | 109 | 108 | 70-130 | 2 | 40 |
| Dichlorvos | ND U | 108 | 116 | 93 | 98.3 | 109 | 90 | 70-130 | 10 | 40 |
| Dimethoate | ND U | 127 | 116 | 110 | 118 | 109 | 109 | 70-130 | 7 | 40 |
| Disulfoton | ND U | 109 | 116 | 94 | 106 | 109 | 97 | 70-130 | 3 | 40 |
| Ethoprop (Prophos) | ND U | 125 | 116 | 108 | 115 | 109 | 106 | 70-130 | 8 | 40 |
| Fensulfothion | ND U | 128 | 116 | 110 | 123 | 109 | 113 | 70-130 | 3 | 40 |
| Ronnel | ND U | 117 | 116 | 101 | 119 | 109 | 110 | 70-130 | 2 | 40 |
| Stirophos | ND U | 130 | 116 | 112 | 122 | 109 | 112 | 70-130 | 6 | 40 |
| Tokuthion | ND U | 114 | 116 | 98 | 111 | 109 | 102 | 70-130 | 3 | 40 |
| Trichloronate | ND U | 121 | 116 | 104 | 117 | 109 | 108 | 70-130 | 3 | 40 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**Results flagged with a pound (#) indicate the control criteria is not applicable.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Sample Matrix:** | Soil | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2218127-04 | **Basis:** | Dry |

## Organophosphorus Pesticides by GC/MS/MS

**Analysis Method:** ALS SOP
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Azinphos-methyl | ND U | 9.3 | 4.2 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Bolstar (Sulprofos) | ND U | 4.6 | 2.8 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Chlorpyrifos | ND U | 4.6 | 1.8 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Coumaphos | ND U | 9.3 | 3.9 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Demeton-O,S | ND U | 4.6 | 2.2 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Diazinon | ND U | 4.6 | 2.9 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Dichlorvos | ND U | 9.3 | 4.5 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Dimethoate | ND U | 4.6 | 4.0 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Disulfoton | ND U | 4.6 | 0.82 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Ethoprop (Prophos) | ND U | 4.6 | 1.9 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Fensulfothion | ND U | 9.3 | 7.1 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Ronnel | ND U | 4.6 | 1.6 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Stirophos | ND U | 4.6 | 3.0 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Tokuthion | ND U | 4.6 | 2.4 | 1 | 10/27/22 01:33 | 10/20/22 | |
| Trichloronate | ND U | 4.6 | 1.8 | 1 | 10/27/22 01:33 | 10/20/22 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Chlorpyrifos-d10 | 97 | 70 - 130 | 10/27/22 01:33 | |
| Diazinon-d10 | 102 | 70 - 130 | 10/27/22 01:33 | |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Analyzed:** | 10/27/22 |
| **Sample Matrix:** | Soil | **Date Extracted:** | 10/20/22 |

## Lab Control Sample Summary
## Organophosphorus Pesticides by GC/MS/MS

| | | | |
|---|---|---|---|
| **Analysis Method:** | ALS SOP | **Units:** | ug/Kg |
| **Prep Method:** | EPA 3541 | **Basis:** | Dry |
| | | **Analysis Lot:** | 783129 |

### Lab Control Sample
### KQ2218127-03

| Analyte Name | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|
| Azinphos-methyl | 117 | 100 | 117 | 70-130 |
| Bolstar (Sulprofos) | 106 | 100 | 106 | 70-130 |
| Chlorpyrifos | 109 | 100 | 109 | 70-130 |
| Coumaphos | 124 | 100 | 124 | 70-130 |
| Demeton-O,S | 196 | 200 | 98 | 70-130 |
| Diazinon | 99.4 | 100 | 99 | 70-130 |
| Dichlorvos | 96.9 | 100 | 97 | 70-130 |
| Dimethoate | 97.8 | 100 | 98 | 70-130 |
| Disulfoton | 103 | 100 | 103 | 70-130 |
| Ethoprop (Prophos) | 102 | 100 | 102 | 70-130 |
| Fensulfothion | 100 | 100 | 100 | 70-130 |
| Ronnel | 115 | 100 | 115 | 70-130 |
| Stirophos | 101 | 100 | 101 | 70-130 |
| Tokuthion | 99.7 | 100 | 100 | 70-130 |
| Trichloronate | 113 | 100 | 113 | 70-130 |

# Semivolatile Organic Compounds by GC

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** Alpine Environmental Consultants, LLC **Service Request:** K2211581
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

## SURROGATE RECOVERY SUMMARY
## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Extraction Method:** EPA 3546

| Sample Name | Lab Code | Decachlorobiphenyl 10-134 | Tetrachloro-m-xylene 10-121 |
|---|---|---|---|
| COMP1-0.0-0.5 | K2211581-001 | 110 | 89 |
| COMP2-0.5-1.0 | K2211581-002 | 125 | 101 |
| COMP3-1.0-1.5 | K2211581-003 | 124 | 100 |
| COMP4-1.5-2.0 | K2211581-004 | 113 | 91 |
| COMP5-2.0-3.0 | K2211581-005 | 127 | 104 |
| Method Blank | KQ2220158-07 | 118 | 101 |
| Lab Control Sample | KQ2220158-05 | 109 | 91 |
| Lab Control Sample | KQ2220158-06 | 119 | 99 |
| COMP1-0.0-0.5 | KQ2220158-01 | 123 | 100 |
| COMP1-0.0-0.5 | KQ2220158-02 | 124 | 103 |
| COMP1-0.0-0.5 | KQ2220158-03 | 113 | 91 |
| COMP1-0.0-0.5 | KQ2220158-04 | 109 | 87 |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 11/18/22 |
| | | **Date Extracted:** | 11/16/22 |

