



Stantec Consulting Services Inc.
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Portland OR 97204-3128

March 30, 2023

Project/File: 185705769

Ryan Webb, Engineering and Planning Manager

Confederated Tribes of Grand Ronde
9615 Grand Ronde Road
Grand Ronde, Oregon 97347

Dear Mr. Webb:

Reference: Tumwater Village - UST Assessment Phase 1 Activities and Findings

The purpose of this letter is to summarize Underground Storage Tank (UST) Assessment Phase 1 activities completed by Stantec Consulting Services Inc. (Stantec) at the Tumwater Village property located at 427 Main Street in Oregon City, Oregon (the "Property," **Figures 1 and 2**). UST Assessment Phase 1 activities were completed on behalf of the Confederated Tribes of Grande Ronde (CTGR) in accordance with Stantec's Site-Specific Sampling and Analysis Plan (SSSAP), Revision 1 – UST Assessment/Removal, dated October 24, 2022. The SSSAP was approved by the Oregon Department of Environmental Quality (DEQ) on October 25, 2022. Approval of the SSSAP by the US Environmental Protection Agency (EPA) was not sought or received as CTGR is self-funding UST Assessment Phase 1 activities.

UST Assessment Phase 1 activities were completed by BB&A Environmental (BB&A), a DEQ-licensed UST service provider, under the direction of Stantec. All work described herein was completed in accordance with the generic Quality Assurance Project Plan (QAPP) prepared for CTGR's EPA Brownfield Community Wide Assessment Grant Project (Cooperative Agreement Number BF-01J99101). The QAPP was approved by the DEQ on May 17, 2022 and the by the EPA on May 23, 2022.

UST Assessment Phase 1 Objectives

UST Assessment Phase 1 activities completed at the Property in January 2023 were intended to confirm the presence, size, approximate volume, and type of contents of each of five suspected USTs identified in two separate locations during a 2017 geophysical survey. A copy of the geophysical survey report was provided in Appendix A of the SSSAP.

Pre-Field Activities

Hazard analysis specific to UST Assessment Phase 1 activities was completed by Stantec and included in the site-specific health and safety plan (HASP) generated for the project. All workers on-site were required to attend and participate in a daily safety "tailgate" safety meeting prior to commencement of any activities at the Property. In addition, BB&A prepared a separate HASP for hazard analysis specific to the UST Service Provider's scope of work.

Prior to any intrusive subsurface work at the Property, Stantec and BB&A contacted the Oregon Utility Notification Center and requested a utility locate for the proposed work areas.

Reference: Tumwater Village UST Assessment Phase 1 Activities and Findings

An inadvertent discovery plan (IDP) was prepared by CTGR to establish protocols and processes in the event of encountering any potential cultural resource and/or material during investigation activities at the Property (**Appendix A**). Further, an archaeological excavation permit application was submitted to the Oregon State Historic Preservation Office (SHPO). SHPO issued archaeological excavation permit AP-3556 for the project on January 13, 2023.

UST Assessment Activities and Findings

The following subsections describe work completed at the Property during UST Assessment Phase 1 activities in the Building 16 Area and the Former Building 21 Area (**Figure 3**).

Subsurface Mapping Survey

On January 10, 2023, Pacific Geophysics completed a subsurface mapping survey (SMS) in the suspected UST locations using a combination of magnetic surveys and ground penetrating radar (GPR). A single magnetic anomaly resembling an UST was identified in the Building 16 Area and four magnetic anomalies were identified in the Former Building 21 Area (photographs 1 and 2, **Appendix B**). The magnetic anomalies were additionally mapped with GPR and appeared to confirm the presence of the USTs.

UST Daylighting

Following completion of the SMS, concrete overlying the two suspected UST locations was sawcut in preparation for daylighting activities. Concrete thickness in the Building 16 Area was approximately 1 foot. Concrete thickness in the Former Building 21 Area was approximately 8 inches.

Stantec and BB&A remobilized to the Property on January 17, 2023 to complete UST Assessment Phase 1 activities. An excavator operated by BB&A personnel was used to remove and stockpile concrete and soil overlying the suspected UST locations. Temporarily stockpiled materials were placed on plastic sheeting during the assessment activities. Following assessment, all excavated soil and concrete debris was returned to the excavations.

Building 16 Area: Results of the January 10, 2023 SMS indicated that the top of the suspected Building 16 Area UST was approximately 3 feet below ground surface (bgs); however, a test pit advanced to approximately 5 feet bgs in this location did not encounter an UST or evidence of a former UST in this location. Lithology of subsurface materials in the Building 16 Area consisted of gravelly fill material up to 4.5 feet bgs, underlain by poorly sorted fine sand to 5 feet bgs, the maximum depth explored during this assessment (photographs 3 and 4, **Appendix B**). False positive readings generated by the geophysical survey equipment may be due to interference caused by: 1) the rebar reinforcement pattern in the concrete, and/or 2) several broken pieces of large-diameter metallic pipe present within the gravel fill at approximately 3 feet bgs.

Former Building 21 Area: The SMS initially indicated the presence of four USTs in the Former Building 21 Area (photograph 2, **Appendix B**); however, after removing concrete and soil overburden, two buried railroad tanker cars were found in the Former Building 21 Area (photographs 6 and 7, **Appendix B**). The rail cars were buried side-by-side and positioned in a north-northeast and south-southwest orientation (**Figures 3 through 5**). The western UST appeared almost full of liquid and the eastern UST appeared approximately half full of liquid - a mixture of water and bunker C-like oil (photographs 8 and 9, **Appendix**

Reference: Tumwater Village UST Assessment Phase 1 Activities and Findings

B). Based on UST dimensions, the western UST contained approximately 12,400 gallons of oil/water mixture and the eastern UST contained approximately 6,200 gallons of liquid.

A concrete skirt was present across the top of both USTs at the mid-line of the tanks, and an approximate 16-inch diameter opening was present in the middle of each tank at the location of the concrete skirt (photograph 6, **Appendix B**). The majority of soil overlying the Former Building 21 Area USTs did not appear discolored and did not exhibit a petroleum odor in the field; however, black discolored soil exhibiting a petroleum odor was observed surrounding the opening in the middle of the western UST.

Archaeological Monitoring

No archaeological objects demonstrably revered by an ethnic group, religious group, or Indian Tribe as holy, or used in connection with a religious or spiritual service or worship of a deity or spirit power (e.g., a sacred object) were observed during project activities.

Sample Collection

One soil sample was collected from the terminal depth of the test pit advanced in the Building 16 Area at a depth of 5 feet bgs. The Building 16 Area soil sample was submitted to Apex Labs for analysis of:

- Diesel- and Residual-Range Organics (DRO and RRO); and
- Resource Conservation and Recovery Act (RCRA) metals¹.

Two overburden soil samples were collected from material overlying the USTs in the Former Building 21 Area, one sample of soils not exhibiting field indications of contamination ("Building 21 – overburden") and one soil sample of the discolored soil observed surrounding the opening on the western UST ("Building 21 – impacted overburden"). The samples were submitted to Apex Labs for analysis of:

- Gasoline-Range Organics (GRO);
- DRO and RRO;
- Volatile Organic Compounds (VOCs);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Polychlorinated Biphenyls (PCBs); and/or
- Total cadmium, chromium, and lead.

In addition, one sample of the contents of each of the Former Building 21 Area USTs was collected during the assessment. These two samples were submitted to Apex Labs for analysis of DRO and PCBs. Analytical results of the contents of the two Former Building 21 Area USTs will be used to generate a waste disposal profile prior to UST decommissioning by removal.

¹ Eight RCRA Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver

Reference: Tumwater Village UST Assessment Phase 1 Activities and Findings

Laboratory Analytical Results

Analytical results for the three soil samples collected during this UST assessment are summarized in **Tables 1** through **4**. Laboratory analytical reports for soil and UST content samples are included in **Appendix C**.

Analytical data for the soil sample collected from the Building 16 Area contained detectable concentrations of RRO and metals; however, all reported concentrations were below DEQ clean fill and potentially applicable risk-based concentration (RBC) screening values.

Overburden soil samples collected in the Former Building 21 Area indicated off-site disposal of soil at a RCRA Subtitle D (solid waste) landfill is necessary due to detected concentrations of lead and a polycyclic aromatic hydrocarbons (PAHs) above DEQ clean fill screening values. Toxicity Leaching Characteristic Procedure (TCLP) analysis of lead in both soil samples collected from the Former Building 21 area did not indicate the soil is a characteristic hazardous waste.

PAHs in the Former Building 21 Area exceed potentially applicable DEQ RBC screening values indicating that soil remediation may be necessary to protect human health and/or the environment in this area.

Samples collected from the USTs contained concentrations of DRO of 40.8 micrograms per liter (µg/L) and 357,000 mg/kg for the water and product samples, respectively. RRO and PCBs were not detected in the UST content samples.

Data Validation

The laboratory analytical data were validated in accordance with the Master QAPP for the project. No data was rejected, and all data were deemed acceptable for their intended use, with the qualifiers indicated in data summary **Tables 1** through **4**. A Data Validation Summary Report is provided in **Appendix D**.

Conclusions

Principal findings of the UST Assessment Phase 1 are summarized below:

- No UST was identified in the Building 16 Area. Moreover, the soil sample collected from 5 feet bgs in this area did not indicate the presence of soil contamination requiring remedial action or special handling during Property redevelopment.
- The Former Building 21 Area UST system consisted of two railroad tanker cars buried side-by side. No evidence of other UST system components (e.g. piping) was observed. Dimensions of each UST were 8 feet in diameter and 33 feet in length. Interior visual inspection indicated both USTs contained a mixture of primarily water and a small quantity of oil.
 - Total volume of liquids contained in both USTs is approximately 18,600 gallons. Liquid samples of the UST contents indicate their suitability for recycling.
 - Petroleum-impacted overburden soil is present overlying both USTs. Concentrations of lead and PAHs in overburden samples indicate that: 1) any soil excavated from this area must be disposed

Reference: Tumwater Village UST Assessment Phase 1 Activities and Findings

off-site; and 2) measures to mitigate risk of exposure to overburden soil in this area may be required to protect human health and/or the environment.

- Soil boring GP10 advanced during a 2017 focused subsurface investigation conducted by Maul Foster Alongi indicated that depth to bedrock near the southern extent of the USTs is approximately 14 feet bgs. Based on the diameter and depth of the USTs, up to 4.5 feet of petroleum-impacted soil may be present beneath these USTs overlying the bedrock surface. These Property conditions are depicted in **Figure 4**.

These findings will be utilized to develop a UST decommissioning plan in the Former Building 21 Area. Following all UST decommissioning activities, Stantec will provide DEQ with a summary of remedial actions completed to update the DEQ Leaking UST file #03-18-0364 for the Property.

Regards,

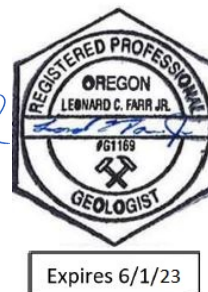
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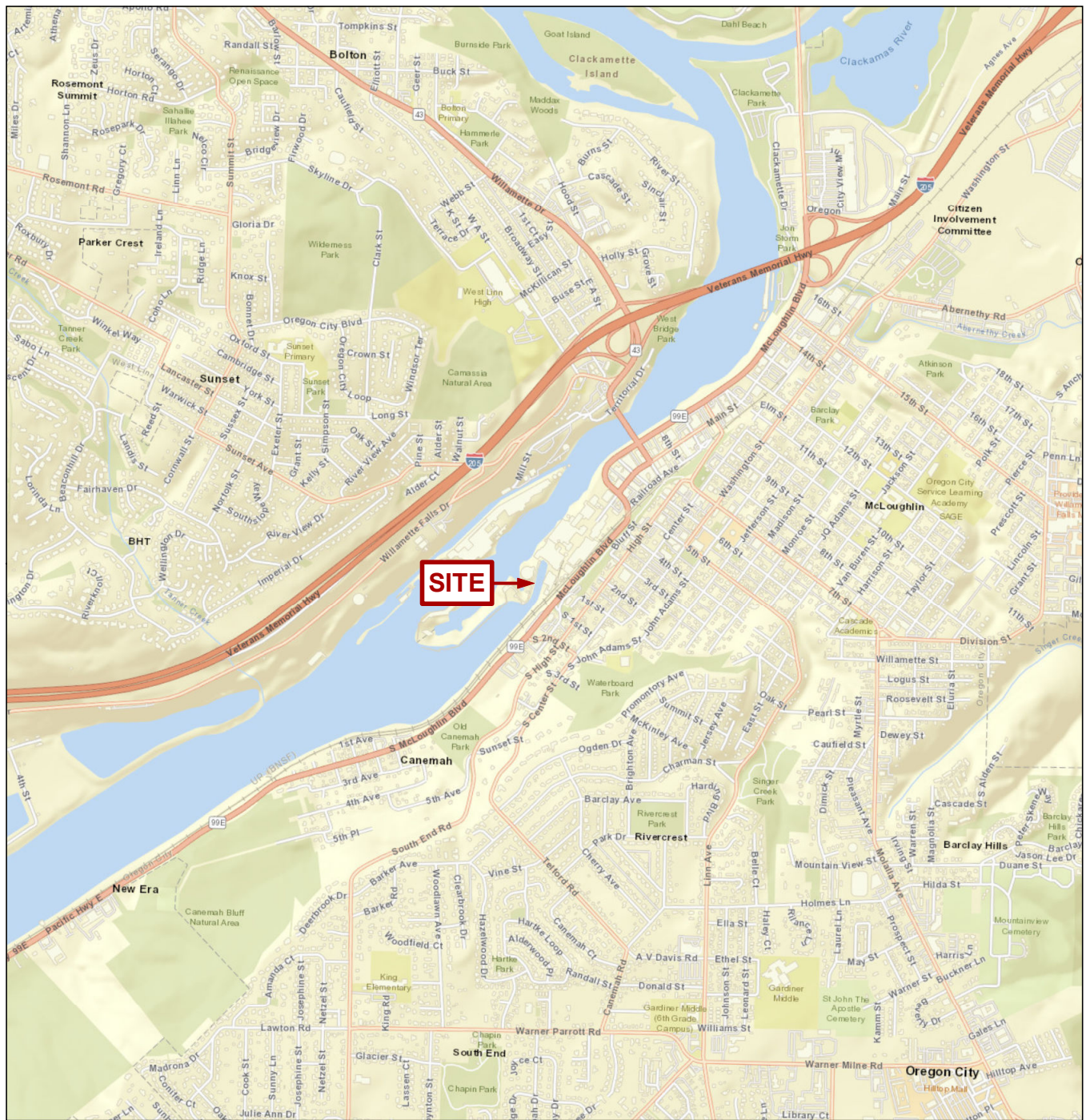
Attachments: Figure 1: Property Location Map
Figure 2: Property Layout Map
Figure 3: Project Area Layout Map
Figure 4: Building 21 Area Cross-Section A-A'

Table 1: Soil Sample Analytical Results – Petroleum Hydrocarbons and Volatile Organic Compounds
Table 2: Soil Sample Analytical Results – Polycyclic Aromatic Hydrocarbons
Table 3: Soil Sample Analytical Results – Polychlorinated Biphenyls
Table 4: Soil Sample Analytical Results – Metals

Appendix A: Inadvertent Discovery Plan
Appendix B: Photographic Log
Appendix C: Laboratory Report
Appendix D: Data Validation Report

FIGURES

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(At original document size of 8.5x11)



