CONSTRUCTION COMPLETION REPORT

Freewell Site
2030 NW Raleigh Street
Portland, Oregon
DEQ LUST File No. 26-22-0118

For
Freewell Apartments, LLC
November 22, 2022

Project: CairnPac-14-08

NV5

November 22, 2022

Freewell Apartments, LLC
2175 NW Raleigh Street, Suite 104
Portland, OR 97210

Attention: James Santana

Construction Completion Report
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2030 NW Raleigh Street
Portland, Oregon
DEQ LUST File No. 26-22-0118
Project: CairnPac-14-08

NV5 is pleased to submit this Construction Completion Report for the Freewell Site located at 2030 NW Raleigh Street in Portland, Oregon (subject property). The Freewell Site redevelopment project encompasses the approximate east half of Block 291. This report (1) summarizes the measures employed for the excavation, handling, characterization, and management of contaminated soil at the subject property; (2) documents the decommissioning of five USTs; and (3) documents the results of confirmation soil and soil gas samples collected from the limits of the mass excavation. Based on the information presented in this report, on behalf of Freewell Apartments, LLC, we respectively request that DEQ issue an NFA determination for LUST File No. 26-22-0118.

♦ ♦ ♦

Please call if you have questions or require additional information.

Sincerely,

NV5

Mike F. Coenen, P.E.
Principal Engineer

cc: Kevin Dana, Oregon Department of Environmental Quality

JKP:KRS:MFC:kt
Attachments
One copy submitted
Document ID: CairnPac-14-08-112222-envr-CCR.docx
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ACRONYMS AND ABBREVIATIONS

AOC	area of concern
BGS	below ground surface
BS	blank spike
BSD	blank spike duplicate
cfm	cubic feet per minute
CFSL	clean fill screening level
CMMP	Contaminated Media Management Plan
DEQ	Oregon Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
HCID	hydrocarbon identification
HVAC	heating, ventilation, and air conditioning
I.D.	identification
LUST	Leaking Underground Storage Tank
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NE	not established
NFA	No Further Action
not detected	compound not detected at a concentration equal to or greater than the laboratory method reporting limit or reporting detection limit
OAR	Oregon Administrative Rule
ORRCO	Oil Re-Refining Company, Inc.
PAH	polycyclic aromatic hydrocarbon
PBOT	Portland Bureau of Transportation
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
QC	quality control
RBC	risk-based concentration
RBDM	*Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
ROW	right-of-way
RPD	relative percent difference
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure

TMB	trimethylbenzene
µg/m^3	micrograms per cubic meter
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

This report summarizes the management and final disposition of soil removed during earthwork activities conducted at the Freewell Site located at 2030 NW Raleigh Street in Portland, Oregon (subject property). The subject property encompasses the approximate east half of Block 291 (referenced herein as Block 291E). The subject property encompasses approximately 1.2 acres on Tax Lot 0105 of Multnomah County Tax Map 1N1E33BA. The subject property is zoned Commercial Mixed Use (CM3) and is currently being redeveloped to accommodate a mixed-use building with one below-grade parking level. The City of Portland designates zone CM3 as a large-scale, commercial mixed-use zone intended for sites close to the Central City, in high-capacity transit station areas or town centers, and on civic corridors. The subject property is currently owned by Freewell Apartments, LLC. Earthwork activities described in this report were conducted in general conformance with the CMMP dated December 29, 2021.[1]

The subject property is shown relative to surrounding physical features on Figure 1. The layout of Block 291E prior to redevelopment activities is shown on Figure 2. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 SUBJECT PROPERTY REDEVELOPMENT

The subject property is currently an active construction site for the continued development of a new seven-story, mixed-use building with one level of below-grade parking. The below-grade parking level will be serviced by an HVAC system independent of the remainder of the structure. The development will include 192 residential apartments, commercial space, and a 2-story amenity pavilion. The ground floor level (level above the parking level) will consist of the main residential entry, retail space, amenities, an open-air courtyard, and residential units. Residential units and additional amenities will be located on level 2. The upper levels (floors 3 through 7) will consist of residential units. Development plans showing the layouts for the below-grade and above-grade levels, prepared by SERA Architects, Inc., are presented in Appendix A.

3.0 REGULATORY SCREENING LEVELS

Although a formal conceptual site model and Level I Ecological Risk Assessment were not prepared for the subject property, the following sections present the applicable DEQ regulatory screening levels for soil and soil gas based on our understanding of the planned redevelopment and the analytical results of the historical investigations at the subject property.

3.1 DEQ RBCS

DEQ has established generic RBCs for various contaminants, exposure pathways, and receptors to evaluate risk to human health and the environment. Based on our understanding of the redevelopment (Section 2.0), the following exposure pathways and receptors are considered complete at the subject property.

[1] NV5, 2021. *Contaminated Media Management Plan; Freewell Block 291E; 2030 NW Raleigh Street; Portland, Oregon,* dated December 29, 2021. Project: CairnPac-14-08

- *Soil Ingestion, Dermal Contact, and Inhalation:* construction worker and excavation worker receptors
- *Volatilization to Outdoor Air:* urban residential and occupational receptors
- *Vapor Intrusion into Buildings*: urban residential and occupational receptors

The RBCs associated with the above exposure pathways and receptors that were used to compare soil and/or soil gas chemical analytical results to are referred herein as the "applicable DEQ RBCs." Urban residential and occupational receptors are not included as applicable RBCs for the *Soil Ingestion, Dermal Contact, and Inhalation* exposure pathway because the majority of the contaminated soil was removed from the subject property, the subject property will be covered in hardscape, and residual contaminated soil is deeper than 3 feet BGS (DEQ considers the *Soil Ingestion, Dermal Contact, and Inhalation* exposure pathway complete for residential, urban residential, and occupational receptors that may come into contact with contaminated soil up to 3 feet BGS).

In addition, the DEQ *Leaching to Groundwater* RBCs are not used for comparison purposes as this exposure pathway is not considered complete since the City of Portland will provide potable water to the subject property (and they do currently to the surrounding properties) and future water supply wells are not planned at the subject property.

Although the *Vapor Intrusion into Buildings* exposure pathway is considered complete for urban residential and occupational receptors (those receptors that will occupy the ground floor level above the below-grade parking garage), an engineering control in the form of a dedicated ventilation system within the parking garage, separate from the above-grade levels, will be constructed and operated in accordance with City of Portland requirements; in particular, the air exchange rates. The below-grade ventilated parking garage will exist beneath the entire building footprint. Details of the ventilation system are provided in Section 8.0.

Soil and soil gas samples collected during the earthwork activities described in this report (Section 7.0) are compared to applicable DEQ RBCs in Tables 1 through 6. The historical soil, soil gas, and perched groundwater chemical analytical results from previous investigations (Section 4.2) are presented in Tables 1 through 9 in Appendix B.

3.2 ECOLOGICAL SCREENING LEVELS

A Level I Ecological Risk Assessment has not been completed for the subject property. However, based on the long-term development of the subject property and surrounding sites as industrial, commercial, and high-density urban residential, it is highly unlikely that sensitive ecological habitat or receptors are located at or in the vicinity of the subject property. Therefore, soil and soil gas chemical analytical results have not been compared to ecological screening levels since ecological exposure pathways are considered incomplete.

3.3 DEQ CFSLS

DEQ has published an internal management directive, which includes CFSLs, to use as guidance when evaluating disposal options for soil with low levels of contamination.[2] Soil that does not

[2] DEQ Internal Management Directive titled *Clean Fill Determinations*, updated February 21, 2019

visually appear contaminated and contains contamination at levels less than the DEQ CFSLs can be reused on site or disposed of off site without restrictions. However, if excavation spoils exhibit physical evidence of contamination (such as staining and/or odor), the spoils would not meet DEQ's definition of "clean fill" regardless of whether chemical constituents were present at concentrations less than DEQ CFSLs. Soil requiring export that does not meet DEQ's definition of "clean fill" would require disposal at a RCRA Subtitle D landfill or other DEQ-approved facility. Soil chemical results that are compared to established DEQ CFSLs are presented in Tables 1 through 5.

4.0 BACKGROUND

The following sections describe the background of the subject property, including a summary of previous investigations conducted at the subject property and a description of the subsurface soil and groundwater conditions at the subject property.

4.1 SUBJECT PROPERTY HISTORY

Our review of historical sources from 1889 through 2021 indicated that Block 291 (including the subject property) was developed for residential use and a fire station sometime before 1889. Sometime between 1889 and 1908, Block 291 was developed with additional commercial structures. By 1936, the former structures were removed and most of Block 291 was redeveloped with a truck garage and loading facility associated with Consolidated Freightways. Sometime between 1965 and 1969, the structures had been removed and Block 291 was redeveloped as an asphalt concrete-paved parking area. By 2021, the west half of Block 291 (Block 291W) had been redeveloped as a six-story, mixed use building.

4.2 PREVIOUS INVESTIGATIONS

The following sections briefly summarize the findings and conclusions of previous environmental investigations conducted at the subject property based on our review of the following environmental documents:

- *Report of Environmental Services; Con-Way Property; 2050 NW Quimby Street; Portland, Oregon,* prepared by GeoDesign, Inc., dated January 23, 2007
- *Report of Environmental Services; Con-Way, Inc. Property; 2050 NW Quimby Street; Portland, Oregon; LUST #26-89-0305,* prepared by GeoDesign, Inc., dated September 2, 2009
- *Report of Environmental Services; Con-Way, Inc. Property; 2050 NW Quimby Street; Portland, Oregon; LUST #26-89-0305,* prepared by GeoDesign, Inc., dated December 3, 2010
- *Additional Environmental Services; Con-Way, Inc. Property; 2050 NW Quimby Street; Portland, Oregon; LUST #26-89-0305,* prepared by GeoDesign, Inc., dated January 26, 2012
- *Phase I Environmental Site Assessment; 21NW Development Site; Blocks 261, 262, 290, 291, 292, 293, 294, 295, and 16; Portland, Oregon,* prepared by GeoDesign, Inc., dated June 5, 2013
- *Phase I Environmental Site Assessment; Block 291; 2050 NW Raleigh Street; Portland, Oregon,* prepared by GeoDesign, Inc., dated April 27, 2017
- *Phase II Environmental Site Assessment; Block 291; 2050 NW Raleigh Street; Portland, Oregon,* prepared by GeoDesign, Inc., dated January 3, 2018

4.2.1 GeoDesign, Inc. (2007)

In January 2007, GeoDesign completed a geophysical survey at Block 291 that included the subject property. Two subsurface anomalies were identified on the subject property as potential USTs. Other anomalies were also identified; based on aerial photograph research, GeoDesign determined the anomalies may be related to former fueling areas, building drywells, or other former trucking facility activities. GeoDesign recommended a limited subsurface investigation of Block 291 to evaluate whether the identified anomalies have adversely impacted subsurface soil.

4.2.2 GeoDesign, Inc. (2009, 2010)

GeoDesign conducted a water well survey for the Block 291 vicinity, the results of which indicated that properties in the vicinity used City of Portland-supplied drinking water and water wells were not present on any of the properties that responded to the survey. The 2009 and 2010 environmental services reports also summarize additional subsurface investigations completed at Block 291 that included direct-push borings GP-4 through GP-7 in 2009 and GP-9 in 2010. The explorations were conducted on Block 291E to further evaluate soil and groundwater down gradient (relative to the inferred groundwater flow direction) of a monitoring well located on Block 290 south of Block 291. Based on the results of these investigations, petroleum hydrocarbons were not detected in soil samples submitted for analysis. TCE and PCE were detected in groundwater samples collected from the direct-push borings at concentrations similar to those found up gradient, although decreasing in concentration at the down-gradient sample location.

4.2.3 GeoDesign, Inc. (2012)

In January 2012, GeoDesign submitted a letter to DEQ summarizing the additional environmental services conducted at Blocks 290 and 291 and requested that DEQ issue an NFA determination for LUST File No. 26-89-0305. LUST File No. 26-89-0305 was associated with a release confirmed during decommissioning of the former waste oil UST located southeast of the west garage associated with the former Consolidated Freightways facility on Block 290. The NFA request summarized that a source of PCE and TCE was not identified in soil at the former UST locations, groundwater in the vicinity of Block 291 was not used domestically, and the concentrations of PCE and TCE detected in groundwater decreased in a down-gradient direction from Block 290 and are less than the current DEQ *Vapor Intrusion into Buildings* RBCs for a residential receptor. Based on these lines of evidence, GeoDesign concluded there was no unacceptable health risk associated with the release from the former waste oil UST and requested DEQ issue an NFA determination for LUST File No. 26-89-0305. In October 2012, DEQ issued an NFA determination for LUST File No. 26-89-0305.

4.2.4 GeoDesign, Inc. (2013)

In June 2013, GeoDesign completed a Phase I ESA of the proposed 21NW Development site that included Block 291. The report concluded that Block 291 was historically used as the Consolidated Freightways truck maintenance facility prior to construction of the facility to the south on Block 290. The assessment found records of three USTs located in the adjacent ROWs west and north of Block 291 but found no record of removal of the USTs. The report concluded that the potential USTs represented a REC at Block 291.

4.2.5 GeoDesign, Inc. (2017)

In April 2017, GeoDesign completed a Phase I ESA of Block 291. The report concluded that Block 291 was historically occupied by the Consolidated Freightways truck maintenance facility. The Phase I ESA indicated that the subsurface anomalies identified during the 2007 geophysical survey, including two potential USTs, represented a REC at Block 291. In addition, the Phase I ESA identified PBOT records of two 10,000-gallon oil USTs in the ROW adjacent to the west side of Block 291W (PBOT Permit 802) and one mineral oil UST in the ROW adjacent to the north side of Block 291 (PBOT Permit 575-A). There were no decommissioning records documenting the removal of these three USTs. Due to the lack of decommissioning documentation, GeoDesign concluded that the potential USTs represented a REC at Block 291. GeoDesign recommended completing subsurface investigations to evaluate the RECs at the subject property.

4.2.6 GeoDesign, Inc. (2018)

In November 2017, GeoDesign conducted a Phase II ESA of Block 291 that included analyzing a soil gas sample (SG-1) and soil samples from eight direct-push borings (DP-1 through DP-8) advanced at Block 291E. The results of the January 2018 Phase II ESA indicated that contaminated soil was present beneath Block 291E at concentrations greater than applicable DEQ RBCs and CFSLs. In addition, the chemical analytical results of soil gas sample SG-1 indicated that two VOCs (1,1,2-trichloroethane and 1,2,4-TMB) were present at concentrations greater than the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors. Based on these findings, GeoDesign recommended preparing a CMMP to provide protocol for the management of the known and potentially impacted soil at the Block 291E site during redevelopment activities. The analytical results from the Phase II ESA soil samples collected from borings DP-1 through DP-8 are presented in Tables 1 through 5 in Appendix B. The analytical results from the Phase II ESA soil gas sample (SG-1) are presented in Table 9 in Appendix B.

4.3 SOIL CONDITIONS

Subsurface soil conditions prior to the current redevelopment, as encountered during advancement of borings DP-1 through DP-8, generally consisted of approximately 7.5 to 16 feet of fill (comprised of varying amounts of silt, sand, clay, and gravel) underlain by silt and sand to depths between approximately 23.5 and 30 feet BGS. Alluvial gravel with varying amounts of silt and sand was encountered underlying the silt and sand in three of the borings to the maximum depths explored (40 feet BGS). Concrete (up to 6 inches thick) was also encountered in the fill material in one of the borings (boring DP-8). The locations of the borings are shown on Figure 2.

4.4 GROUNDWATER CONDITIONS

While regional groundwater was not encountered in the borings advanced on Block 291, isolated and discontinuous zones of perched water were observed in several of the borings. A groundwater sample was collected from the perched water zone encountered in boring DP-6. Petroleum hydrocarbons, RCRA 8 total metals, and PAHs were either not detected or were detected at concentrations less than applicable DEQ RBCs. Groundwater samples were not collected from the perched water zones in the remaining borings due to insufficient water volume. The analytical results from the Phase II ESA groundwater samples collected from boring DP-6 are presented in Tables 6 through 8 in Appendix B.

Based on a review of previous reports and topographic maps of the area, shallow groundwater is expected to be present at depths ranging from 40 to 65 feet BGS and is anticipated to flow to the northeast toward the Willamette River. The depth to groundwater may fluctuate in response to seasonal changes, changes in surface topography, water level fluctuation in nearby bodies of water, and other factors (such as dewatering activities at nearby construction sites and/or permanent dewatering systems for below-grade levels of nearby structures).

5.0 CONTAMINATED MEDIA MANAGEMENT PLAN

NV5 prepared a CMMP for Block 291E, dated December 29, 2021, for use by the construction team and to assist the earthwork contractor with the identification and proper management of known and potentially contaminated soil that could be encountered during construction and earthwork activities. The CMMP noted that petroleum-related contaminants had been detected in the soil throughout the central and west portions of the subject property. For the purpose of the CMMP, the contaminated soil identified at the subject property was designated as an AOC.

Field screening and analytical results indicated the contaminated soil within the AOC extends from approximately 0.5 foot to 25 feet BGS. However, the estimated lateral extent within the AOC varied with depth. The estimated lateral extents of the petroleum-contaminated soil at various depth intervals were described as follows and are shown on Figure 3.

- **Area A:** estimated vertical extent of RCRA Subtitle D petroleum-contaminated soil from 0.5 foot to 3 feet BGS
- **Area B**: estimated vertical extent of RCRA Subtitle D petroleum-contaminated soil from 0.5 foot to 15 feet BGS
- **Area C:** estimated vertical extent of RCRA Subtitle D petroleum-contaminated soil from 15 to 25 feet BGS

The CMMP also included provisions for the handling of potential USTs that may be encountered during earthwork activities associated with the subject property's redevelopment.

6.0 EARTHWORK ACTIVITIES

To accommodate the below-grade parking level, redevelopment included mass excavation of the subject property to a depth of approximately 20 feet BGS. The depth of the elevator pit within the bottom of the mass excavation extended to approximately 25 feet BGS. The mass excavation generated soil that required off-site disposal. In addition to the mass excavation activities, other earthwork activities that generated soil for off-site disposal included (1) soldier pile installation, (2) tieback anchor installation, and (3) excavations associated with existing drywells (drywell nos. 1 through 4 located west of the subject property) and installation of one new drywell (drywell no. 5 located south of the subject property). The limits of the mass excavation within the subject property and the locations of the soldier piles, tieback anchors, and drywells are shown on Figure 4.

All earthwork activities were conducted in general accordance with the CMMP. Soil generated during earthwork activities that exhibited field screening evidence of contamination was

managed by one of the following two options: (1) the contaminated soil was segregated, temporarily stockpiled, and subsequently loaded into trucks for off-site disposal at a RCRA Subtitle D landfill or (2) the contaminated soil was loaded directly into trucks for off-site disposal at a RCRA Subtitle D landfill. All contaminated soil transported to the RCRA Subtitle D landfill (Waste Management's Hillsboro landfill) was disposed of under profile number 1368500R. A summary of the daily tonnage reports for the soil disposed of at the Hillsboro landfill is presented in Appendix C. Select photographs taken during earthwork activities are presented in Appendix D. The following sections provide a summary of the earthwork activities that generated soil for off-site disposal.

6.1 MASS EXCAVATION

Mass excavation of the subject property included excavating soil to accommodate the below-grade level of parking during earthwork activities. The limits of the mass excavation (corresponding with the boundaries of the below-grade parking level) are shown on Figure 4. The mass excavation was primarily conducted between February 16 and April 25, 2022. Prior to the mass excavation, the topography of the subject property was generally level, sloping gently from southwest to northeast, at elevations ranging between 64.00 and 58.07 feet (City of Portland datum). The final grade of the bottom of the mass excavation was 43.00 feet (City of Portland datum). Since significant perched water and groundwater were not encountered during the mass excavation activities, dewatering was not necessary.

Mass excavation at the subject property was completed in several phases to accommodate installation of the timber lagging between the soldier piles (discussed in Section 6.2). In general, each phase of mass excavation along the perimeter of the mass excavation limits was completed in approximately 5-foot depth intervals to accommodate lagging installation and ensure worker safety and adequate support of the soil surrounding the subject property. The central portion of the mass excavation was therefore excavated to final grade prior to the perimeter of the mass excavation. During mass excavation activities, NV5 provided as-needed construction excavation observation, field screening, and environmental sampling services.

NV5 environmental personnel were on site 35 times to observe the mass excavation earthwork activities and document the management of the soil removed from the limits of the mass excavation. During these site visits, over 670 soil samples were collected for the purpose of field screening. Soil samples that exhibited the highest degree of petroleum-related contamination during field screening (significant odors, heavy sheens, and elevated PID readings) were encountered in soil near the west portion of the subject property in the vicinity of the former undocumented USTs (discussed in Section 6.1.1) to depths of up to approximately 21 feet BGS. The majority of the contaminated soil removed from the subject property (to the total depth of the mass excavation) was located in this area. Near-surface contaminated soil (up to a depth of approximately 4 feet BGS) throughout the subject property, including the majority of the AOC, was also removed during the mass excavation activities. Additional areas of contamination, including several pockets along the north mass excavation limit of the subject property (up to a depth of approximately 17 feet BGS) and in the vicinity of an undocumented UST encountered along the east limit of the mass excavation (up to a depth of approximately 13 feet BGS), were also removed. The actual extent of contaminated soil removed during the mass excavation is generally similar to the previously estimated extent of contaminated soil based on the results of

previous investigations. During mass excavation activities, five undocumented USTs were encountered. Upon discovery of the undocumented USTs, NV5 was immediately notified and K&S Environmental, Inc. (K&S; an Oregon-licensed UST service provider) was contracted to properly decommission the undocumented USTs. The undocumented UST decommissioning activities are described in the following sections.

6.1.1 Discovery of Undocumented USTs

On February 17, 2022, during mass excavation activities along the east portion of the subject property, the earthwork contractor encountered an undocumented UST (tank 1), the top of which was approximately 5 feet BGS. Tank 1 was approximately 8 feet long with an estimated capacity of 675 gallons. Upon discovery of tank 1, NV5, on behalf of Cairn Pacific LLC, contracted K&S to notify DEQ and properly decommission the UST in accordance with OAR 340-122 and 340-150. K&S collected a sample of the UST contents on February 18, 2022, for characterization purposes prior to decommissioning.

On February 21, 2022, the earthwork contractor encountered an additional 500- to 1,000-gallon undocumented UST (tank 2) while excavating along the west portion of the subject property. The top of tank 2 was located at approximately 4 to 5 feet BGS. K&S was notified and arrived on site the same day to collect a sample of the liquid within the UST for characterization prior to decommissioning.

