

Herbicide and Pesticide Sampling

Sunset Drive Mixed Use Development
Agricultural Field
3081 Sunset Drive
Forest Grove, Oregon

for
J.T. Smith Companies

March 25, 2024



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File No. 6748-006-03

March 25, 2024

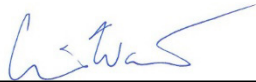
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1.0 INTRODUCTION AND BACKGROUND

This report presents the scope and results of an evaluation of chlorinated herbicides, organochlorine pesticides, and metals in soil at a former agriculture property that is targeted for a mixed-use development. The physical address of the project site is 3081 Sunset Drive in Forest Grove, Oregon (see Vicinity Map, Figure 1). GeoEngineers prepared a Phase I Environmental Site Assessment (ESA) report for the site on November 30, 2022. In the Phase I ESA report, GeoEngineers identified one recognized environmental condition (REC). Filbert and Walnut orchards were located on approximately 2-acres of the property between the 1930s and 1980s. The potential for residual herbicides and pesticides in former orchard soil was identified as an REC. GeoEngineers performed pesticide and herbicide testing in the former orchard area later in 2022. Results of the sampling indicated that legacy pesticides were present in the soil at concentrations less than the Oregon Department of Environmental Quality (DEQ) Risk-Based Concentrations (RBCs) and Oregon Clean Fill levels, as documented in our report dated January 9, 2023. An enrollment application was later submitted to the DEQ Voluntary Cleanup Program (VCP) with a request for no further action (NFA) determination for the Site. While DEQ agreed with the conclusions of the assessment of the former orchard area, DEQ requested additional soil assessment at another portion of the Site, which was used for grass/hay production since the 1970s. That portion of the property, referred to herein as the Project Area, is the subject of this report. DEQ indicated that they would not issue an NFA determination for the Site without the additional assessment.

The evaluation presented herein was performed in accordance with the Herbicide and Pesticide Sampling Work Plan (Work Plan) dated January 3, 2024. DEQ approved the Work Plan on January 10, 2024. GeoEngineers collected soil samples on February 22, 2024. The approximate site location is shown in Figure 1, Vicinity Map, the site features and boring locations are shown in Figure 2, Site Plan.

2.0 SCOPE OF SERVICES

The objective of the soil sampling activity was to assess for the presence of herbicides, pesticides, and/or metals in soil at the Project Area. Based on the size of the Project Area (approximately 10-acres) it was evaluated as a single “decision unit” (DU). Fifty direct-push soil borings were completed in the Project Area. Four composite samples, each representing a distinct depth interval, were collected from the borings. One shallow (0 – 0.5 foot) hand auger boring was completed approximately 5 feet from each direct push boring to collect a replicate composite from the shallow soil interval. The composite samples were prepared in the laboratory using representative sampling methodology (RSM) prior to chemical analysis. Our completed scope of services is described in more detail below:

1. Prepared a brief work plan for DEQ review and approval. The work plan included an outline of the “decision unit (DU)” (i.e., the grass/hay production area that will be assessed), approximate locations of borings, the laboratory analytical program, and field methods to be used during site exploration activities.
2. Completed 50 direct-push borings to approximately 3 feet below ground surface (bgs) in the DU using a track mounted drill rig.
3. At the request of DEQ and in lieu of a field duplicate soil sample, completed a hand auger boring approximately 5 feet from each direct-push boring (total of 50) to collect a replicate composite soil sample from the shallow interval.

4. Recorded the position of each boring location using a Global Positioning System (GPS) instrument.
5. Collected one soil sample from each of the following four depth intervals in each direct-push boring: 0 to 0.5 feet, 0.5 to 1 foot, 1 to 2 feet and 2 to 3 feet bgs.
6. Collected one soil sample from each hand auger boring at the 0-0.5 feet bgs depth interval.
7. The 50 soil samples and 50 replicate samples from each depth interval were field composited into separate 1-gallon laboratory-provided glass jars.
8. Submitted the five composite samples to Apex Labs in Tigard, Oregon for representative sampling methodology (RSM) preparation, archiving, and chemical analysis, samples from the 0 to 0.5 feet bgs (including the replicate 0-0.5 feet bgs sample) and 2 to 3 feet bgs intervals were analyzed for the following:
 - Organochlorine pesticides by U.S. Environmental Protection Agency (EPA) Method 8081.
 - Chlorinated herbicides by EPA Method 8151.
 - 17 metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc) by EPA Method 6000/7000 series.
 - Samples from the 0.5 to 1 and 1 to 2 feet bgs intervals were frozen and archived.
9. Prepared this report including the following:
 - Figure(s) showing the DU.
 - A tabulation of chemical analytical data.
 - An evaluation of chemical analytical data relative to applicable human health screening criteria.

3.0 SOIL SAMPLING

Fifty borings were completed to a depth of approximately 3 feet bgs on February 22, 2024 using a direct-push drill rig. Fifty additional shallow borings (to 0.5 feet bgs) were completed using a stainless-steel hand auger. The exploration locations are shown in Figure 2. The sampling program was developed in general accordance with Guidance for Evaluation of Residual Pesticides on Lands Formerly Used for Agricultural Production (DEQ, 2006; updated June 2019). One composite sample was prepared for each depth interval (0-0.5 feet and replicate, 0.5-1 foot, 1-2 feet and 2-3 feet) using an approximately equal volume of soil from each of the 50 locations, for a total of five composite samples. Each composite sample was placed in a one-gallon glass jar provided by the laboratory. Field procedures are described in more detail in Appendix A.

Soil samples were stored in coolers with ice for transport to Apex Labs in Tigard, Oregon. Three composite soil samples (from 0-0.5 feet, 2-3 feet, and replicate intervals) were analyzed for total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc), organochlorine pesticides, and herbicides. The soil samples from the depth intervals 0.5-1 foot and 1-2 feet bgs were retained for potential follow-up analysis at Apex Labs in freezer storage. Soil cuttings generated during drilling activities were placed back into the soil boring locations.

4.0 RESULTS

4.1. Surface and Subsurface Soil Conditions

The project site is generally covered in pastureland and slopes gradually downward to the southeast. Soil observed during the sampling activity generally consisted of brown sand with some silt to 3 feet bgs. Relatively consistent soil conditions were encountered across sampling locations.

4.2. Soil Chemical Analytical Results

The laboratory chemical analytical reports are presented in Appendix B, Chemical Analytical Data. The soil sample results are listed in Tables 1 and 2 and discussed below:

- Chlorinated herbicides 2,4,5-T and Mecoprop (MCP) were detected in the primary and replicate samples collected from 0-0.5 feet bgs, but not in the composite sample from 2-3 feet bgs. The detected concentration of 2,4,5-T is less than the most restrictive RBCs and DEQ clean fill screening levels. The detected concentration of MCP is less than the most restrictive RBCs, but greater than the Oregon DEQ clean fill screening levels.
- Chlorinated pesticides DDT and DDE (a breakdown product of DDT) were detected in the primary and replicate samples from 0-0.5 feet bgs at concentrations less than the most restrictive RBCs and DEQ clean fill screening levels. No other chlorinated pesticides were detected in the samples.
- Arsenic was detected in the three composite samples, at concentrations exceeding the RBCs for residential, urban residential and occupational receptors for soil ingestion, dermal contact and inhalation; however, the detected concentrations of arsenic are less than the DEQ Regional Default Background Concentrations (DEQ, 2013) for the Portland Basin.
- Other detected metals were at concentrations less than the DEQ Regional Default Background Concentrations.

5.0 CONCLUSIONS AND RECOMMENDATIONS

DDT, DDE, 2,4,5-T and MCP were detected in soil samples collected from the interval between 0-0.5-foot bgs. The detected concentrations of chlorinated herbicides are less than the most restrictive RBCs for dermal contact, inhalation and ingestion pathway. The concentrations of DDT, DDE, 2,4,5-T in the 0-0.5-foot bgs interval also are less than DEQ clean fill screening levels. The detected concentration of MCP in the 0-0.5-foot interval exceeds the corresponding DEQ clean fill screening level.

No chlorinated pesticides were detected in the 2–3-foot interval at concentrations that exceed RBCs or DEQ clean fill screening levels.

Metals were not detected at concentrations that exceed RBCs and DEQ Regional Default Background Concentrations for both the Portland Basin and the Coast Range.

These findings indicate that the residual chlorinated pesticides and metals in soil in the Project Area do not pose a significant risk to human health at the Project Area. This is consistent with sampling of the former orchard area adjacent to the Project Area. Additional soil sampling and/or remedial actions do not appear to be warranted and a no further action determination from DEQ is warranted.

If off-site export of shallow soils is required during future development, additional soil disposal profiling may be warranted.

6.0 LIMITATIONS

This report has been prepared for use by J.T. Smith and their authorized agents. This report may be provided to regulatory agencies for review. No third parties should place legal reliance on this report. GeoEngineers has performed this herbicide and pesticide sampling in accordance with the scope and limitations of our Agreement with J.T. Smith dated November 28, 2023.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to this report.