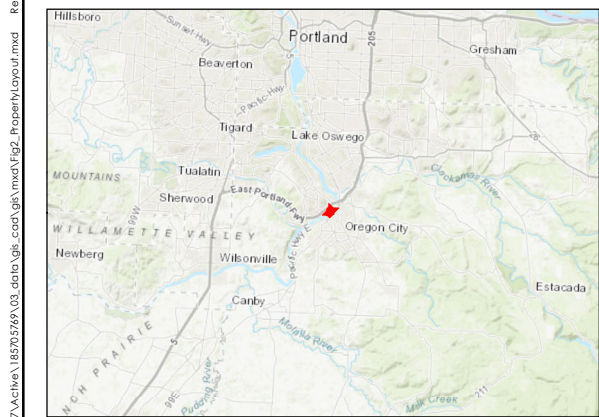
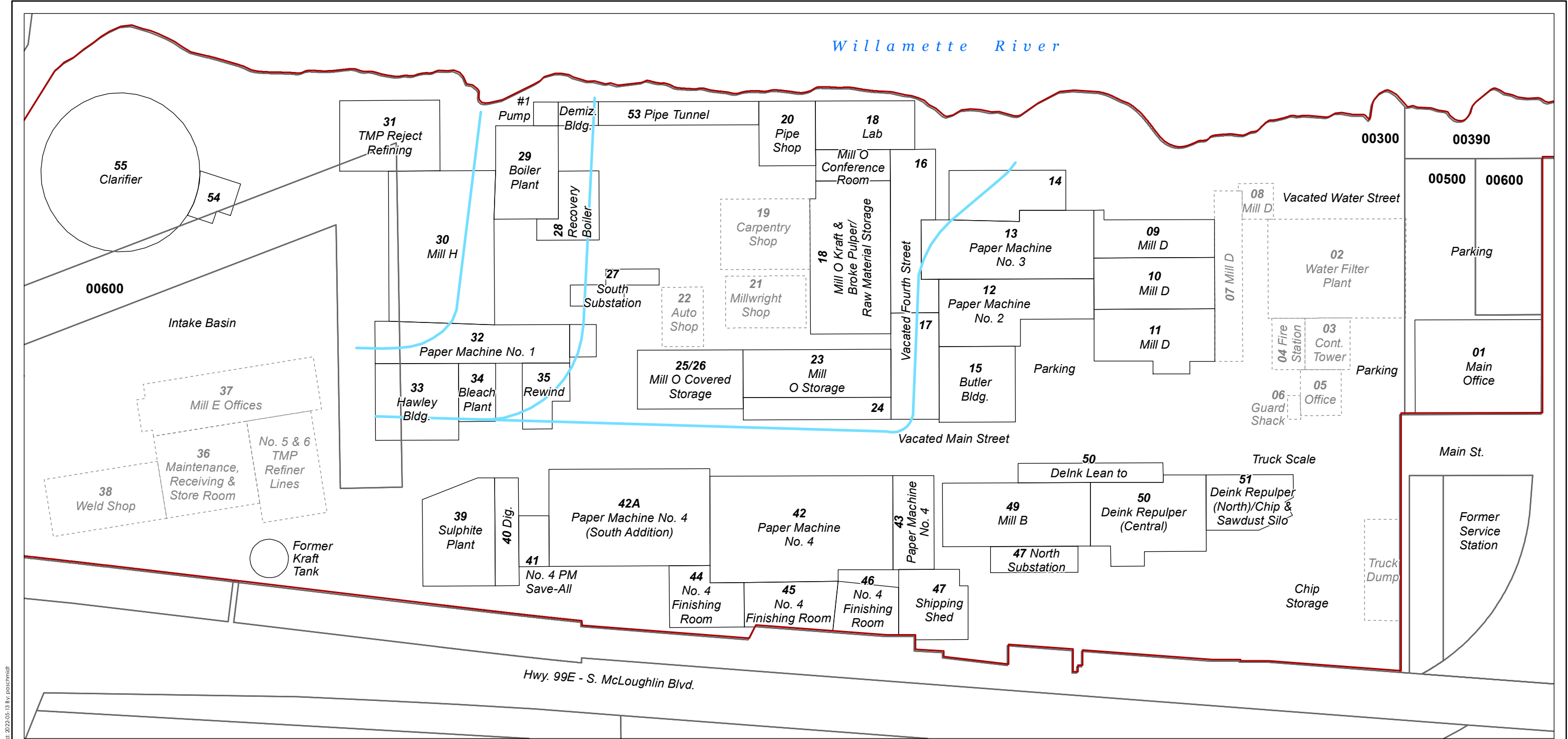
Project Location Prepared by PG on 2022-03-31
419 - 427 Main Street
Oregon City, Oregon TR by LF on 2022-03-31

Client/Project
Confederated Tribes of Grand Ronde
Former Blue Heron Mill Property
UST Assessment Phase 1 Report

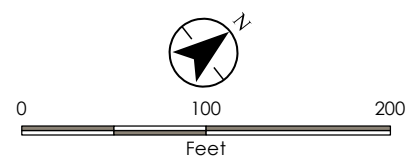
Figure 1

Title
Property Location Map

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- Site Boundary
- Demolished
- Extant
- Tailrace (approximate)
- Tax Lot

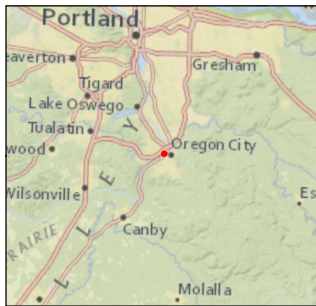
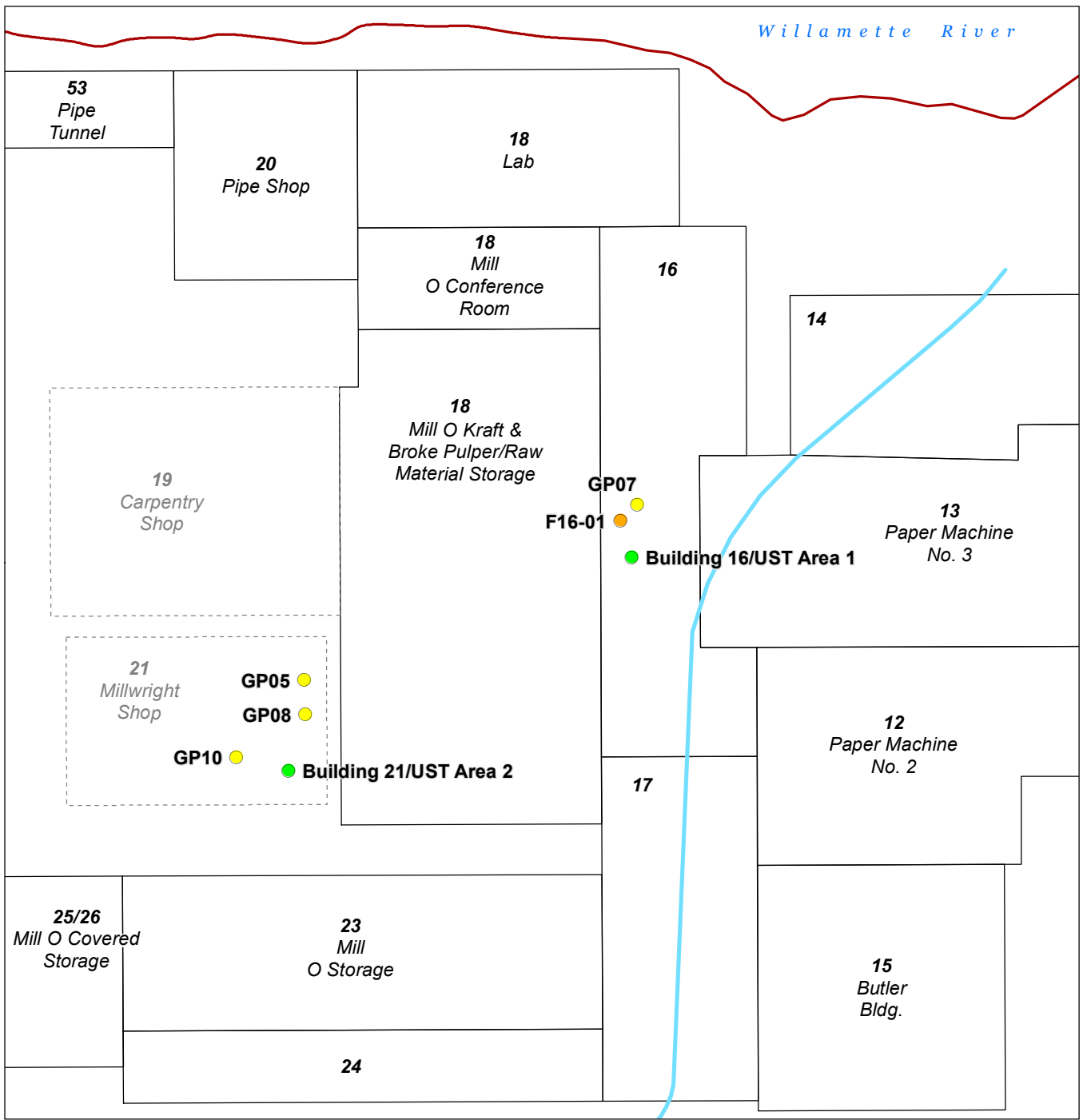


Project Location: Oregon City, Oregon
Prepared by PG on 2022-03-31
TR by LF on 2022-03-31

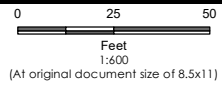
Client/Project: Confederated Tribes of Grand Ronde
Former Blue Heron Mill Property
UST Assessment Phase 1 Report

Figure No.: 2
Title: Property Layout Map

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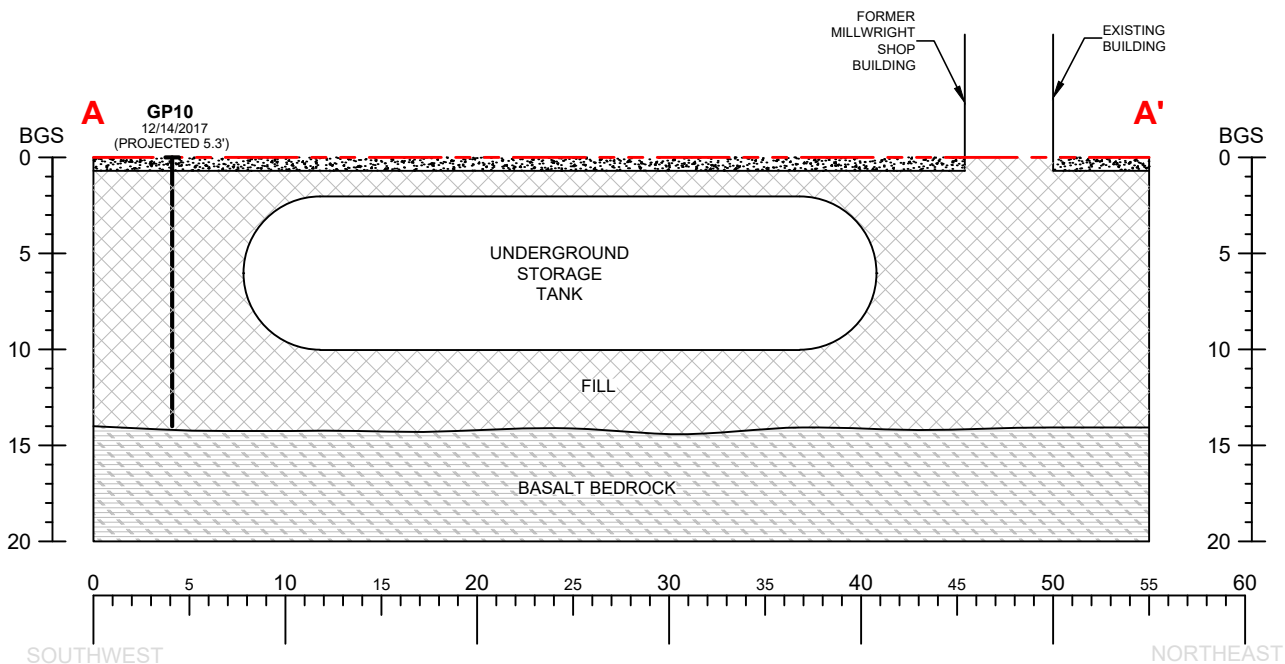
- Site Boundary
- Demolished
- Extant
- UST Location
- 2012 Sample Location (ERM)
- 2017 Sample Location (MFA)
- Tailrace (approximate)



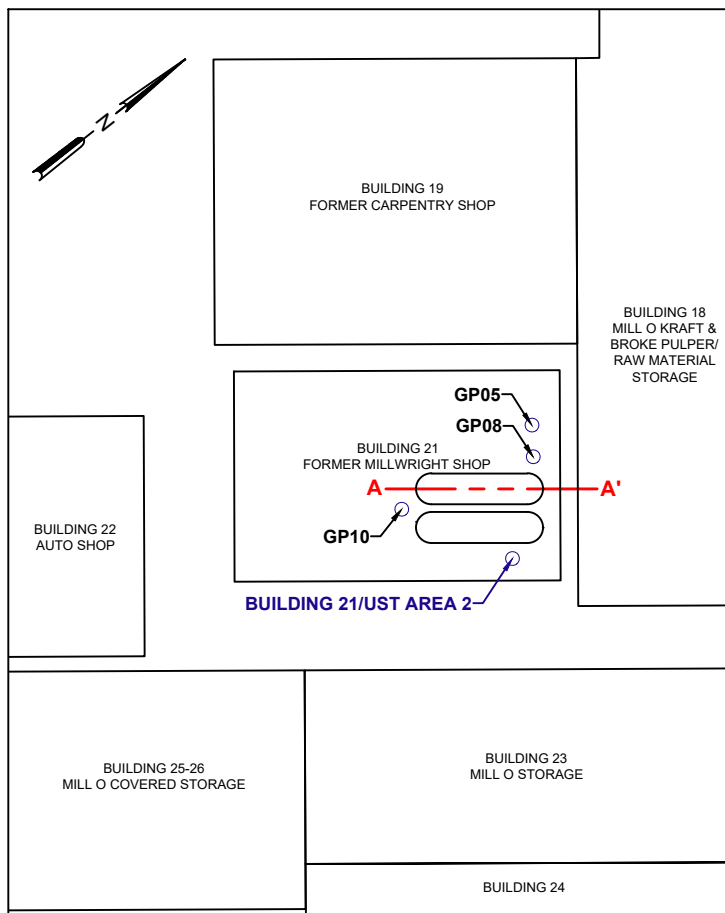
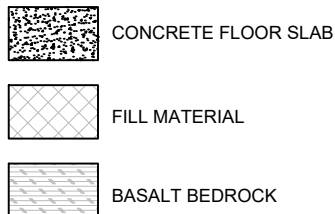
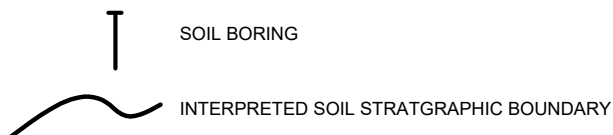
Project Location 419 - 427 Main Street Oregon City, Oregon Prepared by PG on 2022-03-31 TR by LF on 2022-03-31

Client/Project Confederated Tribes of Grand Ronde Former Blue Heron Mill Property UST Assessment Phase 1 Report

Figure 3
Title
Project Area Layout Map



LEGEND:



CROSS-SECTION LOCATION MAP
SCALE: 1" = 50'

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APPROXIMATE SCALE IN FEET



601 SW SECOND AVENUE, SUITE 1400
PORTLAND, OR 97204-3128
PHONE: 503-226-7377 FAX: 503-226-0023

FOR:

FORMER BLUE HERON MILL PROPERTY
419-427 MAIN STREET
OREGON CITY, OREGON

CROSS-SECTION A-A'

FIGURE:

4

JOB NUMBER:
185705769

DRAWN BY:
CRJ

CHECKED BY:
BM

APPROVED BY:
LF

DATE:
03/29/2023

TABLES

TABLE 1
Soil Sample Analytical Results - Petroleum Hydrocarbons and Volatile Organic Compounds
Tumwater Village - UST Assessment Phase 1
427 Main Street, Oregon City, Oregon

Sample ID	Date Sampled	NWTPH-Gx (Gasoline)	NWTPH-Dx (Diesel)	NWTPH-Dx (Residual Oil)	1,2,4- Trimethylbenzene	O-Xylene	4-Isopropylbenzene	Naphthalene
Building 16 - 5'	1/17/2023	--	22.3 U	358 J+	--	--	--	--
Building 21 - Overburden	1/17/2023	6.03 U	443 U	1,520	0.0603 U	0.0301 U	0.0603 U	0.121 U
Building 21 - Impacted Overburden	1/17/2023	55.2	2,250 U	6,770	104	0.0468	0.066	0.884
Clean Fill Screening Value		31	1,100	NA	10	1	96	0.077
Urban Residential Direct Contract RBC		2,500	2,200	NA	860	2,900	7,000	25
Occupational Direct Contract RBC		20,000	14,000	NA	6,900	25,000	57,000	23
Construction Worker Direct Contact RBC		9,700	4,600	NA	2,900	20,000	27,000	580
Excavation Worker Direct Contact RBC		>Max	>Max	NA	81,000	560,000	750,000	16,000
Urban Residential Vapor Intrusion into Buildings RBC		94	>Max	NA	140	160	>Csat	15
Occupational Vapor Intrusion into Buildings RBC		>Max	>Max	NA	>Csat	>Csat	>Csat	83

Notes:

All results expressed as milligrams per kilogram

Volatile organic compound results not included in this table were non-detect for all samples analyzed

bold = indicates concentrations detected above method reporting limits

-- = Not analyzed

shaded gray = indicates concentration exceeds clean fill screening value

highlighted yellow = indicates concentration exceeds one or more potentially applicable RBCs

>Max = Substance is deemed not to pose a risk at any concentration

NA = Not Available, no screening value is listed for this analyte.