On February 23, 2022, K&S returned to the site to assist the earthwork contractor with the removal of the two undocumented USTs. While uncovering tank 2, a third undocumented UST (tank 3), also containing liquid, was discovered immediately south of tank 2. During additional excavation in the area, two additional undocumented USTs (tanks 4 and 5) were uncovered adjacent to tanks 2 and 3. Tanks 2, 3, and 5 were estimated at 1,000 gallons in capacity, and tank 4 was estimated at 850 gallons in capacity.

6.1.2 DEQ Notification

K&S contacted DEQ on February 21, 2022, to discuss the regulatory status of the undocumented USTs. Since the undocumented USTs had likely been out of service since prior to 1974 and did not contain measurable product, DEQ agreed that the undocumented USTs are considered non-regulated and did not need to be registered. Since confirmation samples collected by K&S indicated that soil beneath the undocumented USTs had been adversely impacted by a suspected release (or releases) from the undocumented USTs, DEQ assigned the subject property LUST File No. 26-22-0118.

PREG NW Portland LLC entered into a LUST Cost Recovery Agreement with DEQ for LUST File No. 26-22-0118 on March 18, 2022, and NV5 prepared and submitted to DEQ the "Initial (Twenty Day) Report Form for UST Cleanup Projects." On March 23, 2022, Ximena Cruz Cuevas of DEQ confirmed via an email to Kyle Sattler of NV5 that, based on the subject property's history and the unregulated nature of the undocumented USTs, the UST Checklist and Site Assessment Report were not required.

6.1.3 Undocumented UST Investigation and Decommissioning Activities

K&S supervised the removal of tanks 1 through 5 on February 23, 2022. A total of 3,655 gallons of water was pumped from the USTs using a vacuum truck and transported to an ORRCO-permitted facility located at 4150 North Suttle Road in Portland, Oregon, for recycling. After the USTs were emptied, K&S entered each UST and wiped the USTs clean and dry. A total of 90 gallons of sludge was generated cleaning of the USTs. The sludge was drummed and transported to the ORRCO-permitted facility and a composite sample of the sludge was collected for disposal purposes. After the USTs were removed, they were crushed and transported to Metro Metals Northwest, Inc. of Portland, Oregon, to be salvaged as scrap metal. K&S subsequently collected eight soil samples from soil beneath the USTs and submitted the samples to Apex Laboratories of Tigard, Oregon, for analysis.

The chemical analytical results for the soil samples are discussed in Section 7.2. K&S's UST decommissioning report dated March 3, 2022, is presented in Appendix E.

6.2 SOLDIER PILE INSTALLATION

A timber lagging shoring system was installed along the north, east, south, and west limits of the mass excavation to provide lateral support for the west adjacent site (Block 291W) and the north, south, and east ROWs surrounding the subject property. The shoring plan for the development is shown on Shoring Plan Sheet SH2, presented in Appendix F. The soldier pile shafts were drilled along the perimeter of the mass excavation using a Bauer BG 24H drill equipped with a 24-inch-diameter continuous flight auger. Once the auger achieved the target depths, a lean mix of concrete was pumped into each shaft as the auger was withdrawn. After each drilled shaft was completed and filled with lean mix concrete, the soldier piles were installed to final grade. A total of 109 soldier piles were installed between February 7 and February 14, 2022. The soldier piles along the north, south, and east limits of the mass excavation were installed to depths between approximately 25.2 and 31 feet BGS (to elevation 33 feet, City of Portland datum). The soldier piles along the west limits of the mass excavation were installed to depths between approximately 28 and 31.4 feet BGS (between elevations of 28 and 33 feet, City of Portland datum).

Soil spoils generated from the installation of the soldier piles were field screened for physical evidence of petroleum contamination. Physical evidence of contamination (petroleum-like odor, staining, sheen, and/or elevated PID readings) was observed in the spoils generated during the installation of soldier piles N1 through N15 along the north sidewall of the mass excavation, soldier piles E22 through E26 along the east sidewall of the mass excavation, and soldier piles W8 through W18 and W25 through W28 along the west sidewall of the excavation. Spoils generated during installation of these soldier piles were segregated and temporarily stockpiled at the subject property in accordance with the CMMP. These temporary stockpiles of soil spoils were subsequently disposed of at the Hillsboro landfill under profile number 1368500R.

6.3 TIEBACK ANCHOR INSTALLATION

A total of 100 shafts were drilled to install tieback anchors along the north, west, east, and south shoring walls of the mass excavation using a KLEMM Bohtechnik KR 806-3 drill attached to a 750-cfm air compressor and a 5/8-inch-diameter water connection. The tieback anchors were constructed of two or three ½-inch-diameter, steel strands that were grouted within the shafts

with Type I/II cement using a tremie pipe. One row of 28 tiebacks was installed on the north wall of the mass excavation, one row of 26 tiebacks was installed on the east wall of the mass excavation, one row of 27 tiebacks was installed on the south wall of the mass excavation, and 19 tiebacks were installed on the west wall of the mass excavation. Tieback design on the west wall of the mass excavation included four double-wale beams to avoid the neighboring drywells. The locations of the tieback anchors are shown on Shoring Plan Sheets SH2, SH3, and SH4 presented in Appendix F.

Soil spoils generated from the installation of the tiebacks were periodically field screened for field evidence of petroleum contamination. Field screening evidence of contamination (petroleum-like odor, sheen, staining, and/or elevated PID readings) was observed in the spoils generated during installation of the tiebacks between piles W8 and W18 along the west sidewall of the mass excavation, piles N1 through N15 along the north sidewall of the mass excavation, and piles E21 through E23 along the east sidewall of the mass excavation. Spoils generated during installation of these tiebacks were segregated from the remaining tieback spoils that did not exhibit field screening evidence of contamination for off-site disposal. These temporary stockpiles of soil spoils were subsequently disposed of at the Hillsboro landfill under profile number 1368500R.

6.4 DRYWELL EXCAVATIONS

Redevelopment of the subject property included connecting stormwater discharge piping into four existing neighboring drywells (drywell nos. 1 through 4) that were previously installed during construction of the west adjacent property (Block 191W). These drywells are located beneath the pedestrian walkway located west of below-grade parking garage and the west property line. These drywells were installed to depths of approximately 35 feet BGS (the bottoms of the drywells being between approximately elevation 27.5 and 30 feet, City of Portland datum). The bottom 10 feet of the drywells are constructed with perforated concrete cylinder sections, extending into dense, sandy gravel. Soil generated during excavations associated with the stormwater connection activities that exhibited physical evidence of contamination (petroleum-like odor, sheen, staining, and/or elevated PID readings) was segregated and placed in temporary stockpiles prior to disposal. These temporarily stockpiles of soil were subsequently disposed of at the Hillsboro landfill under profile number 1368500R. Confirmation soil samples were not collected in the excavations associated with the stormwater connection activities since soil samples were previously collected from the previous excavation associated with the installation of drywell no. 2. Soil in the vicinity of former drywell nos. 1 through 4 exhibited field screening evidence of contamination only in the upper 6 feet of soil. Since soil in the vicinity of drywell no. 2 exhibited the highest degree of field screening evidence of contamination, two confirmation soil samples [CSS6(DW2-4) and CSS7(DW2-6)] were collected from the east limits of the excavation associated with this drywell at depths of 4 and 6 feet BGS, respectively. The results of confirmation soil samples CSS6(DW2-4) and CSS7(DW2-6) are discussed below.

- Gasoline- and diesel-range hydrocarbons and PAHs [with the exception of benzo(a)pyrene and 1-methylnaphthalene] were either not detected or were detected in confirmation soil sample CSS6(DW2-4) at concentrations less than the applicable DEQ RBCs and CFSLs. Benzo(a)pyrene and 1-methylnaphthalene were detected in confirmation soil sample CSS6(DW2-4) at concentrations of 0.214 mg/kg and 0.758 mg/kg, respectively. These

concentrations are less than the applicable DEQ RBCs but greater than the DEQ CFSLs. Soil exhibiting contaminant concentrations greater than the DEQ CFSLs must be disposed of at a RCRA Subtitle D landfill, unless further testing demonstrates otherwise. Gasoline-, diesel-, and oil-range hydrocarbons; PAHs; and VOCs were not detected in confirmation soil sample CSS7(DW2-6).

- Total metals were either not detected or were detected at concentrations less than the applicable DEQ RBCs, with the exception of arsenic. Arsenic was detected in confirmation soil samples CSS6(DW2-4) and CSS7(DW2-6) at concentrations of 9.17 mg/kg and 13.2 mg/kg, respectively. These detected concentrations are greater than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBCs for occupational receptors and the DEQ-established naturally occurring background concentration (the CFSL) for arsenic of 8.8 mg/kg. However, residual arsenic-contaminated soil represented by these confirmation soil samples will not pose unacceptable risk to future occupants due to the hardscape (the north/south-oriented pedestrian pathway) constructed east of the structure and the depth of the contaminated soil (greater than 3 feet BGS). The detected arsenic concentrations in the sidewall confirmation soil samples submitted for analysis were less than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBCs for construction and excavation workers.

The locations of drywell nos. 1 through 4 are shown on Figure 4.

One additional drywell (drywell no. 5) was installed south of the subject property. Physical evidence of contamination was observed between approximately 3 and 7 feet BGS during excavation activities associated with the installation of this drywell. On April 25, 2022, NV5 collected confirmation soil samples DW-1 and DW-2 from the limits of the excavation associated with the installation of the drywell no. 5 to document the residual contaminant concentrations left in place in the vicinity of the drywell. Soil that exhibited physical evidence of contamination was segregated and temporarily stockpiled prior to disposal at the Hillsboro landfill. The location of drywell no. 5 is shown on Figure 4. The results of the confirmation soil samples are discussed in Section 7.6.

7.0 FIELD SCREENING AND CHEMICAL ANALYTICAL RESULTS

In accordance with the CMMP, soil generated from the subject property that exhibited physical evidence of contamination (petroleum-like odor, staining, sheens, and/or elevated PID readings), regardless of the chemical analytical results, was segregated from soil that did not exhibit physical evidence of contamination or did not exhibit chemical analytical results greater than DEQ CFSLs. Where field screening identified contaminated soil at the subject property that did not require removal as part of the redevelopment (i.e., at the limits of the mass excavation), confirmation soil samples were collected along the mass excavation limits to document the residual contaminant concentrations left in place. In addition, K&S collected samples of the contents of the undocumented USTs (tanks 1 through 5) that were encountered during mass excavation activities for waste characterization purposes and confirmation samples from beneath the undocumented USTs.

The undocumented UST waste characterization samples, confirmation samples collected beneath the undocumented USTs, and confirmation soil samples collected from the mass excavation were submitted to Apex Labs of Tigard, Oregon, for one or more of the following analyses:

- Hydrocarbon Identification by Method NWTPH-HCID
- Gasoline-range hydrocarbons by Method NWTPH-Gx
- Diesel- and oil-range hydrocarbons by Method NWTPH-Dx
- VOCs by EPA Method 8260D
- RCRA 8 total metals by EPA Method 6020B
- TCLP lead by EPA Methods 1311/6020B
- PAHs by EPA Method 8270E SIM
- PCBs by EPA Method 8082A

The analytical results of the undocumented UST waste characterization samples, confirmation samples collected beneath the undocumented USTs, and confirmation samples associated with the mass excavation and drywell no. 5 excavation are discussed in the following sections and presented in Tables 1 through 5. Laboratory reports for the mass excavation and drywell excavation confirmation samples are presented in Appendix G. The laboratory report for the confirmation soil samples collected beneath the undocumented USTs is included in K&S's UST decommissioning report presented in Appendix E. In addition, the laboratory report for the undocumented UST waste characterization sample collected within the undocumented USTs is also presented in Appendix E.

7.1 UNDOCUMENTED UST WASTE CHARACTERIZATION SAMPLE RESULTS

As described in Section 6.1.3, the results of the undocumented UST waste characterization sample (P1), collected from the 90 gallons of sludge generated during cleaning of tanks 1 through 5, were submitted to ORRCO for evaluation and disposal acceptance as non-hazardous waste. The results of the undocumented UST waste characterization sample are summarized below.

Total arsenic (1.97 mg/kg), barium (15.3 mg/kg), cadmium (3.35 mg/kg), chromium (2.57 mg/kg), and lead (270 mg/kg) were detected in the sample of sludge (P1) collected from the undocumented USTs. Based on the detected concentration of lead, which exceeded the EPA landfill disposal limit of 100 mg/kg, sample P1 was further analyzed for TCLP lead. The TCLP analysis simulates the leaching action of water seeping through waste in a landfill. TCLP lead was detected at a concentration of 0.608 mg/L, which is less than the EPA TCLP limit of 5.0 mg/L, indicating that the sludge could be disposed of non-hazardous waste at a RCRA Subtitle D landfill. PCBs were not detected in sample P1 collected from the undocumented USTs. The sludge generated during cleaning of tanks 1 through 5 was transported to ORRCO for disposal.

7.2 UNDOCUMENTED UST DECOMMISSIONING CONFIRMATION SOIL SAMPLE RESULTS

The analytical results of the confirmation soil samples collected beneath the undocumented USTs are presented in Table 1 and in K&S's UST decommissioning report presented in Appendix E. The analytical results for the confirmation soil samples collected from beneath the undocumented USTs are summarized below.

7.2.1 Tank 1

K&S submitted two confirmation soil samples (#1 and #2) for qualitative analysis of hydrocarbon identification by Method NWTPH-HCID. Diesel-range hydrocarbons were qualitatively detected in confirmation soil sample #2, collected at approximately 8 feet BGS from beneath the west end of tank 1. Petroleum hydrocarbons were not qualitatively detected in sample #1. Based on the qualitative detection of diesel-range hydrocarbons in confirmation soil sample #2, the sample was quantitatively analyzed for diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Diesel-range hydrocarbons were detected at a concentration of 144 mg/kg in confirmation soil sample #2. Oil-range hydrocarbons were not detected in confirmation soil sample #2.

During subsequent mass excavation activities, soil that continued to exhibit field screening evidence of petroleum contamination (petroleum-like odor, sheen, staining, and/or elevated PID readings) was encountered beneath tank 1 to a depth of approximately 13 feet BGS. The lateral extent of soil contamination decreased with depth. NV5 collected confirmation soil sample UST-1(13) at a depth of approximately 13 feet below the bottom of the tank 1 and submitted the sample for analysis of gasoline-range hydrocarbons by Method NWTPH-Dx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-, diesel-, and oil-range hydrocarbons were not detected in confirmation soil sample UST-1(13). The petroleum-contaminated soil that was removed beneath tank 1 during the mass excavation activities was disposed of at the Hillsboro landfill.

7.2.2 Tanks 2 through 5

K&S collected six confirmation soil samples (#3 through #8) from beneath the remaining undocumented USTs (tanks 2 through 5) that were removed from the west portion of the subject property and submitted them for qualitative analysis of petroleum hydrocarbons by Method NWTPH-HCID. Except for confirmation soil sample #5, gasoline-, diesel-, and/or oil-range hydrocarbons were qualitatively detected in these confirmation soil samples submitted for analysis. Therefore, these confirmation soil samples were quantitatively analyzed for gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and/or oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-range hydrocarbons were detected in each of the confirmation soil samples analyzed at concentrations ranging from 696 mg/kg to 1,950 mg/kg. The concentrations of gasoline-range hydrocarbons detected in each of the confirmation soil samples exceeded the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors. Diesel-range hydrocarbons were detected in each of the confirmation soil samples submitted for analysis at concentrations ranging from 2,410 to 14,600 mg/kg. The detected concentrations of gasoline- and diesel-range hydrocarbons exceeded the corresponding DEQ CFSLs. In addition, the detected concentrations of diesel-range hydrocarbons in confirmation soil samples #4 and #6 of 14,600 mg/kg and 8,650 mg/kg, respectively, exceeded the DEQ *Soil Ingestions, Dermal Contact, and Inhalation* RBC for construction worker receptors. Construction workers that may have come into contact with the contaminated soil in this area during mass excavation activities

were made aware of the contamination and used the proper PPE to prevent exposure to unacceptable risk. Oil-range hydrocarbons were not detected in the confirmation samples submitted analysis. Soil represented by each of the confirmation soil samples (#3 through #8) was subsequently removed during continued mass excavation activities and disposed of at the Hillsboro landfill.

Soil that exhibited field screening evidence of contamination (petroleum-like sheen, odor, staining, and/or elevated PID readings) continued to be encountered in the vicinity of former tanks 2 through 5. Once the mass excavation reached subgrade elevation, NV5 collected additional confirmation soil samples from the bottom of the excavation. The results for the confirmation soil samples collected from the limits of the mass excavation in the vicinity of the former tank nest are discussed below in Section 7.3.4.

7.3 MASS EXCAVATION CONFIRMATION SOIL SAMPLE RESULTS

A total of 58 confirmation soil samples were collected from the north, east, and west sidewall limits of the mass excavation and from the bottom limits of the mass excavation. The contaminated soil observed along the east and west sidewalls appeared to have been caused from a release(s) associated with the undocumented USTs encountered during the mass excavation activities at the subject property. The chemical analytical results for the confirmation soil samples collected from the north, east, and west sidewalls and the bottom of the excavation are discussed below.

7.3.1 North Sidewall Confirmation Soil Sample Results

A total of 12 confirmation soil samples were collected from the north sidewall of the mass excavation [SWN-1(2) through SWN-12(17)] at the locations that corresponded with the highest degree of field screening evidence of contamination. The north sidewall confirmation soil sample results are summarized as follows:

- Sidewall samples SWN-1(2) through SWN-12(17) were analyzed for gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-range hydrocarbons were detected in confirmation soil samples SWN-1(2), SWN-6(3), and SWN-7(3) at concentrations of 221 mg/kg, 129 mg/kg, and 106 mg/kg respectively. These concentrations are greater than the DEQ *Vapor Intrusion into Buildings* RBC for urban residential receptors and the corresponding DEQ CFSL. Diesel-range hydrocarbons were detected in confirmation soil sample SWN-4(6) at a concentration of 1,270 mg/kg. This concentration is less than the applicable DEQ RBCs, but greater than the corresponding DEQ CFSL. Gasoline-, diesel-, and oil-range hydrocarbons were either not detected or were detected at concentrations less than applicable DEQ RBCs and corresponding CFSLs in the remaining confirmation samples analyzed.
- Sidewall confirmation soil sample SWN-1(2) was further analyzed for BTEX compounds. BTEX compounds were not detected in sidewall confirmation sample SWN-1(2).
- Sidewall confirmation soil samples SWN-1(2) and SWN-6(3) were further analyzed for PAHs. Dibenzofuran was detected in confirmation soil samples SWN-1(2) and SWN-6(3) at concentrations of 0.174 mg/kg and 0.0268 mg/kg, respectively, and

1-methylnaphthalene was detected in confirmation soil sample SWN-1(2) at a concentration of 1.66 mg/kg. DEQ has not established RBCs for these PAHs. However, these detected PAHs are greater than the corresponding DEQ CFSLs. Soil exhibiting contaminant concentrations greater than applicable CFSLs, if disturbed and requiring off-site disposal, must be disposed of at a RCRA Subtitle D landfill.

- Sidewall confirmation soil sample SWN-6(3) was also analyzed for RCRA 8 total metals. RCRA 8 total metals were either not detected or were detected at concentrations less than the applicable DEQ RBCs and corresponding CFSLs.

7.3.2 East Sidewall Confirmation Soil Sample Results

A total of three confirmation soil samples [SWE-1(6) through SWE-3(6)] were collected from the east sidewall adjacent to tank 1 at locations that corresponded with the highest degree of field screening evidence of contamination. The east sidewall confirmation soil sample results are summarized as follows:

- Sidewall confirmation soil samples SWE-1(6) through SWE-3(6) were submitted for analysis of gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-range hydrocarbons were detected at a concentration of 56.1 mg/kg in confirmation soil sample SWE-1(6), which is less than applicable DEQ RBCs and greater than the corresponding DEQ CFSL. Gasoline-range hydrocarbons were not detected in the two remaining confirmation soil samples collected from the east sidewall. Diesel- and oil-range hydrocarbons were either not detected or were detected at concentrations less than applicable DEQ RBCs and corresponding DEQ CFSLs.
- Sidewall confirmation soil sample SWE-1(6) was further analyzed for BTEX compounds and PAHs. BTEX compounds were not detected in confirmation soil sample SWE-1(6). PAHs were detected in confirmation soil sample SWE-1(6) at concentrations ranging from 0.102 mg/kg (2-methylnaphthalene) to 27.3 mg/kg (pyrene). The detected PAH concentrations are less than the applicable DEQ RBCs. In addition, 11 of the 19 PAHs were detected at concentrations greater than the corresponding DEQ CFSLs. Soil exhibiting contaminant concentrations greater than corresponding DEQ CFSLs, if disturbed and requiring off-site disposal, must be disposed of at a RCRA Subtitle D landfill.

7.3.3 West Sidewall Confirmation Soil Sample Results

A total of 13 confirmation soil samples were collected from the west sidewall of the mass excavation [SWW-1(6) through SWW-13(21)] at locations that corresponded with the highest degree of field screening evidence of contamination. The west sidewall confirmation soil sample results are summarized as follows:

- Sidewall confirmation soil samples SWW-1(6) through SWW-13(21) were submitted for analysis of gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-range hydrocarbons were detected in confirmation soil samples SWW-1(6), SWW-3(6), SWW-5(12), and SWW-10(18) at concentrations of 142 mg/kg, 417 mg/kg, 1,690 mg/kg, and 9.46 mg/kg, respectively. These concentrations are greater than the applicable DEQ RBCs [except for the gasoline-range hydrocarbons detected in confirmation soil sample SWW-10(18)and greater than the corresponding DEQ CFSLs [except for the gasoline-range hydrocarbons detected in

confirmation soil sample SWW-10(18)]. These concentrations exceed the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors. Diesel-range hydrocarbons were detected in confirmation soil samples SWW-3(6) and SWW-5(12) at concentrations of 7,730 mg/kg and 3,380 mg/kg, respectively. These concentrations exceed the corresponding DEQ CFSLs. In addition, the concentration of diesel-range hydrocarbons detected in confirmation soil sample SWW-3(6) exceeded the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. Construction workers that may have come into contact with the contaminated soil in this area during the mass excavation activities were made aware of the contamination and used the proper PPE to prevent exposure to unacceptable risk.