Please refer to Appendix C, Report Limitations and Guidelines for Use, for additional information pertaining to use of this report.

7.0 REFERENCES

GeoEngineers, Inc. 2022. "Phase I Environmental Site Assessment, Proposed Brown's Farm Mixed Use Development, 3081 Sunset Drive, Forest Grove, Oregon." November 30, 2022.

GeoEngineers, Inc. 2023. "Herbicide and Pesticide Sampling Report, Sunset Drive Mixed Use Development -Former Orchards, 3081 Sunset Drive, Forest Grove, Oregon." January 9, 2023.

GeoEngineers 2024. "Herbicide and Pesticide Sampling Work Plan, Sunset Drive Mixed Use Development - Former Orchards, Agricultural Field, 3081 Sunset Drive, Forest Grove, Oregon." January 3, 2024

Interstate Technology and Regulatory (ITRC), 2020. Incremental Sampling Methodology (ISM) Update, October 2020.

Oregon Department of Environmental Quality (DEQ), 2006. Guidance for Evaluating Residual Pesticides on Lands Formerly Used in Agricultural Production, January 2006, revised June 2019.

DEQ, 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites, Including Table of Generic Risk-Based Concentrations for Petroleum Constituents and Total Petroleum Hydrocarbons and Generic Remedy for Simple Risk-Based Sites, 2003, revised June 2023.

DEQ. 2013. Regional Default Background Concentrations for Metals in Soil - State of Oregon (Table 1). Land Quality Division Environmental, Cleanup Program. March 20, 2013.

DEQ, 2019. Clean Fill Determinations. February 2019.

Table 1
Soil Chemical Analytical Results¹
Herbicides and Pesticides
 Sunset Drive Development
 Forest Grove, Oregon

Sample Identification	Date	Sample Depth (feet bgs)	Organochlorine Pesticides by EPA Method 8081B (mg/kg)																
			Aldrin	Alpha-BHC	Beta-BHC	Delta-BHC	Lindane (Gamma-BHC)	cis-Chlordane (alpha)	trans-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Endrin Ketone
Existing Agricultural Land																			
AGL 0-0.5	2/22/2024	0-0.5	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	0.00805	0.00229	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169	<0.00169
AGL 0-0.5 Replicate	2/22/2024	0-0.5	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	0.00938	0.00250	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182	<0.00182
AGL 2-3	2/22/2024	2-3	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175	<0.00175
Former Orchards on Southern Property																			
DU-1(0-0.5)comp	11/30/2022	0-0.5	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	0.00496	0.00324	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197
DU-1(1-2)Comp	11/30/2022	1-2	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	0.00471	0.00311	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199
DU-1(2-3)Comp	11/30/2022	2-3	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198
Potentially Applicable DEQ Risk-Based Concentrations (RBC)²																			
Soil Ingestion, Dermal Contact, and Inhalation																			
Residential			0.031	0.086	NE	NE	0.49	NE	NE	2.2	1.8	1.9	0.034	380	380	NE	19	NE	NE
Urban Residential			0.078	0.21	NE	NE	1.2	NE	NE	4.4	4.5	4.6	0.085	760	760	NE	38	NE	NE
Occupational			0.13	0.36	NE	NE	2.1	NE	NE	12	8.2	8.5	0.14	4,900	4,900	NE	250	NE	NE
Construction Worker			1.1	3.0	NE	NE	17	NE	NE	9.7	66	66	1.2	1,600	1,600	NE	80	NE	NE
Excavation Worker			30	83	NE	NE	470	NE	NE	270	1,800	1,800	33	45,000	45,000	NE	2,200	NE	NE
Oregon DEQ Clean Fill Screening Levels																			
			0.023	0.0063	0.009	NE	0.0095	0.27	NE	0.0063	0.01	0.01	0.0045	0.64	0.64	NE	0.0014	NE	NE

Sample Identification	Date	Sample Depth (feet bgs)	Organochlorine Pesticides by EPA Method 8081B (mg/kg)					Chlorinated Herbicides by GC/ECD (mg/kg)									
			Heptachlor	Heptachlor Epoxide	Methoxychlor	Chlordane (Technical)	Toxaphene (Total)	2,4-D	2,4-DB	2,4,5-T	2,4,5-TP (Silvex)	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	Mecoprop (MCP)
Existing Agricultural Land																	
AGL 0-0.5	2/22/2024	0-0.5	<0.00169	<0.00169	<0.00169	<0.0506	<0.0506	<0.100	<0.100	0.0051	<0.010	<0.250	<0.010	<0.100	<0.100	<10.000	23
AGL 0-0.5 Replicate	2/22/2024	0-0.5	<0.00182	<0.00182	<0.00182	<0.0547	<0.0547	<0.100	<0.100	0.0088	<0.010	<0.250	<0.010	<0.100	<0.100	<10.000	23
AGL 2-3	2/22/2024	2-3	<0.00175	<0.00175	<0.0524	<0.0524	<0.0524	<0.100	<0.100	<0.010	<0.010	<0.250	<0.010	<0.100	<0.100	<10.000	<10.000
Former Orchards on Southern Property																	
DU-1(0-0.5)comp	11/30/2022	0-0.5	<0.00197	<0.00197	<0.0059	<0.059	<0.059	<0.1	<0.1	<0.01	<0.01	<0.25	<0.01	<0.1	<0.1	<10	<10
DU-1(1-2)Comp	11/30/2022	1-2	<0.00199	<0.00199	<0.00596	<0.0596	<0.0596	<0.1	<0.1	<0.01	<0.01	<0.25	<0.01	<0.1	<0.1	<10	<10
DU-1(2-3)Comp	11/30/2022	2-3	<0.00198	<0.00198	<0.00595	<0.0595	<0.0595	<0.1	<0.1	<0.01	<0.01	<0.25	<0.01	<0.1	<0.1	<10	<10
Potentially Applicable DEQ Risk-Based Concentrations²																	
Soil Ingestion, Dermal Contact, and Inhalation																	
Residential (Pathway Not Applicable)			0.11	0.055	NE	1.7	0.49	630	NE	NE	NE	NE	NE	NE	NE	32	NE
Urban Residential			0.28	0.14	NE	4.2	1.2	1,300	NE	NE	NE	NE	NE	NE	NE	63	NE
Occupational			0.45	0.24	NE	7.4	2.1	8,200	NE	NE	NE	NE	NE	NE	NE	410	NE
Construction Worker			4.0	2.0	NE	61	17	2,700	NE	NE	NE	NE	NE	NE	NE	130	NE
Excavation Worker			110	56	NE	1,700	470	74,000	NE	NE	NE	NE	NE	NE	NE	3,700	NE
Oregon DEQ Clean Fill Screening Levels																	
			0.017	0.0042	5.1	0.91	0.36	NE	NE	NE	NE	NE	NE	NE	NE	0.097	0.28

Notes:

¹ Chemical analyses were performed by Apex Labs in Tigard, Oregon.

² Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised August 2023.

NE = Cleanup level is not established; mg/kg = milligrams per kilogram; EPA = United States Environmental Protection Agency.

J = the reported concentration is estimated based on sample matrix interference

"<0.0408" indicates analyte not detected above the method reporting limit.

Gray shading indicates the detected concentrations exceeds one or more of the potentially applicable Oregon DEQ RBCs.

Orange shading indicates the detected concentration exceeds the Oregon DEQ Clean Fill Screening Levels, but not the potentially applicable Oregon DEQ RBCs.

Table 2
Soil Chemical Analytical Results¹
Metals
Sunset Drive Development
Forest Grove, Oregon