## Duplicate Matrix Spike Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |
| **Analysis Method:** | 8081B | | |
| **Prep Method:** | EPA 3546 | | |

| | | Matrix Spike KQ2220158-01 | | | Duplicate Matrix Spike KQ2220158-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Aldrin | ND U | 22.4 | 24.8 | 90 * | 21.3 | 23.6 | 91 * | 18-89 | 5 | 40 |
| alpha-BHC | ND U | 19.8 | 24.8 | 80 | 19.2 | 23.6 | 81 | 16-96 | 3 | 40 |
| beta-BHC | ND U | 22.0 | 24.8 | 89 | 21.0 | 23.6 | 89 | 16-106 | 5 | 40 |
| delta-BHC | ND U | 21.7 | 24.8 | 87 | 20.5 | 23.6 | 87 | 20-95 | 6 | 40 |
| gamma-BHC (Lindane) | ND U | 20.6 | 24.8 | 83 | 19.7 | 23.6 | 83 | 17-97 | 5 | 40 |
| cis-Chlordane | ND U | 22.4 | 24.8 | 90 | 21.2 | 23.6 | 90 | 20-93 | 6 | 40 |
| trans-Chlordane | ND U | 22.5 | 24.8 | 91 | 20.6 | 23.6 | 88 | 10-103 | 9 | 40 |
| 4,4'-DDD | 9.5 | 40.7 | 24.8 | 126 | 41.1 | 23.6 | 134 | 10-180 | 1 | 40 |
| 4,4'-DDE | 550 | 1010 E | 24.8 | 1876 # | 1410 E | 23.6 | 3650 # | 17-94 | 33 | 40 |
| 4,4'-DDT | 96 | 227 E | 24.8 | 529 * | 231 E | 23.6 | 572 # | 17-104 | 2 | 40 |
| Dieldrin | 43 | 88.5 E | 24.8 | 184 * | 87.9 E | 23.6 | 191 * | 19-88 | <1 | 40 |
| Endosulfan I | ND U | 22.4 | 24.8 | 90 * | 21.3 | 23.6 | 90 * | 16-87 | 5 | 40 |
| Endosulfan II | ND U | 29.6 | 24.8 | 119 * | 27.4 | 23.6 | 116 | 15-117 | 8 | 40 |
| Endosulfan Sulfate | 10 | 41.5 | 24.8 | 126 * | 39.6 | 23.6 | 124 * | 17-98 | 5 | 40 |
| Endrin | ND U | 21.9 | 24.8 | 88 | 20.9 | 23.6 | 89 | 10-107 | 5 | 40 |
| Endrin Aldehyde | ND U | 27.0 | 24.8 | 109 * | 21.5 P | 23.6 | 91 | 21-94 | 23 | 40 |
| Endrin Ketone | ND U | 23.9 | 24.8 | 96 | 20.9 | 23.6 | 89 | 19-97 | 13 | 40 |
| Heptachlor | ND U | 22.0 | 24.8 | 89 | 19.7 | 23.6 | 83 | 13-111 | 11 | 40 |
| Heptachlor Epoxide | ND U | 22.3 | 24.8 | 90 | 21.7 | 23.6 | 92 | 18-92 | 3 | 40 |
| Methoxychlor | ND U | 30.4 | 24.8 | 123 * | 27.8 | 23.6 | 118 | 17-122 | 9 | 40 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**Results flagged with a pound (#) indicate the control criteria is not applicable.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 11/18/22 |
| | | **Date Extracted:** | 11/16/22 |

## Duplicate Matrix Spike Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |
| **Analysis Method:** | 8081B | | |
| **Prep Method:** | EPA 3546 | | |

| | | **Matrix Spike** KQ2220158-03 | | | **Duplicate Matrix Spike** KQ2220158-04 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Chlordane | ND U | 217 | 260 | 84 | 230 | 284 | 81 | 31-126 | 6 | 40 |
| Toxaphene | ND Ui | 1520 | 1040 | 146 * | 1280 | 1140 | 113 | 16-114 | 17 | 40 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**Results flagged with a pound (#) indicate the control criteria is not applicable.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Sample Matrix:** | Soil | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2220158-07 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.0 | 0.59 | 1 | 11/18/22 06:43 | 11/16/22 | |
| alpha-BHC | ND U | 1.0 | 0.29 | 1 | 11/18/22 06:43 | 11/16/22 | |
| beta-BHC | ND U | 1.0 | 0.27 | 1 | 11/18/22 06:43 | 11/16/22 | |
| delta-BHC | ND U | 1.0 | 0.28 | 1 | 11/18/22 06:43 | 11/16/22 | |
| gamma-BHC (Lindane) | ND U | 1.0 | 0.31 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Chlordane | ND U | 10 | 4.8 | 1 | 11/18/22 06:43 | 11/16/22 | |
| cis-Chlordane | ND U | 1.0 | 0.41 | 1 | 11/18/22 06:43 | 11/16/22 | |
| trans-Chlordane | ND U | 1.0 | 0.38 | 1 | 11/18/22 06:43 | 11/16/22 | |
| 4,4'-DDD | ND U | 2.0 | 0.60 | 1 | 11/18/22 06:43 | 11/16/22 | |
| 4,4'-DDE | ND U | 1.0 | 0.40 | 1 | 11/18/22 06:43 | 11/16/22 | |
| 4,4'-DDT | ND U | 2.0 | 0.61 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Dieldrin | ND U | 0.80 | 0.22 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endosulfan I | ND U | 1.0 | 0.37 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endosulfan II | ND U | 2.0 | 0.69 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endosulfan Sulfate | ND U | 2.0 | 0.99 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endrin | ND U | 1.0 | 0.32 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endrin Aldehyde | ND U | 2.0 | 0.89 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Endrin Ketone | ND U | 1.0 | 0.45 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Heptachlor | ND U | 1.0 | 0.39 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Heptachlor Epoxide | ND U | 2.0 | 0.66 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Methoxychlor | ND U | 2.0 | 0.71 | 1 | 11/18/22 06:43 | 11/16/22 | |
| Toxaphene | ND U | 100 | 34 | 1 | 11/18/22 06:43 | 11/16/22 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 118 | 10 - 134 | 11/18/22 06:43 | |
| Tetrachloro-m-xylene | 101 | 10 - 121 | 11/18/22 06:43 | |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Analyzed:** | 11/18/22 |
| **Sample Matrix:** | Soil | **Date Extracted:** | 11/16/22 |