- Sidewall confirmation soil sample SWW-5(12) was further analyzed for BTEX compounds, PAHs, and RCRA 8 total metals. BTEX compounds were not detected, except for ethylbenzene. Ethylbenzene was detected at a concentration of 0.351 mg/kg, which is less than the applicable DEQ RBCs but greater than the corresponding DEQ CFSL. The PAHs dibenzofuran and 1-methylnaphthalene were detected at concentrations of 0.220 mg/kg and 3.77 mg/kg. DEQ has not established RBCs for these PAHs. However, these PAHs are greater than the corresponding DEQ CFSLs. Soil exhibiting contaminant concentrations greater than corresponding CFSLs, if disturbed and requiring off-site disposal, must be disposed of at a RCRA Subtitle D landfill. RCRA 8 total metals were either not detected or were detected at concentrations less than applicable DEQ RBCs and corresponding DEQ CFSLs.

7.3.4 Bottom Confirmation Soil Results

A total of 19 confirmation soil samples [HA-1(17) through HA-8(20), HA-9(21), HA-10(21), HA-11(21), HA-12(21), HA-13(21), HA-14(21), HA-15(21), HA-17(20), HA-18(21), HA-19(20), and HA-20(18)] were collected from the bottom of the mass excavation (at approximately 18 to 21 feet BGS) to characterize and delineate the contaminated soil left in place immediately below the future concrete floor slab of the below-grade parking garage. These confirmation soil samples were collected with either hand tools or hand auger equipment operated by NV5 personnel. The results of the bottom confirmation soil samples are summarized as follows:

- Bottom confirmation soil samples HA-1(17) through HA-8(20), HA-9(21), HA-10(21), HA-11(21), HA-12(21), HA-13(21), HA-14(21), HA-15(21), HA-17(20), HA-18(21), HA-19(20), and HA-20(18) were submitted for analysis of gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-range hydrocarbons were detected in confirmation soil samples HA-10(21), HA-12(21), and HA-13(21) at concentrations of 4,820 mg/kg, 451 mg/kg, and 2,830 mg/kg, respectively. These detected concentrations are greater than the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors and the corresponding DEQ CFSL. Diesel-range hydrocarbons were detected in confirmation soil samples HA-10(21) and HA-12(21) at concentrations of 14,700 mg/kg and 1,270 mg/kg respectively. These concentrations exceed the corresponding DEQ CFSL. In addition, the diesel-range hydrocarbon concentration detected in confirmation soil sample HA-10(21) exceeded the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. Construction workers that may have come into contact with the contaminated soil in this area were made aware of the contamination and used the proper PPE to prevent exposure to unacceptable risk. Gasoline-, diesel, and oil-

range hydrocarbons were either not detected or were detected at concentrations less than the applicable DEQ RBCs and corresponding DEQ CFSLs in the remaining confirmation soil samples submitted for analysis.

- Bottom confirmation soil samples HA-10(21), HA-12(21), and HA-13(21) were further analyzed for VOCs. As many as 13 VOCs were detected in these confirmation soil samples at concentrations ranging from 0.322 mg/kg [n-butylbenzene detected in confirmation soil sample HA-12(21)] to 86.6 mg/kg [total xylenes detected in confirmation soil sample HA-10(21)]. Ethylbenzene, 2-hexanone, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and/or total xylenes were detected in these samples at concentrations that exceeded corresponding DEQ CFSLs. In addition, the concentration of naphthalene detected in confirmation soil sample HA-10(21) exceeded the applicable DEQ *Volatilization to Outdoor Air* and *Vapor Intrusion into Building*s RBCs for urban residential receptors. The concentration of ethylbenzene detected in confirmation soil sample HA-10(21) exceeded the DEQ *Vapor Intrusion into Building*s RBCs for urban residential and occupational receptors, and the concentration of naphthalene detected in confirmation soil sample HA-10(21) exceeded the DEQ *Vapor Intrusion into Building*s RBC for urban residential receptors.

A total of 11 confirmation soil samples, including HA-8(25), HA-9(26), HA-10(26), HA-11(26), HA-12(26), HA-13(26), HA-14(26), HA-15(26), HA-16(27), HA-18(26), and HA-19(25) were collected beyond the bottom of the mass excavation at depths between 25 and 27 feet BGS to further characterize/delineate residual contaminated soil left in place below the future concrete floor slab of the below-grade parking garage. The results of the confirmation soil samples collected from beyond the bottom of the mass excavation are summarized as follows:

- Gasoline-, diesel- and oil-range hydrocarbons were not detected in the confirmation soil samples collected beyond the bottom of the mass excavation, except for gasoline-range hydrocarbons detected in confirmation soil samples HA-12(26) and HA-16(27) and diesel-range hydrocarbons detected in confirmation soil samples HA-10(26), HA-12(26), and HA-16(27). Only the gasoline-range hydrocarbons detected in confirmation soil sample HA-12(26) exceed the DEQ *Vapor Intrusion into Building*s RBCs for urban residential receptors. The gasoline-range hydrocarbons detected in confirmation samples HA-12(26) and HA-16(27) and the diesel-range hydrocarbons detected in confirmation samples HA-10(26 and HA-12(26) also exceeded the corresponding DEQ CFSLs. Soil exhibiting contaminant concentrations greater than applicable CFSLs, if disturbed and requiring off-site disposal, must be disposed of at a RCRA Subtitle D landfill.
- Confirmation soil sample HA-12(26) was further analyzed for VOCs. Ten VOCs were detected in confirmation soil sample HA-12(26) at concentrations ranging from 4.30 mg/kg (sec-butylbenzene) to 45.7 mg/kg (1,2,4-TMB). None of the detected VOCs exceeded the applicable DEQ RBCs except for ethylbenzene and naphthalene. The concentrations of ethylbenzene and naphthalene detected in confirmation soil sample HA-12(26) exceeded the DEQ *Vapor Intrusion into Building*s RBCs for urban residential receptors. The concentration of naphthalene detected in confirmation soil sample HA-12(26) also exceeded the DEQ *Volatilization to Outdoor Air* RBC for urban residential receptors. The VOCs ethylbenzene, naphthalene, 1,2,4-TMB, 1,3,5-TMB, and total xylenes also were detected in this confirmation soil sample at concentrations greater than the corresponding DEQ CFSLs. Soil

exhibiting contaminant concentrations greater than applicable CFSLs, if disturbed and requiring off-site disposal, must be disposed of at a RCRA Subtitle D landfill.

7.4 LATERAL AND VERTICAL EXTENT OF SOIL CONTAMINATION

Based on the results of the confirmation soil samples collected from the bottom of the mass excavation, the lateral extent of the residual contaminated soil immediately beneath the base rock and concrete floor slab of the below-grade parking garage have been delineated. The lateral extent of the contaminated soil at the bottom of the excavation is conservatively defined by the following confirmation samples:

- To the north by HA-8(20)
- To the east by HA-14(21), HA-18(21), and HA-19(20)
- To the south by HA-11(21) and HA-15(21)

Although the concentrations of gasoline- and diesel-range hydrocarbons detected in the soil samples collected from hand auger boring HA-12 increase with depth (i.e., the concentrations are higher in the sample collected from 26 feet BGS than in the sample collected from 21 feet BGS), it is our opinion that the vertical depth of contaminated soil beyond the bottom of the mass excavation has been defined based on the following:

- All other confirmation soil samples collected beyond the bottom of the mass excavation with detected hydrocarbon concentrations (from borings HA-8, HA-9, HA-10, and HA-13) exhibit decreasing gasoline- and/or diesel-range hydrocarbon concentrations with depth.
- The deepest confirmation soil sample collected from boring HA-16 at a depth of 27 feet BGS (approximately 6 feet deeper than the concrete floor slab of the below-grade parking garage) nearest the source of the petroleum contamination present in the area (the former undocumented USTs), where the deepest soil contamination was expected, exhibited gasoline- and diesel-range hydrocarbons at concentrations less than the applicable DEQ RBCs and gasoline-range hydrocarbons at a concentration only slightly greater than the DEQ CFSL.
- Confirmation soil sample HA-12(26) is located approximately 20 feet further from the source of the petroleum contamination than confirmation soil sample HA-16(27), and the magnitude of petroleum contamination at the location of confirmation soil sample HA-12(26) is not expected to increase in concentration beyond approximately 27 feet BGS.

The estimated extent of the residual contaminated soil below the bottom of the base rock and concrete floor slab of the below-grade parking garage is shown on Figure 4.

7.5 MASS EXCAVATION SOIL GAS SAMPLE RESULTS

NV5 collected two soil gas samples [SG-2(21.5) and SG-3(21.5)] from immediately beneath the future bottom of the concrete floor slab associated with the below-grade parking garage to further evaluate potential vapor intrusion risk to future occupants on the first floor of the structure (urban residential and occupational receptors). The results of the soil gas samples are summarized as follows:

- Mass excavation soil gas samples SG-2(21.5) and SG-3(21.5) were submitted for analysis of gasoline-range hydrocarbons and VOCs by Method TO-15. Gasoline-range hydrocarbons were detected in the soil gas samples at concentrations of 917,000 µg/m^3 and 12,800,000 µg/m^3, respectively, which exceed the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential and occupational receptors. As many as 13 VOCs were detected in each soil gas sample. Only the VOCs ethylbenzene, 1,2,4-TMB, 1,3,5-TMB, and total xylenes were detected at concentrations greater than the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors. In addition, ethylbenzene also was detected at a concentration greater than the DEQ *Vapor Intrusion into Buildings* RBC for occupational receptors. Other VOCs were either not detected or were detected at concentrations less than the DEQ *Vapor Intrusion into Buildings* RBCs for urban residential and occupational receptors. Although the *Vapor Intrusion into Buildings* exposure pathway is considered complete for urban residential and occupational receptors (those receptors that will occupy the ground floor level above the below-grade parking garage), an engineering control in the form of a dedicated ventilation system within the below-grade parking garage, separate from the above-grade levels, will be constructed and operated in accordance with City of Portland requirements; in particular, the air exchange rates. The below-grade ventilated parking garage exists beneath the entire building footprint. Details of the engineering control (the ventilation system) are provided in Section 8.0.

7.6 DRYWELL EXCAVATION CONFIRMATION SOIL SAMPLE RESULTS

NV5 collected two confirmation soil samples [DW-1 and DW-2] from the excavation associated with the installation of drywell no. 5. Soil sample DW-1 was collected from temporarily stockpiled soil removed from approximately 3 to 7 feet BGS that exhibited moderate field screening evidence of contamination (sheen, odor, elevated PID reading). Sample DW-2 was collected from temporarily stockpiled soil removed from beneath the apparent contaminated soil from approximately 7 to 25 feet BGS that did not exhibit field screening evidence of contamination. The results of the drywell excavation confirmation samples are summarized as follows:

- Drywell confirmation soil samples DW-1 and DW-2 were submitted for analysis of gasoline-range hydrocarbons by Method NWTPH-Gx and diesel- and oil-range hydrocarbons by Method NWTPH-Dx. Gasoline-, diesel-, and oil-range hydrocarbons were not detected in the confirmation soil samples, except for diesel-range hydrocarbons detected in confirmation soil sample DW-1. Diesel-range hydrocarbons were detected in this sample at a concentration of 1,260 mg/kg, which is less than applicable DEQ RBCs but slightly greater than the corresponding DEQ CFSL.
- Drywell confirmation soil samples DW-1 and DW-2 also were submitted for analysis of VOCs. VOCs were not detected in the samples.
- Drywell confirmation soil samples DW-1 and DW-2 also were submitted for analysis of RCRA 8 total metals. RCRA 8 total metals were either not detected or were detected at concentrations less than applicable DEQ RBCs and corresponding DEQ CFSLs, except for arsenic that was detected in confirmation soil sample DW-1. Arsenic was detected in confirmation soil sample DW-1 at a concentration of 9.20 mg/kg, which exceeds the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for occupational receptors and slightly exceeds the DEQ established background concentration (the CFSL) of 8.8 mg/kg. However, occupational receptors will not be exposed to the arsenic-contaminated soil detected in the

vicinity of drywell no. 5 due to the depth of the contaminated soil (greater than 3 feet BGS) and the hardscape constructed at the surface (NW Quimby Street) existing south of the structure. Therefore, the analytical results presented in Table 3 are not compared to the occupational receptor scenario.

- Drywell confirmation soil samples DW-1 and DW-2 also were submitted for analysis of PAHs. PAHs were either not detected or were detected at concentrations less than applicable DEQ RBCs and corresponding DEQ CFSLs, except for dibenzofuran that was detected in confirmation soil sample DW-1. Dibenzofuran was detected in confirmation soil sample DW-1 at a concentration of 0.0695 mg/kg, which is less than the applicable DEQ RBCs, but exceeds the corresponding DEQ CFSL.

Because physical evidence of contamination was not observed deeper than approximately 7 feet BGS during installation of drywell no. 5, the bottom of the residual contamination observed in the excavation associated with the installation of drywell no. 5 is a minimum of approximately 18 feet above the top of the perforated section of the drywell. Consequently, drywell no. 5 will not discharge stormwater above or within contaminated soil but instead will discharge the stormwater into the underlying clean, dense, sandy gravel.

8.0 ENGINEERING CONTROL

The below-grade parking garage engineering control consists of a ventilation system that will continuously operate (24 hours per day, seven days a week) and be controlled by a combination of nine separate carbon monoxide and nitrogen oxide sensors within the garage. The exhaust fan and outside air supply fan will operate continuously at 20 Hz or listed low speeds (whichever is higher), and if carbon monoxide and/or nitrogen oxide are detected in one or more of the sensors at concentrations greater than 25 ppm and 0.2 ppm, respectively, the ventilation system will be ramped up to high speed (set at air balance). Failure of any sensing device or the control system will result in both the exhaust fan and the supply fan defaulting to high speed operation. The low speed operation of the exhaust and supply fans are 9,000 cfm and 3,500 cfm, respectively. The high speed operation of the exhaust and supply fans are 28,500 cfm and 12,000 cfm, respectively. Given that the average ceiling height of the below-grade parking garage is 14.25 feet, the calculated air exchange rate for the exhaust fan (at normal low speed operation) is approximately 1.04 air exchanges per hour (0.25 cfm per square foot of floor area) and the calculated air exchange rate for the supply fan (at normal low speed operation) is approximately 0.41 air exchanges per hour (0.10 cfm per square foot of floor area). The calculated air exchange rate for the exhaust fan (at high speed operation) is approximately 3.3 air exchanges per hour (0.78 cfm per square foot of floor area) and the calculated air exchange rate for the supply fan (at high speed operation) is approximately 1.4 air exchanges per hour (0.33 cfm per square foot of floor area). The exhaust air exchange rates satisfy the Oregon Mechanical Specialty Code 404.1 and International Mechanical Code 404.2 requirements (also the City of Portland's requirements) of 0.05 cfm per square foot of floor area (under low speed operation) and 0.75 cfm per square foot of floor area (under high speed operation).

9.0 MEDIA DISPOSITION

Between February 10 and April 25, 2022, a total of 9,393.60 tons of contaminated soil, a total of 38,000 tons of soil, and 410 tons of construction debris (concrete and asphalt) that met DEQ's clean fill screening criteria were generated during the following redevelopment activities and exported from the subject property for disposal:

- Mass excavation
- Installation of soldier piles
- Installation of tieback anchors
- Excavations associated with connection of stormwater pipes to existing drywell nos. 1 through 4 and installation of drywell no. 5

Disposal of the contaminated soil and clean soil and construction debris (concrete and asphalt) are described in the following sections.

9.1 DISPOSAL OF CONTAMINATED SOIL

Between February 10 and April 25, 2022, at total of 9,393.60 tons of contaminated soil were either temporarily stockpiled on site or direct-loaded in accordance with the CMMP and subsequently transported and disposed of as non-hazardous waste at the Hillsboro landfill under Waste Management profile number 1368500R. A summary of the daily tonnage reports for the contaminated soil transported to Hillsboro landfill is presented in Appendix C.

9.2 DISPOSAL OF SOIL/DEBRIS MEETING DEQ CLEAN FILL CRITERIA

Between approximately February 10 and April 25, 2022, an estimated 38,000 tons of soil meeting DEQ's clean fill criteria and approximately 410 tons of concrete and/or asphalt debris were transported off site to one of three disposal locations. The quantities of soil meeting DEQ's clean fill criteria and concrete/asphalt and their associated disposal locations are summarized in the table below.

Clean Fill Disposal Location	Estimated Clean Fill Disposal (tons)
Site One, LLC 10222 NW 112th Avenue Portland, Oregon	18,000 (soil)
East County Materials 913 NE 172nd Avenue Vancouver, Washington	20,000 (soil)
Westech Yard 2204 NE 194th Avenue Portland, Oregon	410 (concrete and asphalt)

10.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

NV5 assisted with the implementation of the CMMP during the subject property redevelopment activities. In our professional opinion, the activities discussed herein were conducted in general

conformance with the DEQ-approved CMMP. Further action does not appear warranted at this time. If future ground-disturbing activities are planned at the subject property, they should be performed in accordance with the CMMP.

During the redevelopment activities (including mass excavation, installation of soldier piles and tieback anchors, and excavations associated with existing drywell nos. 1 through 4 and newly installed drywell no. 5) at the subject property, a total of 9,393.60 tons of soil exhibiting field screening evidence of contamination were exported from the subject property and disposed of at the Hillsboro landfill under Permit No. 1368500R. During mass excavation activities, five undocumented USTs (tanks 1 through 5) were encountered at the subject property. Releases associated with the undocumented USTs were assigned LUST File No. 26-22-0118. The undocumented USTs were properly decommissioned (by removal) by K&S.

Residual contamination was left in place at the subject property at the following locations:

- North of the approximate west half of the north sidewall
- East of the southeast portion of the east sidewall
- West of the approximate central portion of the west sidewall
- At the bottom of the west-central portion of the mass excavation (beneath the concrete floor slab and imported base rock for the concrete floor slab of the below-grade parking garage)

Residual contamination at the above locations exhibited concentrations of contaminants below applicable DEQ RBCs, except for soil represented by the following confirmation soil samples:

- SWN-1(2),SWN-6(3), and SWN-7(3) (collected from the north sidewall of the mass excavation)
- SWW-1(6), SWW-3(6), and SWW-5(12) (collected from the west sidewall of the excavation)
- HA-10(21), HA-12(21), and HA-13(21) (collected from the bottom of the mass excavation)
- HA-12(26) (collected from beyond the bottom of the mass excavation)

Gasoline-range hydrocarbons were detected in each of the above-referenced confirmation soil samples at concentrations greater than the DEQ *Vapor Intrusion into Building*s RBCs for urban residential receptors. The VOCs ethylbenzene and naphthalene also were detected in confirmation soil sample HA-10(21), collected from the bottom of the mass excavation, and HA-12(26), collected from beyond the bottom of the mass excavation, at concentrations greater than the DEQ *Vapor Intrusion into Building*s RBCs for occupational receptors. However, an engineering control in the form of a dedicated ventilation system within the below-grade parking garage, separate from the above-grade levels, will be constructed and operated in accordance with City of Portland requirements; in particular, the air exchange rates. The below-grade ventilated parking garage exists beneath the entire building footprint. The engineering control will prevent potential vapors from the residual soil contamination [represented by samples SWN-1(2), SWN-6(3), SWN-7(3), SWW-1(6), SWW-3(6), SWW-5(12), HA-10(21), HA-12(21), HA-12(26), and HA-13(21)] to enter the ground floor level, thereby mitigating potential unacceptable risk to future occupants at the subject property.

Naphthalene was detected in confirmation soil samples HA-10(21) and HA-12(26) at concentrations greater than the DEQ *Volatilization to Outdoor Air* RBCs for urban residential receptors. However, these confirmation soil samples were collected beneath the building footprint (from the bottom of the mass excavation and beyond the bottom of the mass excavation, respectively) at depths that may seasonally contain perched groundwater. DEQ considers the *Volatilization to Outdoor Air* exposure pathway potentially complete only if contamination is present in the unsaturated vadose zone soil. In addition, since these samples were collected beneath the structure's footprint (at depths of 21 and 26 feet BGS), potential vapors from soil represented by these samples are not likely to volatilize to the outdoor air at concentrations that would pose unacceptable risk. In addition, the surface conditions immediately surrounding the building footprint are mostly covered with hardscape materials, such as concrete and asphalt, preventing volatilization to outdoor air.

Diesel-range hydrocarbons were detected in confirmation soil samples SWW-3(6), collected along the west sidewall, and HA-10(21), collected from the bottom of the mass excavation, at concentrations greater than the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. If future ground-disturbing activities are planned at the subject property, they should be performed in accordance with the CMMP. Future construction workers that may come into contact with the contaminated soil in these areas must be made aware of the contamination and wear the proper PPE to prevent exposure to unacceptable risk.

Arsenic was detected in confirmation soil sample DW-1, collected from temporarily stockpiled soil removed from approximately 3 to 7 feet BGS that exhibited moderate field screening evidence of contamination during the installation of drywell no. 5, at a concentration that exceeds the DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBC for occupational receptors. However, occupational receptors will not be exposed to the arsenic-contaminated soil detected in the vicinity of drywell no. 5 due to the depth of the contaminated soil (at and greater than 3 feet BGS) and the hardscape constructed at the surface (NW Quimby Street) existing south of the structure. Therefore, the analytical results presented in Table 3 are not compared to the occupational receptor scenario.

In our opinion, the extent of the residual contamination at the subject property has been delineated, both laterally and vertically, to the degree where the residually contaminated soil concentrations are less than the applicable DEQ RBCs and the contamination is stable. NV5 concludes that the contamination is stable based on the following:

- Free product has not been observed at the subject property.
- Residual soil concentrations in the unsaturated zone are generally immobile.
- Groundwater was not encountered at the subject property during historical investigations or earthwork activities.
- The primary source of the contamination (the undocumented USTs) and most of the secondary source (contaminated soil) have been removed.

In our opinion, since the extent of the residual contamination at the subject property has been delineated to the degree where the residually contaminated soil concentrations are less than the applicable DEQ RBCs, and the contamination is stable, no further delineation is necessary at the

subject property. Based on the information presented in this report, on behalf of Freewell Apartments, LLC, we respectfully request that DEQ issue an NFA determination for LUST File No. 26-22-0118.

11.0 LIMITATIONS

This report has been prepared for Freewell Apartments, LLC. This report is not intended for use by others, and the information contained herein is not applicable to other sites. Reliance by other parties must be approved by NV5 in accordance with our standard contractual process for third-party reliance. Our interpretations of subsurface conditions are based on data from select soil and groundwater samples collected from this limited area. The results of the analyses only indicate the presence or absence of those chemical constituents analyzed in those discrete sample locations. It is always possible that contamination could exist between the widely spaced exploration locations. Analytical data from the laboratory samples should only be considered as indicators of project site conditions and not a guarantee of the absence of subsurface impact in areas not sampled.