Sample Identification	Date	Sample Depth (feet bgs)	Total Metals EPA Methods 6020B (mg/kg)																
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Existing Agricultural Land																			
AGL 0-0.5	2/22/2024	0-0.5	<1.04	6.41	167	0.873	0.210	21.9	15.4	14.9	16.4	<0.0836	<1.09	12.1	<1.09	<0.218	<0.218	81.5	68.4
AGL 0-0.5 Replicate	2/22/2024	0-0.5	<1.09	5.99	161	0.799	<0.218	20.2	14.6	13.6	16.8	<0.0871	<1.10	13.9	<1.10	<0.220	<0.220	95.6	67.4
AGL 3-3	2/22/2024	2-3	<1.09	7.96	183	0.798	<0.217	22.7	18.1	19.9	12.5	<0.0869	<1.09	16.3	<1.09	<0.217	<0.217	93.3	66.3
Former Orchard on Southern Property																			
DU-1(0-0.5)comp	11/30/2022	0-0.5	<1.06	6.13	143	0.656	<0.212	17.7	12.6	17.1	20.2	<0.0848	<1.06	12.3	<1.06	<0.212	<0.212	75.7	74.7
DU-1(1-2)Comp	11/30/2022	1-2	<1.10	7.05	122	0.772	<0.220	21.3	16.0	16.4	11.8	<0.0882	<1.10	13.9	<1.10	<0.220	<0.220	95.6	67.4
DU-1(2-3)Comp	11/30/2022	2-3	<1.06	9.90	235	1.05	<0.213	25.5	20.8	27.3	13.3	<0.0852	<1.06	22.3	<1.06	<0.213	0.234	104	83.2
Potentially Applicable DEQ Risk-Based Concentrations (RBC)²																			
Soil Ingestion, Dermal Contact and Inhalation																			
Residential			NE	0.43	15,000	160	78	120,000	NE	3,100	400	23	NE	1,500	NE	390	NE	NE	NE
Urban Residential			NE	1.0	31,000	310	160	230,000	NE	6,200	400	47	NE	3,100	NE	780	NE	NE	NE
Occupational			NE	1.9	220,000	2,300	1,100	NE	NE	47,000	800	350	NE	22,000	NE	5,800	NE	NE	NE
Construction Worker			NE	15	69,000	700	350	530,000	NE	14,000	800	110	NE	7,000	NE	1,800	NE	NE	NE
Excavation Worker			NE	420	NE	19,000	9,700	NE	NE	390,000	800	2,900	NE	190,000	NE	49,000	NE	NE	NE
Regional Default Background Concentrations for Metals in Soil and Clean Fill Screening Levels³																			
Portland Basin			0.56	8.8	790	2.0	0.63	76	NE	34	79	0.23	NE	47	0.71	0.82	5.2	180	180
Coast Range			0.55	12	840	2.8	0.54	240	NE	100	34	0.11	NE	160	1.5	0.41	5.4	260	140

Notes:

¹ Chemical analyses were performed by Apex Labs in Tigard, Oregon.

² Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised May 2018.

³ Oregon DEQ Regional Default Background Concentrations for Metals in Soil (DEQ, March 2013) and DEQ Regional Clean Fill Screening Levels (DEQ, 2019).

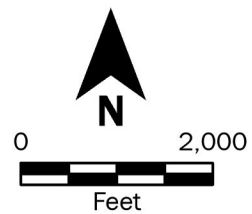
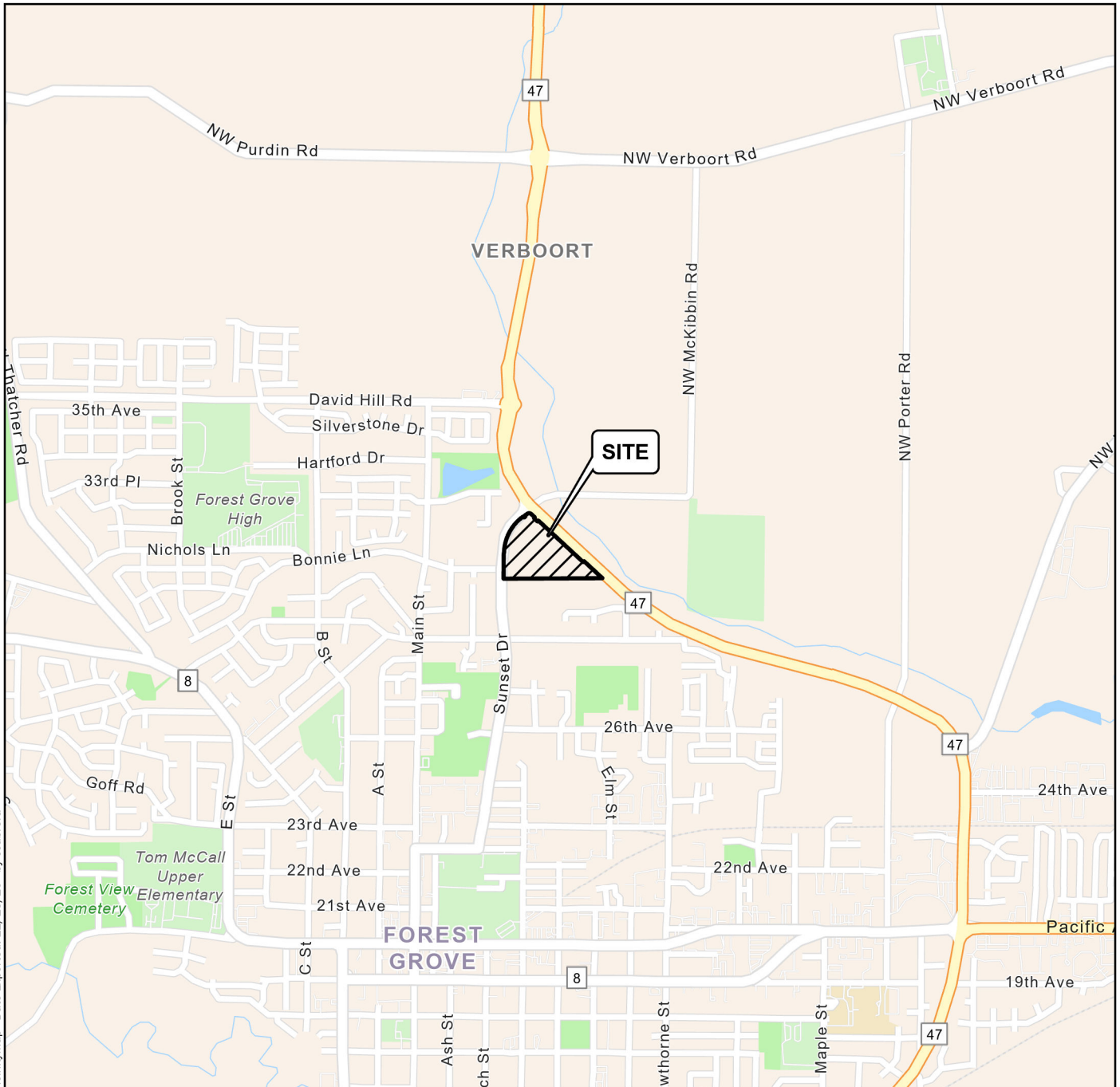
NE = Not Established; EPA = United States Environmental Protection Agency; mg/kg = milligrams per kilogram; bgs = below ground surface.

"<1.05" indicates analyte not detected above the method reporting limit.

Bold indicates the analyte was detected above laboratory method reporting limit (MRL).

Grey shading indicates the analyte was detected at a concentration above one or more potentially applicable RBC.

Orange Shading indicates the detected concentration exceeds the Oregon DEQ regional default background concentrations for metals in soil for the Portland Basin but less than the Coast Range, the Regional Clean Fill Screening Level and one or more of the DEQ RBCs.



Source(s):
 • ESRI

Coordinate System: NAD 1983 UTM Zone 10N

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Vicinity Map

Proposed Brown's Farm Mixed Use Development
 Forest Grove, Oregon



Figure 1



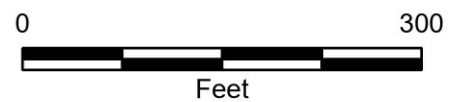
Legend

- ⊙ Proposed Sample Location
- Project Location

Source(s):

- METRO
- ESRI

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
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Site Plan	
Proposed Brown's Farm Mixed Use Development Forest Grove, Oregon	
	Figure 2

APPENDIX A

Field Procedures

APPENDIX A FIELD PROCEDURES

GENERAL

This section of the report describes the field procedures, field Quality Assurance/Quality Control (QA/QC) protocol and the chemical testing program that was implemented during the herbicide and pesticide sampling activities. The field activities included the following:

- Collection of soil samples from soil borings and hand augers
- Field screening soil samples
- Location control
- Decontamination procedures
- Handling of investigation derived waste (IDW)

Collecting Soil Samples from Soil Borings

Soil Sampling

Direct-push explorations were advanced to approximately 3 feet bgs, operated by Anderson Environmental Contracting, LLC shallow hand auger borings were advanced by a GeoEngineers employee. Soil samples were obtained continuously from each boring location. Discrete soil samples were collected at 0 to 0.5 feet, 0.5 to 1 foot, 1 to 2 feet bgs and 2 to 3 feet bgs using disposable nitrile gloves and a designated 1.5-ounce glass jar for each depth interval. The 1.5-ounce jar was used to place an equal volume of soil from each of the 50 locations into a laboratory provided 1-gallon glass jar. Sampling equipment was decontaminated between each sampling location.

Soil samples were placed in an ice chest containing crushed ice for storage prior to delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

Decontamination Procedures

The objective of the decontamination procedure was to minimize the potential for cross contamination between exploration locations and between individual samples within a specific exploration. Sampling or measurement equipment was decontaminated in accordance with the following procedures before each sampling attempt or measurement.

- Brush equipment with a wire brush, if necessary, to remove large particulate matter.
- Wash with non-phosphate detergent solution (LiquiNox® and potable tap water).
- Rinse with distilled water.

Handling of Investigation-Derived Waste

Soil boring cuttings and excess soil sample material were placed back into the borehole.

Disposable items such as gloves and paper towels, etc., were placed in plastic bags after use and deposited in trash receptacles for disposal.