## Lab Control Sample Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8081B | **Units:** | ug/Kg |
| **Prep Method:** | EPA 3546 | **Basis:** | Dry |
| | | **Analysis Lot:** | 785910 |

### Lab Control Sample
### KQ2220158-05

| Analyte Name | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|
| 4,4'-DDD | 18.4 | 25.0 | 73 | 10-180 |
| 4,4'-DDE | 18.6 | 25.0 | 74 | 17-94 |
| 4,4'-DDT | 13.7 | 25.0 | 55 | 17-104 |
| Aldrin | 19.6 | 25.0 | 79 | 18-89 |
| alpha-BHC | 17.7 | 25.0 | 71 | 16-96 |
| beta-BHC | 19.4 | 25.0 | 78 | 16-106 |
| cis-Chlordane | 19.7 | 25.0 | 79 | 20-93 |
| delta-BHC | 18.5 | 25.0 | 74 | 20-95 |
| Dieldrin | 19.8 | 25.0 | 79 | 19-88 |
| Endosulfan I | 19.8 | 25.0 | 79 | 16-87 |
| Endosulfan II | 25.6 | 25.0 | 102 | 15-117 |
| Endosulfan Sulfate | 18.5 | 25.0 | 74 | 17-98 |
| Endrin | 18.9 | 25.0 | 76 | 10-107 |
| Endrin Aldehyde | 18.1 | 25.0 | 72 | 21-94 |
| Endrin Ketone | 19.7 | 25.0 | 79 | 19-97 |
| gamma-BHC (Lindane) | 18.3 | 25.0 | 73 | 17-97 |
| Heptachlor | 17.4 | 25.0 | 70 | 13-111 |
| Heptachlor Epoxide | 19.4 | 25.0 | 78 | 18-92 |
| Methoxychlor | 13.1 | 25.0 | 52 | 17-122 |
| trans-Chlordane | 19.6 | 25.0 | 78 | 10-103 |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Analyzed:** | 11/18/22 |
| **Sample Matrix:** | Soil | **Date Extracted:** | 11/16/22 |

## Lab Control Sample Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8081B | **Units:** | ug/Kg |
| **Prep Method:** | EPA 3546 | **Basis:** | Dry |
| | | **Analysis Lot:** | 785910 |

### Lab Control Sample
### KQ2220158-06

| Analyte Name | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|
| Chlordane | 220 | 250 | 88 | 31-126 |
| Toxaphene | 1190 | 1000 | 119 * | 16-114 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** K2211581-001

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 6.2 | 96 | 100 | 4 | | 10 | 11/22/22 18:01 |
| 4,4'-DDD | 0.61 | 9.5 | 9.1 | 4 | | 1 | 11/18/22 12:06 |
| Dieldrin | 0.23 | 43 | 43 | <1 | | 1 | 11/18/22 12:06 |
| Endosulfan Sulfate | 1.1 | 10 | 17 | 52 | P | 1 | 11/18/22 12:06 |
| 4,4'-DDE | 8.1 | 550 | 560 | 2 | | 20 | 11/22/22 18:46 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:15
**Date Received:** 10/5/22

**Sample Name:** COMP2-0.5-1.0
**Lab Code:** K2211581-002

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 80.5

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDE | 4.0 | 340 | 350 | 3 | | 10 | 11/22/22 19:32 |
| 4,4'-DDT | 6.1 | 69 | 74 | 7 | | 10 | 11/22/22 19:32 |
| Dieldrin | 2.2 | 56 | 57 | 2 | | 10 | 11/22/22 19:32 |
| 4,4'-DDD | 0.60 | 5.0 | 5.5 | 10 | | 1 | 11/18/22 18:15 |
| Endosulfan Sulfate | 0.99 | 8.8 | 13 | 39 | | 1 | 11/18/22 18:15 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:30
**Date Received:** 10/5/22

**Sample Name:** COMP3-1.0-1.5
**Lab Code:** K2211581-003

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 82.6

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDE | 2.4 | 54 | 58 | 7 | | 5 | 11/22/22 20:18 |
| Dieldrin | 0.27 | 6.2 | 6.2 | <1 | | 1 | 11/18/22 19:01 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:45
**Date Received:** 10/5/22