The conclusions presented in this report are based on our observations made during field investigations and chemical analytical data. The findings of this assessment should be considered as a professional opinion based on our evaluation of select and limited data.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

Please call if you have questions or require additional information.

Sincerely,

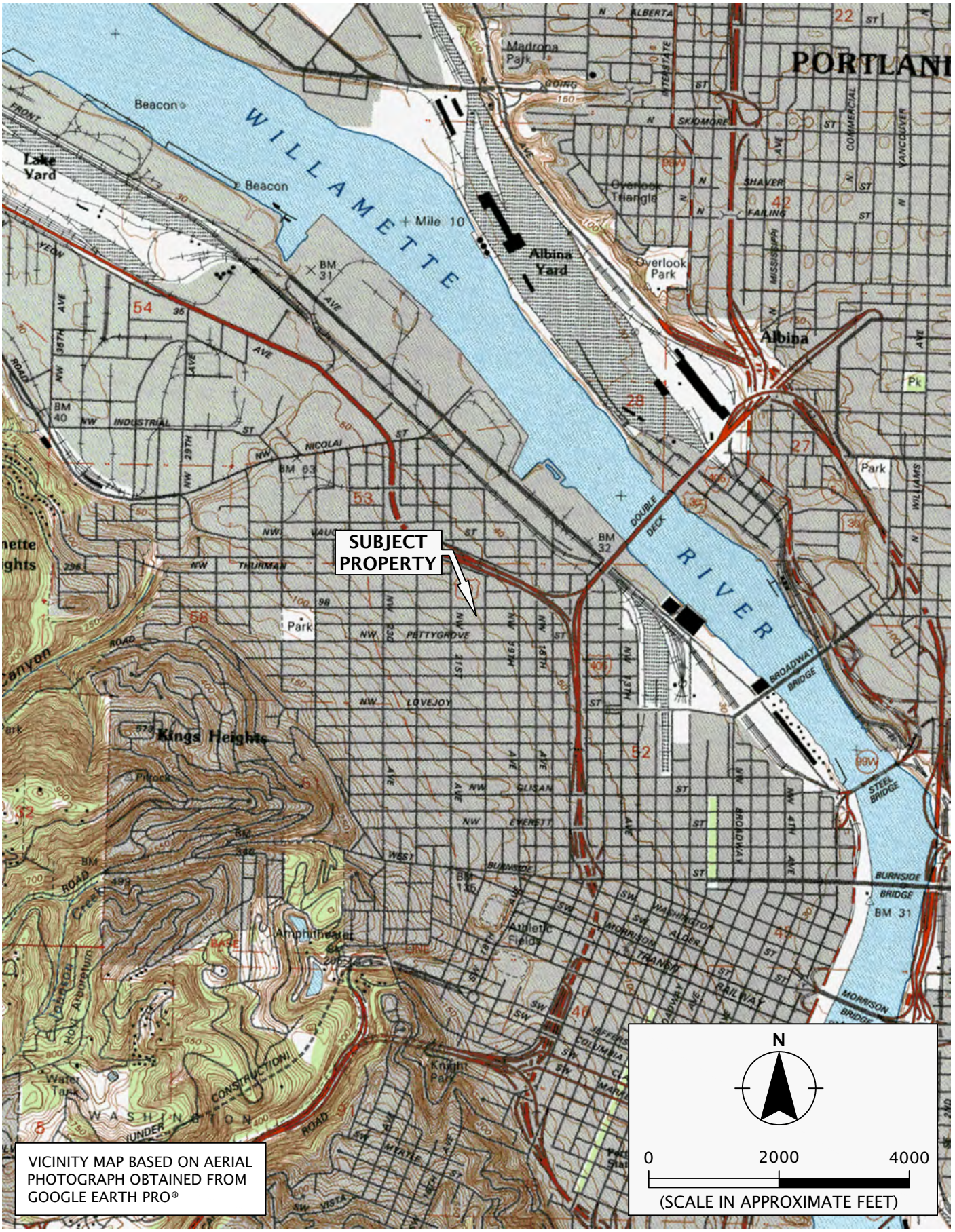
NV5

Julian Peter, E.I.T.
Environmental Staff

Kyle R. Sattler, L.G. (Washington)
Associate Geologist

Mike F. Coenen, P.E.
Principal Engineer

FIGURES



VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

NIV5	CAIRNPAC-14-08	**VICINITY MAP**	
	NOVEMBER 2022	FREEWELL SITE PORTLAND, OR	**FIGURE 1**

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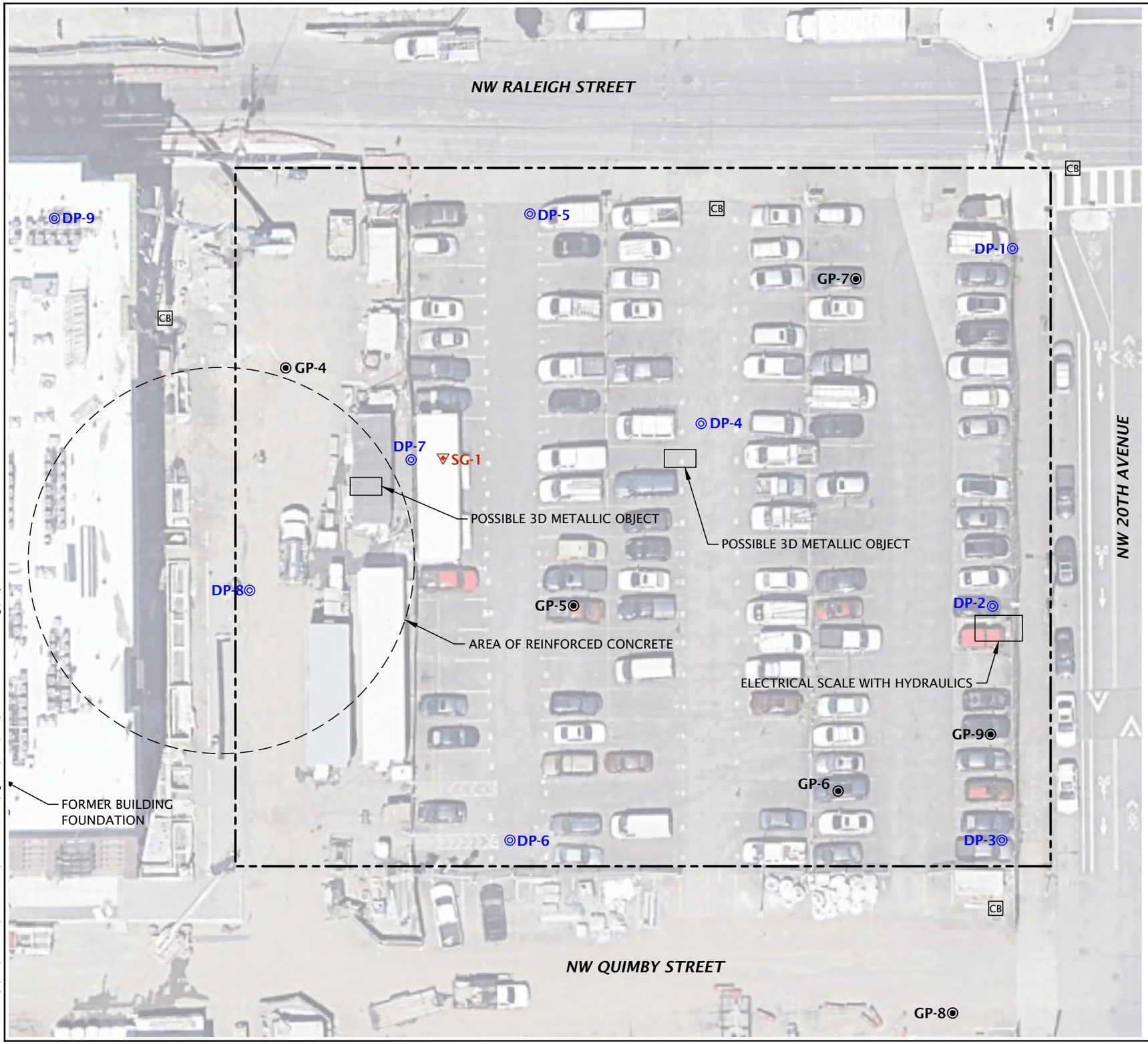
File Name: J:\A-D\CairnPac\CairnPac-14\CairnPac-14-08\Figures\CAD\CCR\CairnPac-14-08-VM01.dwg | Layout: FIGURE 1



LEGEND:

- SUBJECT PROPERTY BOUNDARY
- CB — CATCH BASIN
- GP-4 — DIRECT-PUSH BORING (2009, 2010)
- DP-1 — DIRECT-PUSH BORING (2018)
- SG-1 — SOIL GAS SAMPLE (2018)

N

0 30 60

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED MAY 10, 2021, OBTAINED FROM GOOGLE EARTH PRO.

SITE PLAN - PRE-DEVELOPMENT

FREEWELL SITE
PORTLAND, OR

FIGURE 2

CAIRNPAC-14-08

NOVEMBER 2022

NV5

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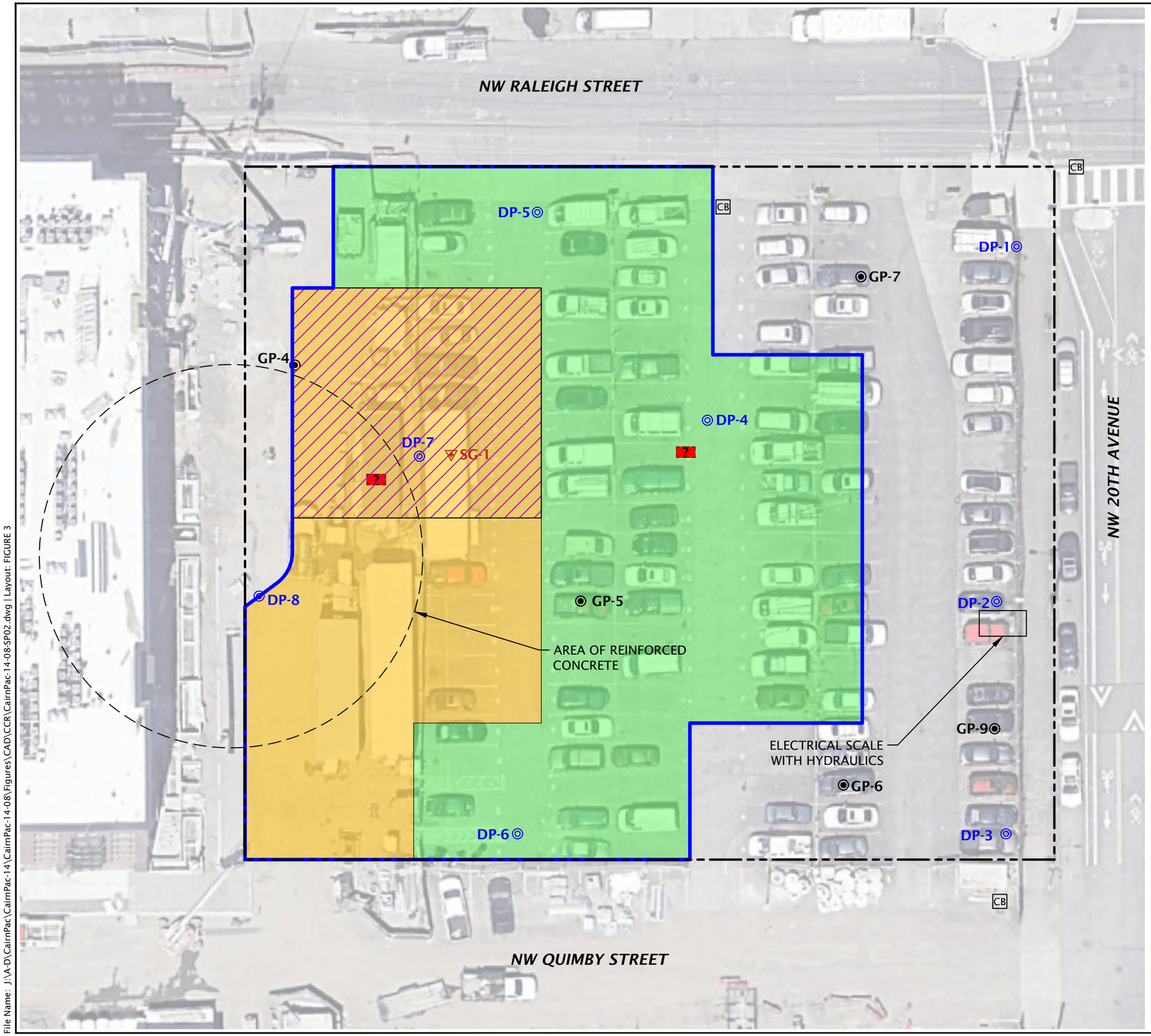

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- AOC
- CB — CATCH BASIN
- GP-4 — DIRECT-PUSH BORING (2009,2010)
- DP-1 — DIRECT-PUSH BORING (2018)
- SG-1 — SOIL GAS SAMPLE (2018)
- ? — POSSIBLE UST OR BURIED METALLIC OBJECT
- AREA A - ESTIMATED RCRA SUBTITLE D PETROLEUM-CONTAMINATED SOIL FROM 0.5 FOOT TO 3 FEET BGS (19,036 SQUARE FEET)
- AREA B - ESTIMATED RCRA SUBTITLE D PETROLEUM-CONTAMINATED SOIL FROM 0.5 FOOT TO 15 FEET BGS (12,280 SQUARE FEET)
- AREA C - ESTIMATED RCRA SUBTITLE D PETROLEUM-CONTAMINATED SOIL FROM 15 TO 25 FEET BGS (5,102 SQUARE FEET)

N

0 30 60

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED MAY 10, 2021, OBTAINED FROM GOOGLE EARTH PRO.

SITE PLAN - ESTIMATED AOCS

FREEWELL SITE
PORTLAND, OR

FIGURE 3

CAIRNPAC-14-08

NOVEMBER 2022

NV5

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DRAFT

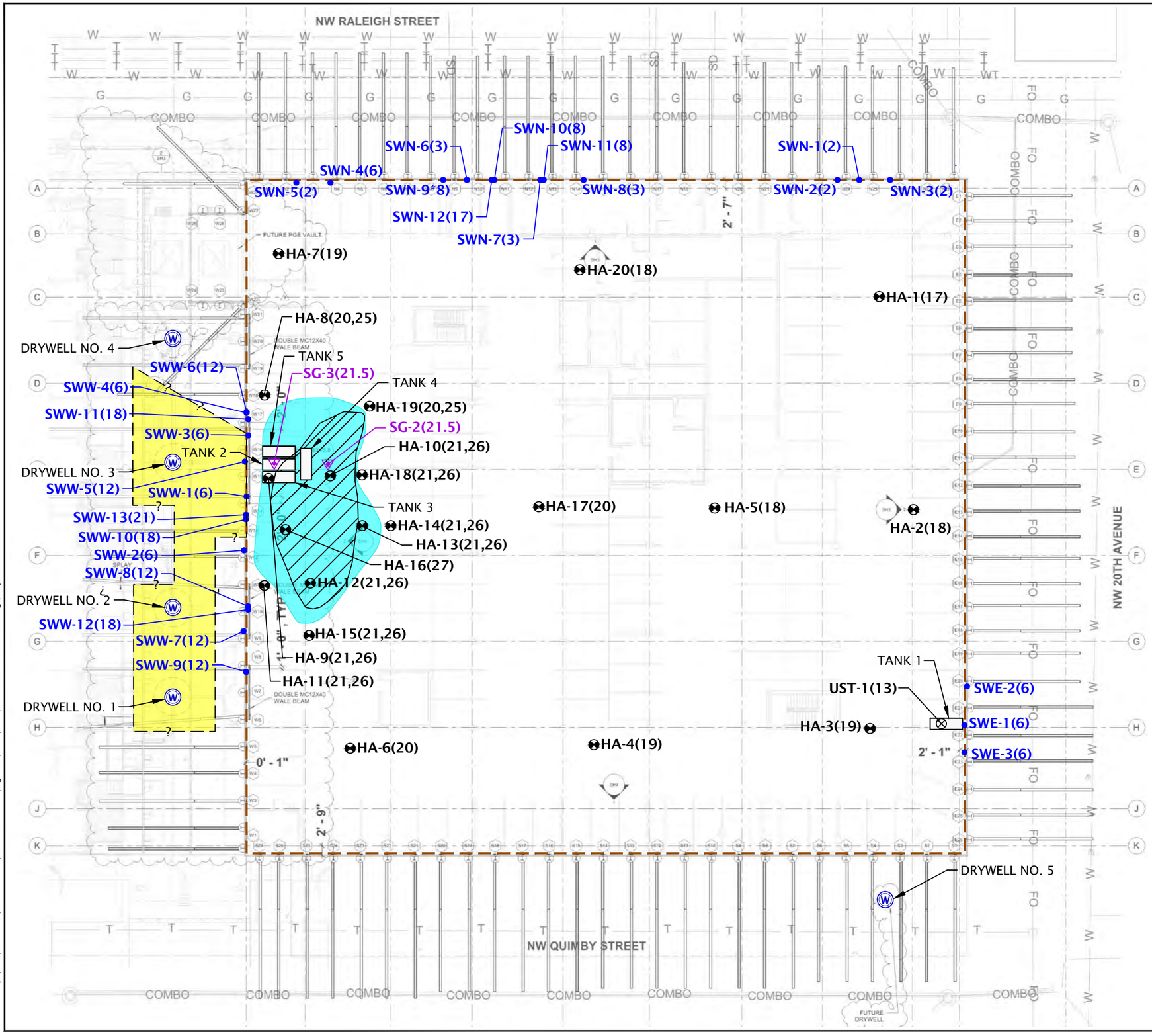
SITE PLAN - RESIDUAL CONTAMINATED SOIL

FIGURE 4

FREEWELL SITE
PORTLAND, OR

CAIRNPAC-14-08

NOVEMBER 2022



LEGEND:

- MASS EXCAVATION LIMIT (APPROXIMATELY 20 FEET BGS)
- SWN-1(2) • SIDEWALL CONFIRMATION SAMPLE
- HA-1(17) ⊗ HAND AUGER BORING/BOTTOM OF EXCAVATION CONFIRMATION SAMPLE
- SG-2(21.5) SOIL GAS SAMPLE
- UST-1(13) ⊗ UST CONFIRMATION SAMPLE
- TANK
- (W) DRYWELL

ESTIMATED RESIDUAL CONTAMINATION	
LATERAL EXTENT	DEPTH (FEET BGS)
	0 - 5
	20 -21
	26 - 27

N

0 30 60

(SCALE IN FEET)

SITE PLAN BASED ON SHEET SH2 SHORING PLAN DATED FEBRUARY 15, 2021, PREPARED BY PACIFIC STRUCTURAL SOLUTIONS, LLC

NV5

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TABLES

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
		Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range
Undocumented UST Decommissioning Confirmation Samples[1]							
#1	02/23/22	ND	ND	ND	--	--	--
#2	02/23/22	ND	DET	ND	--	144	53.2 U
#3	02/23/22	DET	DET	ND	804	2,410	51.3 U
#4	02/23/22	DET	DET	ND	1,470	14,600	1,040 U
#5	02/23/22	ND	ND	ND	--	--	--
#6	02/23/22	DET	DET	DET	1,950	8,650	1,100 U
#7	02/23/22	DET	DET	ND	731	2,910	52.8 U
#8	02/23/22	DET	DET	ND	696	2,600	53.0 U
Mass Excavation Confirmation Samples							
SWE-1(6)	02/24/22	--	--	--	56.1	247	53.8 U
SWE-2(6)	02/24/22	--	--	--	8.64 U	25.0 U	50.0 U
SWE-3(6)	02/24/22	--	--	--	7.73 U	28.0 U	56.0 U
SWN-1(2)	02/25/22	--	--	--	221	866	151
SWN-2(2)	02/25/22	--	--	--	6.07 U	25.4 U	50.8 U
SWN-3(2)	02/25/22	--	--	--	6.36 U	25.0 U	50.0 U
SWN-4(6)	03/16/22	--	--	--	12.7	1,270	357

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		Gasoline-Range	Diesel-Range	Oil-Range			Diesel-Range		Oil-Range	
SWN-5(2)	03/17/22	--	--	--	7.09	U	25.0	U	50.0	U
SWN-6(3)	03/29/22	--	--	--	129		1,090		50.0	U
SWN-7(3)	03/29/22	--	--	--	106		479		51.3	U
SWN-8(3)	03/29/22	--	--	--	8.37	U	61.4		50.0	U
SWN-9(8)	03/29/22	--	--	--	8.35	U	26.4	U	52.8	U
SWN-10(8)	03/29/22	--	--	--	6.82	U	152		303	
SWN-11(8)	03/29/22	--	--	--	8.01	U	25.0	U	136	
SWN-12(17)	04/07/22	--	--	--	9.66	U	26.6	U	53.2	U
SWW-1(6)	03/15/22	--	--	--	142		254		55.6	U
SWW-2(6)	03/15/22	--	--	--	7.02	U	27.0	U	54.0	U
SWW-3(6)	03/15/22	--	--	--	417		7,730		534	U
SWW-4(6)	03/16/22	--	--	--	7.27	U	27.2	U	54.4	U
SSW-5(12)	03/21/22	--	--	--	1,690		3,380		106	U
SSW-6(12)	03/21/22	--	--	--	8.47	U	27.9	U	55.9	U
SSW-7(12)	03/21/22	--	--	--	8.60	U	27.0	U	53.9	U
SSW-8(12)	03/21/22	--	--	--	8.41	U	26.2	U	52.4	U
SWW-9(12)	03/21/22	--	--	--	12.8	U	29.1	U	58.1	U

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Petroleum Hydrocarbons
Freewell Site
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Portland, Oregon