Laboratory Analytical Plan

Method reporting limit (MRL) goals were based on DEQ risk-based screening criteria or standard laboratory methods. The following methods were used for the soil and groundwater samples:

- Select total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc) by U.S. Environmental Protection Agency (EPA) Methods 6010B/7471A;
- Organochlorine pesticides by EPA method 8081; and
- Chlorinated herbicides by EPA Method 8151.

APPENDIX B
Chemical Analytical Data

APPENDIX B

CHEMICAL ANALYTICAL DATA

Chain-of-custody procedures were followed during the transport of the field samples to the accredited analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this appendix.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Any data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this appendix.

Data Quality Exception Summary

Based on our data quality review, it is our opinion that the laboratory data qualifiers listed for the samples in the laboratory reports are not significant with regard to the use of the data for characterization purposes. The samples/results were considered of acceptable quality for their intended use in this report.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Thursday, March 14, 2024

Cris Watkins
GeoEngineers - Portland
5820 S Kelly Ave Unit B
Portland, OR 97239

RE: A4B1424 - Sunset Drive - 06748-006-03

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4B1424, which was received by the laboratory on 2/22/2024 at 3:46:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>	
(See Cooler Receipt Form for details)	
Cooler #1 1.2 degC _____	Cooler #2 1.4 degC _____

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AGL 0-0.5 Replicate	A4B1424-01	Soil	02/22/24 08:36	02/22/24 15:46
AGL 0-0.5 Replicate	A4B1424-02	Soil	02/22/24 08:36	02/22/24 15:46
AGL 0-0.5	A4B1424-03	Soil	02/22/24 08:31	02/22/24 15:46
AGL 0-0.5	A4B1424-04	Soil	02/22/24 08:31	02/22/24 15:46
AGL 0.5-1.0	A4B1424-05	Soil	02/22/24 08:32	02/22/24 15:46
AGL 1-2	A4B1424-06	Soil	02/22/24 08:33	02/22/24 15:46
AGL 2-3	A4B1424-07	Soil	02/22/24 08:34	02/22/24 15:46
AGL 2-3	A4B1424-08	Soil	02/22/24 08:34	02/22/24 15:46

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ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
AGL 0-0.5 Replicate (A4B1424-02RE1)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Aldrin [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
alpha-BHC [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
beta-BHC [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
delta-BHC [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
cis-Chlordane [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
trans-Chlordane [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
4,4'-DDD [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
4,4'-DDE	9.38	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
4,4'-DDT [2C]	2.50	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Dieldrin [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endosulfan I [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endosulfan II [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endrin [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endrin aldehyde [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Endrin ketone [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Heptachlor [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	1.82	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	54.7	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	54.7	ug/kg dry	1	03/08/24 17:55	EPA 8081B	
<i>Surrogate: 2,4,5,6-TCMX (Surr)</i>		<i>Recovery: 52 %</i>		<i>Limits: 42-129 %</i>		<i>1</i>	<i>03/08/24 17:55</i>	<i>EPA 8081B</i>
<i>Decachlorobiphenyl (Surr)</i>		<i>81 %</i>		<i>55-130 %</i>		<i>1</i>	<i>03/08/24 17:55</i>	<i>EPA 8081B</i>

AGL 0-0.5 Replicate (A4B1424-02RE2)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Methoxychlor [2C]	ND	---	5.47	ug/kg dry	1	03/11/24 16:42	EPA 8081B	

AGL 0-0.5 (A4B1424-04RE1)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Aldrin [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
alpha-BHC [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
beta-BHC [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
delta-BHC [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
cis-Chlordane [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
AGL 0-0.5 (A4B1424-04RE1)				Matrix: Soil		Batch: 24C0239		C-05, PRO
trans-Chlordane [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
4,4'-DDD [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
4,4'-DDE	8.05	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
4,4'-DDT [2C]	2.29	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Dieldrin [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endosulfan I [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endosulfan II [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endrin [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endrin aldehyde [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Endrin ketone [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Heptachlor [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	1.69	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	50.6	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	50.6	ug/kg dry	1	03/08/24 18:11	EPA 8081B	
<i>Surrogate: 2,4,5,6-TCMX (Surr)</i>		<i>Recovery: 51 %</i>		<i>Limits: 42-129 %</i>		<i>1</i>	<i>03/08/24 18:11</i>	<i>EPA 8081B</i>
<i>Decachlorobiphenyl (Surr)</i>		<i>80 %</i>		<i>55-130 %</i>		<i>1</i>	<i>03/08/24 18:11</i>	<i>EPA 8081B</i>
AGL 0-0.5 (A4B1424-04RE2)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Methoxychlor [2C]	ND	---	5.06	ug/kg dry	1	03/11/24 16:59	EPA 8081B	
AGL 2-3 (A4B1424-08RE1)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Aldrin [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
alpha-BHC [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
beta-BHC [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
delta-BHC [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
cis-Chlordane [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
trans-Chlordane [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
4,4'-DDD [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
4,4'-DDE [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
4,4'-DDT [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Dieldrin [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Endosulfan I [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
AGL 2-3 (A4B1424-08RE1)				Matrix: Soil		Batch: 24C0239		C-05, PRO
Endosulfan II [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Endrin [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Endrin aldehyde [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Endrin ketone [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Heptachlor [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	1.75	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Methoxychlor [2C]	ND	---	5.24	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	52.4	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	52.4	ug/kg dry	1	03/08/24 16:55	EPA 8081B	
<i>Surrogate: 2,4,5,6-TCMX (Surr)</i>			<i>Recovery: 69 %</i>	<i>Limits: 42-129 %</i>	<i>1</i>	<i>03/08/24 16:55</i>	<i>EPA 8081B</i>	
<i>Decachlorobiphenyl (Surr)</i>			<i>126 %</i>	<i>55-130 %</i>	<i>1</i>	<i>03/08/24 16:55</i>	<i>EPA 8081B</i>	

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
AGL 0-0.5 Replicate (A4B1424-02)				Matrix: Soil				
Batch: 24C0140								
Antimony	ND	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Arsenic	5.99	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Barium	161	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Beryllium	0.799	---	0.218	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Cadmium	ND	---	0.218	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Chromium	20.2	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Cobalt	14.6	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Copper	13.6	---	2.18	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Lead	16.8	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Mercury	ND	---	0.0871	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Molybdenum	ND	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Nickel	12.1	---	2.18	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Selenium	ND	---	1.09	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Silver	ND	---	0.218	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Thallium	ND	---	0.218	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Vanadium	81.5	---	2.18	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO
Zinc	68.4	---	4.35	mg/kg dry	10	03/06/24 02:44	EPA 6020B	PRO

AGL 0-0.5 (A4B1424-04)				Matrix: Soil				
Batch: 24C0140								
Antimony	ND	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Arsenic	6.41	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Barium	167	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Beryllium	0.873	---	0.209	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Cadmium	0.210	---	0.209	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Chromium	21.9	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Cobalt	15.4	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Copper	14.9	---	2.09	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Lead	16.4	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Mercury	ND	---	0.0836	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Molybdenum	ND	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Nickel	13.0	---	2.09	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO
Selenium	ND	---	1.04	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
AGL 0-0.5 (A4B1424-04)				Matrix: Soil					
Silver	ND	---	0.209	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO	
Thallium	ND	---	0.209	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO	
Vanadium	89.2	---	2.09	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO	
Zinc	74.0	---	4.18	mg/kg dry	10	03/06/24 02:52	EPA 6020B	PRO	
AGL 2-3 (A4B1424-08)				Matrix: Soil					
Batch: 24C0140									
Antimony	ND	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Arsenic	7.96	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Barium	183	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Beryllium	0.798	---	0.217	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Cadmium	ND	---	0.217	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Chromium	22.7	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Cobalt	18.1	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Copper	19.9	---	2.17	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Lead	12.5	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Mercury	ND	---	0.0869	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Molybdenum	ND	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Nickel	16.3	---	2.17	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Selenium	ND	---	1.09	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Silver	ND	---	0.217	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Thallium	ND	---	0.217	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Vanadium	93.3	---	2.17	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	
Zinc	66.3	---	4.35	mg/kg dry	10	03/06/24 03:00	EPA 6020B	PRO	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
AGL 0-0.5 Replicate (A4B1424-02)				Matrix: Soil		Batch: 24B0953		PRO
% Solids	99.4	---	1.00	%	1	02/29/24 07:57	EPA 8000D	
AGL 0-0.5 (A4B1424-04)				Matrix: Soil		Batch: 24B0953		PRO
% Solids	99.9	---	1.00	%	1	02/29/24 07:57	EPA 8000D	
AGL 2-3 (A4B1424-08)				Matrix: Soil		Batch: 24B0953		PRO
% Solids	99.6	---	1.00	%	1	02/29/24 07:57	EPA 8000D	