**Sample Name:** COMP4-1.5-2.0
**Lab Code:** K2211581-004

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 81.4

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDE | 4.7 | 130 | 140 | 7 | | 10 | 11/22/22 21:04 |
| 4,4'-DDD | 0.70 | 2.1 | 1.8 | 15 | J | 1 | 11/18/22 19:48 |
| 4,4'-DDT | 0.71 | 22 | 46 | 71 | P | 1 | 11/18/22 19:48 |
| Dieldrin | 0.26 | 11 | 11 | <1 | | 1 | 11/18/22 19:48 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 11:00
**Date Received:** 10/5/22

**Sample Name:** COMP5-2.0-3.0
**Lab Code:** K2211581-005

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 82.3

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDE | 4.2 | 140 | 140 | <1 | | 10 | 11/22/22 21:50 |
| 4,4'-DDD | 0.63 | 2.3 | 3.4 | 39 | | 1 | 11/18/22 20:34 |
| 4,4'-DDT | 0.64 | 12 | 14 | 15 | | 1 | 11/18/22 20:34 |
| Dieldrin | 0.23 | 12 | 12 | <1 | | 1 | 11/18/22 20:34 |
| Endosulfan Sulfate | 1.1 | 3.6 | 4.2 | 15 | | 1 | 11/18/22 20:34 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2220158-01

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.60 | 40.7 | 45.2 | 10 | | 1 | 11/18/22 09:01 |
| 4,4'-DDE | 0.40 | 1010 | 1070 | 6 | E | 1 | 11/18/22 09:01 |
| 4,4'-DDT | 0.61 | 227 | 235 | 3 | E | 1 | 11/18/22 09:01 |
| Aldrin | 0.59 | 22.4 | 22.8 | 2 | | 1 | 11/18/22 09:01 |
| Dieldrin | 0.22 | 88.5 | 90.1 | 2 | E | 1 | 11/18/22 09:01 |
| Endosulfan I | 0.37 | 22.4 | 25.0 | 11 | | 1 | 11/18/22 09:01 |
| Endosulfan II | 0.69 | 29.6 | 36.1 | 20 | | 1 | 11/18/22 09:01 |
| Endosulfan Sulfate | 0.99 | 41.5 | 48.3 | 15 | | 1 | 11/18/22 09:01 |
| Endrin | 0.32 | 21.9 | 24.3 | 10 | | 1 | 11/18/22 09:01 |
| Endrin Aldehyde | 0.89 | 27.0 | 36.3 | 29 | | 1 | 11/18/22 09:01 |
| Endrin Ketone | 0.45 | 23.9 | 24.7 | 3 | | 1 | 11/18/22 09:01 |
| Heptachlor | 0.39 | 22.0 | 22.2 | <1 | | 1 | 11/18/22 09:01 |
| Heptachlor Epoxide | 0.66 | 22.3 | 23.3 | 4 | | 1 | 11/18/22 09:01 |
| Methoxychlor | 0.71 | 30.4 | 39.5 | 26 | | 1 | 11/18/22 09:01 |
| alpha-BHC | 0.29 | 19.8 | 20.2 | 2 | | 1 | 11/18/22 09:01 |
| beta-BHC | 0.27 | 22.0 | 23.5 | 7 | | 1 | 11/18/22 09:01 |
| cis-Chlordane | 0.41 | 22.4 | 25.4 | 13 | | 1 | 11/18/22 09:01 |
| delta-BHC | 0.28 | 21.7 | 22.2 | 2 | | 1 | 11/18/22 09:01 |
| gamma-BHC (Lindane) | 0.31 | 20.6 | 20.8 | <1 | | 1 | 11/18/22 09:01 |
| trans-Chlordane | 0.38 | 22.5 | 24.8 | 10 | | 1 | 11/18/22 09:01 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2220158-02

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.60 | 41.1 | 49.0 | 18 | | 1 | 11/18/22 09:48 |
| 4,4'-DDE | 0.40 | 1410 | 1470 | 4 | E | 1 | 11/18/22 09:48 |
| 4,4'-DDT | 0.61 | 231 | 244 | 5 | E | 1 | 11/18/22 09:48 |
| Aldrin | 0.59 | 21.3 | 21.4 | <1 | | 1 | 11/18/22 09:48 |
| Dieldrin | 0.22 | 87.9 | 88.0 | <1 | E | 1 | 11/18/22 09:48 |
| Endosulfan I | 0.37 | 21.3 | 23.7 | 11 | | 1 | 11/18/22 09:48 |
| Endosulfan II | 0.69 | 27.4 | 31.4 | 14 | | 1 | 11/18/22 09:48 |
| Endosulfan Sulfate | 0.99 | 39.6 | 46.2 | 15 | | 1 | 11/18/22 09:48 |
| Endrin | 0.32 | 20.9 | 22.8 | 9 | | 1 | 11/18/22 09:48 |
| Endrin Aldehyde | 0.89 | 21.5 | 32.5 | 41 | P | 1 | 11/18/22 09:48 |
| Endrin Ketone | 0.45 | 20.9 | 22.7 | 8 | | 1 | 11/18/22 09:48 |
| Heptachlor | 0.39 | 19.7 | 20.7 | 5 | | 1 | 11/18/22 09:48 |
| Heptachlor Epoxide | 0.66 | 21.7 | 21.8 | <1 | | 1 | 11/18/22 09:48 |
| Methoxychlor | 0.71 | 27.8 | 29.0 | 4 | | 1 | 11/18/22 09:48 |
| alpha-BHC | 0.29 | 19.2 | 19.6 | 2 | | 1 | 11/18/22 09:48 |
| beta-BHC | 0.27 | 21.0 | 22.5 | 7 | | 1 | 11/18/22 09:48 |
| cis-Chlordane | 0.41 | 21.2 | 26.6 | 23 | | 1 | 11/18/22 09:48 |
| delta-BHC | 0.28 | 20.5 | 21.0 | 2 | | 1 | 11/18/22 09:48 |
| gamma-BHC (Lindane) | 0.31 | 19.7 | 20.2 | 3 | | 1 | 11/18/22 09:48 |
| trans-Chlordane | 0.38 | 20.6 | 21.9 | 6 | | 1 | 11/18/22 09:48 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2220158-03