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		Gasoline-Range	Diesel-Range	Oil-Range			Diesel-Range		Oil-Range	
SWW-10(18)	03/22/22	--	--	--	**9.46**		**42.0**		50.0	U
SWW-11(18)	03/22/22	--	--	--	8.10	U	25.0	U	50.0	U
SWW-12(18)	03/22/22	--	--	--	7.31	U	25.0	U	50.0	U
SWW-13(21)	03/28/22	--	--	--	6.31	U	25.0	U	50.0	U
UST-1(13)	03/04/22	--	--	--	7.36	U	26.5	U	53.0	U
HA-1(17)	03/22/22	--	--	--	7.74	U	25.7	U	51.3	U
HA-2(18)	03/22/22	--	--	--	10.3	U	27.5	U	55.0	U
HA-3(19)	03/22/22	--	--	--	8.51	U	28.2	U	56.4	U
HA-4(19)	03/22/22	--	--	--	7.33	U	25.0	U	50.0	U
HA-5(18)	03/22/22	--	--	--	8.64	U	25.8	U	51.5	U
HA-6(20)	03/22/22	--	--	--	7.17	U	25.0	U	50.0	U
HA-7(19)	03/22/22	--	--	--	6.61	U	25.0	U	50.0	U
HA-8(20)	03/23/22	--	--	--	8.56	U	28.6	U	57.2	U
HA-8(25)	03/23/22	--	--	--	5.92	U	25.0	U	50.0	U
HA-9(21)	03/23/22	--	--	--	7.59	U	**45.3**		50.0	U
HA-9(26)	03/23/22	--	--	--	6.73	U	26.8	U	53.7	U
HA-10(21)	03/23/22	--	--	--	**4,820**		**14,700**		2,560	U

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Petroleum Hydrocarbons
Freewell Site
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Portland, Oregon

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		Gasoline-Range	Diesel-Range	Oil-Range			Diesel-Range		Oil-Range	
HA-10(26)	03/23/22	--	--	--	6.51	U	3,750		236	U
HA-11(21)	03/23/22	--	--	--	7.25	U	25.0	U	50.0	U
HA-11(26)	03/23/22	--	--	--	6.74	U	25.0	U	50.0	U
HA-12(21)	03/23/22	--	--	--	451		1,270		56.0	U
HA-12(26)	03/23/22	--	--	--	5,650		1,560		50.0	U
HA-13(21)	03/24/22	--	--	--	2,830		798		55.0	U
HA-13(26)	03/24/22	--	--	--	8.76	U	25.0	U	50.0	U
HA-14(21)	03/24/22	--	--	--	6.76	U	25.0	U	50.0	U
HA-14(26)	03/24/22	--	--	--	7.09	U	25.9	U	51.9	U
HA-15(21)	03/24/22	--	--	--	8.56	U	25.0	U	50.0	U
HA-15(26)	03/24/22	--	--	--	6.85	U	25.0	U	50.0	U
HA-16(27)	03/24/22	--	--	--	46.6		121		50.0	U
HA-17(20)	03/25/22	--	--	--	6.69	U	25.0	U	50.0	U
HA-18(21)	03/28/22	--	--	--	7.86	U	26.8	U	53.5	U
HA-18(26)	03/28/22	--	--	--	6.61	U	25.0	U	50.0	U
HA-19(20)	03/31/22	--	--	--	8.89	U	25.2	U	50.4	U

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
		Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range
HA-19(25)	03/31/22	--	--	--	7.42 U	25.0 U	50.1 U
HA-20(18)	04/08/22	--	--	--	7.52 U	25.7 U	51.5 U
Drywell Excavation Confirmation Samples							
DW-1	05/05/22	--	--	--	7.58 U	1,260	52.8 U
DW-2	05/05/22	--	--	--	7.75 U	25.0 U	50.0 U
DEQ Generic RBCs[2]							
Soil Ingestion, Dermal Contact, and Inhalation							
Construction Worker		NE	NE	NE	9,700	4,600	NE
Excavation Worker		NE	NE	NE	>Max	>Max	NE
Volatilization to Outdoor Air							
Urban Residential		NE	NE	NE	5,900	>Max	NE
Occupational		NE	NE	NE	69,000	>Max	NE
Vapor Intrusion into Buildings							
Urban Residential		NE	NE	NE	94	>Max	NE
Occupational		NE	NE	NE	>Max	>Max	NE
DEQ CFSLs[3]		NE	NE	NE	31	1,100	NE

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
		Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range

Notes:
1. Soil represented by the undocumented UST decommissioning confirmation soil samples was over-excavated during the mass excavation activities and disposed at Hillsboro landfill.
2. DEQ Generic RBCs dated May 2018
3. DEQ CFSLs dated February 21, 2019

DET: carbon-range detected during hydrocarbon identication analysis
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
ND: carbon-range not detected during hydrocarbon identification analysis
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.
--: not analyzed

TABLE 2
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs[1] EPA Method 8260D (mg/kg)												
		n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Ethylbenzene	2-Hexanone	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	n-Propylbenzene	Toluene	1,2,4-TMB	1,3,5-TMB	Total Xylenes
Mass Excavation Confirmation Soil Samples														
SWE-1(6)	02/24/22	--	--	--	0.396 U	--	--	--	--	--	--	--	--	1.19 U
SWN-1(6)	02/25/22	--	--	--	0.0396 U	--	--	--	--	--	--	--	--	0.119 U
SSW-5(12)	03/21/22	--	--	--	**0.351**	--	--	--	--	--	--	--	--	0.999 U
HA-10(21)	03/23/22	**7.02**	**5.86**	0.626 U	**18.8**	**11.7**	**11.2**	**11.2**	**37.6**	**14.1**	**0.666**	2.56 U	**33.4**	**86.6**
HA-12(21)	03/23/22	**0.322**	0.322 U	0.322 U	**0.717**	3.22 U	**0.376**	**0.476**	**1.07**	**0.653**	0.322 U	**3.74**	**0.981**	**1.32**
HA-12(26)	03/23/22	**6.13**	**4.30**	0.602 U	**5.99**	11.2 U	**5.34**	**8.60**	**19.4**	**7.75**	0.287 U	**45.7**	**18.6**	**9.78**
HA-13(21)	03/24/22	**4.28**	**2.75**	**0.266**	**0.183**	3.54 U	**1.18**	**5.50**	**5.62**	**2.31**	0.154 U	**14.2**	**6.44**	**0.713**
SWN-6(3)	03/29/22	--	--	--	0.0746 U	--	--	--	--	--	--	--	--	0.224 U
Drywell Excavation Confirmation Samples														
DW-1	05/05/22	0.0758 U	0.0758 U	0.0758 U	0.0379 U	0.758 U	0.0758 U	0.0758 U	0.152 U	0.0379 U	0.0758 U	0.0758 U	0.0758 U	0.114 U
DW-2	05/05/22	0.0775 U	0.0775 U	0.0775 U	0.0387 U	0.775 U	0.0775 U	0.0775 U	0.155 U	0.0387 U	0.0775 U	0.0775 U	0.0775 U	0.116 U
DEQ Generic RBCs[2]														
Soil Ingestion, Dermal Contact, and Inhalation														
Construction Worker		NE	NE	NE	1,700	NE	27,000	NE	580	NE	28,000	2,900	2,900	20,000
Excavation Worker		NE	NE	NE	49,000	NE	750,000	NE	16,000	NE	770,000	81,000	81,000	560,000
Volatilization to Outdoor Air														
Urban Residential		NE	NE	NE	85	NE	>Csat	NE	15	NE	>Csat	>Csat	>Csat	>Csat
Occupational		NE	NE	NE	160	NE	>Csat	NE	83	NE	>Csat	>Csat	>Csat	>Csat
Vapor Intrusion into Buildings														
Urban Residential		NE	NE	NE	3.0	NE	>Csat	NE	15	NE	>Csat	140	98	160
Occupational		NE	NE	NE	17	NE	>Csat	NE	83	NE	>Csat	>Csat	>Csat	>Csat
DEQ CFSLs[3]		190	350	96	0.22	0.36	96	NE	0.077	72	23	10	11	1.4

TABLE 2
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Notes:
1. Only VOCs detected during this investigation are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix G.
2. DEQ Generic RBCs dated May 2018
3. DEQ CFSLs dated February 21, 2019

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.
--: not analyzed

TABLE 3
Summary of Soil Sample Chemical Analytical Results
RCRA 8 Total Metals and TCLP Lead
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	RCRA 8 Total Metals EPA Method 6020B (mg/kg)								TCLP Lead EPA Methods 1311/6020B (mg/L)
		Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	
Undocumented UST Waste Characterization Sample										
P1	02/25/22	**1.97**	**15.3**	**3.35**	**2.57**	**270**	0.0806 U	1.01 U	0.202 U	**0.608**
Mass Excavation Confirmation Soil Samples										
SWW-5(12)	03/21/22	**4.37**	**145**	0.278 U	**14.6**	**15.4**	0.111 U	1.39 U	0.278 U	–
SWN-6(3)	03/29/22	**5.90**	**172**	0.275 U	**19.6**	**20.8**	0.110 U	1.38 U	0.275 U	–
Drywell Excavation Confirmation Samples										
DW-1	05/05/22	**9.20**	**221**	0.282 U	**24.8**	**18.0**	0.113 U	1.41 U	0.282 U	–
DW-2	05/05/22	**3.91**	**95.0**	0.238 U	**10.7**	**7.06**	0.0951 U	1.19 U	0.238 U	–
DEQ Generic RBCs[1]										
Soil Ingestion, Dermal Contact, and Inhalation										
Construction Worker		15	69,000	350	530,000	800	110	NE	1,800	NE
Excavation Worker		420	>Max	9,700	>Max	800	2,900	NE	49,000	NE
Volatilization to Outdoor Air										
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV	NE
Occupational		NV	NV	NV	NV	NV	NV	NE	NV	NE
Vapor Intrusion into Buildings										
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV	NE
Occupational		NV	NV	NV	NV	NV	NV	NE	NV	NE
DEQ CFSLs[2]		8.8	790	0.63	76	28	0.23	0.71	0.82	NE
EPA Maximum Allowable Levels[3]		100	2,000	20	100	100	4	20	100	NA
EPA TCLP Limits[4]		NA								5.0

Notes:
1. DEQ Generic RBCs dated May 2018
3. DEQ CFSLs dated February 21, 2019
4. Section 1.2 of EPA Method 1311 (TCLP) allows for a total constituent analysis in lieu of the TCLP extraction. The maximum allowable limits equate to 20 times the maximum leachable limit.
5. Analytes exceeding the maximum leachable limits are defined as toxicity characteristic hazardous waste.

>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ CFSLs and/or EPA Maximum Allowable Levels for disposal at a RCRA Subtitle D landfill.
–: not analyzed

TABLE 4
Summary of Soil Sample Chemical Analytical Results
PAHs
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PAHs EPA Method 8270E SIM (mg/kg)																		
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
Mass Excavation Confirmation Samples																				
SWE-1(6)	02/24/22	**0.383**	**0.215**	**3.83**	**13.9**	**14.7**	**13.7**	**5.26**	**6.48**	**18.6**	**1.84**	**0.108**	**17.9**	**0.713**	**7.14**	**0.105**	**0.102**	**0.322**	**3.89**	**27.3**
SWN-1(2)	02/25/22	0.186 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	0.0546 U	**0.174**	0.0546 U	**0.360**	0.0546 U	**1.66**	**0.262**	0.0546 U	**0.826**	**0.0557**
SWW-5(12)	03/21/22	0.308 U	0.131 U	0.141 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	0.0505 U	**0.220**	0.0505 U	**0.908**	0.0505 U	**3.77**	**5.33**	0.929 U	**1.41**	**0.0542**
SWN-6(3)	03/29/22	0.0289 U	0.0144 U	0.0393 U	0.0131 U	0.0131 U	0.0131 U	0.0131 U	0.0131 U	0.0131 U	0.0131 U	**0.0268**	0.0131 U	**0.119**	0.0131 U	**0.0191**	0.0131 U	0.0131 U	**0.0801**	0.0131 U
Drywell Excavation Confirmation Samples																				
DW-1	05/05/22	0.0972 U	0.0246 U	0.105 U	0.0311 U	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0220 U	0.0311 U	**0.0695**	**0.0312**	**0.242**	0.0130 U	0.0246 U	0.0130 U	0.0130 U	0.0130 U	**0.146**
DW-2	05/05/22	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U
DEQ Generic RBCs[1]																				
Soil Ingestion, Dermal Contact, and Inhalation																				
Construction Worker		21,000	NE	110,000	170	17	170	1,700	NE	17,000	17	NE	10,000	14,000	170	NE	NE	580	NE	7,500
Excavation Worker		590,000	NE	>Max	4,800	490	4,900	49,000	NE	490,000	490	NE	280,000	390,000	4,900	NE	NE	16,000	NE	210,000
Volatilization to Outdoor Air																				
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NE	NV	>Max	NV	NE	NE	15	NE	>Max
Occupational		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NE	NV	>Max	NV	NE	NE	83	NE	>Max
Vapor Intrusion into Buildings																				
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NE	NV	>Max	NV	NE	NE	15	NE	>Max
Occupational		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NE	NV	>Max	NV	NE	NE	83	NE	>Max
DEQ CFSLs[2]		0.25	120	6.8	0.73	0.11	1.1	11	25	3.1	0.11	0.002	10	3.7	1.1	0.36	11	0.077	5.5	10

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ CFSLs.

TABLE 5
Summary of Soil Sample Chemical Analytical Results
PCBs
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PCBs EPA Method 8082A (mg/kg)						
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
Undocumented UST Waste Characterization Sample								
P1	02/25/22	0.746 U	0.746 U	0.746 U	0.746 U	0.746 U	0.746 U	0.746 U
Drywell Excavation Confirmation Samples								
DW-1	05/05/22	0.0133 U	0.0133 U	0.0133 U	0.0133 U	0.0133 U	0.0133 U	0.0133 U
DW-2	05/05/22	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0120 U
DEQ Generic RBCs[1]								
Soil Ingestion, Dermal Contact, and Inhalation								
Construction Worker		4.9						
Excavation Worker		140						
Volatilization to Outdoor Air								
Urban Residential		>Csat						
Occupational		>Csat						
Vapor Intrusion into Buildings								
Urban Residential		>Csat						
Occupational		>Csat						
DEQ CFSLs[2]		1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.

U: Not detected. Reporting or detection limit shown.

TABLE 6
Summary of Soil Gas Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and VOCs
Freewell Site
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Date	Gasoline-Range Hydrocarbons EPA Method TO-15 (µg/m³)	VOCs[1] EPA Method TO-15 (µg/m³)												
			Acetone	Cyclohexane	Ethanol	Ethylbenzene	4-Ethyltoluene	Heptane	n-Hexane	iso-Propylbenzene	2-Propanol	PCE	1,2,4-TMB	1,3,5-TMB	Total Xylenes
SG-2(21.5)	03/18/22	**917,000**	**798**	**5,170**	**398**	69.4 U	78.5 U	**1,060**	**2,470**	78.7 U	**4,740**	**119**	78.5 U	**506**	208 U
SG-3(21.5)	03/18/22	**12,800,000**	5,940 U	**131,000**	4,710 U	**33,800**	**14,400**	**406,000**	**61,000**	**11,800**	6,150 U	2,720 U	**33,400**	**13,800**	**91,100**
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Urban Residential		79,000	NE	NE	NE	530	NE	NE	NE	NE	NE	5,100	13,000	13,000	21,000
Occupational		1,700,000	NE	NE	NE	4,900	NE	NE	NE	1,800,000	NE	47,000	260,000	260,000	440,000

Notes:
1. Only VOCs detected during this investigation are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix G.
2. DEQ Generic RBCs dated May 2018
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.

APPENDIX A

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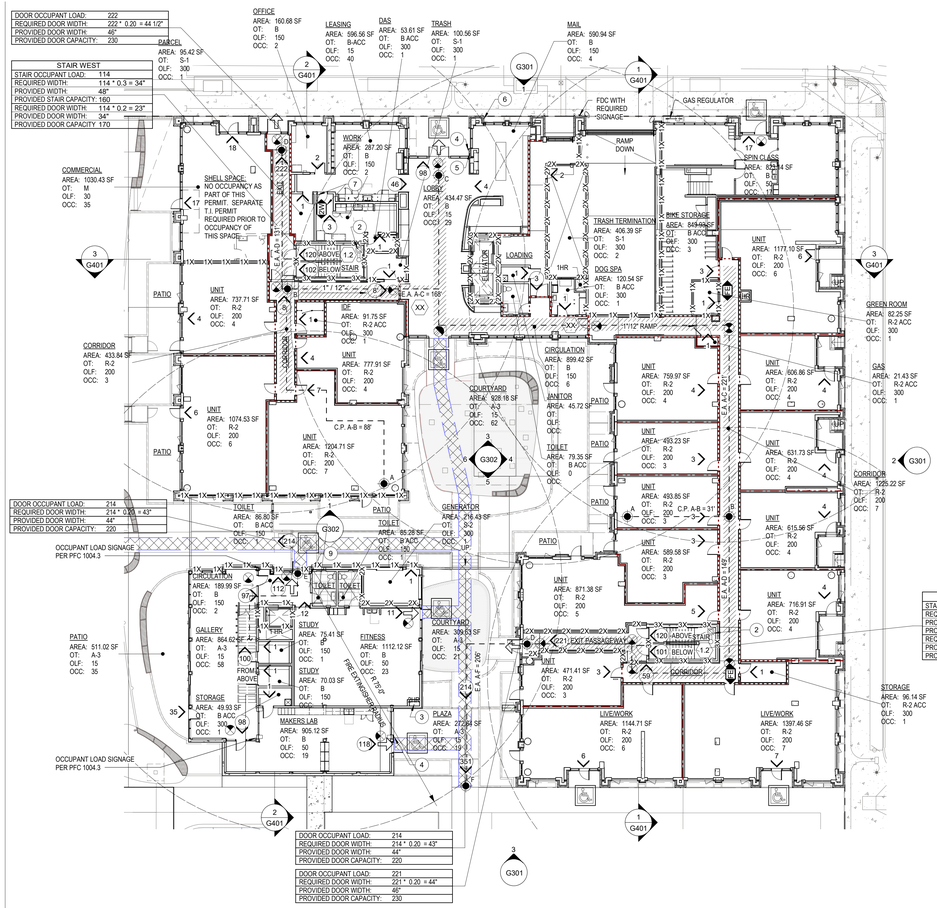
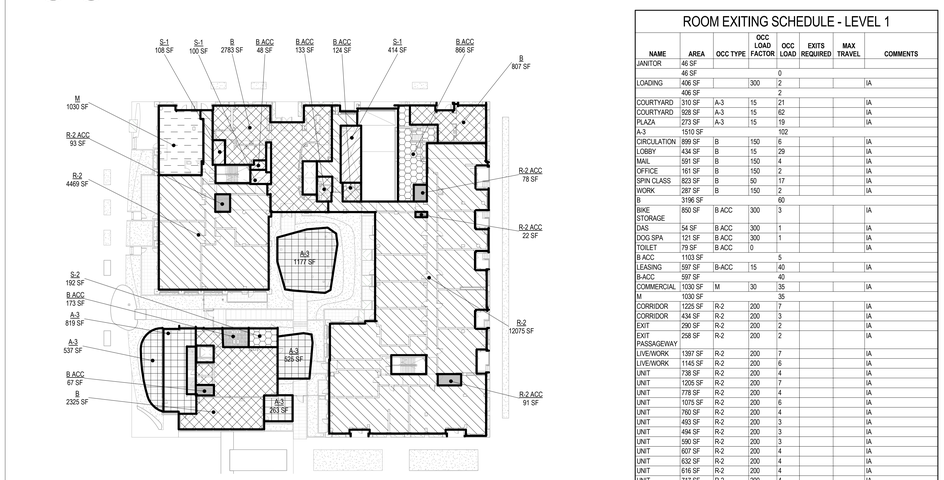


2 CODE COMPLIANCE PLAN - LEVEL 01
1/16" = 1'-0"



1 CODE COMPLIANCE PLAN - LEVEL P1
1/16" = 1'-0"

GENERAL NOTES - CODE SUMMARY

A. CODE SUMMARY KEYED NOTES APPLY TO G100, G300 & G400 SERIES SHEETS. ALL KEYED NOTES MAY NOT OCCUR ON THIS SHEET AND DO NOT APPLY TO ANY OTHER SHEETS EXCEPT THOSE NOTED.

B. ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN THE CONTRACT FOR CONSTRUCTION, WHETHER SHOWN ELSEWHERE OR NOT. CONTRACTOR SHALL MAKE ALLOWANCES FOR CONNECTION, HOOK UP, ETC. AS REQUIRED SO THAT ITEMS, EQUIPMENT, ETC. ARE FIT FOR INTENDED PURPOSE.

C. SEE ELECTRICAL AND MECHANICAL PLANS FOR ADDITIONAL SYMBOLS

D. PROVIDE LISTED FIRESTOP, CONTINUOUS AT PERIMETER GAPS OF ALL RATED CONSTRUCTION AS REQUIRED TO MAINTAIN THE SPECIFIED RATING.

E. SQUARE FOOTAGE AREA CALCULATIONS ARE BASED ON THE BUILDING CODE DEFINITIONS OF GROSS AND NET AREAS AS USED TO DETERMINE OCCUPANT LOADS ONLY AND ARE NOT A REPRESENTATION OF LEASABLE AREA.

F. AERIAL ACCESS IS UNABLE TO BE PROVIDED. THE PROJECT WILL COMPLY WITH THE FOLLOWING CONDITIONS PER PORTLAND FIRE AND RESCUE FOR ALTERNATE TO AERIAL FIRE APPARATUS ROAD
1. BUILDING IS EQUIPPED WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM.
2. THERE ARE NO COMBUSTIBLE CONCEALED ATTIC SPACES (SPRINKLERS).
3. ALL STAIRWAY EXIT ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 2 HOURS.
4. THE ROOF IS ESSENTIALLY FLAT.
5. APPROVED ACCESS IS PROVIDED TO THE ROOF FROM EACH STAIRWAY COMPLYING WITH THE REGION STRUCTURAL SPECIALTY CODE (1009). IN BUILDINGS WITHOUT AN OCCUPIED ROOF, ACCESS TO THE ROOF SHALL BE PERMITTED TO BE A ROOF HATCH OR TRAP DOOR NOT LESS THAN 30" WIDE CLEAR BETWEEN THE HANDRAILS AND 8' LONG.
6. BUILDINGS REQUIRING STANDPIPES ARE EQUIPPED WITH AT LEAST ONE STANDPIPE THAT TERMINATES ON THE ROOF.

G. ALL EXTERIOR BEARING WALLS ARE 2 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AND ALL INTERIOR BEARING WALLS ARE 1 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AT LEVELS 3-7. FIRE RESISTANCE RATING SYMBOLS MAY NOT BE SHOWN FOR CLARITY.