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24C0239 - EPA 3546/3640A (GPC)						Soil							
Blank (24C0239-BLK1)			Prepared: 02/29/24 04:39 Analyzed: 03/08/24 15:45						C-05				
EPA 8081B													
Aldrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
alpha-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
beta-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
delta-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
gamma-BHC (Lindane)	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
cis-Chlordane	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
trans-Chlordane	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
4,4'-DDD	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
4,4'-DDE	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
4,4'-DDT	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Dieldrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endosulfan I	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endosulfan II	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endosulfan sulfate	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endrin aldehyde	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Endrin ketone	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Heptachlor	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Heptachlor epoxide	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---		
Methoxychlor	ND	---	6.00	ug/kg wet	1	---	---	---	---	---	---		
Chlordane (Technical)	ND	---	60.0	ug/kg wet	1	---	---	---	---	---	---		
Toxaphene (Total)	ND	---	60.0	ug/kg wet	1	---	---	---	---	---	---		
<i>Surr: 2,4,5,6-TCMX (Surr)</i>		<i>Recovery: 55 %</i>		<i>Limits: 42-129 %</i>		<i>Dilution: 1x</i>							
<i>Decachlorobiphenyl (Surr)</i>		<i>110 %</i>		<i>55-130 %</i>		<i>"</i>							

LCS (24C0239-BS1)			Prepared: 02/29/24 04:39 Analyzed: 03/08/24 16:02						C-05				
EPA 8081B													
Aldrin	22.9	---	2.00	ug/kg wet	1	50.0	---	46	45-136%	---	---		
alpha-BHC	26.5	---	2.00	ug/kg wet	1	50.0	---	53	45-137%	---	---		
beta-BHC	28.0	---	2.00	ug/kg wet	1	50.0	---	56	50-136%	---	---		
delta-BHC	34.2	---	2.00	ug/kg wet	1	50.0	---	68	47-139%	---	---		
gamma-BHC (Lindane)	28.0	---	2.00	ug/kg wet	1	50.0	---	56	49-135%	---	---		
cis-Chlordane	36.4	---	2.00	ug/kg wet	1	50.0	---	73	54-133%	---	---		

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0239 - EPA 3546/3640A (GPC)						Soil						
LCS (24C0239-BS1)						Prepared: 02/29/24 04:39 Analyzed: 03/08/24 16:02						C-05
trans-Chlordane	35.0	---	2.00	ug/kg wet	1	50.0	---	70	53-135%	---	---	
4,4'-DDD	52.3	---	2.00	ug/kg wet	1	50.0	---	105	56-139%	---	---	
4,4'-DDE	44.1	---	2.00	ug/kg wet	1	50.0	---	88	56-134%	---	---	
4,4'-DDT	63.4	---	2.00	ug/kg wet	1	50.0	---	127	50-141%	---	---	
Dieldrin	47.7	---	2.00	ug/kg wet	1	50.0	---	95	56-136%	---	---	
Endosulfan I	40.4	---	2.00	ug/kg wet	1	50.0	---	81	53-132%	---	---	
Endosulfan II	51.5	---	2.00	ug/kg wet	1	50.0	---	103	53-134%	---	---	
Endosulfan sulfate	49.2	---	2.00	ug/kg wet	1	50.0	---	98	55-136%	---	---	
Endrin	51.1	---	2.00	ug/kg wet	1	50.0	---	102	57-140%	---	---	
Endrin aldehyde	45.9	---	2.00	ug/kg wet	1	50.0	---	92	35-137%	---	---	
Endrin ketone	49.8	---	2.00	ug/kg wet	1	50.0	---	100	55-136%	---	---	
Heptachlor	28.1	---	2.00	ug/kg wet	1	50.0	---	56	47-136%	---	---	
Heptachlor epoxide	36.5	---	2.00	ug/kg wet	1	50.0	---	73	52-136%	---	---	
Methoxychlor	73.9	---	6.00	ug/kg wet	1	50.0	---	148	52-143%	---	---	Q-29
Surr: 2,4,5,6-TCMX (Surr)		Recovery: 52 %		Limits: 42-129 %		Dilution: 1x						
Decachlorobiphenyl (Surr)		114 %		55-130 %		"						

Duplicate (24C0239-DUP1)						Prepared: 02/29/24 04:39 Analyzed: 03/08/24 16:37						C-05
QC Source Sample: Non-SDG (A4B1402-29RE1)												
Aldrin	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
beta-BHC	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
delta-BHC	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	
Endrin	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24C0239 - EPA 3546/3640A (GPC)						Soil							
Duplicate (24C0239-DUP1)			Prepared: 02/29/24 04:39 Analyzed: 03/08/24 16:37						C-05				
QC Source Sample: Non-SDG (A4B1402-29RE1)													
Endrin aldehyde	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%		
Endrin ketone	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%		
Heptachlor	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%		
Heptachlor epoxide	ND	---	2.37	ug/kg dry	1	---	ND	---	---	---	30%		
Methoxychlor	ND	---	7.11	ug/kg dry	1	---	ND	---	---	---	30%		
Chlordane (Technical)	ND	---	71.1	ug/kg dry	1	---	ND	---	---	---	30%		
Toxaphene (Total)	ND	---	71.1	ug/kg dry	1	---	ND	---	---	---	30%		
<i>Surr: 2,4,5,6-TCMX (Surr)</i>		<i>Recovery: 47 %</i>		<i>Limits: 42-129 %</i>		<i>Dilution: 1x</i>							
<i>Decachlorobiphenyl (Surr)</i>		<i>93 %</i>		<i>55-130 %</i>		<i>"</i>							

Matrix Spike (24C0239-MS1)			Prepared: 02/29/24 04:39 Analyzed: 03/08/24 17:12						C-05, PRO				
QC Source Sample: AGL 2-3 (A4B1424-08RE1)													
EPA 8081B													
Aldrin	20.9	---	1.79	ug/kg dry	1	44.8	ND	47	45-136%	---	---		
alpha-BHC	23.7	---	1.79	ug/kg dry	1	44.8	ND	53	45-137%	---	---		
beta-BHC	23.5	---	1.79	ug/kg dry	1	44.8	ND	53	50-136%	---	---		
delta-BHC	26.7	---	1.79	ug/kg dry	1	44.8	ND	60	47-139%	---	---		
gamma-BHC (Lindane)	24.5	---	1.79	ug/kg dry	1	44.8	ND	55	49-135%	---	---		
cis-Chlordane	27.2	---	1.79	ug/kg dry	1	44.8	ND	61	54-133%	---	---		
trans-Chlordane	26.8	---	1.79	ug/kg dry	1	44.8	ND	60	53-135%	---	---		
4,4'-DDD	33.9	---	1.79	ug/kg dry	1	44.8	ND	76	56-139%	---	---		
4,4'-DDE	31.9	---	1.79	ug/kg dry	1	44.8	ND	71	56-134%	---	---		
4,4'-DDT	42.2	---	1.79	ug/kg dry	1	44.8	ND	94	50-141%	---	---		
Dieldrin	32.7	---	1.79	ug/kg dry	1	44.8	ND	73	56-136%	---	---		
Endosulfan I	29.5	---	1.79	ug/kg dry	1	44.8	ND	66	53-132%	---	---		
Endosulfan II	34.1	---	1.79	ug/kg dry	1	44.8	ND	76	53-134%	---	---		
Endosulfan sulfate	32.1	---	1.79	ug/kg dry	1	44.8	ND	72	55-136%	---	---		
Endrin	35.2	---	1.79	ug/kg dry	1	44.8	ND	79	57-140%	---	---		
Endrin aldehyde	28.3	---	1.79	ug/kg dry	1	44.8	ND	63	35-137%	---	---		
Endrin ketone	32.6	---	1.79	ug/kg dry	1	44.8	ND	73	55-136%	---	---		
Heptachlor	25.0	---	1.79	ug/kg dry	1	44.8	ND	56	47-136%	---	---		
Heptachlor epoxide	28.5	---	1.79	ug/kg dry	1	44.8	ND	64	52-136%	---	---		
Methoxychlor	41.4	---	5.38	ug/kg dry	1	44.8	ND	92	52-143%	---	---		

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0239 - EPA 3546/3640A (GPC)						Soil						
Matrix Spike (24C0239-MS1)						Prepared: 02/29/24 04:39 Analyzed: 03/08/24 17:12						C-05, PRO
QC Source Sample: AGL 2-3 (A4B1424-08RE1)												
<i>Surr: 2,4,5,6-TCMX (Surr)</i>		<i>Recovery: 52 %</i>		<i>Limits: 42-129 %</i>		<i>Dilution: 1x</i>						
<i>Decachlorobiphenyl (Surr)</i>		<i>83 %</i>		<i>55-130 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0140 - EPA 3051A												
Soil												
Blank (24C0140-BLK1)												
						Prepared: 03/05/24 14:02 Analyzed: 03/05/24 23:28						
EPA 6020B												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cobalt	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg wet	10	---	---	---	---	---	---	
Molybdenum	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Vanadium	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	4.00	mg/kg wet	10	---	---	---	---	---	---	