>Csat = This soil RBC exceeds the limit of three-phase partitioning. Soil concentrations in excess of Csat indicate that free product might be present.

J = The result is an estimated value; "+" indicates a potential high bias

U = Not detected, the associated value is the method detection limit

Clean Fill Screening Values, Oregon DEQ April 2019 revision

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 2
Soil Sample Analytical Results - Polycyclic Aromatic Hydrocarbons
Tumwater Village - UST Assessment Phase 1
427 Main Street, Oregon City, Oregon

Sample ID	Date Sampled	1-Methyl-naph-thalene	2-Methyl-naph-thalene	Anthra-cene	Acenaph-thene	Acenaph-thylene	Benzo[a]-anthra-cene	Benzo[a]-pyrene	Benzo[b]-fluoran-thene	Benzo [g,h,i]-perylene	Benzo[k]-fluoran-thene	Chrysene	Dibenz [a,h]-anthracene	Indeno[1,2,3-cd]-pyrene	Fluoran-thene	Fluorene	Naph-thalene	Dibenzo-furan	Phenan-threne	Pyrene	Benzo[a]-pyrene TEQ
Building 16 - 5'	1/17/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Building 21 - Overburden	1/17/2023	0.0821 J	0.113 J	0.723 J	0.222 J	0.509 J	2.01 J	3.05 J	3.39 J	2.50 J	1.16 J	3.36 J	0.360 J	2.51 J	5.59 J	0.247 J	0.354 J	0.762 J	4.83 J	6.41 J	4.2
Building 21 - Impacted Overburden	1/17/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Clean Fill Screening Value		NA	NA	6.8	0.25	120	0.73	0.11	1.1	NA	11	3.1	1.1	1.1	10	3.7	0.077	0.002	5.5	10	0.11
Urban Residential Direct Contract RBC		NA	NA	47,000	9,400	NA	2.5	0.25	2.5	NA	25	250	2.5	2.5	4,800	6,300	25	NA	NA	3,600	0.25
Occupational Direct Contract RBC		NA	NA	350,000	70,000	NA	21	2.1	21	NA	210	2,100	2.1	21	30,000	47,000	23	NA	NA	23,000	2.1
Construction Worker Direct Contact RBC		NA	NA	110,000	21,000	NA	170	17	170	NA	1,700	17,000	17	170	10,000	14,000	580	NA	NA	7,500	17
Excavation Worker Direct Contact RBC		NA	NA	>Max	590,000	NA	4,800	490	4,900	NA	49,000	490,000	490	4,900	280,000	390,000	16,000	NA	NA	210,000	490
Occupational Volatilization to Outdoor Air RBC		NA	NA	>Max	>Max	NA	NA	NA	NA	NA	NV	NA	NV	NV	NA	>Max	83	NA	NA	NA	NA
Occupational Vapor Intrusion into Buildings RBC		NA	NA	>Max	>Max	NA	NA	NA	NA	NA	NV	NA	NV	NV	NA	>Max	83	NA	NA	NA	NA
Occupational Leaching to Groundwater RBC		NA	NA	>S	>S	NA	>S	>S	>S	NA	>S	>S	>S	>S	>S	>S	0.34	NA	NA	>S	>S

Notes:

All results expressed as milligrams per kilogram

bold = indicates concentrations detected above method reporting limits

highlighted yellow = indicates concentration exceeds background and one or more potentially applicable RBCs

>Max = Substance is deemed not to pose a risk at any concentration

>S = This soil RBC exceeds the limit of three-phase partitioning. Soil concentrations in excess of Csat indicate that free product might be present.

NA = Not Available, no screening value is listed for this analyte.

TEQ = Toxic Equivalence Quotient

J = The result is an estimated value.

U = Not detected, the associated value is the method reporting limit

Clean Fill Screening Values, Oregon DEQ April 2019 revision

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 3
Soil Sample Analytical Results - Polychlorinated Biphenyls
Tumwater Village - UST Assessment Phase 1
427 Main Street, Oregon City, Oregon

Sample ID	Date Sampled	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
Building 16 - 5'	1/17/2023	--	--	--	--	--	--	--	--
Building 21 - Overburden	1/17/2023	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0117	0.0113 U	0.0117
Building 21 - Impacted Overburden	1/17/2023	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0270	0.0113 U	0.0270
Clean Fill Screening Value		NA	NA	NA	NA	NA	NA	NA	0.23
Urban Residential Direct Contract RBC		NA	NA	NA	NA	NA	NA	NA	0.33
Occupational Direct Contract RBC		NA	NA	NA	NA	NA	NA	NA	0.59
Construction Worker Direct Contact RBC		NA	NA	NA	NA	NA	NA	NA	4.9
Excavation Worker Direct Contact RBC		NA	NA	NA	NA	NA	NA	NA	140

Notes:

All results expressed as milligrams per kilogram

Volatile organic compound results not included in this table were non-detect for all samples analyzed

bold = indicates concentrations detected above method reporting limits

-- = Not analyzed

highlighted yellow = indicates concentration exceeds one or more potentially applicable RBCs

>Max = Substance is deemed not to pose a risk at any concentration

NA = Not Available, no screening value is listed for this analyte.

>S = This soil RBC exceeds the limit of three-phase partitioning. Soil concentrations in excess of Csat indicate that free product might be present.

J = The result is an estimated value; "-" indicates a potential low bias

U = Not detected, the associated value is the method detection limit

UJ = Not detected; the associated method detection limit is approximate

Clean Fill Screening Values, Oregon DEQ April 2019 revision

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 4
Soil Sample Analytical Results - Metals
Tumwater Village - UST Assessment Phase 1
427 Main Street, Oregon City, Oregon

Sample ID	Date Sampled	Arsenic	Barium	Cadmium	Chromium	Lead	TCLP Lead	Mercury	Selenium	Silver
Building 16 - 5'	1/17/2023	3.31	107	0.221 U	21.4	26.0	--	0.122	1.11 U	0.221 U
Building 21 - Overburden	1/17/2023	--	--	0.378	44.6	147	0.0670	--	--	--
Building 21 - Impacted Overburden	1/17/2023	--	--	1.36	78.7	309	0.122	--	--	--
Clean Fill/Background Screening Values		18	730	1.6	100	28	NA	2.1	0.68	2.6
Urban Residential Direct Contact RBC		1.0	31,000	160.0	230,000	400	NA	47.0	NA	780.0
Occupational Direct Contact RBC		1.9	220,000	1,100	>Max	800	NA	350	NA	5,800
Construction Worker Direct Contact RBC		15	69,000	350	530,000	800	NA	110	NA	1,800
Excavation Worker Direct Contact RBC		420	>Max	9,700	>Max	800	NA	2,900	NA	49,000
Occupational Volatilization to Outdoor Air RBC		NV	NV	NV	NV	NV	NA	NV	NA	NV
Occupational Vapor Intrusion into Buildings RBC		NV	NV	NV	NV	NV	NA	NV	NA	NV

Notes:

All results expressed as milligrams per kilogram

bold = indicates concentrations detected above method reporting limits

shaded gray = indicates concentration exceeds clean fill screening value

highlighted yellow = indicates concentration exceeds background and one or more potentially applicable RBCs

>Max = Substance is deemed not to pose a risk at any concentration

TCLP = Toxicity Characteristic Leaching Procedure

NA = Not Available, no screening value is listed for this analyte

NV = Indicates chemical is non-volatile

U = Not detected, the associated value is the method reporting limit

Clean Fill/Background Screening Values (South Willamette Valley), Oregon DEQ April 2019 revision

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

APPENDIX A

Inadvertent Discovery Plan



The Confederated Tribes of Grand Ronde Tribal Historic Preservation Office

Cultural Monitoring Summary for the Inadvertent Discovery of Ancestral Remains and Cultural Materials

The following steps summarizing protocol that will be followed by all crew members in the event of a human remains/burial items or cultural materials discovery. Historic materials associated with the Blue Heron Paper Mill will be exempt from this process, unless the finds are unique and notably different from what is already known to be present at the facility.

STEP 1: Stop Work.

If any employee, contractor, or subcontractor believes that they have uncovered a cultural resource at any point in the project, all work must stop immediately. Notify the appropriate party(ies). Leave the surrounding area untouched, and provide a secured and protected buffer no less than 30 meters (100 ft.) around the discovery. The discovery location must be secured at all times by a temporary fence or other onsite security. Any temporary fence should not further impact the ground.

STEP 2: Notify the Cultural Resources Monitor.

If there is a Cultural Resources Monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the outlined procedure.

STEP 3: Notify the Project Manager.

The Project Manager or applicable staff will make all calls and necessary notifications. If a Cultural Resources Monitor is on the project, the Project Manager may delegate the responsibility of notification to the Cultural Resources Monitor.

If human remains are encountered, treat them with dignity and respect at all times. Cover the remains with a new clean tarp for temporary protection and to shield them from being photographed. **Do not call 911 or speak with the media. Do not take pictures. DO NOT CONTINUE DISTURBANCE!**

Project Manager's Responsibilities:

- **Protect Find:** The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop in an area adequate to provide for the total security, protection, and integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating cultural material as set forth in this document.
- **Direct Construction Elsewhere On-site:** The Project Manager may direct construction away from cultural resources to work in other areas if a cultural resources monitor is available to monitor said activities. .
- **Identify Find:** A professional archaeologist will examine the find to determine if it is archaeological.
 - If the discovery is determined to not be archaeological, work may proceed with no further delay.
 - If the discovery is determined to be archaeological, the Project Manager will continue with notification to the Historic Preservation Office.
 - If the discovery is human remains, the Project Manager will ensure that law enforcement is notified, and then notify the Historic Preservation Office.

Special Procedures for Human Remains

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Cover the remains with a new clean tarp for temporary protection and to shield them from being photographed. **Do not call 911 or speak with the media. Do not take pictures.**
Do not place ancestral human remains in plastic bags

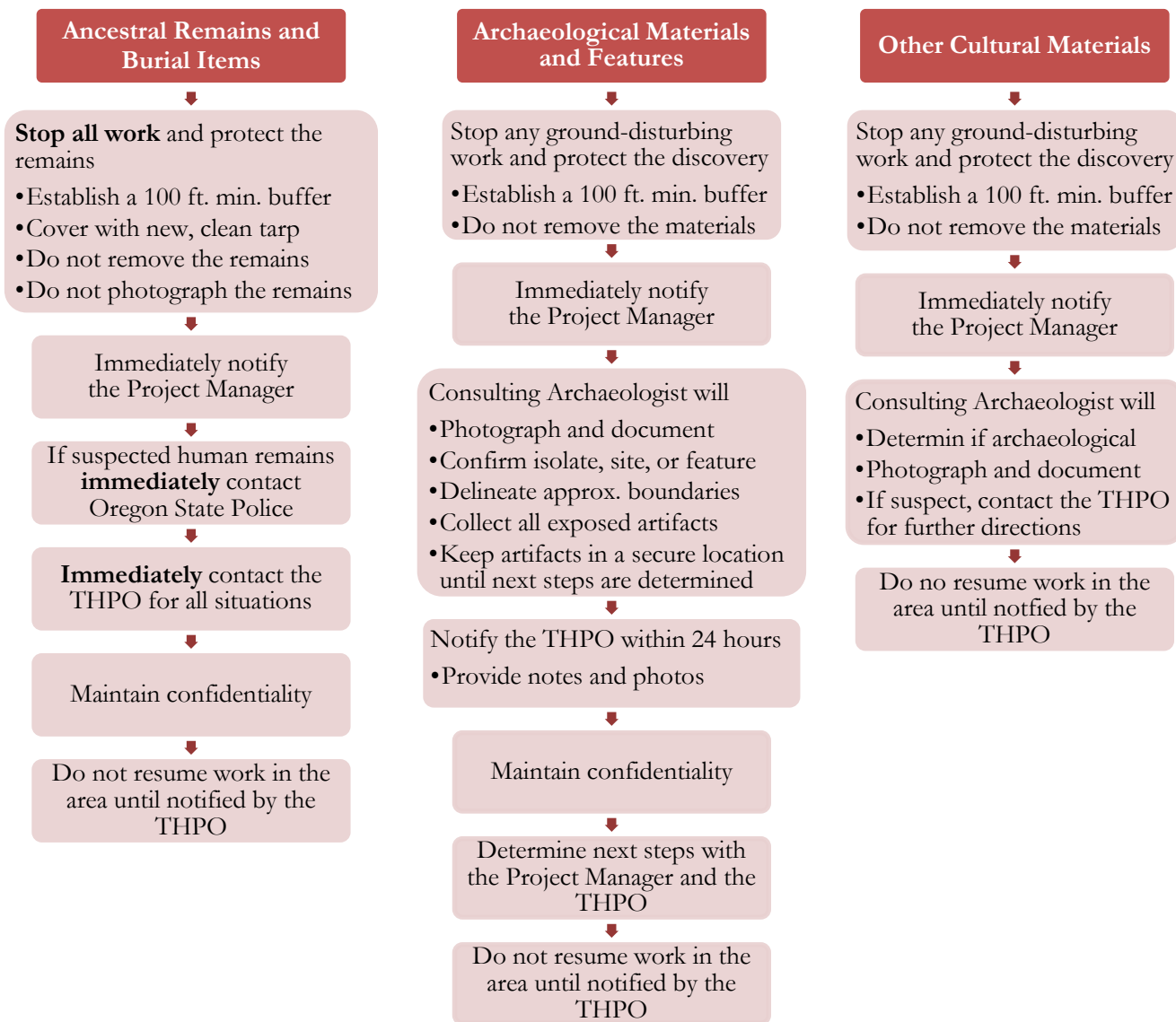


The Confederated Tribes of Grand Ronde Tribal Historic Preservation Office

Cultural Monitoring Summary for the Inadvertent Discovery of Ancestral Remains and Cultural Materials

Synthesis of Monitoring Protocol

The following flowchart summarizing protocol that will be followed by the monitoring archaeologist in the event of a human remains/burial items or cultural materials discovery. Historic materials associated with the Blue Heron Paper Mill will be exempt from this process, unless the finds are unique and notably different from what is already known to be present at the facility.



Contacts

State Historic Preservation Office Asst. State Archaeologist	John Pouley:	503-480-9164
Historic Preservation Office Manager / Deputy Tribal Historic Preservation Officer	Briece Edwards	Office: (503) 879-2084 Cell: (919) 274-4458
Tribal Archaeologist	Michael Lewis	Office: (503) 879-1674 Cell: (503) 720-2815



**The Confederated Tribes of Grand Ronde
Tribal Historic Preservation Office**

**Cultural Monitoring Summary for the
Inadvertent Discovery of Ancestral Remains and Cultural Materials**

Oregon State Police	Lt. Craig Heuberger:	503-508-0779
Tribal Police	Chief Jake McNight	(503) 879-1474

APPENDIX B

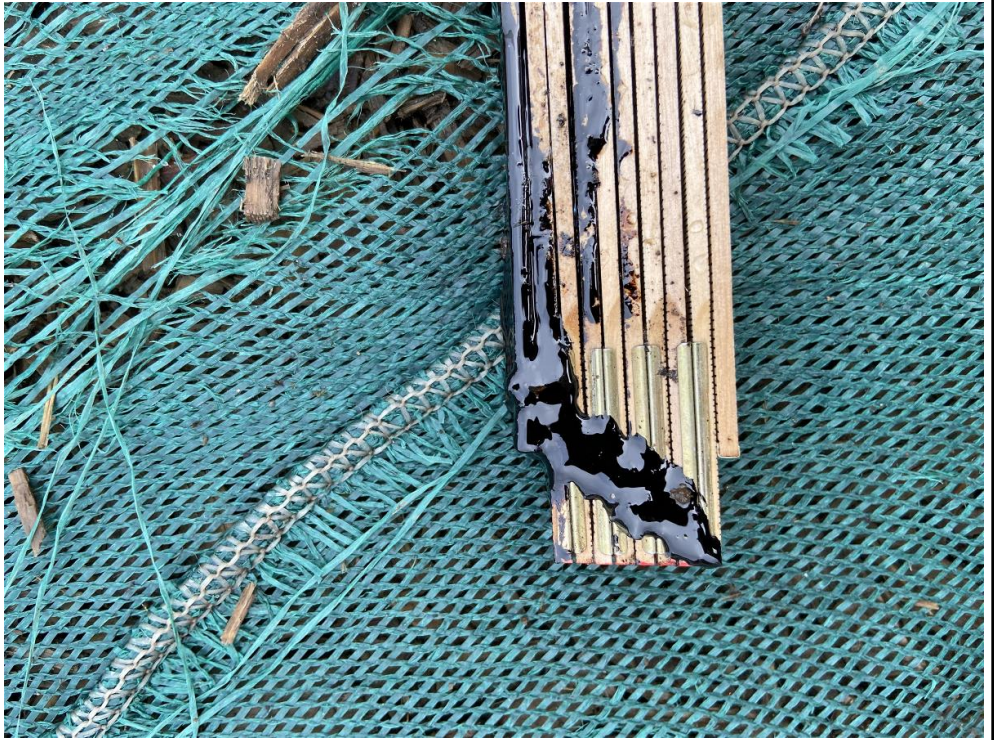
Photographic Log

Client:	Confederated Tribes of the Grande Ronde Community of Oregon	Project:	Underground Storage Tank Assessment
Site Name:	Former Blue Heron Paper Company	Site Location:	419-427 Main Street, Oregon City, Oregon 97045
Photograph ID: 1			
Photo Location: Building 16			
Direction: Southwest			
Survey Date: 1/10/2023			
Comments: Suspected building 16 underground storage tank (UST) location. Pink paint delineates geophysical survey, orange paint delineates concrete saw cut lines.			
Photograph ID: 2			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: Northeast			
Survey Date: 1/10/2023			
Comments: Suspected building 21 UST locations. Pink paint delineates geophysical survey, orange paint delineates concrete saw cut lines.			