H. 36" DOORS EGRESSING 170 OCUPANTS, OR LESS, MEET THE MINIMUM REQUIRED EGRESS WIDTH.

KEYED NOTES - CODE SUMMARY

1 ELECTRIC READY PARKING STALL PER CITY OF PORTLAND GUIDELINES
2 STANDPIPE CONTINUES TO ROOF LEVEL
3 REMOTE FUEL PORT
4 ADA ACTUATOR
5 TENANT ACCESS CONTROL
6 KNOX BOX LOCATION FOR FIRE, PGE, AND NW NATURAL
7 2-WAY COMMUNICATION PANEL LOCATION. PROVIDE SIGNAGE ON DOOR TO ROOM PER FIRE MARSHALL
8 ROOF ACCESS VIA SHIPSLADDER
9 "MAX OCCUPANT LOAD 125" PER APPEAL 24811

LEGEND - CODE COMPLIANCE SYMBOLS

- PROPERTY LINE
- 1/2 HOUR FIRE PARTITION
- 1 HOUR FIRE PARTITION
- 1 HOUR FIRE BARRIER
- 2 HOUR FIRE BARRIER
- 1 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 2 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 3 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 1 HOUR SMOKE BARRIER
- 44" EXTERIOR EGRESS PATH TO ROW WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- 44" EGRESS PATH OF TRAVEL WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- ACCESSIBLE ROUTE OF TRAVEL
- C.P. X'-XX" - (PER 1014.3) COMMON PATH OF EGRESS TRAVEL
- E.A. X'-XX" - (PER 1016.2) EXIT ACCESS DISTANCE
- # HR RATED SHAFT (WALL CONSTRUCTION TO MEET FIRE BARRIER REQUIREMENTS)
- 55B OCCUPANT LOAD AT OPENING
- 55B CUMULATIVE OCCUPANT LOAD AT OPENING
- BUILDING EXIT
- # BUILDING CODE APPEAL
- MH MAGNETIC HOLD OPEN
- AREA AREA NAME
- STANDPIPE
- LIGHTED EXIT SIGN - SHADING INDICATES LIGHTED FACE(S) DIRECTION ARROW CORRESPONDS TO DIRECTION ARROW ON SIGN
- LIGHTED EXIT SIGN - CEILING MOUNTED
- LIGHTED EXIT SIGN - WALL MOUNTED
- FE FIRE EXTINGUISHER (AND CABINET WHERE OCCURS)
- 2W TWO-WAY ACCESSIBLE COMMUNICATIONS
- ACCESSIBLE ENTRANCE

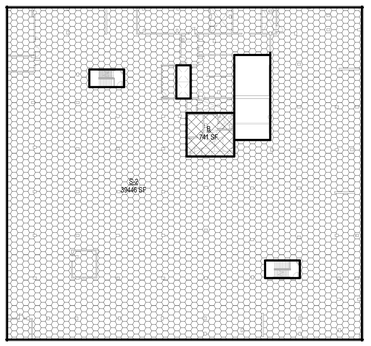
ROOM EXITING SCHEDULE - LEVEL 1

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
JANITOR	46 SF						
	46 SF			0			
LOADING	406 SF		300	2			IA
	406 SF			2			
COURTYARD	310 SF	A-3	15	21			IA
COURTYARD	928 SF	A-3	15	62			IA
PLAZA	273 SF	A-3	15	19			IA
A-3	1510 SF			102			
CIRCULATION	899 SF	B	150	6			IA
LOBBY	434 SF	B	15	29			IA
MAIL	591 SF	B	150	4			IA
OFFICE	161 SF	B	150	2			IA
SPIN CLASS	823 SF	B	50	17			IA
WORK	287 SF	B	150	2			IA
B	3196 SF			60			
BIKE STORAGE	850 SF	B ACC	300	3			IA
DAS	54 SF	B ACC	300	1			IA
DOG SPA	121 SF	B ACC	300	1			IA
TOILET	79 SF	B ACC	0				IA
B ACC	1103 SF			5			
LEASING	597 SF	B-ACC	15	40			IA
B-ACC	597 SF			40			
COMMERCIAL	1030 SF	M	30	35			IA
M	1030 SF			35			
CORRIDOR	1225 SF	R-2	200	7			IA
CORRIDOR	434 SF	R-2	200	3			IA
EXIT	290 SF	R-2	200	2			IA
EXIT PASSAGEWAY	258 SF	R-2	200	2			IA
LIVE/WORK	1397 SF	R-2	200	7			IA
LIVEWORK	1145 SF	R-2	200	6			IA
UNIT	738 SF	R-2	200	4			IA
UNIT	1205 SF	R-2	200	7			IA
UNIT	778 SF	R-2	200	4			IA
UNIT	1075 SF	R-2	200	6			IA
UNIT	760 SF	R-2	200	4			IA
UNIT	493 SF	R-2	200	3			IA
UNIT	494 SF	R-2	200	3			IA
UNIT	590 SF	R-2	200	3			IA
UNIT	607 SF	R-2	200	4			IA
UNIT	632 SF	R-2	200	4			IA
UNIT	616 SF	R-2	200	4			IA
UNIT	717 SF	R-2	200	4			IA
UNIT	471 SF	R-2	200	3			IA
UNIT	871 SF	R-2	200	5			IA
UNIT	1177 SF	R-2	200	6			IA
R-2	15972 SF			91			
GAS	21 SF	R-2 ACC	300	1			IA
GREEN ROOM	82 SF	R-2 ACC	300	1			IA
IDF	92 SF	R-2 ACC	300	1			IA
STORAGE	96 SF	R-2 ACC	300	1			IA
R-2 ACC	292 SF			4			
PARCEL	95 SF	S-1	300	1			IA
TRASH	101 SF	S-1	300	1			IA
TRASH TERMINATION	406 SF	S-1	300	2			IA
S-1	602 SF			4			
	24754 SF			343			

PAVILION ROOM EXITING SCHEDULE - LEVEL 1

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
GALLERY	865 SF	A-3	15	58			VB
PATIO	511 SF	A-3	15	35			VB
A-3	1376 SF			93			
CIRCULATION	190 SF	B	150	2			VB
FITNESS	1112 SF	B	50	23			VB
MAKERS LAB	905 SF	B	50	19			VB
STUDY	70 SF	B	150	1			VB
STUDY	75 SF	B	150	1			VB
B	2353 SF			46			
STORAGE	50 SF	B ACC	300	1			VB
TOILET	87 SF	B ACC	150	1			VB
TOILET	85 SF	B ACC	150	1			VB
B ACC	222 SF			3			
GENERATOR	216 SF	S-2	300	1			VB
S-2	216 SF			1			
	4167 SF			143			

3 OCCUPANT TYPE PLAN - LEVEL 01
1/32" = 1'-0"



ROOM EXITING SCHEDULE - LEVEL P1

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
MAINTENANCE	498 SF	B	150	4			IA
OFFICE	144 SF	B	150	1			IA
B	642 SF			5			
BIKE STORAGE	806 SF	S-2	300	3			IA
BIKE STORAGE	680 SF	S-2	300	3			IA
BIKE STORAGE	640 SF	S-2	300	3			IA
BIKE STORAGE	204 SF	S-2	300	1			IA
DATA	153 SF	S-2	300	1			IA
ELECTRICAL	474 SF	S-2	300	2			IA
ELEV CONTROL	54 SF	S-2	300	1			IA
ENCLOSED PARKING	35283 SF	S-2	200	177			IA
FIRE PUMP	147 SF	S-2	300	1			IA
MECHANICAL	237 SF	S-2	300	1			IA
PAVILION MEP	183 SF	S-2	300	1			IA
TOILET	92 SF	S-2	300	1			IA
VESTIBULE	170 SF	S-2	200	1			IA
WATER	212 SF	S-2	300	1			IA
WATER HEATER	207 SF	S-2	300	1			IA
S-2	39543 SF			198			

4 OCCUPANT TYPE PLAN - LEVEL P1
1/32" = 1'-0"

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REGISTERED ARCHITECT 3680 KURT K. SCHULTZ PORTLAND, OR STATE OF OREGON

FREEWELL
BLOCK 291 EAST
2030 NW RALEIGH ST
PORTLAND, OR

VOLUME: 1

REVISIONS
1 Permit Response #1 6/14/21

CHECKED BY: P. ARCH
ISSUE DATE: 22 JUNE 2021
PROJECT NO: 1903067

CODE COMPLIANCE PLANS
G101
GMP SET

6/22/2021 11:14:24 AM SERA Design and Architecture, Inc.

Owner's Notice of Extended Certification Provision: The construction contract will allow the Owner to certify billings and estimates no later than 20-days after the billings and estimates are received from the original contractor.
Owner's Notice of Extended Payment Provision: The construction contract will allow the Owner to make progress payments no later than 30 days after the date a billing or estimate is certified.

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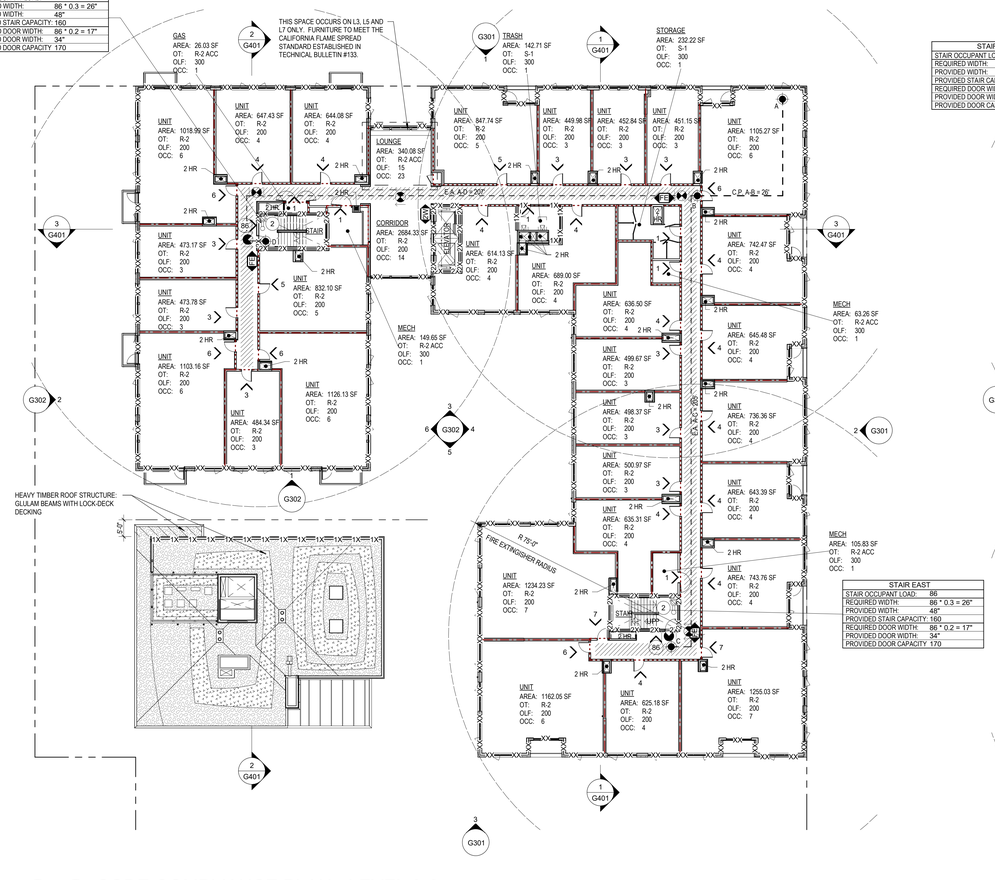
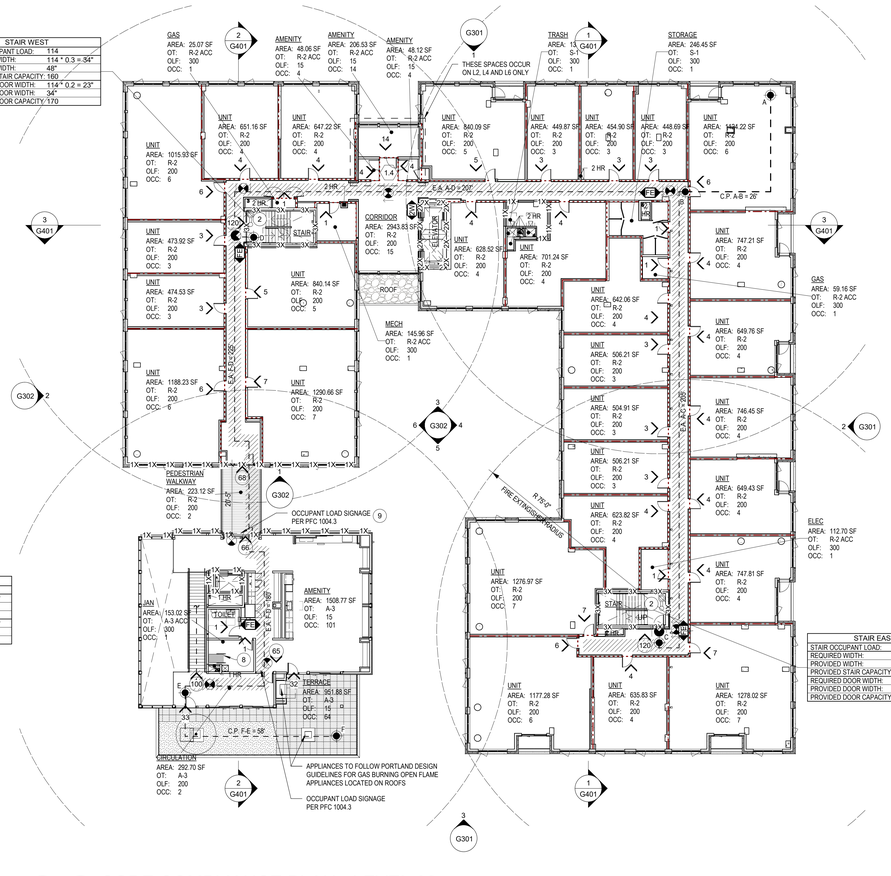
STAIR WEST	
STAIR OCCUPANT LOAD:	86
REQUIRED WIDTH:	86 * 0.3 = 26"
PROVIDED WIDTH:	48"
PROVIDED STAIR CAPACITY:	160
REQUIRED DOOR WIDTH:	86 * 0.2 = 17"
PROVIDED DOOR WIDTH:	34"
PROVIDED DOOR CAPACITY:	170



STAIR EAST	
STAIR OCCUPANT LOAD:	86
REQUIRED WIDTH:	86 * 0.3 = 26"
PROVIDED WIDTH:	48"
PROVIDED STAIR CAPACITY:	160
REQUIRED DOOR WIDTH:	86 * 0.2 = 17"
PROVIDED DOOR WIDTH:	34"
PROVIDED DOOR CAPACITY:	170

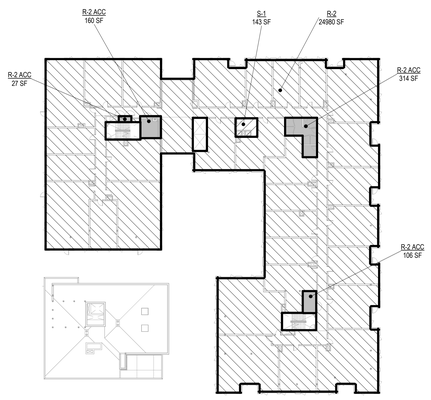
STAIR WEST	
STAIR OCCUPANT LOAD:	114
REQUIRED WIDTH:	114 * 0.3 = 34"
PROVIDED WIDTH:	48"
PROVIDED STAIR CAPACITY:	160
REQUIRED DOOR WIDTH:	114 * 0.2 = 23"
PROVIDED DOOR WIDTH:	34"
PROVIDED DOOR CAPACITY:	170



STAIR EAST	
STAIR OCCUPANT LOAD:	113
REQUIRED WIDTH:	113 * 0.3 = 34"
PROVIDED WIDTH:	48"
PROVIDED STAIR CAPACITY:	160
REQUIRED DOOR WIDTH:	113 * 0.2 = 23"
PROVIDED DOOR WIDTH:	34"
PROVIDED DOOR CAPACITY:	170

1 CODE COMPLIANCE PLAN - LEVEL 3-6
1/16" = 1'-0"

2 CODE COMPLIANCE PLAN - LEVEL 02
1/16" = 1'-0"

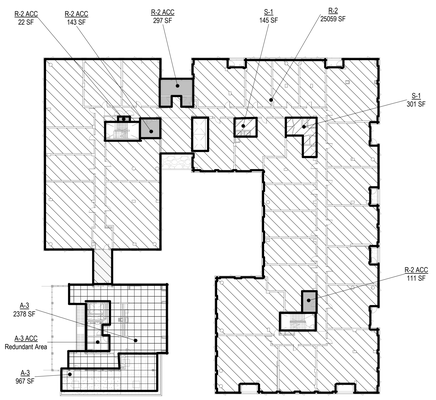


4 OCCUPANT TYPE PLAN - LEVEL 03
1/32" = 1'-0"

ROOM EXITING SCHEDULE - LEVEL 03

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
CORRIDOR	2684 SF	R-2	200	14			
UNIT	1019 SF	R-2	200	6			
UNIT	647 SF	R-2	200	4			
UNIT	473 SF	R-2	200	3			
UNIT	1103 SF	R-2	200	6			
UNIT	484 SF	R-2	200	3			
UNIT	832 SF	R-2	200	5			
UNIT	644 SF	R-2	200	4			
UNIT	848 SF	R-2	200	5			
UNIT	450 SF	R-2	200	3			
UNIT	453 SF	R-2	200	3			
UNIT	451 SF	R-2	200	3			
UNIT	1105 SF	R-2	200	6			
UNIT	742 SF	R-2	200	4			
UNIT	645 SF	R-2	200	4			
UNIT	736 SF	R-2	200	4			
UNIT	643 SF	R-2	200	4			
UNIT	744 SF	R-2	200	4			
UNIT	614 SF	R-2	200	4			
UNIT	689 SF	R-2	200	4			
UNIT	636 SF	R-2	200	4			
UNIT	500 SF	R-2	200	3			
UNIT	498 SF	R-2	200	3			
UNIT	501 SF	R-2	200	3			
UNIT	635 SF	R-2	200	4			
UNIT	1234 SF	R-2	200	7			
UNIT	1255 SF	R-2	200	7			
UNIT	625 SF	R-2	200	4			
UNIT	1162 SF	R-2	200	6			
UNIT	474 SF	R-2	200	3			
UNIT	1126 SF	R-2	200	6			
R-2	24666 SF			143			
GAS	26 SF	R-2 ACC	300	1			
LOUNGE	340 SF	R-2 ACC	15	23			
MECH	150 SF	R-2 ACC	300	1			
MECH	63 SF	R-2 ACC	300	1			
MECH	106 SF	R-2 ACC	300	1			
R-2 ACC	685 SF			27			
STORAGE	232 SF	S-1	300	1			
TRASH	143 SF	S-1	300	1			
S-1	375 SF			2			
	25716 SF			172			

3 OCCUPANT TYPE PLAN - LEVEL 02
1/32" = 1'-0"



ROOM EXITING SCHEDULE - LEVEL 2

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
CORRIDOR	2944 SF	R-2	200	15			IA
PEDESTRIAN WALKWAY	223 SF	R-2	200	2			
UNIT	1016 SF	R-2	200	6			IA
UNIT	651 SF	R-2	200	4			IA
UNIT	474 SF	R-2	200	3			IA
UNIT	475 SF	R-2	200	3			IA
UNIT	840 SF	R-2	200	5			IA
UNIT	647 SF	R-2	200	4			IA
UNIT	840 SF	R-2	200	5			IA
UNIT	450 SF	R-2	200	3			IA
UNIT	455 SF	R-2	200	3			IA
UNIT	449 SF	R-2	200	3			IA
UNIT	1124 SF	R-2	200	6			IA
UNIT	747 SF	R-2	200	4			IA
UNIT	650 SF	R-2	200	4			IA
UNIT	746 SF	R-2	200	4			IA
UNIT	649 SF	R-2	200	4			IA
UNIT	748 SF	R-2	200	4			IA
UNIT	629 SF	R-2	200	4			IA
UNIT	701 SF	R-2	200	4			IA
UNIT	642 SF	R-2	200	4			IA
UNIT	506 SF	R-2	200	3			IA
UNIT	505 SF	R-2	200	3			IA
UNIT	506 SF	R-2	200	3			IA
UNIT	624 SF	R-2	200	4			IA
UNIT	1277 SF	R-2	200	7			IA
UNIT	1278 SF	R-2	200	7			IA
UNIT	636 SF	R-2	200	4			IA
UNIT	1177 SF	R-2	200	6			IA
UNIT	1188 SF	R-2	200	6			IA
UNIT	1291 SF	R-2	200	7			IA
R-2	25088 SF			144			
AMENITY	207 SF	R-2 ACC	15	14			IA
AMENITY	48 SF	R-2 ACC	15	4			IA
AMENITY	48 SF	R-2 ACC	15	4			IA
ELEC	113 SF	R-2 ACC	300	1			IA
GAS	59 SF	R-2 ACC	300	1			IA
GAS	25 SF	R-2 ACC	300	1			IA
MECH	146 SF	R-2 ACC	300	1			IA
R-2 ACC	646 SF			26			
STORAGE	246 SF	S-1	300	1			IA
TRASH	139 SF	S-1	300	1			IA
S-1	385 SF			2			
	26119 SF			172			

PAVILION ROOM EXITING SCHEDULE - LEVEL 2

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
AMENITY	1509 SF	A-3	15	101			VB
CIRCULATION	293 SF	A-3	200	2			VB
TERRACE	952 SF	A-3	15	64			VB
JAN	153 SF	A-3 ACC	300	1			VB
TOILET	91 SF	A-3 ACC	150	1			VB
	2997 SF			169			

GENERAL NOTES - CODE SUMMARY

A. CODE SUMMARY KEYED NOTES APPLY TO G100, G300 & G400 SERIES SHEETS. ALL KEYED NOTES MAY NOT OCCUR ON THIS SHEET AND DO NOT APPLY TO ANY OTHER SHEETS EXCEPT THOSE NOTED.

B. ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN THE CONTRACT FOR CONSTRUCTION. WHETHER SHOWN ELSEWHERE OR NOT. CONTRACTOR SHALL MAKE ALLOWANCES FOR CONNECTION, HOOK UP, ETC. AS REQUIRED SO THAT ITEMS, EQUIPMENT, ETC. ARE FIT FOR INTENDED PURPOSE.