LCS (24C0140-BS1)												
						Prepared: 03/05/24 14:02 Analyzed: 03/05/24 23:51						
EPA 6020B												
Antimony	23.5	---	1.00	mg/kg wet	10	25.0	---	94	80-120%	---	---	
Arsenic	49.7	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Barium	51.3	---	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Beryllium	25.1	---	0.200	mg/kg wet	10	25.0	---	101	80-120%	---	---	
Cadmium	49.8	---	0.200	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Chromium	49.4	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Cobalt	51.0	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Copper	51.5	---	2.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Lead	53.7	---	1.00	mg/kg wet	10	50.0	---	107	80-120%	---	---	
Mercury	1.02	---	0.0800	mg/kg wet	10	1.00	---	102	80-120%	---	---	
Molybdenum	25.2	---	1.00	mg/kg wet	10	25.0	---	101	80-120%	---	---	
Nickel	50.7	---	2.00	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Selenium	24.2	---	1.00	mg/kg wet	10	25.0	---	97	80-120%	---	---	

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0140 - EPA 3051A												
Soil												
LCS (24C0140-BS1)												
						Prepared: 03/05/24 14:02 Analyzed: 03/05/24 23:51						
Silver	24.8	---	0.200	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Thallium	26.3	---	0.200	mg/kg wet	10	25.0	---	105	80-120%	---	---	
Vanadium	49.9	---	2.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Zinc	50.2	---	4.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	

Duplicate (24C0140-DUP1)												
						Prepared: 03/05/24 14:02 Analyzed: 03/06/24 00:07						
QC Source Sample: Non-SDG (A4B1366-02)												
Antimony	ND	---	0.999	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Arsenic	2.08	---	0.999	mg/kg dry	10	---	2.07	---	---	0.4	20%	PRO
Barium	129	---	0.999	mg/kg dry	10	---	127	---	---	2	20%	PRO
Beryllium	0.386	---	0.200	mg/kg dry	10	---	0.380	---	---	2	20%	PRO
Cadmium	0.216	---	0.200	mg/kg dry	10	---	0.213	---	---	1	20%	PRO
Chromium	3.48	---	0.999	mg/kg dry	10	---	3.42	---	---	2	20%	PRO
Cobalt	7.80	---	0.999	mg/kg dry	10	---	7.88	---	---	0.9	20%	PRO
Copper	15.8	---	2.00	mg/kg dry	10	---	16.0	---	---	2	20%	PRO
Lead	29.5	---	0.999	mg/kg dry	10	---	29.3	---	---	0.6	20%	PRO
Mercury	ND	---	0.0800	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Molybdenum	ND	---	0.999	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Nickel	3.52	---	2.00	mg/kg dry	10	---	3.72	---	---	5	20%	PRO
Selenium	ND	---	0.999	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Silver	ND	---	0.200	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Thallium	ND	---	0.200	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Vanadium	88.5	---	2.00	mg/kg dry	10	---	88.6	---	---	0.2	20%	PRO
Zinc	67.5	---	4.00	mg/kg dry	10	---	68.4	---	---	1	20%	PRO

Matrix Spike (24C0140-MS1)												
						Prepared: 03/05/24 14:02 Analyzed: 03/06/24 00:15						
QC Source Sample: Non-SDG (A4B1366-02)												
EPA 6020B												
Antimony	22.0	---	1.03	mg/kg dry	10	25.8	ND	85	75-125%	---	---	PRO
Arsenic	49.9	---	1.03	mg/kg dry	10	51.5	2.07	93	75-125%	---	---	PRO
Barium	178	---	1.03	mg/kg dry	10	51.5	127	99	75-125%	---	---	PRO
Beryllium	24.9	---	0.206	mg/kg dry	10	25.8	0.380	95	75-125%	---	---	PRO
Cadmium	50.2	---	0.206	mg/kg dry	10	51.5	0.213	97	75-125%	---	---	PRO
Chromium	54.3	---	1.03	mg/kg dry	10	51.5	3.42	99	75-125%	---	---	PRO

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0140 - EPA 3051A						Soil						
Matrix Spike (24C0140-MS1)						Prepared: 03/05/24 14:02 Analyzed: 03/06/24 00:15						
QC Source Sample: Non-SDG (A4B1366-02)												
Cobalt	59.8	---	1.03	mg/kg dry	10	51.5	7.88	101	75-125%	---	---	PRO
Copper	69.5	---	2.06	mg/kg dry	10	51.5	16.0	104	75-125%	---	---	PRO
Lead	79.7	---	1.03	mg/kg dry	10	51.5	29.3	98	75-125%	---	---	PRO
Mercury	0.977	---	0.0824	mg/kg dry	10	1.03	ND	95	75-125%	---	---	PRO
Molybdenum	24.8	---	1.03	mg/kg dry	10	25.8	ND	94	75-125%	---	---	PRO
Nickel	56.8	---	2.06	mg/kg dry	10	51.5	3.72	103	75-125%	---	---	PRO
Selenium	23.4	---	1.03	mg/kg dry	10	25.8	ND	91	75-125%	---	---	PRO
Silver	24.2	---	0.206	mg/kg dry	10	25.8	ND	94	75-125%	---	---	PRO
Thallium	24.5	---	0.206	mg/kg dry	10	25.8	ND	95	75-125%	---	---	PRO
Vanadium	141	---	2.06	mg/kg dry	10	51.5	88.6	102	75-125%	---	---	PRO
Zinc	122	---	4.12	mg/kg dry	10	51.5	68.4	104	75-125%	---	---	PRO

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0953 - Total Solids (Dry Weight) - 2022							Soil					
Duplicate (24B0953-DUP1)			Prepared: 02/28/24 09:25 Analyzed: 02/29/24 07:57									
<u>QC Source Sample: Non-SDG (A4B1525-01)</u>												
% Solids	92.5	---	1.00	%	1	---	91.7	---	---	0.8	10%	
Duplicate (24B0953-DUP2)			Prepared: 02/28/24 09:25 Analyzed: 02/29/24 07:57									
<u>QC Source Sample: Non-SDG (A4B1525-02)</u>												
% Solids	83.3	---	1.00	%	1	---	84.5	---	---	1	10%	
Duplicate (24B0953-DUP3)			Prepared: 02/28/24 19:09 Analyzed: 02/29/24 07:57									
<u>QC Source Sample: Non-SDG (A4B1616-09)</u>												
% Solids	91.6	---	1.00	%	1	---	92.3	---	---	0.8	10%	
Duplicate (24B0953-DUP4)			Prepared: 02/28/24 19:09 Analyzed: 02/29/24 07:57									
<u>QC Source Sample: Non-SDG (A4B1616-08)</u>												
% Solids	90.9	---	1.00	%	1	---	90.6	---	---	0.3	10%	
Duplicate (24B0953-DUP5)			Prepared: 02/28/24 19:09 Analyzed: 02/29/24 07:57									
<u>QC Source Sample: Non-SDG (A4B1616-07)</u>												
% Solids	91.8	---	1.00	%	1	---	91.3	---	---	0.5	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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SAMPLE PREPARATION INFORMATION

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24C0239</u>							
A4B1424-02RE1	Soil	EPA 8081B	02/22/24 08:36	02/29/24 04:39	11.03g/10mL	10g/5mL	1.81
A4B1424-02RE2	Soil	EPA 8081B	02/22/24 08:36	02/29/24 04:39	11.03g/10mL	10g/5mL	1.81
A4B1424-04RE1	Soil	EPA 8081B	02/22/24 08:31	02/29/24 04:39	11.87g/10mL	10g/5mL	1.68
A4B1424-04RE2	Soil	EPA 8081B	02/22/24 08:31	02/29/24 04:39	11.87g/10mL	10g/5mL	1.68
A4B1424-08RE1	Soil	EPA 8081B	02/22/24 08:34	02/29/24 04:39	11.49g/10mL	10g/5mL	1.74

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24C0140</u>							
A4B1424-02	Soil	EPA 6020B	02/22/24 08:36	03/05/24 14:02	0.462g/50mL	0.5g/50mL	1.08
A4B1424-04	Soil	EPA 6020B	02/22/24 08:31	03/05/24 14:02	0.479g/50mL	0.5g/50mL	1.04
A4B1424-08	Soil	EPA 6020B	02/22/24 08:34	03/05/24 14:02	0.462g/50mL	0.5g/50mL	1.08

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24B0953</u>							
A4B1424-02	Soil	EPA 8000D	02/22/24 08:36	02/28/24 09:25			NA
A4B1424-04	Soil	EPA 8000D	02/22/24 08:31	02/28/24 09:25			NA
A4B1424-08	Soil	EPA 8000D	02/22/24 08:34	02/28/24 09:25			NA

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ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Table with 3 columns: Client info (GeoEngineers - Portland), Project info (Sunset Drive), and Report ID (A4B1424 - 03 14 24 1742).

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- C-05 Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
PRO Sample has undergone sample processing prior to extraction and analysis.
Q-29 Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.