Client:	Confederated Tribes of the Grande Ronde Community of Oregon	Project:	Underground Storage Tank Assessment
Site Name:	Former Blue Heron Paper Company	Site Location:	419-427 Main Street, Oregon City, Oregon 97045
Photograph ID: 3			
Photo Location: Building 16			
Direction: Northwest			
Survey Date: 1/17/2023			
Comments: Suspected building 16 UST location after concrete sawcutting and removal. Concrete thickness approx. 12 inches.			
Photograph ID: 4			
Photo Location: Building 16			
Direction: --			
Survey Date: 1/17/2023			
Comments: Test pit advanced to approx. five feet below ground surface (bgs). No UST present. Gravelly fill material underlying concrete extends to 4.5 feet bgs. Poorly graded fine sand underlying gravel fill material.			

Client:	Confederated Tribes of the Grande Ronde Community of Oregon	Project:	Underground Storage Tank Assessment
Site Name:	Former Blue Heron Paper Company	Site Location:	419-427 Main Street, Oregon City, Oregon 97045
Photograph ID: 5			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: Northwest			
Survey Date: 1/17/2023			
Comments: Suspected building 21 UST locations during concrete removal. Concrete thickness approx. eight inches.			
Photograph ID: 6			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: Southwest			
Survey Date: 1/17/2023			
Comments: Building 21 USTs consist of two 12,500-gallon capacity buried rail cars.			

Client:	Confederated Tribes of the Grande Ronde Community of Oregon	Project:	Underground Storage Tank Assessment
Site Name:	Former Blue Heron Paper Company	Site Location:	419-427 Main Street, Oregon City, Oregon 97045
Photograph ID: 7			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: Northwest			
Survey Date: 1/17/2023			
Comments: Additional view of buried railcar USTs showing open manholes in the center of each tank.			
Photograph ID: 8			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: --			
Survey Date: 1/17/2023			
Comments: View inside the western UST. Both USTs contained a combination of water and viscous heavy oil (likely Bunker C oil).			

Client:	Confederated Tribes of the Grande Ronde Community of Oregon	Project:	Underground Storage Tank Assessment
Site Name:	Former Blue Heron Paper Company	Site Location:	419-427 Main Street, Oregon City, Oregon 97045
Photograph ID: 9			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: --			
Survey Date: 1/17/2023			
Comments: Close-up of heavy oil within USTs.			
Photograph ID: 10			
Photo Location: Building 21 (Former Millwright Shop)			
Direction: Northwest			
Survey Date: 1/17/2023			
Comments: Backfilled concrete in building 21 UST location after UST assessment activities.			

APPENDIX C

Laboratory Report



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Tuesday, February 14, 2023

Len Farr
Stantec Portland
601 SW 2nd Ave Suite 1400
Portland, OR 97204

RE: A3A0614 - Blue Heron UST Assessment - 185705769

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 A3A0614, which was received by the laboratory on 1/18/2023 at 2:10:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@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

(See Cooler Receipt Form for details)

Default Cooler 1.8 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

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland

601 SW 2nd Ave Suite 1400
Portland, OR 97204

Project: Blue Heron UST Assessment

Project Number: 185705769

Project Manager: Len Farr

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Building 16-5'	A3A0614-01	Soil	01/17/23 09:15	01/18/23 14:10
Building 21-Impacted Overburden	A3A0614-02	Soil	01/17/23 11:30	01/18/23 14:10
Building 21-Overburden	A3A0614-03	Soil	01/17/23 11:45	01/18/23 14:10

Apex Laboratories

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ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 16-5' (A3A0614-01)				Matrix: Soil		Batch: 23A0664		
Gasoline Range Organics	ND	---	21.7	mg/kg dry	1	01/19/23 22:38	NWTPH-HCID	
Diesel Range Organics	ND	---	54.2	mg/kg dry	1	01/19/23 22:38	NWTPH-HCID	
Oil Range Organics	DET	---	108	mg/kg dry	1	01/19/23 22:38	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>01/19/23 22:38</i>	<i>NWTPH-HCID</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>86 %</i>		<i>50-150 %</i>	<i>1</i>	<i>01/19/23 22:38</i>	<i>NWTPH-HCID</i>	

Apex Laboratories

Philip Nerenberg, Lab Director

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Portland, OR 97204

Project: **Blue Heron UST Assessment**

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 16-5' (A3A0614-01RE1)				Matrix: Soil		Batch: 23A0989		
Diesel	ND	---	22.3	mg/kg dry	1	01/30/23 08:08	NWTPH-Dx	
Oil	358	---	44.7	mg/kg dry	1	01/30/23 08:08	NWTPH-Dx	Q-42
Surrogate: o-Terphenyl (Surr)		Recovery: 95 %		Limits: 50-150 %	1	01/30/23 08:08	NWTPH-Dx	
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0683		
Diesel	ND	---	2250	mg/kg dry	100	01/20/23 01:12	NWTPH-Dx	
Oil	6770	---	4490	mg/kg dry	100	01/20/23 01:12	NWTPH-Dx	F-13
Surrogate: o-Terphenyl (Surr)		Recovery: %		Limits: 50-150 %	100	01/20/23 01:12	NWTPH-Dx	S-01
Building 21-Overburden (A3A0614-03RE1)				Matrix: Soil		Batch: 23A0683		
Diesel	ND	---	443	mg/kg dry	20	01/20/23 07:40	NWTPH-Dx	
Oil	1520	---	885	mg/kg dry	20	01/20/23 07:40	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 78 %		Limits: 50-150 %	20	01/20/23 07:40	NWTPH-Dx	S-05

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ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400
Portland, OR 97204

Project: **Blue Heron UST Assessment**

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0799		
Gasoline Range Organics	55.2	---	6.40	mg/kg dry	50	01/23/23 18:38	NWTPH-Gx (MS)	F-09
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery:	121 %	Limits:	50-150 %	1	01/23/23 18:38	NWTPH-Gx (MS)
1,4-Difluorobenzene (Sur)			102 %		50-150 %	1	01/23/23 18:38	NWTPH-Gx (MS)
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23A0799		
Gasoline Range Organics	ND	---	6.03	mg/kg dry	50	01/23/23 19:03	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery:	105 %	Limits:	50-150 %	1	01/23/23 19:03	NWTPH-Gx (MS)
1,4-Difluorobenzene (Sur)			98 %		50-150 %	1	01/23/23 19:03	NWTPH-Gx (MS)

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ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0799		
Acetone	ND	---	1280	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Acrylonitrile	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Benzene	ND	---	12.8	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Bromobenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Bromochloromethane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Bromodichloromethane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Bromoform	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Bromomethane	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
2-Butanone (MEK)	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
n-Butylbenzene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
sec-Butylbenzene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
tert-Butylbenzene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Carbon disulfide	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Carbon tetrachloride	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Chlorobenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Chloroethane	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Chloroform	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Chloromethane	ND	---	320	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
2-Chlorotoluene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
4-Chlorotoluene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Dibromochloromethane	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	320	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Dibromomethane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2-Dichlorobenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,3-Dichlorobenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,4-Dichlorobenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Dichlorodifluoromethane	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1-Dichloroethane	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1-Dichloroethene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0799		
1,2-Dichloropropane	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,3-Dichloropropane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
2,2-Dichloropropane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1-Dichloropropene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Ethylbenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Hexachlorobutadiene	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
2-Hexanone	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Isopropylbenzene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
4-Isopropyltoluene	66.0	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Methylene chloride	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	640	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Naphthalene	884	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
n-Propylbenzene	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Styrene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Toluene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	320	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	320	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1,1-Trichloroethane	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,1,2-Trichloroethane	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Trichloroethene (TCE)	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Trichlorofluoromethane	ND	---	128	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2,3-Trichloropropane	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,2,4-Trimethylbenzene	104	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
1,3,5-Trimethylbenzene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
Vinyl chloride	ND	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
m,p-Xylene	ND	---	64.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	
o-Xylene	46.8	---	32.0	ug/kg dry	50	01/23/23 18:38	5035A/8260D	

Apex Laboratories

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0799		
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery: 107 %	Limits: 80-120 %	1	01/23/23 18:38	5035A/8260D		
Toluene-d8 (Surr)		92 %	80-120 %	1	01/23/23 18:38	5035A/8260D		
4-Bromofluorobenzene (Surr)		97 %	79-120 %	1	01/23/23 18:38	5035A/8260D		
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23A0799		
Acetone	ND	---	1210	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Acrylonitrile	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Benzene	ND	---	12.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Bromobenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Bromochloromethane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Bromodichloromethane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Bromoform	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Bromomethane	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
2-Butanone (MEK)	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
n-Butylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
sec-Butylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
tert-Butylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Carbon disulfide	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Carbon tetrachloride	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Chlorobenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Chloroethane	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Chloroform	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Chloromethane	ND	---	301	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
2-Chlorotoluene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
4-Chlorotoluene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Dibromochloromethane	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	301	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Dibromomethane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2-Dichlorobenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,3-Dichlorobenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,4-Dichlorobenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Dichlorodifluoromethane	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1-Dichloroethane	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23A0799		
1,2-Dichloroethane (EDC)	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1-Dichloroethene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2-Dichloropropane	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,3-Dichloropropane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
2,2-Dichloropropane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1-Dichloropropene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Ethylbenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Hexachlorobutadiene	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
2-Hexanone	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Isopropylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
4-Isopropyltoluene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Methylene chloride	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	---	603	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Naphthalene	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
n-Propylbenzene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Styrene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Toluene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	301	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	301	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1,1-Trichloroethane	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,1,2-Trichloroethane	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Trichloroethene (TCE)	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Trichlorofluoromethane	ND	---	121	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2,3-Trichloropropane	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
1,2,4-Trimethylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23A0799		
1,3,5-Trimethylbenzene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
Vinyl chloride	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
m,p-Xylene	ND	---	60.3	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
o-Xylene	ND	---	30.1	ug/kg dry	50	01/23/23 19:03	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>01/23/23 19:03</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>	<i>1</i>	<i>01/23/23 19:03</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>79-120 %</i>	<i>1</i>	<i>01/23/23 19:03</i>	<i>5035A/8260D</i>	

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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0746		C-07
Aroclor 1016	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	P-12, Q-42
Aroclor 1221	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Aroclor 1232	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Aroclor 1242	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Aroclor 1248	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Aroclor 1254	27.0	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Aroclor 1260	ND	---	11.3	ug/kg dry	1	01/23/23 08:57	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 69 %		Limits: 60-125 %	1	01/23/23 08:57	EPA 8082A	
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23B0147		C-07
Aroclor 1016	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	P-12
Aroclor 1221	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Aroclor 1232	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Aroclor 1242	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Aroclor 1248	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Aroclor 1254	11.7	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Aroclor 1260	ND	---	11.3	ug/kg dry	1	02/06/23 08:41	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 96 %		Limits: 60-125 %	1	02/06/23 08:41	EPA 8082A	A-01

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Portland, OR 97204Project: Blue Heron UST Assessment

Project Number: 185705769

Project Manager: Len Farr

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23B0118		H-06
Acenaphthene	222	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	
Acenaphthylene	509	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Anthracene	723	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Benz(a)anthracene	2010	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Benzo(a)pyrene	3050	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Benzo(b)fluoranthene	3390	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Benzo(k)fluoranthene	1160	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	M-05, Q-42
Benzo(g,h,i)perylene	2500	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Chrysene	3360	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Dibenz(a,h)anthracene	360	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Fluoranthene	5590	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Fluorene	247	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	2510	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
1-Methylnaphthalene	82.1	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	
2-Methylnaphthalene	113	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Naphthalene	354	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Phenanthrene	4830	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Pyrene	6410	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	Q-42
Dibenzofuran	76.2	---	45.7	ug/kg dry	4	02/03/23 14:38	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		Recovery:	80 %	Limits:	44-120 %	4	02/03/23 14:38	EPA 8270E SIM
p-Terphenyl-d14 (Surr)			88 %		54-127 %	4	02/03/23 14:38	EPA 8270E SIM

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Portland, OR 97204

Project: Blue Heron UST Assessment

Project Number: 185705769

Project Manager: Len Farr

Report ID:

A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 16-5' (A3A0614-01)				Matrix: Soil				
Batch: 23A0686								
Arsenic	3.31	---	1.11	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Barium	107	---	1.11	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Cadmium	ND	---	0.221	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Chromium	21.4	---	1.11	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Lead	26.0	---	0.221	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Mercury	0.122	---	0.0886	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Selenium	ND	---	1.11	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Silver	ND	---	0.221	mg/kg dry	10	01/19/23 19:34	EPA 6020B	
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil				
Batch: 23A0686								
Cadmium	1.36	---	0.230	mg/kg dry	10	01/19/23 19:40	EPA 6020B	
Chromium	78.7	---	1.15	mg/kg dry	10	01/19/23 19:40	EPA 6020B	
Lead	309	---	0.230	mg/kg dry	10	01/19/23 19:40	EPA 6020B	
Building 21-Overburden (A3A0614-03)				Matrix: Soil				
Batch: 23A0686								
Cadmium	0.378	---	0.237	mg/kg dry	10	01/19/23 19:46	EPA 6020B	
Chromium	44.6	---	1.18	mg/kg dry	10	01/19/23 19:46	EPA 6020B	
Lead	147	---	0.237	mg/kg dry	10	01/19/23 19:46	EPA 6020B	

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A3A0614 - 02 14 23 1712

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil				
Batch: 23B0244								
Lead	0.122	---	0.0500	mg/L	10	02/08/23 15:20	1311/6020B	
Building 21-Overburden (A3A0614-03)				Matrix: Soil				
Batch: 23B0244								
Lead	0.0670	---	0.0500	mg/L	10	02/08/23 15:25	1311/6020B	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 16-5' (A3A0614-01)				Matrix: Soil		Batch: 23A0696		
% Solids	89.1	---	1.00	%	1	01/20/23 05:24	EPA 8000D	
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23A0696		
% Solids	87.3	---	1.00	%	1	01/20/23 05:24	EPA 8000D	
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23A0696		
% Solids	86.4	---	1.00	%	1	01/20/23 05:24	EPA 8000D	

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ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-Impacted Overburden (A3A0614-02)				Matrix: Soil		Batch: 23B0184		
TCLP Extraction	PREP	---		N/A	1	02/06/23 16:00	EPA 1311	
Building 21-Overburden (A3A0614-03)				Matrix: Soil		Batch: 23B0184		
TCLP Extraction	PREP	---		N/A	1	02/06/23 16:00	EPA 1311	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0664 - NWTPH-HCID (Soil)						Soil						
Blank (23A0664-BLK1)			Prepared: 01/19/23 05:48 Analyzed: 01/19/23 22:15									
NWTPH-HCID												
Gasoline Range Organics	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	100	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 87 %		Limits: 50-150 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		87 %		50-150 %		"						
Duplicate (23A0664-DUP1)			Prepared: 01/19/23 05:48 Analyzed: 01/19/23 23:01									
QC Source Sample: Building 16-5' (A3A0614-01)												
NWTPH-HCID												
Gasoline Range Organics	ND	---	20.9	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	52.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	DET	---	105	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: 94 %		Limits: 50-150 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		95 %		50-150 %		"						