C. SEE ELECTRICAL AND MECHANICAL PLANS FOR ADDITIONAL SYMBOLS

D. PROVIDE LISTED FIRESTOP, CONTINUOUS AT PERIMETER GAPS OF ALL RATED CONSTRUCTION AS REQUIRED TO MAINTAIN THE SPECIFIED RATING.

E. SQUARE FOOTAGE AREA CALCULATIONS ARE BASED ON THE BUILDING CODE DEFINITIONS OF GROSS AND NET AREAS AS USED TO DETERMINE OCCUPANT LOADS ONLY AND ARE NOT A REPRESENTATION OF LEASABLE AREA.

F. AERIAL ACCESS IS UNABLE TO BE PROVIDED. THE PROJECT WILL COMPLY WITH THE FOLLOWING CONDITIONS PER PORTLAND FIRE AND RESCUE FOR ALTERNATE TO AERIAL FIRE APPARATUS ROAD:
1. BUILDING IS EQUIPPED WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM.
2. THERE ARE NO COMBUSTIBLE CONCEALED ATTIC SPACES (SPRINKLERS).
3. ALL STAIRWAY EXIT ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 2 HOURS.
4. THE ROOF IS ESSENTIALLY FLAT.
5. APPROVED ACCESS IS PROVIDED TO THE ROOF FROM EACH STAIRWAY COMPLYING WITH THE REGION STRUCTURAL SPECIALTY CODE (1009). IN BUILDINGS WITHOUT AN OCCUPIED ROOF, ACCESS TO THE ROOF SHALL BE PERMITTED TO BE A ROOF HATCH OR TRAP DOOR NOT LESS THAN 30" WIDE CLEAR BETWEEN THE HANDRAILS AND 8' LONG.
6. BUILDINGS REQUIRING STANDPIPES ARE EQUIPPED WITH AT LEAST ONE STANDPIPE THAT TERMINATES ON THE ROOF.

G. ALL EXTERIOR BEARING WALLS ARE 2 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AND ALL INTERIOR BEARING WALLS ARE 1 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AT LEVELS 3-7. FIRE RESISTANCE RATING SYMBOLS MAY NOT BE SHOWN FOR CLARITY.

H. 36" DOORS EGRESSING 170 CCUPANTS, OR LESS, MEET THE MINIMUM REQUIRED EGRESS WIDTH.

KEYED NOTES - CODE SUMMARY

1	ELECTRIC READY PARKING STALL PER CITY OF PORTLAND GUIDELINES
2	STANDPIPE CONTINUES TO ROOF LEVEL
3	REMOTE FUEL PORT
4	ADA ACTUATOR
5	TENANT ACCESS CONTROL
6	KNOX BOX LOCATION FOR FIRE, PGE, AND NW NATURAL
7	2-WAY COMMUNICATION PANEL LOCATION. PROVIDE SIGNAGE ON DOOR TO ROOM PER FIRE MARSHALL
8	ROOF ACCESS VIA SHIPSLADDER
9	"MAX OCCUPANT LOAD 125" PER APPEAL 24811

LEGEND - CODE COMPLIANCE SYMBOLS

- PROPERTY LINE
- 1/2 HOUR FIRE PARTITION
- 1 HOUR FIRE PARTITION
- 1 HOUR FIRE BARRIER
- 2 HOUR FIRE BARRIER
- 1 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 2 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 3 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 1 HOUR SMOKE BARRIER
- 44" EXTERIOR EGRESS PATH TO ROW WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- 44" EGRESS PATH OF TRAVEL WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- ACCESSIBLE ROUTE OF TRAVEL
- C.P. X'-X'' - (PER 1014.3) COMMON PATH OF EGRESS TRAVEL
- E.A. X'-X'' - (PER 1016.2) EXIT ACCESS DISTANCE
- # HR — RATED SHAFT (WALL CONSTRUCTION TO MEET FIRE BARRIER REQUIREMENTS)
- 555 — OCCUPANT LOAD AT OPENING
- 555 — CUMULATIVE OCCUPANT LOAD AT OPENING
- BUILDING EXIT
- # — BUILDING CODE APPEAL
- MH — MAGNETIC HOLD OPEN
- AREA — AREA NAME
- STANDPIPE
- LIGHTED EXIT SIGN - SHADING INDICATES LIGHTED FACE(S) DIRECTION ARROW CORRESPONDS TO DIRECTION ARROW ON SIGN
- LIGHTED EXIT SIGN - CEILING MOUNTED
- LIGHTED EXIT SIGN - WALL MOUNTED
- FE — FIRE EXTINGUISHER (AND CABINET WHERE OCCURS)
- 2W — TWO-WAY ACCESSIBLE COMMUNICATIONS
- ACCESSIBLE ENTRANCE

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REGISTERED ARCHITECT 3680 KURT K. SCHULTZ PORTLAND, OR STATE OF OREGON

FREEWELL
BLOCK 293 EAST
2030 NW RALEIGH ST
PORTLAND, OR

VOLUME: 1

REVISIONS
1 Permit Response #1 6/14/21

CHECKED BY: P ARCH
ISSUE DATE: 22 JUNE 2021
PROJECT NO: 1903067

CODE COMPLIANCE PLANS
G102
GMP SET

6/22/2021 11:14:56 AM SERA Design and Architecture, Inc.

Owner's Notice of Extended Certification Provision: The construction contract will allow the Owner to certify billings and estimates no later than 20-days after the billings and estimates are received from the original contractor.
Owner's Notice of Extended Payment Provision: The construction contract will allow the Owner to make progress payments no later than 30 days after the date a billing or estimate is certified.

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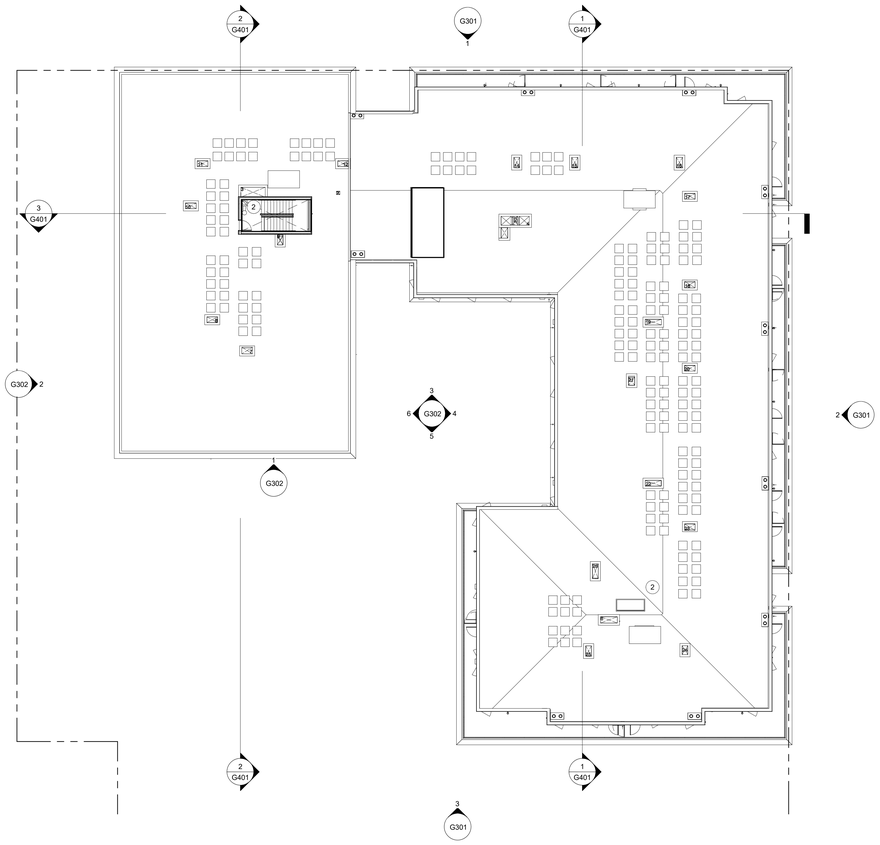
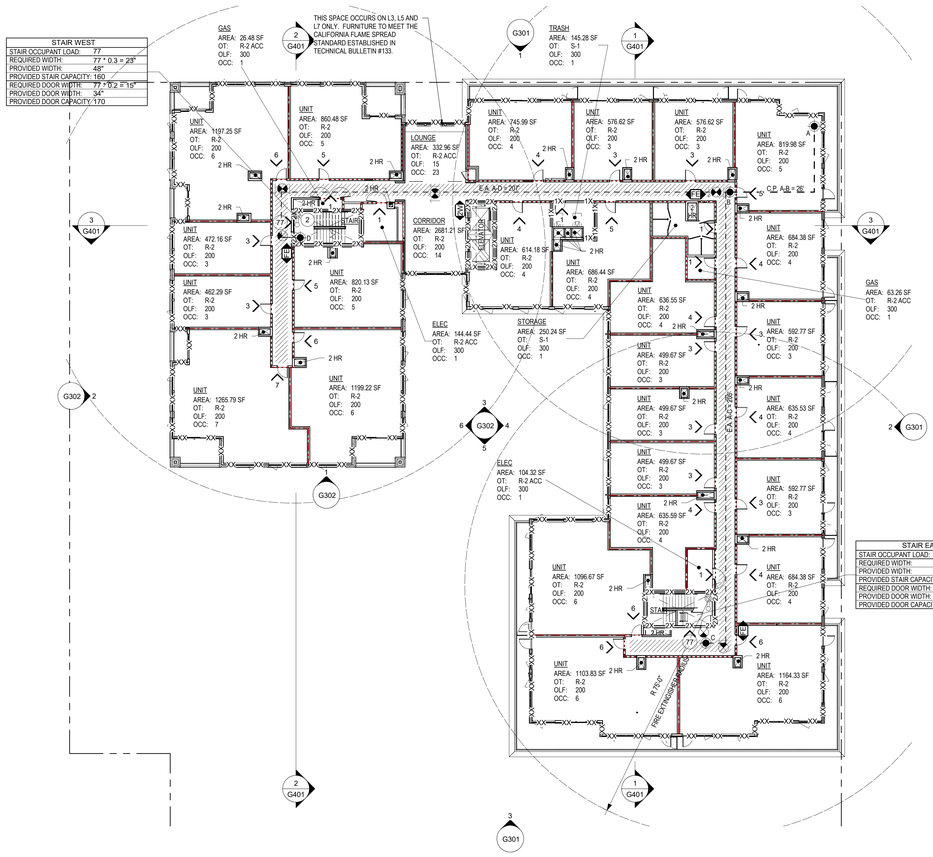
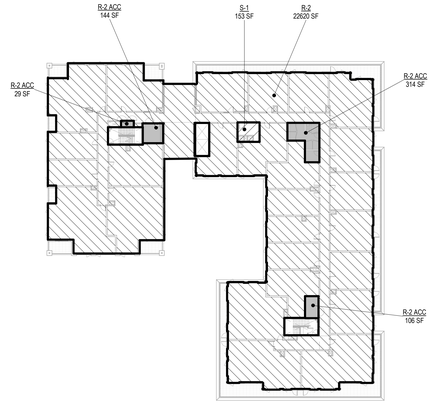


2 CODE COMPLIANCE PLAN - ROOF
1/16" = 1'-0"



1 CODE COMPLIANCE PLAN - LEVEL 07
1/16" = 1'-0"



3 OCCUPANT TYPE PLAN - LEVEL 07
1/32" = 1'-0"

ROOM EXITING SCHEDULE - LEVEL 07

NAME	AREA	OCC TYPE	OCC LOAD FACTOR	OCC LOAD	EXITS REQUIRED	MAX TRAVEL	COMMENTS
CORRIDOR	2681 SF	R-2	200	14			
UNIT	1197 SF	R-2	200	6			
UNIT	462 SF	R-2	200	3			
UNIT	1266 SF	R-2	200	7			
UNIT	820 SF	R-2	200	5			
UNIT	860 SF	R-2	200	5			
UNIT	746 SF	R-2	200	4			
UNIT	577 SF	R-2	200	3			
UNIT	577 SF	R-2	200	3			
UNIT	820 SF	R-2	200	5			
UNIT	684 SF	R-2	200	4			
UNIT	593 SF	R-2	200	3			
UNIT	636 SF	R-2	200	4			
UNIT	593 SF	R-2	200	3			
UNIT	684 SF	R-2	200	4			
UNIT	614 SF	R-2	200	4			
UNIT	686 SF	R-2	200	4			
UNIT	637 SF	R-2	200	4			
UNIT	500 SF	R-2	200	3			
UNIT	500 SF	R-2	200	3			
UNIT	500 SF	R-2	200	3			
UNIT	636 SF	R-2	200	4			
UNIT	1097 SF	R-2	200	6			
UNIT	1164 SF	R-2	200	6			
UNIT	1104 SF	R-2	200	6			
UNIT	1199 SF	R-2	200	6			
UNIT	472 SF	R-2	200	3			
R-2	22304 SF			125			
ELEC	144 SF	R-2 ACC	300	1			
ELEC	104 SF	R-2 ACC	300	1			
GAS	63 SF	R-2 ACC	300	1			
GAS	26 SF	R-2 ACC	300	1			
LOUNGE	333 SF	R-2 ACC	15	23			
R-2 ACC	671 SF			27			
STORAGE	250 SF	S-1	300	1			
TRASH	145 SF	S-1	300	1			
S-1	396 SF			2			
	23371 SF			154			

GENERAL NOTES - CODE SUMMARY

A. CODE SUMMARY KEYED NOTES APPLY TO G100, G300 & G400 SERIES SHEETS. ALL KEYED NOTES MAY NOT OCCUR ON THIS SHEET AND DO NOT APPLY TO ANY OTHER SHEETS EXCEPT THOSE NOTED.

B. ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN THE CONTRACT FOR CONSTRUCTION, WHETHER SHOWN ELSEWHERE OR NOT. CONTRACTOR SHALL MAKE ALLOWANCES FOR CONNECTION, HOOK UP, ETC. AS REQUIRED SO THAT ITEMS, EQUIPMENT, ETC. ARE FIT FOR INTENDED PURPOSE.

C. SEE ELECTRICAL AND MECHANICAL PLANS FOR ADDITIONAL SYMBOLS

D. PROVIDE LISTED FIRESTOP, CONTINUOUS AT PERIMETER GAPS OF ALL RATED CONSTRUCTION AS REQUIRED TO MAINTAIN THE SPECIFIED RATING.

E. SQUARE FOOTAGE AREA CALCULATIONS ARE BASED ON THE BUILDING CODE DEFINITIONS OF GROSS AND NET AREAS AS USED TO DETERMINE OCCUPANT LOADS ONLY AND ARE NOT A REPRESENTATION OF LEASABLE AREA.

F. AERIAL ACCESS IS UNABLE TO BE PROVIDED. THE PROJECT WILL COMPLY WITH THE FOLLOWING CONDITIONS PER PORTLAND FIRE AND RESCUE FOR ALTERNATE TO AERIAL FIRE APPARATUS ROAD:
1. BUILDING IS EQUIPPED WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM.
2. THERE ARE NO COMBUSTIBLE CONCEALED ATTIC SPACES (SPRINKLERS).
3. ALL STAIRWAY EXIT ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 2 HOURS.
4. THE ROOF IS ESSENTIALLY FLAT.
5. APPROVED ACCESS IS PROVIDED TO THE ROOF FROM EACH STAIRWAY COMPLYING WITH THE REGION STRUCTURAL SPECIALTY CODE (1009). IN BUILDINGS WITHOUT AN OCCUPIED ROOF, ACCESS TO THE ROOF SHALL BE PERMITTED TO BE A ROOF HATCH OR TRAP DOOR NOT LESS THAN 30" WIDE CLEAR BETWEEN THE HANDRAILS AND IF LONG.
6. BUILDINGS REQUIRING STANDPIPES ARE EQUIPPED WITH AT LEAST ONE STANDPIPE THAT TERMINATES ON THE ROOF.

G. ALL EXTERIOR BEARING WALLS ARE 2 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AND ALL INTERIOR BEARING WALLS ARE 1 HR FIRE RESISTANCE RATED CONSTRUCTION, MINIMUM AT LEVELS 3-7. FIRE RESISTANCE RATING SYMBOLS MAY NOT BE SHOWN FOR CLARITY.

H. 36" DOORS EGRESSING 170 CCUPANTS, OR LESS, MEET THE MINIMUM REQUIRED EGRESS WIDTH.

KEYED NOTES - CODE SUMMARY

1 ELECTRIC READY PARKING STALL PER CITY OF PORTLAND GUIDELINES
2 STANDPIPE CONTINUES TO ROOF LEVEL
3 REMOTE FUEL PORT
4 ADA ACTUATOR
5 TENANT ACCESS CONTROL
6 KNOX BOX LOCATION FOR FIRE, PGE, AND NW NATURAL
7 2-WAY COMMUNICATION PANEL LOCATION. PROVIDE SIGNAGE ON DOOR TO ROOM PER FIRE MARSHALL
8 ROOF ACCESS VIA SHIPSLADDER
9 "MAX OCCUPANT LOAD 125" PER APPEAL 24811

LEGEND - CODE COMPLIANCE SYMBOLS

- PROPERTY LINE
- 1/2 HOUR FIRE PARTITION
- 1 HOUR FIRE PARTITION
- 1 HOUR FIRE BARRIER
- 2 HOUR FIRE BARRIER
- 1 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 2 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 3 HOUR FIRE RESISTANCE RATED CONSTRUCTION
- 1 HOUR SMOKE BARRIER
- EXTERIOR EGRESS PATH TO ROW WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- EGRESS PATH OF TRAVEL WITH TRAVEL WIDTH REQUIRED (PROVIDE MINIMUM ILLUMINATION FOR EXITING - REFER TO ELECTRICAL DRAWINGS).
- ACCESSIBLE ROUTE OF TRAVEL
- C.P. X'-XX" - (PER 1014.3) COMMON PATH OF EGRESS TRAVEL
- E.A. X'-XX" - (PER 1016.2) EXIT ACCESS DISTANCE
- # HR — RATED SHAFT (WALL CONSTRUCTION TO MEET FIRE BARRIER REQUIREMENTS)
- 55S — OCCUPANT LOAD AT OPENING
- 55A — CUMULATIVE OCCUPANT LOAD AT OPENING
- BUILDING EXIT
- # — BUILDING CODE APPEAL
- MH — MAGNETIC HOLD OPEN
- AREA — AREA NAME
- STANDPIPE
- LIGHTED EXIT SIGN - SHADING INDICATES LIGHTED FACE(S) DIRECTION ARROW CORRESPONDS TO DIRECTION ARROW ON SIGN
- LIGHTED EXIT SIGN - CEILING MOUNTED
- LIGHTED EXIT SIGN - WALL MOUNTED
- FE — FIRE EXTINGUISHER (AND CABINET WHERE OCCURS)
- 2W — TWO-WAY ACCESSIBLE COMMUNICATIONS
- ACCESSIBLE ENTRANCE

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ARCHITECTURE
URBAN DESIGN + PLANNING
INTERIOR DESIGN

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REGISTERED ARCHITECT
3680
KURT K. SCHULTZ
PORTLAND, OR
STATE OF OREGON

FREEWELL

BLOCK 291 EAST
2030 NW RALEIGH ST
PORTLAND, OR

VOLUME: 1

REVISIONS
1 Permit Response #1 6/14/21

CHECKED BY: P. ARCH
ISSUE DATE: 22 JUNE 2021
PROJECT NO: 1903067

CODE COMPLIANCE PLANS

G103

GMP SET

6/22/2021 11:15:20 AM SERA Design and Architecture, Inc.

Owner's Notice of Extended Certification Provision: The construction contract will allow the Owner to certify billings and estimates no later than 20-days after the billings and estimates are received from the original contractor.
Owner's Notice of Extended Payment Provision: The construction contract will allow the Owner to make progress payments no later than 30 days after the date a billing or estimate is certified.

APPENDIX B

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)		Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)			
				Diesel-Range		Oil-Range	
DP-1(1.0-2.5)	11/08/17	0.133	U	5.31	U	13.3	U
DP-1(16.5-18.0)	11/08/17	0.130	U	5.21	U	13.0	U
DP-2(6.0-7.5)	11/08/17	0.136	U	5.46	U	13.6	U
DP-2(22.0-24.0)	11/08/17	0.125	U	5.00	U	12.5	U
DP-3(2.0-4.0)	11/08/17	0.130	U	5.18	U	13.0	U
DP-3(22.0-24.0)	11/08/17	0.115	U	4.60	U	11.5	U
DP-4(0.5-2.5)	11/09/17	0.109	U	438	U	**2,790**	
DP-4(12.0-14.0)	11/09/17	0.112	U	4.49	U	11.2	U
DP-5(0.2-2.0)	11/09/17	0.127	U	508	U	**3,220**	
DP-5(16.0-17.5)	11/09/17	0.130	U	5.21	U	13.0	U
DP-6(0.2-2.0)	11/09/17	0.125	U	250	U	**1,410**	
DP-6(16.5-18.5)	11/09/17	0.129	U	5.17	U	12.9	U
DP-7(1.0-3.0)	11/09/17	**251**		**38.1**		**67.4**	
DP-7(4.5-6.5)	11/09/17	0.219	U	5.13	U	12.8	U
DP-7(20.5-22.5)	11/09/17	**1,930**		**624**		**68.4**	
DP-8(1.0-3.0)	11/09/17	0.135	U	5.39	U	13.5	U
DP-8(13.5-15.5)	11/09/17	0.129	U	5.14	U	12.9	U
DEQ Generic RBCs[1]							
Soil Ingestion, Dermal Contact, and Inhalation							
Urban Residential		2,500		2,200		NE	
Occupational		20,000		14,000		NE	
Construction Worker		9,700		4,600		NE	
Excavation Worker		>Max		>Max		NE	
Volatilization to Outdoor Air							
Urban Residential		5,900		>Max		NE	
Occupational		69,000		>Max		NE	

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
			Diesel-Range	Oil-Range
Vapor Intrusion into Buildings				
Urban Residential		94	>Max	NE
Occupational		>Max	>Max	NE
DEQ CFSLs[2]		31	1,100	NE

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019

>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.

U: Not detected. Reporting or detection limit shown.

Bolding indicates analyte detection.

Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.