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GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
---	---	---

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

- " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
- " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
- " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

- For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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ORELAP ID: OR100062

Table with 3 columns: Client info (GeoEngineers - Portland), Project info (Sunset Drive), and Report ID (A4B1424 - 03 14 24 1742).

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Table header with columns: Matrix, Analysis, TNI_ID, Analyte, TNI_ID, Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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ORELAP ID: OR100062

GeoEngineers - Portland 5820 S Kelly Ave Unit B Portland, OR 97239	Project: Sunset Drive Project Number: 06748-006-03 Project Manager: Cris Watkins	Report ID: A4B1424 - 03 14 24 1742
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APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A4B1424

Project/Project #: Sunset Drive #06748-006-03

Delivery Info:
 Date/time received: 2/22/24 @ 1546 By: JS
 Delivered by: Apex Client ESS FedEx UPS Radio Morgan SDS Evergreen Other

Cooler Inspection Date/time inspected: 2/22/24 @ 1547 By: JS
 Chain of Custody included? Yes No
 Signed/dated by client? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>1.2</u>	<u>1.4</u>					
Custody seals? (Y/N)	<u>N</u>	<u>N</u>					
Received on ice? (Y/N)	<u>Y</u>	<u>Y</u>					
Temp. blanks? (Y/N)	<u>N</u>	<u>N</u>					
Ice type: (Gel/Real/Other)	<u>Real</u>	<u>Real</u>					
Condition (In/Out):	<u>In</u>	<u>In</u>					

Cooler out of temp? (Y/N) Possible reason why: _____
 Green dots applied to out of temperature samples? Yes No
 Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 2/22/24 @ 16:03 By: ZAM
 All samples intact? Yes No Comments: _____
ZAM 2/22/24

Bottle labels/COCs agree? Yes No Comments: COC lists Trip blank but no Trip blank was received

COC/container discrepancies form initiated? Yes No
 Containers/volumes received appropriate for analysis? Yes No Comments: Container A6L0-05 is 3/4 full all other containers are 7/8 full

Do VOA vials have visible headspace? Yes No NA
 Comments: _____

Water samples: pH checked: Yes No NA pH appropriate? Yes No NA pH ID: _____
 Comments: _____

Additional information: _____

Labeled by: ZAM Witness: AW Cooler Inspected by: ZAM

Form Y-003 R-01

Apex Laboratories

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ANALYTICAL REPORT

PREPARED FOR

Attn: Darrell Auvil
Apex Laboratories LLC
6700 SW Sandburg St.
Tigard, Oregon 97223
Generated 3/13/2024 10:20:56 AM

JOB DESCRIPTION

A4B1424

JOB NUMBER

570-174186-1

Eurofins Calscience

Job Notes

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Authorization



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Definitions/Glossary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Apex Laboratories LLC
Project: A4B1424

Job ID: 570-174186-1

Job ID: 570-174186-1

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Job Narrative 570-174186-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/28/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Detection Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Client Sample ID: AGL 0-0.5 Replicate

Lab Sample ID: 570-174186-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2,4,5-T	8.8	J	10	3.7	ug/Kg	1	✳	8151A	Total/NA
MCP	23000		10000	6600	ug/Kg	1	✳	8151A	Total/NA

Client Sample ID: AGL 0-0.5

Lab Sample ID: 570-174186-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2,4,5-T	5.1	J p	10	3.7	ug/Kg	1	✳	8151A	Total/NA
MCP	23000		10000	6700	ug/Kg	1	✳	8151A	Total/NA

Client Sample ID: AGL 2-3

Lab Sample ID: 570-174186-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Method: SW846 8151A - Herbicides (GC)

Client Sample ID: AGL 0-0.5 Replicate

Date Collected: 02/22/24 08:36

Date Received: 02/28/24 09:40

Lab Sample ID: 570-174186-1

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	8.8	J	10	3.7	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
2,4,5-TP (Silvex)	ND		10	7.5	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
2,4-D	ND		100	49	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
2,4-DB	ND		100	100	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
Dalapon	ND		250	72	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
Dicamba	ND		10	4.7	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
Dichlorprop	ND		100	49	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
Dinoseb	ND		100	59	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
MCPA	ND		10000	4900	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
MCPP	23000		10000	6600	ug/Kg	☼	03/05/24 18:25	03/12/24 04:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	75		20 - 163				03/05/24 18:25	03/12/24 04:12	1

Client Sample ID: AGL 0-0.5

Date Collected: 02/22/24 08:31

Date Received: 02/28/24 09:40

Lab Sample ID: 570-174186-2

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	5.1	J p	10	3.7	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
2,4,5-TP (Silvex)	ND		10	7.6	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
2,4-D	ND		100	49	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
2,4-DB	ND		100	100	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
Dalapon	ND		250	73	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
Dicamba	ND		10	4.8	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
Dichlorprop	ND		100	50	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
Dinoseb	ND		100	59	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
MCPA	ND		10000	4900	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
MCPP	23000		10000	6700	ug/Kg	☼	03/05/24 18:25	03/12/24 04:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	77		20 - 163				03/05/24 18:25	03/12/24 04:34	1

Client Sample ID: AGL 2-3

Date Collected: 02/22/24 08:34

Date Received: 02/28/24 09:40

Lab Sample ID: 570-174186-3

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		10	3.7	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
2,4,5-TP (Silvex)	ND		10	7.6	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
2,4-D	ND		100	49	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
2,4-DB	ND		100	100	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
Dalapon	ND		250	73	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
Dicamba	ND		10	4.8	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
Dichlorprop	ND		100	50	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
Dinoseb	ND		100	60	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
MCPA	ND		10000	4900	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
MCPP	ND		10000	6700	ug/Kg	☼	03/05/24 18:25	03/12/24 04:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	66	p	20 - 163				03/05/24 18:25	03/12/24 04:56	1

Eurofins Calscience

Surrogate Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (20-163)
570-174186-1	AGL 0-0.5 Replicate	75
570-174186-2	AGL 0-0.5	77
570-174186-3	AGL 2-3	66 p
LCS 570-416978/2-A	Lab Control Sample	88
LCSD 570-416978/3-A	Lab Control Sample Dup	77

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (20-163)
MB 570-416978/1-A	Method Blank	62

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

QC Sample Results

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 570-416978/1-A
Matrix: Solid
Analysis Batch: 418923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 416978

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		10	3.7	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
2,4,5-TP (Silvex)	ND		10	7.5	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
2,4-D	ND		100	49	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
2,4-DB	ND		100	100	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
Dalapon	ND		250	72	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
Dicamba	ND		10	4.7	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
Dichlorprop	ND		100	49	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
Dinoseb	ND		100	59	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
MCPA	ND		10000	4900	ug/Kg		03/05/24 15:00	03/12/24 02:43	1
MCPP	ND		10000	6600	ug/Kg		03/05/24 15:00	03/12/24 02:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	62		20 - 163	03/05/24 15:00	03/12/24 02:43	1

Lab Sample ID: LCS 570-416978/2-A
Matrix: Solid
Analysis Batch: 418923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,5-T	20.0	22.18		ug/Kg		111	26 - 180
2,4,5-TP (Silvex)	20.0	14.61		ug/Kg		73	10 - 180
2,4-D	200	209.3	p	ug/Kg		105	13 - 180
2,4-DB	200	133.1		ug/Kg		67	10 - 180
Dalapon	500	385.7		ug/Kg		77	10 - 176
Dicamba	20.0	15.49		ug/Kg		77	21 - 164
Dichlorprop	200	204.6		ug/Kg		102	10 - 175
Dinoseb	100	ND		ug/Kg		54	10 - 180
MCPA	20000	30440		ug/Kg		152	22 - 180
MCPP	20000	17220		ug/Kg		86	18 - 180

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid	88		20 - 163

Lab Sample ID: LCSD 570-416978/3-A
Matrix: Solid
Analysis Batch: 418923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 416978

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
2,4,5-T	20.0	20.48		ug/Kg		102	26 - 180	8	40
2,4,5-TP (Silvex)	20.0	13.78		ug/Kg		69	10 - 180	6	40
2,4-D	200	201.9		ug/Kg		101	13 - 180	4	40
2,4-DB	200	126.0		ug/Kg		63	10 - 180	5	40
Dalapon	500	379.9		ug/Kg		76	10 - 176	1	40
Dicamba	20.0	14.90		ug/Kg		75	21 - 164	4	40
Dichlorprop	200	153.7		ug/Kg		77	10 - 175	28	40
Dinoseb	100	ND		ug/Kg		52	10 - 180	4	40
MCPA	20000	27250		ug/Kg		136	22 - 180	11	40
MCPP	20000	16420		ug/Kg		82	18 - 180	5	40

Eurofins Calscience

QC Sample Results

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Method: 8151A - Herbicides (GC) (Continued)

<i>Surrogate</i>	<i>LCS D</i>	<i>LCS D</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
2,4-Dichlorophenylacetic acid	77		20 - 163

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QC Association Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