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0683 - EPA 3546 (Fuels)						Soil						
Blank (23A0683-BLK1)			Prepared: 01/19/23 09:54 Analyzed: 01/19/23 21:08									
NWTPH-Dx												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 89 %		Limits: 50-150 %		Dilution: 1x						
LCS (23A0683-BS1)			Prepared: 01/19/23 09:54 Analyzed: 01/19/23 21:29									
NWTPH-Dx												
Diesel	133	---	20.0	mg/kg wet	1	125	---	106	38-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 90 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (23A0683-DUP1)			Prepared: 01/19/23 09:54 Analyzed: 01/19/23 22:09									
QC Source Sample: Non-SDG (A3A0582-01)												
Diesel	ND	---	26.1	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	52.1	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	279	---	52.1	mg/kg dry	1	---	288	---	---	3	30%	
Surr: o-Terphenyl (Surr)		Recovery: 68 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (23A0683-DUP2)			Prepared: 01/19/23 17:46 Analyzed: 01/20/23 00:52									
QC Source Sample: Non-SDG (A3A0699-05)												
Diesel	ND	---	27.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	54.5	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	54.5	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: 65 %		Limits: 50-150 %		Dilution: 1x						

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0989 - EPA 3546 (Fuels)						Soil						
Blank (23A0989-BLK1)			Prepared: 01/27/23 07:30 Analyzed: 01/27/23 21:54									
NWTPH-Dx												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 92 %		Limits: 50-150 %		Dilution: 1x		Q-41				
LCS (23A0989-BS2)			Prepared: 01/27/23 07:30 Analyzed: 01/30/23 07:48									
NWTPH-Dx												
Diesel	113	---	20.0	mg/kg wet	1	125	---	90	38-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (23A0989-DUP3)			Prepared: 01/27/23 07:30 Analyzed: 01/30/23 08:56									
QC Source Sample: Building 16-5' (A3A0614-01RE1)												
NWTPH-Dx												
Diesel	ND	---	22.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	258	---	44.8	mg/kg dry	1	---	358	---	---	33	30%	Q-04
Mineral Oil	ND	---	44.8	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: 101 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (23A0989-DUP4)			Prepared: 01/27/23 18:29 Analyzed: 01/30/23 10:58									
QC Source Sample: Non-SDG (A3A0962-02RE1)												
Diesel	46200	---	477	mg/kg dry	20	---	42100	---	---	9	30%	
Oil	ND	---	955	mg/kg dry	20	---	ND	---	---	---	30%	
Mineral Oil	ND	---	955	mg/kg dry	20	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: %		Limits: 50-150 %		Dilution: 20x		S-01				

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 23A0799 - EPA 5035A						Soil							
Blank (23A0799-BLK1)			Prepared: 01/23/23 09:00 Analyzed: 01/23/23 12:31										
NWTPH-Gx (MS)													
Gasoline Range Organics	ND	---	5.00	mg/kg wet	50	---	---	---	---	---	---		
Surr: 4-Bromofluorobenzene (Sur)		Recovery:	97 %	Limits:	50-150 %	Dilution: 1x							
1,4-Difluorobenzene (Sur)			99 %		50-150 %	"							
LCS (23A0799-BS2)			Prepared: 01/23/23 09:00 Analyzed: 01/23/23 12:05										
NWTPH-Gx (MS)													
Gasoline Range Organics	22.2	---	5.00	mg/kg wet	50	25.0	---	89	80-120%	---	---		
Surr: 4-Bromofluorobenzene (Sur)		Recovery:	101 %	Limits:	50-150 %	Dilution: 1x							
1,4-Difluorobenzene (Sur)			98 %		50-150 %	"							
Duplicate (23A0799-DUP1)			Prepared: 01/19/23 12:56 Analyzed: 01/23/23 14:38										
QC Source Sample: Non-SDG (A3A0695-21)													
Gasoline Range Organics	ND	---	7.53	mg/kg dry	50	---	ND	---	---	---	30%		
Surr: 4-Bromofluorobenzene (Sur)		Recovery:	102 %	Limits:	50-150 %	Dilution: 1x							
1,4-Difluorobenzene (Sur)			103 %		50-150 %	"							
Duplicate (23A0799-DUP2)			Prepared: 01/20/23 12:53 Analyzed: 01/23/23 17:21										V-15
QC Source Sample: Non-SDG (A3A0732-01)													
Gasoline Range Organics	ND	---	5.32	mg/kg dry	50	---	ND	---	---	---	30%		
Surr: 4-Bromofluorobenzene (Sur)		Recovery:	103 %	Limits:	50-150 %	Dilution: 1x							
1,4-Difluorobenzene (Sur)			103 %		50-150 %	"							

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712****QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Blank (23A0799-BLK1)			Prepared: 01/23/23 09:00		Analyzed: 01/23/23 12:31							
5035A/8260D												
Acetone	ND	---	1000	ug/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	10.0	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	---	250	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	250	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Blank (23A0799-BLK1)						Prepared: 01/23/23 09:00 Analyzed: 01/23/23 12:31						
1,2-Dichloropropane	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	500	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	250	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	250	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	100	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	50.0	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	---	25.0	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr) Recovery: 102 % Limits: 80-120 % Dilution: 1x												

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ANALYTICAL REPORT

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Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Blank (23A0799-BLK1)			Prepared: 01/23/23 09:00		Analyzed: 01/23/23 12:31							
Surr: Toluene-d8 (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		99 %		79-120 %		"						
LCS (23A0799-BS1)			Prepared: 01/23/23 09:00		Analyzed: 01/23/23 11:40							
5035A/8260D												
Acetone	1900	---	1000	ug/kg wet	50	2000	---	95	80-120%	---	---	
Acrylonitrile	993	---	100	ug/kg wet	50	1000	---	99	80-120%	---	---	
Benzene	1040	---	10.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Bromobenzene	955	---	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Bromochloromethane	1140	---	50.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
Bromodichloromethane	1100	---	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
Bromoform	970	---	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
Bromomethane	2100	---	500	ug/kg wet	50	1000	---	210	80-120%	---	---	Q-56
2-Butanone (MEK)	1920	---	500	ug/kg wet	50	2000	---	96	80-120%	---	---	
n-Butylbenzene	922	---	50.0	ug/kg wet	50	1000	---	92	80-120%	---	---	
sec-Butylbenzene	934	---	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
tert-Butylbenzene	878	---	50.0	ug/kg wet	50	1000	---	88	80-120%	---	---	
Carbon disulfide	1000	---	500	ug/kg wet	50	1000	---	100	80-120%	---	---	
Carbon tetrachloride	1060	---	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Chlorobenzene	988	---	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Chloroethane	1430	---	500	ug/kg wet	50	1000	---	143	80-120%	---	---	Q-56
Chloroform	1110	---	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
Chloromethane	958	---	250	ug/kg wet	50	1000	---	96	80-120%	---	---	
2-Chlorotoluene	933	---	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
4-Chlorotoluene	940	---	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Dibromochloromethane	970	---	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,2-Dibromo-3-chloropropane	864	---	250	ug/kg wet	50	1000	---	86	80-120%	---	---	
1,2-Dibromoethane (EDB)	983	---	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Dibromomethane	1120	---	50.0	ug/kg wet	50	1000	---	112	80-120%	---	---	
1,2-Dichlorobenzene	970	---	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,3-Dichlorobenzene	986	---	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,4-Dichlorobenzene	964	---	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Dichlorodifluoromethane	928	---	100	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,1-Dichloroethane	1120	---	25.0	ug/kg wet	50	1000	---	112	80-120%	---	---	

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ANALYTICAL REPORT

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Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
LCS (23A0799-BS1)						Prepared: 01/23/23 09:00 Analyzed: 01/23/23 11:40						
1,2-Dichloroethane (EDC)	1140	---	25.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
1,1-Dichloroethene	1100	---	25.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
cis-1,2-Dichloroethene	1060	---	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
trans-1,2-Dichloroethene	1090	---	25.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
1,2-Dichloropropane	1080	---	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,3-Dichloropropane	982	---	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
2,2-Dichloropropane	1130	---	50.0	ug/kg wet	50	1000	---	113	80-120%	---	---	
1,1-Dichloropropene	986	---	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
cis-1,3-Dichloropropene	955	---	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
trans-1,3-Dichloropropene	1060	---	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Ethylbenzene	981	---	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Hexachlorobutadiene	868	---	100	ug/kg wet	50	1000	---	87	80-120%	---	---	
2-Hexanone	1670	---	500	ug/kg wet	50	2000	---	83	80-120%	---	---	
Isopropylbenzene	898	---	50.0	ug/kg wet	50	1000	---	90	80-120%	---	---	
4-Isopropyltoluene	904	---	50.0	ug/kg wet	50	1000	---	90	80-120%	---	---	
Methylene chloride	1050	---	500	ug/kg wet	50	1000	---	105	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1810	---	500	ug/kg wet	50	2000	---	90	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	978	---	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Naphthalene	863	---	100	ug/kg wet	50	1000	---	86	80-120%	---	---	
n-Propylbenzene	965	---	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Styrene	858	---	50.0	ug/kg wet	50	1000	---	86	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1030	---	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,1,2,2-Tetrachloroethane	948	---	50.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Tetrachloroethene (PCE)	1030	---	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Toluene	968	---	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,2,3-Trichlorobenzene	950	---	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	868	---	25.0	ug/kg wet	50	1000	---	87	80-120%	---	---	
1,1,1-Trichloroethane	1080	---	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,1,2-Trichloroethane	994	---	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Trichloroethene (TCE)	1100	---	25.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
Trichlorofluoromethane	1520	---	100	ug/kg wet	50	1000	---	152	80-120%	---	---	Q-56
1,2,3-Trichloropropane	971	---	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,2,4-Trimethylbenzene	981	---	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3,5-Trimethylbenzene	986	---	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	

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Philip Nerenberg, Lab Director

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503-718-2323

ORELAP ID: OR100062

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
LCS (23A0799-BS1)			Prepared: 01/23/23 09:00		Analyzed: 01/23/23 11:40							
Vinyl chloride	1620	---	25.0	ug/kg wet	50	1000	---	162	80-120%	---	---	Q-56
m,p-Xylene	1970	---	50.0	ug/kg wet	50	2000	---	99	80-120%	---	---	
o-Xylene	891	---	25.0	ug/kg wet	50	1000	---	89	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		96 %		79-120 %		"						
Duplicate (23A0799-DUP1)			Prepared: 01/19/23 12:56		Analyzed: 01/23/23 14:38							
QC Source Sample: Non-SDG (A3A0695-21)												
Acetone	ND	---	1510	ug/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	---	15.1	ug/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	377	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	377	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Duplicate (23A0799-DUP1)			Prepared: 01/19/23 12:56 Analyzed: 01/23/23 14:38									
QC Source Sample: Non-SDG (A3A0695-21)												
1,3-Dichlorobenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	753	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	377	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	377	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Duplicate (23A0799-DUP1)			Prepared: 01/19/23 12:56 Analyzed: 01/23/23 14:38									
QC Source Sample: Non-SDG (A3A0695-21)												
Trichloroethene (TCE)	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	151	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	75.3	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	37.7	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 105 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		98 %		79-120 %		"						

Duplicate (23A0799-DUP2)			Prepared: 01/20/23 12:53 Analyzed: 01/23/23 17:21									V-15
QC Source Sample: Non-SDG (A3A0732-01)												
Acetone	ND	---	1060	ug/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	---	10.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	266	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Duplicate (23A0799-DUP2)			Prepared: 01/20/23 12:53 Analyzed: 01/23/23 17:21				V-15					
QC Source Sample: Non-SDG (A3A0732-01)												
4-Chlorotoluene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	266	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	532	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	

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Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Duplicate (23A0799-DUP2)			Prepared: 01/20/23 12:53 Analyzed: 01/23/23 17:21					V-15				
QC Source Sample: Non-SDG (A3A0732-01)												
Tetrachloroethene (PCE)	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	53.2	ug/kg dry	50	---	36.2	---	---	***	30%	
1,2,3-Trichlorobenzene	ND	---	266	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	266	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	106	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	53.2	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	26.6	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 107 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		98 %		79-120 %		"						

Matrix Spike (23A0799-MS1)

Prepared: 01/17/23 11:45 Analyzed: 01/23/23 19:29

QC Source Sample: Building 21-Overburden (A3A0614-03)**5035A/8260D**

Acetone	2120	---	1210	ug/kg dry	50	2420	ND	88	36-164%	---	---	
Acrylonitrile	1120	---	121	ug/kg dry	50	1210	ND	93	65-134%	---	---	
Benzene	1260	---	12.1	ug/kg dry	50	1210	ND	105	77-121%	---	---	
Bromobenzene	1150	---	30.1	ug/kg dry	50	1210	ND	95	78-121%	---	---	
Bromochloromethane	1300	---	60.3	ug/kg dry	50	1210	ND	108	78-125%	---	---	
Bromodichloromethane	1270	---	60.3	ug/kg dry	50	1210	ND	105	75-127%	---	---	
Bromoform	1160	---	121	ug/kg dry	50	1210	ND	96	67-132%	---	---	
Bromomethane	2690	---	603	ug/kg dry	50	1210	ND	223	53-143%	---	---	Q-54c
2-Butanone (MEK)	2120	---	603	ug/kg dry	50	2420	ND	88	51-148%	---	---	
n-Butylbenzene	1120	---	60.3	ug/kg dry	50	1210	ND	93	70-128%	---	---	
sec-Butylbenzene	1130	---	60.3	ug/kg dry	50	1210	ND	94	73-126%	---	---	
tert-Butylbenzene	1050	---	60.3	ug/kg dry	50	1210	ND	87	73-125%	---	---	

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Matrix Spike (23A0799-MS1)			Prepared: 01/17/23 11:45 Analyzed: 01/23/23 19:29									
QC Source Sample: Building 21-Overburden (A3A0614-03)												
Carbon disulfide	1210	---	603	ug/kg dry	50	1210	ND	100	63-132%	---	---	Q-54
Carbon tetrachloride	1270	---	60.3	ug/kg dry	50	1210	ND	105	70-135%	---	---	
Chlorobenzene	1190	---	30.1	ug/kg dry	50	1210	ND	98	79-120%	---	---	
Chloroethane	1750	---	603	ug/kg dry	50	1210	ND	145	59-139%	---	---	
Chloroform	1340	---	60.3	ug/kg dry	50	1210	ND	111	78-123%	---	---	
Chloromethane	1060	---	301	ug/kg dry	50	1210	ND	88	50-136%	---	---	
2-Chlorotoluene	1100	---	60.3	ug/kg dry	50	1210	ND	91	75-122%	---	---	
4-Chlorotoluene	1080	---	60.3	ug/kg dry	50	1210	ND	89	72-124%	---	---	
Dibromochloromethane	1130	---	121	ug/kg dry	50	1210	ND	94	74-126%	---	---	
1,2-Dibromo-3-chloropropane	972	---	301	ug/kg dry	50	1210	ND	80	61-132%	---	---	
1,2-Dibromoethane (EDB)	1190	---	60.3	ug/kg dry	50	1210	ND	98	78-122%	---	---	
Dibromomethane	1350	---	60.3	ug/kg dry	50	1210	ND	112	78-125%	---	---	
1,2-Dichlorobenzene	1130	---	30.1	ug/kg dry	50	1210	ND	94	78-121%	---	---	
1,3-Dichlorobenzene	1160	---	30.1	ug/kg dry	50	1210	ND	96	77-121%	---	---	
1,4-Dichlorobenzene	1120	---	30.1	ug/kg dry	50	1210	ND	93	75-120%	---	---	
Dichlorodifluoromethane	1160	---	121	ug/kg dry	50	1210	ND	96	29-149%	---	---	
1,1-Dichloroethane	1360	---	30.1	ug/kg dry	50	1210	ND	113	76-125%	---	---	
1,2-Dichloroethane (EDC)	1340	---	30.1	ug/kg dry	50	1210	ND	111	73-128%	---	---	
1,1-Dichloroethene	1390	---	30.1	ug/kg dry	50	1210	ND	115	70-131%	---	---	
cis-1,2-Dichloroethene	1280	---	30.1	ug/kg dry	50	1210	ND	106	77-123%	---	---	
trans-1,2-Dichloroethene	1320	---	30.1	ug/kg dry	50	1210	ND	110	74-125%	---	---	
1,2-Dichloropropane	1290	---	30.1	ug/kg dry	50	1210	ND	107	76-123%	---	---	
1,3-Dichloropropane	1130	---	60.3	ug/kg dry	50	1210	ND	93	77-121%	---	---	
2,2-Dichloropropane	1250	---	60.3	ug/kg dry	50	1210	ND	104	67-133%	---	---	
1,1-Dichloropropene	1230	---	60.3	ug/kg dry	50	1210	ND	102	76-125%	---	---	
cis-1,3-Dichloropropene	1060	---	60.3	ug/kg dry	50	1210	ND	88	74-126%	---	---	
trans-1,3-Dichloropropene	1180	---	60.3	ug/kg dry	50	1210	ND	98	71-130%	---	---	
Ethylbenzene	1170	---	30.1	ug/kg dry	50	1210	ND	97	76-122%	---	---	
Hexachlorobutadiene	1350	---	121	ug/kg dry	50	1210	ND	112	61-135%	---	---	
2-Hexanone	1880	---	603	ug/kg dry	50	2420	ND	78	53-145%	---	---	
Isopropylbenzene	1090	---	60.3	ug/kg dry	50	1210	ND	90	68-134%	---	---	
4-Isopropyltoluene	1100	---	60.3	ug/kg dry	50	1210	ND	91	73-127%	---	---	
Methylene chloride	1220	---	603	ug/kg dry	50	1210	ND	101	70-128%	---	---	