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Chlordane | 5.0 | 217 | 272 | 22 | | 1 | 11/18/22 10:34 |
| Toxaphene | 36 | 1520 | 1240 | 20 | | 1 | 11/18/22 10:34 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2220158-04

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Chlordane | 5.5 | 230 | 280 | 20 | | 1 | 11/18/22 11:20 |
| Toxaphene | 39 | 1280 | 1690 | 28 | | 1 | 11/18/22 11:20 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** NA
**Date Received:**

**Sample Name:** Lab Control Sample
**Lab Code:** KQ2220158-05

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.60 | 18.4 | 23.6 | 25 | | 1 | 11/18/22 07:29 |
| 4,4'-DDE | 0.40 | 18.6 | 19.6 | 5 | | 1 | 11/18/22 07:29 |
| 4,4'-DDT | 0.61 | 13.7 | 14.3 | 4 | | 1 | 11/18/22 07:29 |
| Aldrin | 0.59 | 19.6 | 19.8 | 1 | | 1 | 11/18/22 07:29 |
| Dieldrin | 0.22 | 19.8 | 20.9 | 5 | | 1 | 11/18/22 07:29 |
| Endosulfan I | 0.37 | 19.8 | 21.5 | 8 | | 1 | 11/18/22 07:29 |
| Endosulfan II | 0.69 | 25.6 | 23.1 | 10 | | 1 | 11/18/22 07:29 |
| Endosulfan Sulfate | 0.99 | 18.5 | 18.6 | <1 | | 1 | 11/18/22 07:29 |
| Endrin | 0.32 | 18.9 | 19.6 | 4 | | 1 | 11/18/22 07:29 |
| Endrin Aldehyde | 0.89 | 18.1 | 19.7 | 8 | | 1 | 11/18/22 07:29 |
| Endrin Ketone | 0.45 | 19.7 | 20.9 | 6 | | 1 | 11/18/22 07:29 |
| Heptachlor | 0.39 | 17.4 | 18.5 | 6 | | 1 | 11/18/22 07:29 |
| Heptachlor Epoxide | 0.66 | 19.4 | 20.5 | 6 | | 1 | 11/18/22 07:29 |
| Methoxychlor | 0.71 | 13.1 | 15.9 | 19 | | 1 | 11/18/22 07:29 |
| alpha-BHC | 0.29 | 17.7 | 18.1 | 2 | | 1 | 11/18/22 07:29 |
| beta-BHC | 0.27 | 19.4 | 19.7 | 2 | | 1 | 11/18/22 07:29 |
| cis-Chlordane | 0.41 | 19.7 | 20.7 | 5 | | 1 | 11/18/22 07:29 |
| delta-BHC | 0.28 | 18.5 | 19.1 | 3 | | 1 | 11/18/22 07:29 |
| gamma-BHC (Lindane) | 0.31 | 18.3 | 18.8 | 3 | | 1 | 11/18/22 07:29 |
| trans-Chlordane | 0.38 | 19.6 | 20.6 | 5 | | 1 | 11/18/22 07:29 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

Confirmation Results

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Matrix:** | Soil | **Date Received:** | |
| **Sample Name:** | Lab Control Sample | | |
| **Lab Code:** | KQ2220158-06 | **Units:** | ug/Kg |
| | | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Chlordane | 4.8 | 220 | 232 | 5 | | 1 | 11/18/22 08:15 |
| Toxaphene | 34 | 1190 | 1400 | 16 | | 1 | 11/18/22 08:15 |

**Client:** Alpine Environmental Consultants, LLC **Service Request:** K2211581
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

## SURROGATE RECOVERY SUMMARY
## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Extraction Method:** Method

| Sample Name | Lab Code | 2,4-Dichlorophenylacetic Acid 26-127 |
|---|---|---|
| COMP1-0.0-0.5 | K2211581-001 | 76 |
| COMP2-0.5-1.0 | K2211581-002 | 78 |
| COMP3-1.0-1.5 | K2211581-003 | 75 |
| COMP4-1.5-2.0 | K2211581-004 | 74 |
| COMP5-2.0-3.0 | K2211581-005 | 76 |
| Method Blank | KQ2218026-03 | 74 |
| Lab Control Sample | KQ2218026-04 | 83 |
| COMP1-0.0-0.5 | KQ2218026-01 | 82 |
| COMP1-0.0-0.5 | KQ2218026-02 | 77 |

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**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 11/1/22 |
| | | **Date Extracted:** | 10/17/22 |