GC Semi VOA

Prep Batch: 416978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-174186-1	AGL 0-0.5 Replicate	Total/NA	Solid	8151A	
570-174186-2	AGL 0-0.5	Total/NA	Solid	8151A	
570-174186-3	AGL 2-3	Total/NA	Solid	8151A	
MB 570-416978/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 570-416978/2-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 570-416978/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	

Analysis Batch: 418923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-174186-1	AGL 0-0.5 Replicate	Total/NA	Solid	8151A	416978
570-174186-2	AGL 0-0.5	Total/NA	Solid	8151A	416978
570-174186-3	AGL 2-3	Total/NA	Solid	8151A	416978
MB 570-416978/1-A	Method Blank	Total/NA	Solid	8151A	416978
LCS 570-416978/2-A	Lab Control Sample	Total/NA	Solid	8151A	416978
LCSD 570-416978/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	416978

Lab Chronicle

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Client Sample ID: AGL 0-0.5 Replicate

Lab Sample ID: 570-174186-1

Date Collected: 02/22/24 08:36

Matrix: Solid

Date Received: 02/28/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			50.81 g	5 mL	416978	03/05/24 18:25	CR	EET CAL 4
Total/NA	Analysis	8151A		1	1 mL	1 mL	418923	03/12/24 04:12	UJ3K	EET CAL 4
Instrument ID: GC41										

Client Sample ID: AGL 0-0.5

Lab Sample ID: 570-174186-2

Date Collected: 02/22/24 08:31

Matrix: Solid

Date Received: 02/28/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			50.11 g	5 mL	416978	03/05/24 18:25	CR	EET CAL 4
Total/NA	Analysis	8151A		1	1 mL	1 mL	418923	03/12/24 04:34	UJ3K	EET CAL 4
Instrument ID: GC41										

Client Sample ID: AGL 2-3

Lab Sample ID: 570-174186-3

Date Collected: 02/22/24 08:34

Matrix: Solid

Date Received: 02/28/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			50.07 g	5 mL	416978	03/05/24 18:25	CR	EET CAL 4
Total/NA	Analysis	8151A		1	1 mL	1 mL	418923	03/12/24 04:56	UJ3K	EET CAL 4
Instrument ID: GC41										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4175	02-03-25
Washington	State	C916-18	10-11-24

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Method Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	EET CAL 4
8151A	Extraction (Herbicides)	SW846	EET CAL 4

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494



Sample Summary

Client: Apex Laboratories LLC
Project/Site: A4B1424

Job ID: 570-174186-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-174186-1	AGL 0-0.5 Replicate	Solid	02/22/24 08:36	02/28/24 09:40
570-174186-2	AGL 0-0.5	Solid	02/22/24 08:31	02/28/24 09:40
570-174186-3	AGL 2-3	Solid	02/22/24 08:34	02/28/24 09:40

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SUBCONTRACT ORDER

Apex Laboratories

AS 2/27/24 A4B1424

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Eurofins_CalScience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone : (714) 895-5494
Fax: (714) 894-7501

AAW

Sample Name: AGL 0-0.5 Replicate **Soil** **After Processing**
Sampled: 02/22/24 08:36 (A4B1424-02)

Analysis	Due	Expires	Comments
8151A Herbicides (SUB) <i>Containers Supplied:</i> (B)4 oz Glass Jar	03/06/24 17:00	03/07/24 08:36	Eurofins Calscience

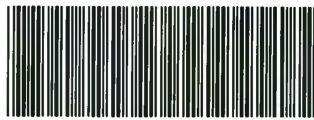
Sample Name: AGL 0-0.5 **Soil** **After Processing**
Sampled: 02/22/24 08:31 (A4B1424-04)

Analysis	Due	Expires	Comments
8151A Herbicides (SUB) <i>Containers Supplied:</i> (B)4 oz Glass Jar	03/06/24 17:00	03/07/24 08:31	Eurofins Calscience

Sample Name: AGL 2-3 **Soil** **After Processing**
Sampled: 02/22/24 08:34 (A4B1424-08)

Analysis	Due	Expires	Comments
8151A Herbicides (SUB) <i>Containers Supplied:</i> (B)4 oz Glass Jar	03/06/24 17:00	03/07/24 08:34	Eurofins Calscience

Standard JAT



570-174186 Chain of Custody

Loc: 570
174186

Released By *WAD* *2/27/24* Date **Fed Ex (Shipper)** Received By **Fed Ex (Shipper)** Date

Released By **Fed Ex (Shipper)** Date Received By *CA* *2/29/24* *0940* Date

Released By Date Received By *2-4* */* *2-4* *sc12* Date

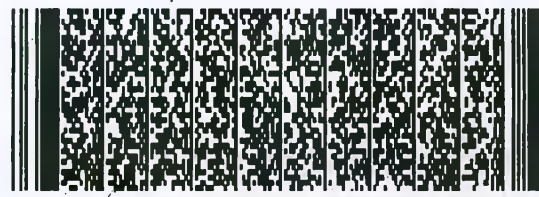
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CA-05 SNA
92780

WZ DTHA

TRK# 7753 3898 8241
WED - 28 FEB 10:30A
PRIORITY OVERNIGHT



5833619489A63

TO DANIELLE GONSMAN
EUROFINS CALSCIENCE
2841 DOW AVENUE
SUITE 100
TUSTIN CA 92780
REF: (714) 895-5494
INV: (714) 895-5494
PO: (714) 895-5494

ORIGIN ID: BNOA (503) 718-2323
APEX LABS
APEX LABORATORIES
6700 SW SANDBURG ST.
TIGARD, OR 97223
UNITED STATES US
SHIP DATE: 27FEB24
ACTWGT: 24.00 LB
CAD: 4716258/NET4535
DIMS: 16x17x14 IN
BILL SENDER



570-174186 Waybill

Login Sample Receipt Checklist

Client: Apex Laboratories LLC

Job Number: 570-174186-1

Login Number: 174186

List Source: Eurofins Calscience

List Number: 1

Creator: Thompson, Lori

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This appendix provides information to help you manage your risks with respect to the use of this report. Please confer with GeoEngineers if you need to know more about how these “Report Limitations and Guidelines for Use” apply to your project or property.

Read These Provisions Closely

It is important to recognize that the environmental engineering and geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce the risk of misunderstandings or unrealistic expectations that lead to disappointments, claims and disputes.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

GeoEngineers has performed this herbicide and pesticide sampling for the Sunset Drive Mixed Use Development in general accordance with the scope and limitations of our proposal, dated November 15, 2022. This report has been prepared for the exclusive use of J.T. Smith. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

GeoEngineers structures its services to meet the specific needs of its clients. For example, an ESA study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and property. Use of this report is not recommended for any purpose or project other than as expressly stated in this report.

This Environmental Report Is Based on a Unique Set of Project-Specific Factors

This report has been prepared for Sunset Drive Mixed Use Development located at 3801 Sunset Drive in Forest Grove, Oregon. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this Project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important project changes were made.

¹ Developed based on material provided by GBA, GeoProfessional Business Association; www.geoprofessional.org.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations in the context of such changes. Based on that review, we then can provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed upon Project scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in our scope of service, this report does not provide any geotechnical findings, conclusions, or recommendations, including but not limited to, the suitability of subsurface materials for construction purposes.

Do Not Separate Documentation from the Report

Environmental reports often include supplemental documentation, such as maps, figures and table. Do not separate such documentation from the report. Further, do not, and do not permit any other party to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.

Environmental Regulations Change and Evolve

Some substances may be present in the vicinity of the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substances, change or if more stringent environmental standards are developed in the future.

Uncertainty Remains Even After This Phase I ESA Study is Completed

Performance of a Phase I ESA study is intended to reduce uncertainty regarding the potential for recognized environmental conditions (RECs) in connection with a property, but no ESA can wholly eliminate that uncertainty. The potential always remains that this Phase I ESA might not identify some areas with contamination that exist at the property or in the study area. Further evaluation to reduce uncertainty regarding potential unidentified contamination would require additional research, subsurface exploration, sampling and/or testing.

Site Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by events such as a change in property use or occupancy, by new information or technology that becomes available subsequent to the report date, or by natural events, such as floods, earthquakes, slope instability or groundwater fluctuations. Please contact GeoEngineers before applying this report for its intended purpose so that GeoEngineers may evaluate whether changed conditions affect the continued reliability of the report.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other properties or for other on-site uses of the affected soil and/or groundwater. Note that hazardous substances may be present in some of the on-site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject property or reuse of the affected soil or groundwater on-site to evaluate the potential for associated environmental liabilities. GeoEngineers will not assume responsibility for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject property to another location, or the reuse of such soil and/or groundwater on-site in any instances that we did not recommend, know of, or control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the subject property. site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions throughout the property. Actual subsurface conditions may differ significantly from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design documents. Only photographic or electronic reproduction that preserves the entire original boring log is acceptable, but separating logs from the report can increase the risk of potential misinterpretation.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.