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0799 - EPA 5035A						Soil						
Matrix Spike (23A0799-MS1)			Prepared: 01/17/23 11:45 Analyzed: 01/23/23 19:29									
QC Source Sample: Building 21-Overburden (A3A0614-03)												
4-Methyl-2-pentanone (MiBK)	2090	---	603	ug/kg dry	50	2420	ND	86	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1160	---	60.3	ug/kg dry	50	1210	ND	96	73-125%	---	---	
Naphthalene	1010	---	121	ug/kg dry	50	1210	ND	84	62-129%	---	---	
n-Propylbenzene	1120	---	30.1	ug/kg dry	50	1210	ND	93	73-125%	---	---	
Styrene	1050	---	60.3	ug/kg dry	50	1210	ND	87	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1240	---	30.1	ug/kg dry	50	1210	ND	103	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1050	---	60.3	ug/kg dry	50	1210	ND	87	70-124%	---	---	
Tetrachloroethene (PCE)	1290	---	30.1	ug/kg dry	50	1210	ND	106	73-128%	---	---	
Toluene	1140	---	60.3	ug/kg dry	50	1210	ND	94	77-121%	---	---	
1,2,3-Trichlorobenzene	1130	---	301	ug/kg dry	50	1210	ND	93	66-130%	---	---	
1,2,4-Trichlorobenzene	1060	---	301	ug/kg dry	50	1210	ND	88	67-129%	---	---	
1,1,1-Trichloroethane	1340	---	30.1	ug/kg dry	50	1210	ND	111	73-130%	---	---	
1,1,2-Trichloroethane	1170	---	30.1	ug/kg dry	50	1210	ND	97	78-121%	---	---	
Trichloroethene (TCE)	1400	---	30.1	ug/kg dry	50	1210	ND	116	77-123%	---	---	
Trichlorofluoromethane	1940	---	121	ug/kg dry	50	1210	ND	161	62-140%	---	---	Q-54a
1,2,3-Trichloropropane	1150	---	60.3	ug/kg dry	50	1210	ND	95	73-125%	---	---	
1,2,4-Trimethylbenzene	1150	---	60.3	ug/kg dry	50	1210	ND	96	75-123%	---	---	
1,3,5-Trimethylbenzene	1160	---	60.3	ug/kg dry	50	1210	ND	96	73-124%	---	---	
Vinyl chloride	1920	---	30.1	ug/kg dry	50	1210	ND	159	56-135%	---	---	Q-54b
m,p-Xylene	2300	---	60.3	ug/kg dry	50	2420	ND	95	77-124%	---	---	
o-Xylene	1060	---	30.1	ug/kg dry	50	1210	ND	87	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery:		104 %	Limits: 80-120 %		Dilution: 1x					
Toluene-d8 (Surr)				95 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				97 %	79-120 %		"					

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503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0746 - EPA 3546												
Soil												
Blank (23A0746-BLK1)												
Prepared: 01/20/23 11:18 Analyzed: 01/23/23 08:21												
EPA 8082A												
Aroclor 1016	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr) Recovery: 91 % Limits: 60-125 % Dilution: 1x												
LCS (23A0746-BS1)												
Prepared: 01/20/23 11:18 Analyzed: 01/23/23 08:39												
EPA 8082A												
Aroclor 1016	198	---	10.0	ug/kg wet	1	250	---	79	47-134%	---	---	
Aroclor 1260	216	---	10.0	ug/kg wet	1	250	---	87	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr) Recovery: 97 % Limits: 60-125 % Dilution: 1x												
Duplicate (23A0746-DUP2)												
Prepared: 01/20/23 11:18 Analyzed: 01/23/23 10:43												
QC Source Sample: Building 21-Impacted Overburden (A3A0614-02)												
EPA 8082A												
Aroclor 1016	ND	---	11.4	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	11.4	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	15.9	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Aroclor 1242	ND	---	11.8	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Aroclor 1248	ND	---	24.5	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Aroclor 1254	74.1	---	11.4	ug/kg dry	1	---	27.0	---	---	93	30%	P-10, Q-17
Aroclor 1260	27.9	---	11.4	ug/kg dry	1	---	9.08	---	---	102	30%	P-10, Q-05
Surr: Decachlorobiphenyl (Surr) Recovery: 86 % Limits: 60-125 % Dilution: 1x												
Matrix Spike (23A0746-MS2)												
Prepared: 01/20/23 11:18 Analyzed: 01/23/23 11:19												
QC Source Sample: Building 21-Impacted Overburden (A3A0614-02)												
EPA 8082A												
Aroclor 1016	190	---	11.4	ug/kg dry	1	285	ND	67	47-134%	---	---	
Aroclor 1260	237	---	11.4	ug/kg dry	1	285	9.08	80	53-140%	---	---	

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ANALYTICAL REPORT

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Stantec Portland

601 SW 2nd Ave Suite 1400
Portland, OR 97204

Project: **Blue Heron UST Assessment**

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0746 - EPA 3546							Soil					
Matrix Spike (23A0746-MS2)			Prepared: 01/20/23 11:18 Analyzed: 01/23/23 11:19					C-07				
QC Source Sample: Building 21-Impacted Overburden (A3A0614-02)												
Surr: Decachlorobiphenyl (Surr)		Recovery: 85 %		Limits: 60-125 %		Dilution: 1x						

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0147 - EPA 3546												
Soil												
Blank (23B0147-BLK1)			Prepared: 02/03/23 11:36			Analyzed: 02/06/23 08:06			C-07			
EPA 8082A												
Aroclor 1016	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 89 %		Limits: 60-125 %		Dilution: 1x						
LCS (23B0147-BS1)												
Prepared: 02/03/23 11:36			Analyzed: 02/06/23 08:23			C-07						
EPA 8082A												
Aroclor 1016	180	---	10.0	ug/kg wet	1	250	---	72	47-134%	---	---	
Aroclor 1260	210	---	10.0	ug/kg wet	1	250	---	84	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 101 %		Limits: 60-125 %		Dilution: 1x						
Duplicate (23B0147-DUP1)												
Prepared: 02/03/23 11:36			Analyzed: 02/06/23 09:16			C-07						
QC Source Sample: Building 21-Overburden (A3A0614-03)												
EPA 8082A												
Aroclor 1016	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	17.2	---	11.1	ug/kg dry	1	---	11.7	---	---	38	30%	P-12, Q-05
Aroclor 1260	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		Recovery: 101 %		Limits: 60-125 %		Dilution: 1x						
Matrix Spike (23B0147-MS1)												
Prepared: 02/03/23 11:36			Analyzed: 02/06/23 11:38			C-07						
QC Source Sample: Non-SDG (A3A1026-01)												
EPA 8082A												
Aroclor 1016	179	---	10.5	ug/kg dry	1	264	ND	68	47-134%	---	---	
Aroclor 1260	200	---	10.5	ug/kg dry	1	264	ND	76	53-140%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

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601 SW 2nd Ave Suite 1400
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Project: Blue Heron UST Assessment

Project Number: **185705769**
Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0147 - EPA 3546							Soil					
Matrix Spike (23B0147-MS1)			Prepared: 02/03/23 11:36 Analyzed: 02/06/23 11:38					C-07				
QC Source Sample: Non-SDG (A3A1026-01)												
Surr: Decachlorobiphenyl (Surr)				Recovery: 75 %		Limits: 60-125 %		Dilution: 1x				

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ORELAP ID: OR100062

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0118 - EPA 3546						Soil						
Blank (23B0118-BLK1)			Prepared: 02/03/23 04:49 Analyzed: 02/03/23 13:47									
EPA 8270E SIM												
Acenaphthene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 91 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		105 %		54-127 %		"						

LCS (23B0118-BS1)

Prepared: 02/03/23 04:49 Analyzed: 02/03/23 14:13

EPA 8270E SIM												
Acenaphthene	786	---	10.0	ug/kg wet	1	800	---	98	40-123%	---	---	
Acenaphthylene	802	---	10.0	ug/kg wet	1	800	---	100	32-132%	---	---	
Anthracene	812	---	10.0	ug/kg wet	1	800	---	102	47-123%	---	---	
Benz(a)anthracene	794	---	10.0	ug/kg wet	1	800	---	99	49-126%	---	---	
Benzo(a)pyrene	801	---	10.0	ug/kg wet	1	800	---	100	45-129%	---	---	
Benzo(b)fluoranthene	805	---	10.0	ug/kg wet	1	800	---	101	45-132%	---	---	
Benzo(k)fluoranthene	795	---	10.0	ug/kg wet	1	800	---	99	47-132%	---	---	
Benzo(g,h,i)perylene	804	---	10.0	ug/kg wet	1	800	---	100	43-134%	---	---	
Chrysene	827	---	10.0	ug/kg wet	1	800	---	103	50-124%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0118 - EPA 3546						Soil						
LCS (23B0118-BS1)			Prepared: 02/03/23 04:49		Analyzed: 02/03/23 14:13							
Dibenz(a,h)anthracene	866	---	10.0	ug/kg wet	1	800	---	108	45-134%	---	---	
Fluoranthene	781	---	10.0	ug/kg wet	1	800	---	98	50-127%	---	---	
Fluorene	819	---	10.0	ug/kg wet	1	800	---	102	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	843	---	10.0	ug/kg wet	1	800	---	105	45-133%	---	---	
1-Methylnaphthalene	783	---	10.0	ug/kg wet	1	800	---	98	40-120%	---	---	
2-Methylnaphthalene	792	---	10.0	ug/kg wet	1	800	---	99	38-122%	---	---	
Naphthalene	806	---	10.0	ug/kg wet	1	800	---	101	35-123%	---	---	
Phenanthrene	786	---	10.0	ug/kg wet	1	800	---	98	50-121%	---	---	
Pyrene	791	---	10.0	ug/kg wet	1	800	---	99	47-127%	---	---	
Dibenzofuran	783	---	10.0	ug/kg wet	1	800	---	98	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 93 %		Limits: 44-120 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		103 %		54-127 %		"						
Duplicate (23B0118-DUP1)						Prepared: 02/03/23 04:49 Analyzed: 02/03/23 15:03						H-06
QC Source Sample: Building 21-Overburden (A3A0614-03)												
EPA 8270E SIM												
Acenaphthene	230	---	45.6	ug/kg dry	4	---	222	---	---	4	30%	
Acenaphthylene	220	---	45.6	ug/kg dry	4	---	509	---	---	79	30%	Q-04
Anthracene	505	---	45.6	ug/kg dry	4	---	723	---	---	36	30%	Q-04
Benz(a)anthracene	1050	---	45.6	ug/kg dry	4	---	2010	---	---	62	30%	Q-04
Benzo(a)pyrene	1390	---	45.6	ug/kg dry	4	---	3050	---	---	75	30%	Q-04
Benzo(b)fluoranthene	1610	---	45.6	ug/kg dry	4	---	3390	---	---	71	30%	Q-04
Benzo(k)fluoranthene	546	---	45.6	ug/kg dry	4	---	1160	---	---	72	30%	Q-04, M-05
Benzo(g,h,i)perylene	1070	---	45.6	ug/kg dry	4	---	2500	---	---	80	30%	Q-04
Chrysene	1740	---	45.6	ug/kg dry	4	---	3360	---	---	63	30%	Q-04
Dibenz(a,h)anthracene	175	---	45.6	ug/kg dry	4	---	360	---	---	69	30%	Q-04
Fluoranthene	2860	---	45.6	ug/kg dry	4	---	5590	---	---	65	30%	Q-04
Fluorene	201	---	45.6	ug/kg dry	4	---	247	---	---	21	30%	
Indeno(1,2,3-cd)pyrene	1080	---	45.6	ug/kg dry	4	---	2510	---	---	80	30%	Q-04
1-Methylnaphthalene	61.3	---	45.6	ug/kg dry	4	---	82.1	---	---	29	30%	
2-Methylnaphthalene	74.1	---	45.6	ug/kg dry	4	---	113	---	---	41	30%	Q-04
Naphthalene	162	---	45.6	ug/kg dry	4	---	354	---	---	74	30%	Q-04
Phenanthrene	3080	---	45.6	ug/kg dry	4	---	4830	---	---	44	30%	Q-04
Pyrene	3290	---	45.6	ug/kg dry	4	---	6410	---	---	64	30%	Q-04

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ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0118 - EPA 3546						Soil						
Duplicate (23B0118-DUP1)			Prepared: 02/03/23 04:49				Analyzed: 02/03/23 15:03				H-06	
QC Source Sample: Building 21-Overburden (A3A0614-03)												
Dibenzofuran	63.1	---	45.6	ug/kg dry	4	---	76.2	---	---	19	30%	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 74 %		Limits: 44-120 %		Dilution: 4x						
p-Terphenyl-d14 (Surr)		82 %		54-127 %		"						
Matrix Spike (23B0118-MS1)			Prepared: 02/03/23 04:49				Analyzed: 02/03/23 15:28				H-06	
QC Source Sample: Building 21-Overburden (A3A0614-03)												
EPA 8270E SIM												
Acenaphthene	924	---	45.3	ug/kg dry	4	906	222	77	40-123%	---	---	
Acenaphthylene	1240	---	45.3	ug/kg dry	4	906	509	81	32-132%	---	---	
Anthracene	1370	---	45.3	ug/kg dry	4	906	723	71	47-123%	---	---	
Benz(a)anthracene	2140	---	45.3	ug/kg dry	4	906	2010	15	49-126%	---	---	Q-03
Benzo(a)pyrene	2890	---	45.3	ug/kg dry	4	906	3050	-19	45-129%	---	---	Q-03
Benzo(b)fluoranthene	2930	---	45.3	ug/kg dry	4	906	3390	-51	45-132%	---	---	Q-03
Benzo(k)fluoranthene	1730	---	45.3	ug/kg dry	4	906	1160	64	47-132%	---	---	
Benzo(g,h,i)perylene	2470	---	45.3	ug/kg dry	4	906	2500	-3	43-134%	---	---	Q-03
Chrysene	2920	---	45.3	ug/kg dry	4	906	3360	-48	50-124%	---	---	Q-03
Dibenz(a,h)anthracene	1060	---	45.3	ug/kg dry	4	906	360	77	45-134%	---	---	
Fluoranthene	4780	---	45.3	ug/kg dry	4	906	5590	-90	50-127%	---	---	Q-03
Fluorene	1010	---	45.3	ug/kg dry	4	906	247	84	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	2760	---	45.3	ug/kg dry	4	906	2510	28	45-133%	---	---	Q-03
1-Methylnaphthalene	972	---	45.3	ug/kg dry	4	906	82.1	98	40-120%	---	---	
2-Methylnaphthalene	1080	---	45.3	ug/kg dry	4	906	113	107	38-122%	---	---	
Naphthalene	1260	---	45.3	ug/kg dry	4	906	354	100	35-123%	---	---	
Phenanthrene	4300	---	45.3	ug/kg dry	4	906	4830	-58	50-121%	---	---	Q-03
Pyrene	5410	---	45.3	ug/kg dry	4	906	6410	-111	47-127%	---	---	Q-03
Dibenzofuran	911	---	45.3	ug/kg dry	4	906	76.2	92	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 88 %		Limits: 44-120 %		Dilution: 4x						
p-Terphenyl-d14 (Surr)		95 %		54-127 %		"						

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street

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503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