**Duplicate Matrix Spike Summary**
**Chlorinated Herbicides by GC**

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | ug/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |
| **Analysis Method:** | 8151A | | |
| **Prep Method:** | Method | | |

| | | **Matrix Spike** KQ2218026-01 | | | **Duplicate Matrix Spike** KQ2218026-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| 2,4,5-T | ND U | 231 | 195 | 119 | 225 | 192 | 117 | 21-137 | 3 | 40 |
| 2,4,5-TP (Silvex) | ND Ui | 175 | 195 | 90 | 171 | 192 | 89 | 34-129 | 3 | 40 |
| 2,4-D | ND U | 211 | 195 | 108 | 206 | 192 | 107 | 35-129 | 2 | 40 |
| 2,4-DB | ND U | 125 P | 195 | 64 | 127 | 192 | 66 | 20-131 | 1 | 40 |
| Dalapon | ND U | 73.7 | 195 | 38 | 77.5 | 192 | 40 | 14-100 | 5 | 40 |
| Dicamba | ND U | 175 | 195 | 90 | 169 | 192 | 88 | 32-129 | 3 | 40 |
| Dichlorprop | ND U | 177 | 195 | 91 | 164 | 192 | 86 | 23-140 | 7 | 40 |
| Dinoseb | 7.0 J | 21.5 JP | 195 | 7 * | 23.1 J | 192 | 8 * | 10-121 | 7 | 40 |
| MCPA | ND Ui | 16900 | 19500 | 87 | 16200 | 19200 | 84 | 13-130 | 4 | 40 |
| MCPP | ND U | 13900 P | 19500 | 71 | 13000 P | 19200 | 68 | 10-169 | 7 | 40 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**Results flagged with a pound (#) indicate the control criteria is not applicable.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Sample Matrix:** | Soil | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2218026-03 | **Basis:** | Dry |

## Chlorinated Herbicides by GC

**Analysis Method:** 8151A
**Prep Method:** Method

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND U | 49 | 4.0 | 1 | 10/31/22 23:32 | 10/17/22 | |
| 2,4,5-TP (Silvex) | ND U | 49 | 2.4 | 1 | 10/31/22 23:32 | 10/17/22 | |
| 2,4-D | ND U | 49 | 7.7 | 1 | 10/31/22 23:32 | 10/17/22 | |
| 2,4-DB | ND U | 49 | 5.4 | 1 | 10/31/22 23:32 | 10/17/22 | |
| Dalapon | ND U | 49 | 5.5 | 1 | 10/31/22 23:32 | 10/17/22 | |
| Dicamba | ND U | 49 | 4.3 | 1 | 10/31/22 23:32 | 10/17/22 | |
| Dichlorprop | ND U | 49 | 3.4 | 1 | 10/31/22 23:32 | 10/17/22 | |
| Dinoseb | ND U | 49 | 2.7 | 1 | 10/31/22 23:32 | 10/17/22 | |
| MCPA | ND U | 4900 | 320 | 1 | 10/31/22 23:32 | 10/17/22 | |
| MCPP | ND U | 4900 | 460 | 1 | 10/31/22 23:32 | 10/17/22 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2,4-Dichlorophenylacetic Acid | 74 | 26 - 127 | 10/31/22 23:32 | |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Analyzed:** | 10/31/22 |
| **Sample Matrix:** | Soil | **Date Extracted:** | 10/17/22 |

## Lab Control Sample Summary
## Chlorinated Herbicides by GC

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8151A | **Units:** | ug/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 783658 |

### Lab Control Sample
### KQ2218026-04

| Analyte Name | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|
| 2,4,5-T | 200 | 167 | 120 | 44-125 |
| 2,4,5-TP (Silvex) | 155 | 167 | 93 | 46-125 |
| 2,4-D | 179 | 167 | 108 | 46-120 |
| 2,4-DB | 148 | 167 | 89 | 30-126 |
| Dalapon | 73.3 | 167 | 44 | 13-100 |
| Dicamba | 158 | 167 | 95 | 43-119 |
| Dichlorprop | 147 | 167 | 88 | 47-108 |
| Dinoseb | 139 | 167 | 83 | 25-110 |
| MCPA | 15900 | 16700 | 95 | 40-128 |
| MCPP | 13600 | 16700 | 82 | 49-134 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** K2211581-001

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Chlorinated Herbicides by GC

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Dinoseb | 3.2 | 7.0 | 14 | 67 | JP | 1 | 11/01/22 00:20 |

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**dba ALS Environmental**

Confirmation Results

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 10:30 |
| **Matrix:** | Soil | **Date Received:** | 10/5/22 |
| **Sample Name:** | COMP3-1.0-1.5 | | |
| **Lab Code:** | K2211581-003 | | |
| | | **Units:** | ug/Kg |
| | | **Basis:** | Dry |
| | | **Percent Solids:** | 82.6 |

**Chlorinated Herbicides by GC**

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Dinoseb | 3.3 | 5.0 | 5.1 | 2 | J | 1 | 11/01/22 01:55 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 11:00
**Date Received:** 10/5/22

**Sample Name:** COMP5-2.0-3.0
**Lab Code:** K2211581-005

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 82.3

## Chlorinated Herbicides by GC

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 2,4-DB | 6.6 | 27 | 32 | 17 | J | 1 | 11/01/22 02:43 |
| Dinoseb | 3.3 | 3.6 | 7.5 | 70 | JP | 1 | 11/01/22 02:43 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2218026-01

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Chlorinated Herbicides by GC

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | 4.7 | 231 | 268 | 15 | | 1 | 11/01/22 00:44 |
| 2,4,5-TP (Silvex) | 2.9 | 175 | 201 | 14 | | 1 | 11/01/22 00:44 |
| 2,4-D | 9.0 | 211 | 237 | 12 | | 1 | 11/01/22 00:44 |
| 2,4-DB | 6.4 | 125 | 229 | 59 | P | 1 | 11/01/22 00:44 |
| Dalapon | 6.5 | 73.7 | 90.3 | 20 | | 1 | 11/01/22 00:44 |
| Dicamba | 5.1 | 175 | 185 | 6 | | 1 | 11/01/22 00:44 |
| Dichlorprop | 4.0 | 177 | 189 | 7 | | 1 | 11/01/22 00:44 |
| Dinoseb | 3.2 | 21.5 | 46.9 | 74 | JP | 1 | 11/01/22 00:44 |
| MCPA | 380 | 16900 | 19800 | 16 | | 1 | 11/01/22 00:44 |
| MCPP | 540 | 13900 | 22200 | 46 | P | 1 | 11/01/22 00:44 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** 10/03/22 10:00
**Date Received:** 10/5/22