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 23A0686 - EPA 3051A												
Soil												
Blank (23A0686-BLK1)			Prepared: 01/19/23 10:22			Analyzed: 01/19/23 14:01						
EPA 6020B												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (23A0686-BS1)												
			Prepared: 01/19/23 10:22			Analyzed: 01/19/23 14:08						
EPA 6020B												
Arsenic	55.9	---	1.00	mg/kg wet	10	50.0	---	112	80-120%	---	---	
Barium	56.7	---	1.00	mg/kg wet	10	50.0	---	113	80-120%	---	---	
Cadmium	56.2	---	0.200	mg/kg wet	10	50.0	---	112	80-120%	---	---	
Chromium	55.8	---	1.00	mg/kg wet	10	50.0	---	112	80-120%	---	---	
Lead	53.4	---	0.200	mg/kg wet	10	50.0	---	107	80-120%	---	---	
Mercury	1.07	---	0.0800	mg/kg wet	10	1.00	---	107	80-120%	---	---	
Selenium	26.1	---	1.00	mg/kg wet	10	25.0	---	105	80-120%	---	---	
Silver	29.0	---	0.200	mg/kg wet	10	25.0	---	116	80-120%	---	---	
Duplicate (23A0686-DUP1)												
			Prepared: 01/19/23 10:22			Analyzed: 01/19/23 15:43						
QC Source Sample: Non-SDG (A3A0581-01)												
Arsenic	5.08	---	1.22	mg/kg dry	10	---	5.08	---	---	0.005	20%	
Barium	160	---	1.22	mg/kg dry	10	---	154	---	---	4	20%	
Cadmium	0.263	---	0.244	mg/kg dry	10	---	0.287	---	---	9	20%	
Lead	15.4	---	0.244	mg/kg dry	10	---	16.2	---	---	5	20%	
Mercury	ND	---	0.0975	mg/kg dry	10	---	ND	---	---	---	20%	
Silver	ND	---	0.244	mg/kg dry	10	---	ND	---	---	---	20%	
Duplicate (23A0686-DUP2)												
			Prepared: 01/19/23 10:22			Analyzed: 01/19/23 19:15						
QC Source Sample: Non-SDG (A3A0581-01RE1)												
Chromium	16.3	---	1.22	mg/kg dry	10	---	17.3	---	---	6	20%	Q-16

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**ANALYTICAL REPORT****Apex Laboratories, LLC**6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712****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 23A0686 - EPA 3051A						Soil						
Duplicate (23A0686-DUP2)			Prepared: 01/19/23 10:22 Analyzed: 01/19/23 19:15									
QC Source Sample: Non-SDG (A3A0581-01RE1)												
Selenium	ND	---	1.22	mg/kg dry	10	---	0.610	---	---	***	20%	Q-16
Matrix Spike (23A0686-MS1)			Prepared: 01/19/23 10:22 Analyzed: 01/19/23 15:49									
QC Source Sample: Non-SDG (A3A0581-01)												
EPA 6020B												
Arsenic	70.9	---	1.30	mg/kg dry	10	65.1	5.08	101	75-125%	---	---	
Barium	218	---	1.30	mg/kg dry	10	65.1	154	98	75-125%	---	---	
Cadmium	65.9	---	0.260	mg/kg dry	10	65.1	0.287	101	75-125%	---	---	
Lead	80.5	---	0.260	mg/kg dry	10	65.1	16.2	99	75-125%	---	---	
Mercury	1.31	---	0.104	mg/kg dry	10	1.30	ND	101	75-125%	---	---	
Silver	34.6	---	0.260	mg/kg dry	10	32.5	ND	106	75-125%	---	---	
Matrix Spike (23A0686-MS2)			Prepared: 01/19/23 10:22 Analyzed: 01/19/23 19:21									
QC Source Sample: Non-SDG (A3A0581-01RE1)												
EPA 6020B												
Chromium	80.4	---	1.30	mg/kg dry	10	65.1	17.3	97	75-125%	---	---	Q-16
Selenium	32.2	---	1.30	mg/kg dry	10	32.5	ND	99	75-125%	---	---	Q-16

Apex Laboratories

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ANALYTICAL REPORT

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6700 S.W. Sandburg Street

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ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP 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 23B0244 - EPA 1311/3015A						Soil						
Blank (23B0244-BLK1)			Prepared: 02/07/23 12:02 Analyzed: 02/08/23 15:10									
1311/6020B												
Lead	ND	---	0.0500	mg/L	10	---	---	---	---	---	---	TCLP
LCS (23B0244-BS1)			Prepared: 02/07/23 12:02 Analyzed: 02/08/23 15:15									
1311/6020B												
Lead	5.27	---	0.0500	mg/L	10	5.00	---	105	80-120%	---	---	TCLP
Duplicate (23B0244-DUP1)			Prepared: 02/07/23 12:02 Analyzed: 02/08/23 15:36									
QC Source Sample: Non-SDG (A3B0066-01)												
Lead	ND	---	0.0500	mg/L	10	---	ND	---	---	---	20%	
Matrix Spike (23B0244-MS1)			Prepared: 02/07/23 12:02 Analyzed: 02/08/23 15:41									
QC Source Sample: Non-SDG (A3B0066-01)												
1311/6020B												
Lead	5.17	---	0.0500	mg/L	10	5.00	ND	103	50-150%	---	---	
Matrix Spike (23B0244-MS2)			Prepared: 02/07/23 12:02 Analyzed: 02/08/23 16:07									
QC Source Sample: Non-SDG (A3B0101-01)												
1311/6020B												
Lead	5.31	---	0.0500	mg/L	10	5.00	ND	106	50-150%	---	---	TCLPa

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601 SW 2nd Ave Suite 1400
Portland, OR 97204

Project: **Blue Heron UST Assessment**

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

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 23A0696 - Total Solids (Dry Weight)							Soil					
Duplicate (23A0696-DUP1)			Prepared: 01/19/23 11:12		Analyzed: 01/20/23 05:24		PRO					
QC Source Sample: Non-SDG (A3A0425-02)												
% Solids	98.1	---	1.00	%	1	---	98.1	---	---	0.02	10%	
Duplicate (23A0696-DUP2)			Prepared: 01/19/23 11:12		Analyzed: 01/20/23 05:24		PRO					
QC Source Sample: Non-SDG (A3A0425-04)												
% Solids	97.9	---	1.00	%	1	---	97.9	---	---	0.04	10%	
Duplicate (23A0696-DUP3)			Prepared: 01/19/23 11:12		Analyzed: 01/20/23 05:24		PRO					
QC Source Sample: Non-SDG (A3A0425-06)												
% Solids	97.4	---	1.00	%	1	---	97.5	---	---	0.08	10%	
Duplicate (23A0696-DUP4)			Prepared: 01/19/23 18:58		Analyzed: 01/20/23 05:24							
QC Source Sample: Non-SDG (A3A0687-01)												
% Solids	83.1	---	1.00	%	1	---	83.1	---	---	0.04	10%	

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

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ORELAP ID: OR100062

Stantec Portland

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Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

SAMPLE PREPARATION INFORMATION

Hydrocarbon Identification Screen by NWTPH-HCID

Prep: NWTPH-HCID (Soil)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0664							
A3A0614-01	Soil	NWTPH-HCID	01/17/23 09:15	01/19/23 05:48	10.35g/10mL	10g/10mL	0.97

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0683							
A3A0614-02	Soil	NWTPH-Dx	01/17/23 11:30	01/19/23 09:54	10.2g/5mL	10g/5mL	0.98
A3A0614-03RE1	Soil	NWTPH-Dx	01/17/23 11:45	01/19/23 09:54	10.46g/5mL	10g/5mL	0.96
Batch: 23A0989							
A3A0614-01RE1	Soil	NWTPH-Dx	01/17/23 09:15	01/27/23 07:30	10.05g/5mL	10g/5mL	1.00

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0799							
A3A0614-02	Soil	NWTPH-Gx (MS)	01/17/23 11:30	01/17/23 11:30	5.05g/5mL	5g/5mL	0.99
A3A0614-03	Soil	NWTPH-Gx (MS)	01/17/23 11:45	01/17/23 11:45	5.52g/5mL	5g/5mL	0.91

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0799							
A3A0614-02	Soil	5035A/8260D	01/17/23 11:30	01/17/23 11:30	5.05g/5mL	5g/5mL	0.99
A3A0614-03	Soil	5035A/8260D	01/17/23 11:45	01/17/23 11:45	5.52g/5mL	5g/5mL	0.91

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0746							
A3A0614-02	Soil	EPA 8082A	01/17/23 11:30	01/20/23 11:18	10.16g/5mL	10g/5mL	0.98
Batch: 23B0147							

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0614 - 02 14 23 1712**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A3A0614-03	Soil	EPA 8082A	01/17/23 11:45	02/03/23 11:36	10.27g/5mL	10g/5mL	0.97

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23B0118</u>							
A3A0614-03	Soil	EPA 8270E SIM	01/17/23 11:45	02/03/23 04:49	10.14g/5mL	10g/5mL	0.99

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23A0686</u>							
A3A0614-01	Soil	EPA 6020B	01/17/23 09:15	01/19/23 10:22	0.507g/50mL	0.5g/50mL	0.99
A3A0614-02	Soil	EPA 6020B	01/17/23 11:30	01/19/23 10:22	0.499g/50mL	0.5g/50mL	1.00
A3A0614-03	Soil	EPA 6020B	01/17/23 11:45	01/19/23 10:22	0.489g/50mL	0.5g/50mL	1.02

TCLP Metals by EPA 6020B (ICPMS)

Prep: EPA 1311/3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23B0244</u>							
A3A0614-02	Soil	1311/6020B	01/17/23 11:30	02/07/23 12:02	10mL/50mL	10mL/50mL	1.00
A3A0614-03	Soil	1311/6020B	01/17/23 11:45	02/07/23 12:02	10mL/50mL	10mL/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 23A0696</u>							
A3A0614-01	Soil	EPA 8000D	01/17/23 09:15	01/19/23 11:12			NA
A3A0614-02	Soil	EPA 8000D	01/17/23 11:30	01/19/23 11:12			NA
A3A0614-03	Soil	EPA 8000D	01/17/23 11:45	01/19/23 11:12			NA

TCLP Extraction by EPA 1311

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Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

SAMPLE PREPARATION INFORMATION

TCLP Extraction by EPA 1311

Prep: EPA 1311 (TCLP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23B0184							
A3A0614-02	Soil	EPA 1311	01/17/23 11:30	02/06/23 16:00	100g/2000g	100g/2000g	NA
A3A0614-03	Soil	EPA 1311	01/17/23 11:45	02/06/23 16:00	100g/2000g	100g/2000g	NA

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A3A0614 - 02 14 23 1712

QUALIFIER DEFINITIONS

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

Apex Laboratories

- A-01** Sample results are less than MDL and duplicate results are greater than the MDL. See duplicate results.
- C-07** Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- F-09** Results in the Gasoline Range are impacted by the overlap of a heavier fuel hydrocarbon product.
- F-13** The chromatographic pattern does not resemble the fuel standard used for quantitation
- H-06** This sample was received, or the analysis requested, outside the recommended holding time.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- P-10** Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
- P-12** Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
- PRO** Sample has undergone sample processing prior to extraction and analysis.
- Q-03** Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-17** RPD between original and duplicate sample is outside of established control limits.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +23%. The results are reported as Estimated Values.
- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +32%. The results are reported as Estimated Values.
- Q-54b** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +42%. The results are reported as Estimated Values.
- Q-54c** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +90%. The results are reported as Estimated Values.
- Q-56** Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-01** Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.

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Report ID:

A3A0614 - 02 14 23 1712

- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- TCLP** This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 23B0184.
- TCLPa** Limited sample volume. Leachate was prepared using less than the recommended amount of sample per EPA 1311 or 1312. To maintain consistency in leaching, the standard ratio of sample to leachate fluid was maintained.
- V-15** Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

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A3A0614 - 02 14 23 1712

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'.

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).

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.

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Philip Nerenberg, Lab Director



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A3A0614 - 02 14 23 1712

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

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.

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.

Apex Laboratories

Philip Nerenberg, Lab Director

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Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0614 - 02 14 23 1712

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

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

Philip Nerenberg, Lab Director

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601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: Blue Heron UST AssessmentProject Number: 185705769Project Manager: Len Farr

Report ID:

A3A0614 - 02 14 23 1712

APEX LABS COOLER RECEIPT FORM

Client: stantecElement WO#: A3A0614Project/Project #: Blue Heron UST Assessment 185 705 709

Delivery Info:

Date/time received: 1/18/23 @ 1410 By: ESTDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐Cooler Inspection Date/time inspected: 1/18/23 @ 1415 By: ESTChain 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>1.8</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<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: 1/18/23 @ 14:22 By: 2KAMAll samples intact? Yes ☒ No ☐ Comments: _____Bottle labels/COCs agree? Yes ☒ No ☐ Comments: _____COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: _____Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments: _____

Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒

Comments: _____

Additional information: _____

Labeled by:

2KAM

Witness:

DS

Cooler Inspected by:

2KAM

Form Y-003 R-00

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Thursday, February 2, 2023

Len Farr
Stantec Portland
601 SW 2nd Ave Suite 1400
Portland, OR 97204

RE: A3A0639 - Blue Heron UST Assessment - 185705769

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 A3A0639, which was received by the laboratory on 1/18/2023 at 2:10:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@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

(See Cooler Receipt Form for details)

Default Cooler 1.8 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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Project: Blue Heron UST Assessment

Project Number: 185705769

Project Manager: Len Farr

Report ID:

A3A0639 - 02 02 23 1617

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Building 21-UST Liquids	A3A0639-01	Water	01/17/23 12:00	01/18/23 14:10
Building 21-UST Product	A3A0639-02	Liquid	01/17/23 12:15	01/18/23 14:10

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Project Number: **185705769**

Project Manager: **Len Farr**

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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-UST Liquids (A3A0639-01)				Matrix: Water		Batch: 23A0812		
Diesel	40.8	---	1.43	mg/L	1	01/23/23 21:13	NWTPH-Dx	F-13
Oil	ND	---	2.86	mg/L	1	01/23/23 21:13	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>01/23/23 21:13</i>	<i>NWTPH-Dx</i>	
Building 21-UST Product (A3A0639-02RE1)				Matrix: Liquid		Batch: 23A0666		
Diesel	357000	---	57100	mg/kg	40	01/20/23 08:56	NWTPH-Dx	F-13, Q-42
Oil	ND	---	114000	mg/kg	40	01/20/23 08:56	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: %</i>		<i>Limits: 50-150 %</i>	<i>40</i>	<i>01/20/23 08:56</i>	<i>NWTPH-Dx</i>	<i>S-01</i>

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503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0639 - 02 02 23 1617**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Building 21-UST Liquids (A3A0639-01)		Matrix: Water			Batch: 23A1099		C-07, R-03	
Aroclor 1016	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1221	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1232	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1242	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1248	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1254	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
Aroclor 1260	ND	---	1.25	ug/L	1	01/31/23 15:39	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 64 %</i>		<i>Limits: 40-135 %</i>	<i>1</i>	<i>01/31/23 15:39</i>	<i>EPA 8082A</i>	
Building 21-UST Product (A3A0639-02)		Matrix: Liquid			Batch: 23A0861		C-07	
Aroclor 1016	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1221	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1232	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1242	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1248	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1254	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
Aroclor 1260	ND	---	1.42	mg/kg	2	01/24/23 18:46	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 60-125 %</i>	<i>2</i>	<i>01/24/23 18:46</i>	<i>EPA 8082A</i>	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: OR100062**Stantec Portland**601 SW 2nd Ave Suite 1400
Portland, OR 97204Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0639 - 02 02 23 1617**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0666 - EPA 3580A						Oil						
Blank (23A0666-BLK1)			Prepared: 01/19/23 05:52 Analyzed: 01/20/23 03:11									
NWTPH-Dx												
Diesel	ND	---	2000	mg/kg	1	---	---	---	---	---	---	
Oil	ND	---	4000	mg/kg	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 94 %		Limits: 50-150 %		Dilution: 1x						
LCS (23A0666-BS1)						Prepared: 01/19/23 05:52 Analyzed: 01/20/23 03:30						
NWTPH-Dx												
Diesel	11100	---	2000	mg/kg	1	12500	---	88	38-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 97 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (23A0666-DUP2)						Prepared: 01/19/23 05:52 Analyzed: 01/20/23 09:16						
QC Source Sample: Building 21-UST Product (A3A0639-02RE1)												
NWTPH-Dx												
Diesel	588000	---	80000	mg/kg	40	---	357000	---	---	49	30%	F-13, Q-17
Oil	ND	---	160000	mg/kg	40	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: %		Limits: 50-150 %		Dilution: 40x						
Batch 23A0812 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (23A0812-BLK1)			Prepared: 01/23/23 11:30 Analyzed: 01/23/23 19:51									
NWTPH-Dx												
Diesel	ND	---	0.200	mg/L	1	---	---	---	---	---	---	
Oil	ND	---	0.400	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 87 %		Limits: 50-150 %		Dilution: 1x						
LCS (23A0812-BS1)						Prepared: 01/23/23 11:30 Analyzed: 01/23/23 20:12						
NWTPH-Dx												
Diesel	1.11	---	0.200	mg/L	1	1.25	---	88	36-132%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 90 %		Limits: 50-150 %		Dilution: 1x						
LCS Dup (23A0812-BSD1)						Prepared: 01/23/23 11:30 Analyzed: 01/23/23 20:32						
NWTPH-Dx												
Diesel	1.08	---	0.200	mg/L	1	1.25	---	86	36-132%	3	30%	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Stantec Portland

601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: Blue Heron UST Assessment

Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0639 - 02 02 23 1617

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0812 - EPA 3510C (Fuels/Acid Ext.)						Water						
LCS Dup (23A0812-BSD1)						Prepared: 01/23/23 11:30 Analyzed: 01/23/23 20:32						Q-19
Surr: o-Terphenyl (Surr)		Recovery: 97 %		Limits: 50-150 %		Dilution: 1x						

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0639 - 02 02 23 1617**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0861 - EPA 3580A/Sulfuric Acid and Florisil Cleanup Transformer Oil												
Blank (23A0861-BLK1) Prepared: 01/24/23 10:27 Analyzed: 01/24/23 12:19 C-07												
<u>EPA 8082A</u>												
Aroclor 1016	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	1.00	mg/kg	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr) Recovery: 109 % Limits: 60-125 % Dilution: 1x												
LCS (23A0861-BS1) Prepared: 01/24/23 10:27 Analyzed: 01/24/23 12:38 C-07												
<u>EPA 8082A</u>												
Aroclor 1016	17.3	---	1.00	mg/kg	1	25.0	---	69	47-134%	---	---	
Aroclor 1260	23.8	---	1.00	mg/kg	1	25.0	---	95	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr) Recovery: 105 % Limits: 60-125 % Dilution: 1x												
Duplicate (23A0861-DUP1) Prepared: 01/24/23 10:27 Analyzed: 01/24/23 13:32 C-07												
<u>QC Source Sample: Non-SDG (A3A0737-01)</u>												
Aroclor 1016	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	1.61	mg/kg	2	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr) Recovery: 105 % Limits: 60-125 % Dilution: 2x												
Matrix Spike (23A0861-MS1) Prepared: 01/24/23 10:27 Analyzed: 01/24/23 13:32 C-07												
<u>QC Source Sample: Non-SDG (A3A0786-03)</u>												
<u>EPA 8082A</u>												
Aroclor 1016	14.1	---	1.48	mg/kg	2	18.5	ND	76	47-134%	---	---	
Aroclor 1260	15.9	---	1.48	mg/kg	2	18.5	ND	86	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr) Recovery: 96 % Limits: 60-125 % Dilution: 2x												

Apex Laboratories

Philip Nerenberg, Lab Director

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Project: Blue Heron UST Assessment

Project Number: 185705769

Project Manager: Len Farr

Report ID:

A3A0639 - 02 02 23 1617

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0861 - EPA 3580A/Sulfuric Acid and Florisil Cleanup							Transformer Oil					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A1099 - EPA 3510C (Neutral pH)						Water						
Blank (23A1099-BLK1)			Prepared: 01/31/23 07:07 Analyzed: 01/31/23 14:46									C-07
EPA 8082A												
Aroclor 1016	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 62 %		Limits: 40-135 %		Dilution: 1x						
LCS (23A1099-BS1)			Prepared: 01/31/23 07:07 Analyzed: 01/31/23 15:03									C-07
EPA 8082A												
Aroclor 1016	0.707	---	0.0200	ug/L	1	1.25	---	57	46-129%	---	---	
Aroclor 1260	0.844	---	0.0200	ug/L	1	1.25	---	68	45-134%	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 67 %		Limits: 40-135 %		Dilution: 1x						
LCS Dup (23A1099-BSD1)			Prepared: 01/31/23 07:07 Analyzed: 01/31/23 15:21									C-07, Q-19
EPA 8082A												
Aroclor 1016	0.706	---	0.0200	ug/L	1	1.25	---	57	46-129%	0.1	30%	
Aroclor 1260	0.843	---	0.0200	ug/L	1	1.25	---	67	45-134%	0.06	30%	
Surr: Decachlorobiphenyl (Surr)		Recovery: 64 %		Limits: 40-135 %		Dilution: 1x						

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ORELAP ID: OR100062

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601 SW 2nd Ave Suite 1400

Portland, OR 97204

Project: **Blue Heron UST Assessment**Project Number: **185705769**Project Manager: **Len Farr****Report ID:****A3A0639 - 02 02 23 1617****SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3510C (Fuels/Acid Ext.)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0812							
A3A0639-01	Water	NWTPH-Dx	01/17/23 12:00	01/23/23 11:30	140mL/5mL	1000mL/5mL	7.14

Prep: EPA 3580A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0666							
A3A0639-02RE1	Liquid	NWTPH-Dx	01/17/23 12:15	01/19/23 05:52	0.14g/5mL	0.1g/5mL	0.71

Polychlorinated Biphenyls by EPA 8082A**Prep: EPA 3510C (Neutral pH)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A1099							
A3A0639-01	Water	EPA 8082A	01/17/23 12:00	01/31/23 07:07	80mL/5mL	1000mL/5mL	12.50

Prep: EPA 3580A/Sulfuric Acid and Florisil Cleanup

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0861							
A3A0639-02	Liquid	EPA 8082A	01/17/23 12:15	01/24/23 16:28	0.141g/5mL	0.1g/5mL	0.71

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Project Number: **185705769**

Project Manager: **Len Farr**

Report ID:

A3A0639 - 02 02 23 1617

QUALIFIER DEFINITIONS

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

Apex Laboratories

- C-07** Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- F-13** The chromatographic pattern does not resemble the fuel standard used for quantitation
- Q-17** RPD between original and duplicate sample is outside of established control limits.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- R-03** Elevated Reporting Limits due to limited sample volume.
- S-01** Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.

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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'.

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).

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.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

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.

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.

Apex Laboratories

Philip Nerenberg, Lab Director

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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

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

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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Report ID:

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APEX LABS		CHAIN OF CUSTODY		Lab # <u>A300639</u> COC <u>1</u> of <u>1</u>																			
Company: STANTEC	Project Mgr: LEN FARR	Project Name: BLUE HERON UST ASSESSMENT	Project #: 185705769																				
Address: 601 SW 2nd Ave, Suite 1400, PDX	Phone: 714 686 4435	LEONARD FARR Email: Q.STANTEC.COM	PO #																				
Sampled by: <u>ROBERT MCALISTER</u> Site Location: State <u>OR</u> County <u>CLATSOP</u> SAMPLE ID <u>BUILDING 21 - UST LIQUIDS</u> <u>BUILDING 21 - UST PRODUCT</u>																							
DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-DX	NWTPH-GX	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS. TCLP	TCLP Metals (8)	Frozen Sample	Frozen Archive		
11/17/23	12:00	Ag	1	X	H	H							X										
11/17/23	12:15	Prod.	1	X	H	H							X										
SPECIAL INSTRUCTIONS: H = QUANTIFY IF DETECTED w/ HCLD																							
TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Standard Other																							
SAMPLES ARE HELD FOR 30 DAYS																							
RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RELINQUISHED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>		RECEIVED BY: Signature: <u>[Signature]</u> Date: <u>11/18/23</u>	
Printed Name: <u>ROBERT MCALISTER</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>		Printed Name: <u>LEN FARR</u> Company: <u>STANTEC</u>			

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A3A0639 - 02 02 23 1617

APEX LABS COOLER RECEIPT FORM

Client: Stantec Element WO#: A3 A0639

Project/Project #: Blue Heron UST Assessment 185705769

Delivery Info:

Date/time received: 1/18/23 @ 1410 By: EST

Delivered by: Apex Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other

Cooler Inspection Date/time inspected: 1/18/23 @ 1415 By: EST

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)	1.8						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	IN						

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: 1/18/23 @ 1445 By: RNP

All samples intact? Yes ☒ No Comments:

Bottle labels/COCs agree? Yes ☒ No Comments:

COC/container discrepancies form initiated? Yes No ☒

Containers/volumes received appropriate for analysis? Yes ☒ No Comments: Only 1807 RNP 1/18

~~for analysis - got the bottles or used for other 102 vials are used containers mark~~

Do VOA vials have visible headspace? Yes No NA ☒

Comments:

Water samples: pH checked: Yes ☒ No NA pH appropriate? Yes ☒ No ☒ NA

Comments: Liquids pH ~ 7 - received unpreserved

Additional information:

Labeled by:

RNP

Witness:

ZAM

Cooler Inspected by:

RNP

Form Y-003 R-00

APPENDIX D

Data Validation Report

DATA VALIDATION SUMMARY REPORT

GENERAL INFORMATION:

Lab Name:	APEX Laboratories
Lab SDG/Project/Work Order:	A3A0614
Project Name:	Former Blue Heron Mil Site Oregon City, Oregon
Stantec Project Number:	185705769
Client:	Confederated Tribes of Grand Ronde
Validator Name:	Kathlyn Doroski
Date of Validation:	March 7, 2023

SAMPLE INFORMATION:

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Number of Samples:	3
Matrix:	3 Soil
Number of Trip Blanks:	0
Number of Equipment Blanks:	0
Number of Field Duplicates:	0
Number of Field Triplicates:	0
Date of Sample Collection:	January 17, 2023

Sample Name:	Analyses	Batch
Building 16-5'	(NWTPH-HCID)	23A0664
	DRO/ORO (NWTPH-Dx)	23A0989
	RCRA Metals (EPA 6020B)	23A0686
Building 21 – Impacted Overburden	VOCs (EPA 8260D)	23A0799
	GRO (NWTPH-Gx)	23A0799
	PCBs (EPA 8082A)	23A0746
	DRO/ORO (NWTPH-Dx)	23A0683
	RCRA Metals (EPA 6020B)	23A0686
	TCLP Metals (6020B)	23B0244
	TCLP Extraction (1311)	23B0184
Building 21—Overburden	VOCs (EPA 8260D)	23A0799
	GRO (NWTPH-Gx)	23A0799
	PCBs (EPA 8082A)	23B0147
	DRO/ORO (NWTPH-Dx)	23A0683
	PAHs (EPA 8270E)	23B0118
	RCRA Metals (EPA 6020B)	23A0686
	TCLP Metals (6020B)	23B0244
	TCLP Extraction (1311)	23B0184

GENERAL DATA VALIDATION:

<u>Case Narrative:</u> The laboratory did not identify any non-conformances in the case narrative.
<u>Chain of Custody:</u> The COC was complete, and all samples were analyzed as requested.
<u>Sample Receipt:</u> The samples were received within the acceptable temperature range of 0° - 6° C.
<u>Holding Times:</u> PAHs were analyzed past the recommended holding time in sample Building 21-Impacted Overburden. All associated data were qualified as estimated "J".

<u>Trip Blank Review:</u>
There were no trip blanks in this SDG.
<u>Equipment Blank Review:</u>
There were no trip blanks in this SDG.
<u>Surrogates:</u>
The surrogate percent recovery was less than the lower acceptance limit for o-Terphenyl in sample Building 21-Impacted Overburden. This sample was diluted 100x, so no data was qualified.
<u>Elevated Reporting Limits:</u>
NWTPH-Dx – Sample Building 21-Impacted Overburden was analyzed at an 100x dilution and sample Building 21-Overburden was analyzed at a 20x dilution.
NWTPH-Gx – Both soil samples were analyzed at a 50x dilution.
VOCs and GRO - Both soil samples were analyzed at a 50x dilution.
PAHs – Sample Building 21-Overburden was analyzed at a 4x dilution.
Metals: All soil samples were analyzed at a 10x dilution.
Laboratory MDLs and MRLs were raised accordingly.
<u>Additional Items:</u>
ORO results were qualified as estimated in sample Building 21-Impacted Overburden due to the chromatographic pattern not matching the fuel standard used for quantification.
GRO result was qualified as estimated with a potential positive bias in sample Building 21-Impacted Overburden due to overlapping with a heavier fuel hydrocarbon product.
Aroclor 1254 was qualified as estimated in sample Building 21-Impacted Overburden because there was a presence to multiple PCB Aroclors or congeners.
Benzo(b)fluoranthene was qualified as estimated in sample Building 21-Overburden because there was insufficient peak separation.

PER ANALYSIS:

Total Petroleum Hydrocarbons, Gas, Diesel, and Oil Range Organics Methods NWTPH-HCID and NWTPH-Gx (Batches 23A0664 and 23A0799)
Method Blanks:
No analytes were detected above the MRL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample:
The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate:
A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate:
Project sample Building 16-5' was analyzed as one of the lab duplicates. Calculated RPD was within acceptance limits.
Volatile Organic Compounds, Method 8260D (Batch 23A0799)
Method Blanks:
No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample:
LCS percent recoveries exceeded the upper acceptance limit for bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride in batch 23A0799. The analytes were not detected in the samples, no data were qualified.

Matrix Spike/Matrix Spike Duplicate: Project Sample Building 21-Overburden was run as the MS. The MS spike recovery exceeded the upper acceptance limit for bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride. None of these analytes were detected in the parent sample; no data was qualified.
Laboratory Duplicate: A project sample was not analyzed as the lab duplicate.
Diesel and Oil Range Organics, Method NWTPH-Dx (Batches 23A0683 and 23A0989)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate: Project sample Building 16-5' was analyzed as one of the lab duplicates. Calculated RPD for Oil exceeded the upper acceptance limit. Oil was qualified as estimated (J) in the sample.
Polychlorinated Biphenyls, Method 8082A (Batches 23A0746 and 23B0147)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample Building 21-Impacted Overburden was analyzed as the MS. The percent recoveries were within the acceptance limits; no qualifiers are needed.
Laboratory Duplicate: Project samples Building 21-Impacted Overburden and Building 21-Overburden were analyzed for the laboratory duplicate. The RPDs exceeded the upper acceptance limit for Aroclor 1254 and Aroclor 1260 for Building 21-Impacted Overburden and Aroclor 1254 for Building 21-Overburden, but results were less than 5x the reporting limit so no qualifiers are needed.
Polyaromatic Hydrocarbons, Method 8270E SIM (Batch 23B0118)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample Building 21-Overburden was analyzed as the MS. Percent recovery for 9 PAHs were below the lower acceptance limit. Spike concentrations were less than 1/4th the sample concentration; therefore no data was qualified.
Laboratory Duplicate: Project sample Building 21-Overburden was analyzed as the lab duplicate. Calculated RPD for fifteen PAHs exceeded the upper acceptance limit. These analytes were qualified as estimated (J) in the parent sample if both the original sample and duplicate had concentrations greater than 5x the reporting limit.
RCRA Metals, Method 6020B (Batch 23A0686)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.

Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate: A project sample was not analyzed for the lab duplicate.
TCLP Metals, Method 6020B (Batch 23B0244)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate: A project sample was not analyzed for the lab duplicate.

FIELD REPLICATE REVIEW: No field replicates were sampled.

DETERMINATION:

The data in this work order have been validated, all data are usable as qualified.

<u>Sample Name</u>	<u>Method</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
Building 21-Overburden	8270E SIM	Acenaphthene	222	222 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Acenaphthylene	509	509 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Anthracene	723	723 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Benzo(a)anthracene	2010	2010 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Benzo(a)pyrene	3050	3050 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Benzo(b)fluoranthene	3390	3390 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Benzo(k)fluoranthene	1160	1160 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Benzo(g,h,i)perylene	2500	2500 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Chrysene	3360	3360 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Dibenz(a,h)anthracene	360	360 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Fluoranthene	5590	5590 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Fluorene	247	247 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Indeno(1,2,3-cd)pyrene	2510	2510 J	µg/kg	01a
Building 21-Overburden	8270E SIM	1-Methylnaphthalene	82.1	82.1 J	µg/kg	01a
Building 21-Overburden	8270E SIM	2-Methylnaphthalene	113	113 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Naphthalene	354	354 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Phenanthrene	4830	4830 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Pyrene	6410	6410 J	µg/kg	01a
Building 21-Overburden	8270E SIM	Dibenzofuran	76.2	76.2 J	µg/kg	01a
Building 16-5'	NWTPH-Dx	Oil	358	358 J	mg/Kg	23a

Notes:

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

SIM = selective ion monitoring

Reason Codes:

01a = Sample was not prepared within the specified holding time.

NOTES:

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value. J-qualifiers may be appended with a "+" or "-" to indicate the result has a potential positive or negative bias, respectively.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2014a. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-013-001*. Office of Superfund Remediation and Technology Innovation (OSRTI). August.

EPA. 2014b. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002*. OSRTI. August.

Stantec, 2018. *Master Quality Assurance Project Plan for Oregon Cascades West Coalition of Governments*. Cooperative Agreement No. BF-01J40301. March 26, 2018.