**Sample Name:** COMP1-0.0-0.5
**Lab Code:** KQ2218026-02

**Units:** ug/Kg
**Basis:** Dry
**Percent Solids:** 85.1

## Chlorinated Herbicides by GC

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | 4.7 | 225 | 256 | 13 | | 1 | 11/01/22 01:08 |
| 2,4,5-TP (Silvex) | 2.8 | 171 | 193 | 12 | | 1 | 11/01/22 01:08 |
| 2,4-D | 8.9 | 206 | 227 | 10 | | 1 | 11/01/22 01:08 |
| 2,4-DB | 6.3 | 127 | 175 | 32 | | 1 | 11/01/22 01:08 |
| Dalapon | 6.4 | 77.5 | 103 | 28 | | 1 | 11/01/22 01:08 |
| Dicamba | 5.0 | 169 | 178 | 5 | | 1 | 11/01/22 01:08 |
| Dichlorprop | 4.0 | 164 | 182 | 10 | | 1 | 11/01/22 01:08 |
| Dinoseb | 3.2 | 23.1 | 33.7 | 37 | J | 1 | 11/01/22 01:08 |
| MCPA | 370 | 16200 | 18700 | 14 | | 1 | 11/01/22 01:08 |
| MCPP | 540 | 13000 | 22400 | 53 | P | 1 | 11/01/22 01:08 |

Confirmation Results

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Matrix:** Soil

**Service Request:** K2211581
**Date Collected:** NA
**Date Received:**

**Sample Name:** Lab Control Sample
**Lab Code:** KQ2218026-04

**Units:** ug/Kg
**Basis:** Dry

## Chlorinated Herbicides by GC

**Analytical Method:** 8151A
**Prep Method:** Method

| | MDL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 2,4,5-T | 4.0 | 200 | 217 | 8 | | 1 | 10/31/22 23:56 |
| 2,4,5-TP (Silvex) | 2.4 | 155 | 168 | 8 | | 1 | 10/31/22 23:56 |
| 2,4-D | 7.7 | 179 | 203 | 13 | | 1 | 10/31/22 23:56 |
| 2,4-DB | 5.4 | 148 | 161 | 8 | | 1 | 10/31/22 23:56 |
| Dalapon | 5.5 | 73.3 | 78.6 | 7 | | 1 | 10/31/22 23:56 |
| Dicamba | 4.3 | 158 | 165 | 4 | | 1 | 10/31/22 23:56 |
| Dichlorprop | 3.4 | 147 | 166 | 12 | | 1 | 10/31/22 23:56 |
| Dinoseb | 2.7 | 139 | 148 | 6 | | 1 | 10/31/22 23:56 |
| MCPA | 320 | 15900 | 17200 | 8 | | 1 | 10/31/22 23:56 |
| MCPP | 460 | 13600 | 15300 | 12 | | 1 | 10/31/22 23:56 |

# Metals

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Sample Matrix:** | Soil | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2218125-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 10/20/22 15:22 | 10/20/22 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | NA |
| **Sample Matrix:** | Soil | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2218126-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Arsenic | 6020A | ND | U | mg/Kg | 0.5 | 0.06 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Barium | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Beryllium | 6020A | ND | U | mg/Kg | 0.020 | 0.006 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Cadmium | 6020A | ND | U | mg/Kg | 0.040 | 0.007 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Chromium | 6020A | ND | U | mg/Kg | 0.20 | 0.06 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Cobalt | 6020A | ND | U | mg/Kg | 0.020 | 0.006 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Copper | 6020A | ND | U | mg/Kg | 0.10 | 0.04 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Lead | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Molybdenum | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Nickel | 6020A | ND | U | mg/Kg | 0.20 | 0.03 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Selenium | 6020A | ND | U | mg/Kg | 1.0 | 0.09 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Silver | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Thallium | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Vanadium | 6020A | ND | U | mg/Kg | 0.20 | 0.03 | 5 | 10/24/22 16:26 | 10/19/22 | |
| Zinc | 6020A | **0.24** | **J** | mg/Kg | 0.5 | 0.20 | 5 | 10/24/22 16:26 | 10/19/22 | |

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project:** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 10/24/22 |
| | | **Date Extracted:** | 10/19/22 |

## Matrix Spike Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | mg/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |
| **Analysis Method:** | 6020A | | |
| **Prep Method:** | EPA 3050B | | |

### Matrix Spike
KQ2218126-02

| Analyte Name | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 0.262 | 37.4 | 102 | 36 N | 75-125 |
| Arsenic | 55.3 | 185 | 102 | 128 N | 75-125 |
| Barium | 259 | 507 | 204 | 122 | 75-125 |
| Beryllium | 0.683 | 10.5 | 10.2 | 96 | 75-125 |
| Cadmium | 0.146 | 10.0 | 10.2 | 97 | 75-125 |
| Chromium | 49.2 | 86.1 | 40.8 | 90 | 75-125 |
| Cobalt | 23.8 | 125 | 102 | 99 | 75-125 |
| Copper | 28.1 | 73.7 | 51.0 | 89 | 75-125 |
| Lead | 367 | 491 | 102 | 122 | 75-125 |
| Molybdenum | 0.198 | 88.3 | 102 | 86 | 75-125 |
| Nickel | 27.2 | 125 | 102 | 96 | 75-125 |
| Selenium | ND U | 92.0 | 102 | 90 | 75-125 |
| Silver | 0.066 | 9.78 | 10.2 | 95 | 75-125 |
| Thallium | 0.119 | 20.8 | 20.4 | 101 | 75-125 |
| Vanadium | 49.8 | 152 | 102 | 100 | 75-125 |
| Zinc | 47.7 | 132 | 102 | 83 | 75-125 |

**Results flagged with an asterisk (*) indicate values outside control criteria.**

**Results flagged with a pound (#) indicate the control criteria is not applicable.**

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 10/24/22 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | mg/Kg |
| **Lab Code:** | K2211581-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2218126-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.057 | 0.023 | 0.262 | 0.160 | 0.211 | 48 # | 20 |
| Arsenic | 6020A | 0.57 | 0.07 | 55.3 | 52.2 | 53.8 | 6 | 20 |
| Barium | 6020A | 0.057 | 0.023 | 259 | 257 | 258 | <1 | 20 |
| Beryllium | 6020A | 0.023 | 0.007 | 0.683 | 0.669 | 0.676 | 2 | 20 |
| Cadmium | 6020A | 0.046 | 0.008 | 0.146 | 0.099 | 0.123 | 37 # | 20 |
| Chromium | 6020A | 0.23 | 0.07 | 49.2 | 48.7 | 49.0 | 1 | 20 |
| Cobalt | 6020A | 0.023 | 0.007 | 23.8 | 21.0 | 22.4 | 13 | 20 |
| Copper | 6020A | 0.11 | 0.05 | 28.1 | 24.4 | 26.3 | 14 | 20 |
| Lead | 6020A | 0.057 | 0.023 | 367 | 189 | 278 | 64 * | 20 |
| Molybdenum | 6020A | 0.057 | 0.023 | 0.198 | 0.113 | 0.156 | 55 # | 20 |
| Nickel | 6020A | 0.23 | 0.03 | 27.2 | 23.3 | 25.3 | 15 | 20 |
| Selenium | 6020A | 1.1 | 0.1 | ND U | ND U | ND | - | 20 |
| Silver | 6020A | 0.023 | 0.005 | 0.066 | 0.055 | 0.061 | 20 | 20 |
| Thallium | 6020A | 0.023 | 0.005 | 0.119 | 0.080 | 0.100 | 39 # | 20 |
| Vanadium | 6020A | 0.23 | 0.03 | 49.8 | 49.7 | 49.8 | <1 | 20 |
| Zinc | 6020A | 0.57 | 0.23 | 47.7 | 36.3 | 42.0 | 27 * | 20 |

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**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

**Service Request:** K2211581
**Date Analyzed:** 10/24/22

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

**Lab Control Sample**
KQ2218126-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 96.4 | 100 | 96 | 80-120 |
| Arsenic | 6020A | 96.2 | 100 | 96 | 80-120 |
| Barium | 6020A | 191 | 200 | 96 | 80-120 |
| Beryllium | 6020A | 9.62 | 10.0 | 96 | 80-120 |
| Cadmium | 6020A | 9.56 | 10.0 | 96 | 80-120 |
| Chromium | 6020A | 38.1 | 40.0 | 95 | 80-120 |
| Cobalt | 6020A | 93.8 | 100 | 94 | 80-120 |
| Copper | 6020A | 46.9 | 50.0 | 94 | 80-120 |
| Lead | 6020A | 96.7 | 100 | 97 | 80-120 |
| Molybdenum | 6020A | 98.3 | 100 | 98 | 80-120 |
| Nickel | 6020A | 94.7 | 100 | 95 | 80-120 |
| Selenium | 6020A | 96.0 | 100 | 96 | 80-120 |
| Silver | 6020A | 9.68 | 10.0 | 97 | 80-120 |
| Thallium | 6020A | 20.7 | 20.0 | 103 | 80-120 |
| Vanadium | 6020A | 97.1 | 100 | 97 | 80-120 |
| Zinc | 6020A | 92.7 | 100 | 93 | 80-120 |

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QA/QC Report

**Client:** Alpine Environmental Consultants, LLC
**Project:** Medford Water Commission Phase II
**Sample Matrix:** Soil

**Service Request:** K2211581
**Date Analyzed:** 10/20/22

## Duplicate Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

| | | Lab Control Sample | | | Duplicate Lab Control Sample | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | KQ2218125-04 | | | KQ2218125-05 | | | | | |
| **Analyte Name** | **Analytical Method** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Mercury | 7471B | 0.493 | 0.500 | 99 | 0.491 | 0.500 | 98 | 80-120 | <1 | 20 |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | Alpine Environmental Consultants, LLC | **Service Request:** | K2211581 |
| **Project** | Medford Water Commission Phase II | **Date Collected:** | 10/03/22 |
| **Sample Matrix:** | Soil | **Date Received:** | 10/05/22 |
| | | **Date Analyzed:** | 10/17/22 |

## Replicate Sample Summary
## Inorganic Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | COMP1-0.0-0.5 | **Units:** | Percent |
| **Lab Code:** | K2211581-001 | **Basis:** | As Received |

| Analyte Name | Analysis Method | MRL | Sample Result | Duplicate Sample K2211581-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|
| Solids, Total | 160.3 Modified | - | 85.1 | 84.9 | 85.0 | <1 | 20 |

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