TABLE 2
Summary of Soil Sample Chemical Analytical Results
RCRA 8 Total Metals
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	RCRA 8 Total Metals EPA Methods 6010B/7471A (mg/kg)							
		Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
DP-1(1.0-2.5)	11/08/17	10.7	176	0.663 U	26.5	13.9	0.0265 U	2.65 U	1.33 U
DP-2(22.0-24.0)	11/08/17	3.76	138	0.625 U	15.8	4.3	0.0250 U	2.50 U	1.25 U
DP-3(2.0-4.0)	11/08/17	5.08	150	0.648 U	20.1	12.1	0.0540	2.59 U	1.30 U
DP-4(0.5-2.5)	11/09/17	2.19 U	52.3	0.547 U	9.22	8.00	0.0219 U	2.19 U	1.09 U
DP-5(16.0-17.5)	11/09/17	4.95	171	0.652 U	18.8	5.80	0.0261 U	2.61 U	1.30 U
DP-6(16.5-18.5)	11/09/17	5.02	172	0.646 U	18.0	9.1	0.0276	2.59 U	1.29 U
DP-7(1.0-3.0)	11/09/17	3.65	171	0.601 U	22.8	25.1	0.0461	2.40 U	1.20 U
DP-7(20.5-22.5)	11/09/17	5.03	172	0.660 U	20.7	6.03	0.0264 U	2.68 U	1.34 U
DP-8(1.0-3.0)	11/09/17	5.90	169	0.674 U	25.9	19.0	0.0830	2.70 U	1.35 U
Average Concentration [1]		***5.0***	NC	NC	NC	NC	NC	NC	NC
DEQ Generic RBCs[2]									
Soil Ingestion, Dermal Contact, and Inhalation									
Urban Residential		1.0[3]	31,000	160	230,000	400	47	NE	780
Occupational		1.9[3]	220,000	1,100	>Max	800	350	NE	5,800
Construction Worker		15	69,000	350	530,000	800	110	NE	1,800
Excavation Worker		420	>Max	9,700	>Max	800	2,900	NE	49,000
Volatilization to Outdoor Air									
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV
Occupational		NV	NV	NV	NV	NV	NV	NE	NV

TABLE 2
Summary of Soil Sample Chemical Analytical Results
RCRA 8 Total Metals
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	RCRA 8 Total Metals EPA Methods 6010B/7471A (mg/kg)							
		Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Vapor Intrusion into Buildings									
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV
Occupational		NV	NV	NV	NV	NV	NV	NE	NV
DEQ CFSLs[4]		8.8	790	0.63	76	28	0.23	0.71	0.82

Notes:

1. Averaged concentrations calculated using the detected concentrations and one-half of the MRL or MDL for non-detects. Average only calculated for compounds detected at concentrations greater than DEQ CFSLs.
2. DEQ Generic RBCs dated May 2018
3. While the detected concentrations of arsenic are greater than this RBC, they are within the range of naturally occurring arsenic concentrations in soil in this area.
4. DEQ CFSLs dated February 21, 2019

>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.

TABLE 3
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260B (mg/kg)														
		Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane
DP-4(0.5-2.5)	11/09/17	**0.547**	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00547 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00547 U	0.00547 U	0.00274 U
DP-5(0.2-2.0)	11/09/17	**0.0635**	0.00129 U	0.00127 U	0.00127 U	0.00127 U	0.00635 U	0.0127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00635 U	0.00635 U	0.00318 U
DP-6(0.0-2.0)	11/09/17	**0.0624**	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00624 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00624 U	0.00624 U	0.00312 U
DP-7(1.0-3.0)	11/09/17	**0.0601**	**0.00211**	0.00120 U	0.00120 U	0.00120 U	0.00601 U	0.01200 U	**0.00845**	**0.0167**	**0.00123**	0.00120 U	0.00120 U	0.00601 U	0.00601 U	0.00300 U
DP-7(4.5-6.5)	11/09/17	**1.60**	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.160 U	0.0801 U
DP-7(20.5-22.5)	11/09/17	**13.2**	0.264 U	0.264 U	1.32 U	0.264 U	0.264 U	2.64 U	**3.27**	**2.65**	0.264 U	0.264 U	0.264 U	1.32 U	1.32 U	0.660 U
DP-8(1.0-3.0)	11/09/17	1.68 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.168 U	0.337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.168 U	**0.168**	0.0842 U
DP-8(13.5-15.5)	11/09/17	0.0643 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00643 U	0.0129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00643 U	**0.00643**	0.00321 U
DEQ Generic RBCs[1]																
Soil Ingestion, Dermal Contact, and Inhalation																
Urban Residential		NE	24	NE	12	170	92	NE	NE	NE	NE	21	1,100	320,000	22	2,900
Occupational		NE	37	NE	15	260	750	NE	NE	NE	NE	34	8,700	>Max	26	25,000
Construction Worker		NE	380	NE	230	2,700	370	NE	NE	NE	NE	320	4,700	>Max	410	25,000
Excavation Worker		NE	11,000	NE	6,300	74,000	10,000	NE	NE	NE	NE	8,900	130,000	>Max	11,000	700,000
Volatilization to Outdoor Air																
Urban Residential		NE	27	NE	5.7	190	170	NE	NE	NE	NE	35	>Csat	>Csat	9.2	>Csat
Occupational		NE	50	NE	11	360	700	NE	NE	NE	NE	65	>Csat	>Csat	17	>Csat
Vapor Intrusion into Buildings																
Urban Residential		NE	0.38	NE	0.096	19	1.3	NE	NE	NE	NE	0.28	77	>Csat	0.074	24
Occupational		NE	2.1	NE	0.53	110	17	NE	NE	NE	NE	1.6	>Csat	>Csat	0.41	300
DEQ CFSLs[2]		1.2	0.023	2.5	0.002	0.046	0.083	72	190	350	96	0.013	2.4	310	0.0034	2.2

TABLE 3
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260B (mg/kg)														
		2-Chlorotoluene	4-Chlorotoluene	1,2-Dibromo-3-chloropropane	Dibromochloromethane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
DP-4(0.5-2.5)	11/09/17	0.00109 U	0.00109 U	0.00547 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00547 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U
DP-5(0.2-2.0)	11/09/17	0.00127 U	0.00127 U	0.00635 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00635 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
DP-6(0.0-2.0)	11/09/17	0.00125 U	0.00125 U	0.00624 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00624 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U
DP-7(1.0-3.0)	11/09/17	0.00120 U	0.00120 U	0.00601 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U
DP-7(4.5-6.5)	11/09/17	0.0321 U	0.0321 U	0.160 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U
DP-7(20.5-22.5)	11/09/17	0.264 U	0.264 U	1.32 U	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U	1.32 U	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U
DP-8(1.0-3.0)	11/09/17	0.0337 U	0.0337 U	0.168 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.168 U	0.0337 U	0.0337 U	0.0337 U	**0.0337**	0.0337 U
DP-8(13.5-15.5)	11/09/17	0.00129 U	0.00129 U	0.00643 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	**0.00129**	0.00129 U
DEQ Generic RBCs[1]																
Soil Ingestion, Dermal Contact, and Inhalation																
Urban Residential		NE	NE	NE	12	0.53	NE	4,400	NE	62	NE	190	12	3,500	310	3,100
Occupational		NE	NE	NE	17	0.73	NE	36,000	NE	64	NE	260	16	29,000	2,300	23,000
Construction Worker		NE	NE	NE	210	9.0	NE	20,000	NE	1,300	NE	3,200	200	13,000	710	7,100
Excavation Worker		NE	NE	NE	5,800	250	NE	560,000	NE	36,000	NE	89,000	5,600	370,000	20,000	200,000
Volatilization to Outdoor Air																
Urban Residential		NE	NE	NE	7.8	0.35	NE	>Csat	NE	19	NE	130	8.1	>Csat	>Max	>Max
Occupational		NE	NE	NE	14	0.65	NE	>Csat	NE	36	NE	240	15	>Csat	>Max	>Max
Vapor Intrusion into Buildings																
Urban Residential		NE	NE	NE	0.53	0.028	NE	>Csat	NE	2.3	NE	1.1	0.18	54	>Max	>Max
Occupational		NE	NE	NE	2.9	0.16	NE	>Csat	NE	13	NE	5.9	1.0	680	>Max	>Max
DEQ CFSLs[2]		14	14	0.0000084	0.0024	0.00012	0.13	0.92	0.74	0.057	18	0.044	0.0028	6.7	0.63	7

TABLE 3
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260B (mg/kg)														
		1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	4-Methyl-2-pentanone (MiBK)	MTBE	Methylene Chloride	Naphthalene	n-Propylbenzene	Styrene
DP-4(0.5-2.5)	11/09/17	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.0109 U	0.00109 U	0.00547 U	0.00547 U	0.00109 U	0.00109 U
DP-5(0.2-2.0)	11/09/17	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.0127 U	0.00127 U	0.00635 U	0.00635 U	0.00127 U	0.00127 U
DP-6(0.0-2.0)	11/09/17	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.0125 U	0.00125 U	0.00125 U	0.00624 U	0.00125 U	0.00125 U
DP-7(1.0-3.0)	11/09/17	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	**0.00302**	0.00120 U	**0.00852**	0.0120 U	0.00120 U	0.00601 U	0.00601 U	**0.0129** U	0.00120 U
DP-7(4.5-6.5)	11/09/17	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.160 U	0.0321 U	0.0321 U
DP-7(20.5-22.5)	11/09/17	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U	**4.33**	0.264 U	**3.55**	2.64 U	0.264 U	1.32 U	**11.2**	**4.91**	0.264 U
DP-8(1.0-3.0)	11/09/17	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.337 U	0.0337 U	0.168 U	0.168 U	0.0337 U	0.0337 U
DP-8(13.5-15.5)	11/09/17	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.0129 U	0.00129 U	0.00643 U	0.00643 U	0.00129 U	0.00129 U
DEQ Generic RBCs[1]																
Soil Ingestion, Dermal Contact, and Inhalation																
Urban Residential		NE	NE	NE	NE	NE	NE	110	NE	7,000	NE	730	170	25	NE	16,000
Occupational		NE	NE	NE	NE	NE	NE	150	NE	57,000	NE	1,100	1,600	23	NE	130,000
Construction Worker		NE	NE	NE	NE	NE	NE	1,700	NE	27,000	NE	12,000	2,100	580	NE	56,000
Excavation Worker		NE	NE	NE	NE	NE	NE	49,000	NE	750,000	NE	320,000	58,000	16,000	NE	>Max
Volatilization to Outdoor Air																
Urban Residential		NE	NE	NE	NE	NE	NE	85	NE	>Csat	NE	810	>Csat	15	NE	>Csat
Occupational		NE	NE	NE	NE	NE	NE	160	NE	>Csat	NE	1,500	>Csat	83	NE	>Csat
Vapor Intrusion into Buildings																
Urban Residential		NE	NE	NE	NE	NE	NE	3.0	NE	>Csat	NE	20	48	15	NE	>Csat
Occupational		NE	NE	NE	NE	NE	NE	17	NE	>Csat	NE	110	950	83	NE	>Csat
DEQ CFSLs[2]		0.017	7.8	NE	NE	0.01	0.01	0.22	0.016	96	9.7	0.11	0.14	0.077	72	1.2

TABLE 3
Summary of Soil Sample Chemical Analytical Results
VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260B (mg/kg)														
		1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	PCE	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	TCE	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-TMB	1,3,5-TMB	Vinyl Chloride	Total Xylenes
DP-4(0.5-2.5)	11/09/17	0.00109 U	0.00109 U	0.00109 U	0.00547 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00109 U	0.00547 U	0.00274 U	0.00109 U	0.00109 U	0.00109 U	0.00328 U
DP-5(0.2-2.0)	11/09/17	0.00127 U	0.00127 U	0.00127 U	0.00635 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00635 U	0.00318 U	0.00127 U	0.00127 U	0.00127 U	0.00318 U
DP-6(0.0-2.0)	11/09/17	0.00125 U	0.00125 U	0.00125 U	0.00624 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00624 U	0.00312 U	0.00125 U	0.00125 U	0.00125 U	0.00375 U
DP-7(1.0-3.0)	11/09/17	0.00120 U	0.00120 U	0.00120 U	0.00601 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00120 U	0.00601 U	0.00300 U	**0.0907**	**0.00378**	0.00120 U	**0.00862**
DP-7(4.5-6.5)	11/09/17	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.0321 U	0.160 U	0.0801 U	**0.0454**	0.0321 U	0.0321 U	0.0962 U
DP-7(20.5-22.5)	11/09/17	0.264 U	0.264 U	0.264 U	1.32 U	0.264 U	0.264 U	0.264 U	0.264 U	0.264 U	1.32 U	0.66 U	**32.6**	**7.78**	0.264 U	**15.7**
DP-8(1.0-3.0)	11/09/17	0.0337 U	0.0337 U	0.0337 U	0.168 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.0337 U	0.168 U	0.0842 U	0.0337 U	0.0337 U	0.0337 U	0.101 U
DP-8(13.5-15.5)	11/09/17	0.00129 U	0.00129 U	0.00129 U	0.00643 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00129 U	0.00643 U	0.0321 U	0.00129 U	0.00129 U	0.00129 U	0.00386 U
DEQ Generic RBCs[1]																
Soil Ingestion, Dermal Contact, and Inhalation																
Urban Residential		NE	NE	540	12,000	NE	NE	110,000	6.3	17	15,000	NE	860	860	0.80	2,900
Occupational		NE	NE	1,000	88,000	NE	NE	870,000	26	51	130,000	NE	6,900	6,900	4.4	25,000
Construction Worker		NE	NE	1,800	28,000	NE	NE	470,000	54	130	69,000	NE	2,900	2,900	34	20,000
Excavation Worker		NE	NE	50,000	770,000	NE	NE	>Max	1,500	3,700	>Max	NE	81,000	81,000	950	560,000
Volatilization to Outdoor Air																
Urban Residential		NE	NE	>Csat	>Csat	NE	NE	>Csat	6.7	33	>Csat	NE	>Csat	>Csat	6.5	>Csat
Occupational		NE	NE	>Csat	>Csat	NE	NE	>Csat	24	96	>Csat	NE	>Csat	>Csat	89	>Csat
Vapor Intrusion into Buildings																
Urban Residential		NE	NE	6.6	>Csat	NE	NE	>Csat	0.38	0.26	190	NE	140	98	0.053	160
Occupational		NE	NE	36	>Csat	NE	NE	>Csat	4.2	2.3	>Csat	NE	>Csat	>Csat	2.2	>Csat
DEQ CFSLs[2]		0.013	0.0018	0.18	23	1.3	0.2	190	0.0063	0.013	52	0.000019	10	11	0.00057	1.4

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.

TABLE 4
Summary of Soil Sample Chemical Analytical Results
PAHs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PAHs EPA Method 8270D SIM (mg/kg)																		
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	2-Chloronaphthalene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
DP-1(1.0-2.5)	11/08/17	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.0265 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.00796 U	0.0265 U	0.0265 U	0.0265 U	0.00796 U	0.00796 U
DP-1(16.5-18.0)	11/08/17	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.0261 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.0261 U	0.0261 U	0.0261 U	0.00782 U	0.00782 U
DP-2(6.0-7.5)	11/08/17	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.0273 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.00818 U	0.0273 U	0.0273 U	0.0273 U	0.00818 U	0.00818 U
DP-2(22.0-24.0)	11/08/17	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.0250 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.00750 U	0.0250 U	0.0250 U	0.0250 U	0.00750 U	0.00750 U
DP-3(2.0-4.0)	11/08/17	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.0259 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.00777 U	0.0259 U	0.0259 U	0.0259 U	0.00777 U	0.00777 U
DP-3(22.0-24.0)	11/08/17	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.0230 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.00691 U	0.0230 U	0.0230 U	0.0230 U	0.00691 U	0.00691 U
DP-4(0.5-2.5)	11/09/17	0.131 U	0.131 U	0.131 U	0.328 U	0.328 U	0.328 U	0.328 U	0.328 U	0.438 U	0.328 U	0.328 U	0.131 U	0.131 U	0.328 U	0.438 U	0.438 U	0.438 U	0.131 U	0.328 U
DP-4(12.0-14.0)	11/09/17	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.0224 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.00673 U	0.0224 U	0.0224 U	0.0224 U	0.00673 U	0.00673 U
DP-5(0.2-2.0)	11/09/17	0.153 U	0.153 U	0.153 U	0.381 U	0.381 U	0.381 U	0.381 U	0.381 U	0.508 U	0.381 U	0.381 U	0.153 U	0.153 U	0.381 U	0.508 U	0.508 U	0.508 U	0.153 U	0.381 U
DP-5(16.0-17.5)	11/09/17	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.0261 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.00782 U	0.0261 U	0.0261 U	0.0261 U	0.00782 U	0.00782 U
DP-6(0.2-2.0)	11/09/17	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.125 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.0374 U	0.125 U	0.125 U	0.125 U	0.0374 U	0.0374 U
DP-6(16.5-18.5)	11/09/17	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.0259 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.00776 U	0.0259 U	0.0259 U	0.0259 U	0.00776 U	0.00776 U
DP-7(1.0-3.0)	11/09/17	0.00721 U	0.00721 U	0.00721 U	0.00721 U	**0.00801**	**0.00792**	0.00721 U	**0.00823**	0.0240 U	0.00721 U	0.00721 U	**0.0112**	0.00721 U	0.00721 U	0.0240 U	0.0240 U	**0.0685**	0.00721 U	**0.0115**
DP-7(4.5-6.5)	11/09/17	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.0256 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.00769 U	0.0256 U	0.0256 U	0.0256 U	0.00769 U	0.00769 U
DP-7(20.5-22.5)	11/09/17	**0.272**	0.158 U	**0.170**	0.00791 U	0.00791 U	0.00791 U	0.00791 U	0.00791 U	0.528 U	**0.0133**	0.00791 U	**0.0115**	**0.613**	0.00791 U	**4.30**	**6.73**	**2.93**	**0.844**	**0.0672**
DP-8(1.0-3.0)	11/09/17	0.00809 U	0.00809 U	**0.0115**	**0.0440**	**0.0481**	**0.0530**	**0.0154**	**0.0367**	0.0270 U	**0.0541**	0.00809 U	**0.112**	0.00809 U	**0.0283**	0.0270 U	0.0270 U	0.0270 U	**0.0533**	**0.118**
DP-8(13.5-15.5)	11/09/17	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.0257 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.00771 U	0.0257 U	0.0257 U	0.0257 U	0.00771 U	0.00771 U
DEQ Generic RBCs[1]																				
Soil Ingestion, Dermal Contact, and Inhalation																				
Urban Residential		9,400	NE	47,000	2.5	0.25	2.5	25	NE	NE	250	0.25	4,800	6,300	2.5	NE	NE	25	NE	3,600
Occupational		70,000	NE	350,000	21	2.1	21	210	NE	NE	2,100	2.1	30,000	47,000	21	NE	NE	23	NE	23,000
Construction Worker		21,000	NE	110,000	170	17	170	1,700	NE	NE	17,000	17	10,000	14,000	170	NE	NE	580	NE	7,500
Excavation Worker		590,000	NE	>Max	4,800	490	4,900	49,000	NE	NE	490,000	490	280,000	390,000	4,900	NE	NE	16,000	NE	210,000
Volatilization to Outdoor Air																				
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV	NV	NV	>Max	NV	NE	NE	15	NE	>Max
Occupational		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV	NV	NV	>Max	NV	NE	NE	83	NE	>Max
Vapor Intrusion into Buildings																				
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV	NV	NV	>Max	NV	NE	NE	15	NE	>Max
Occupational		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV	NV	NV	>Max	NV	NE	NE	83	NE	>Max
DEQ CFSLs[2]		0.25	120	6.8	0.73	0.11	1.1	11	25	230	3.1	0.11	10	3.7	1.1	0.36	11	0.077	5.5	10

TABLE 4
Summary of Soil Sample Chemical Analytical Results
PAHs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs and/or CFSLs.

TABLE 5
Summary of Soil Sample Chemical Analytical Results
PCBs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PCBs EPA Method 8082 (mg/kg)						
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
DP-4(0.5-2.5)	11/14/17	0.0186 U	0.0186 U	0.0186 U	0.0186 U	0.0186 U	0.0186 U	0.0186 U
DP-5(0.2-2.0)	11/14/17	0.0216 U	0.0216 U	0.0216 U	0.0216 U	0.0216 U	0.0216 U	0.0216 U
DP-6(0.0-2.0)	11/14/17	0.0212 U	0.0212 U	0.0212 U	0.0212 U	0.0212 U	0.0212 U	0.0212 U
DEQ Generic RBCs[1]								
Soil Ingestion, Dermal Contact, and Inhalation								
Urban Residential		0.33						
Occupational		0.59						
Construction Worker		4.9						
Excavation Worker		140						
Volatilization to Outdoor Air								
Urban Residential		>Csat						
Occupational		>Csat						
Vapor Intrusion into Buildings								
Urban Residential		>Csat						
Occupational		>Csat						
DEQ CFSLs[2]		1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019

>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.

U: Not detected. Reporting or detection limit shown.

TABLE 6
Summary of Perched Groundwater Sample Chemical Analytical Results
Petroleum Hydrocarbons
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	Gasoline-Range Hydrocarbons Method NWTPH-Gx (µg/L)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (µg/L)	
				Diesel-Range	Oil-Range
DP-6	11/09/17	10 - 15	100 U	100 U	**430**
DEQ Generic RBCs[1]					
Ingestion and Inhalation from Tapwater					
Urban Residential			110	100	NE
Occupational			450	430	NE
Volatilization to Outdoor Air					
Urban Residential			>S	>S	NE
Occupational			>S	>S	NE
Vapor Intrusion into Buildings					
Urban Residential			22,000	>S	NE
Occupational			>S	>S	NE
Groundwater in Excavation					
Construction/Excavation Worker			14,000	>S	NE

Notes:
1. DEQ Generic RBCs dated May 2018

>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.

U: Not detected. Reporting or detection limit shown.

Bolding indicates analyte detection.

TABLE 7
Summary of Perched Groundwater Sample Chemical Analytical Results
RCRA 8 Total Metals
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	RCRA 8 Total Metals EPA Method 6010B (µg/L)							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
DP-6	11/09/17	10 - 15	**232**	**2,440**	**4.24**	**267**	**480**	0.200 U	10.0 U	5.00 U
DEQ Generic RBCs[1]										
Ingestion and inhalation from Tapwater										
Urban Residential			0.21	15,000	73	110,000	15	22	NE	370
Occupational			0.31	33,000	160	250,000	15	49	NE	820
Volatilization to Outdoor Air										
Urban Residential			NV	NV	NV	NV	NV	NV	NE	NV
Occupational			NV	NV	NV	NV	NV	NV	NE	NV
Vapor Intrusion into Buildings										
Urban Residential			NV	NV	NV	NV	NV	NV	NE	NV
Occupational			NV	NV	NV	NV	NV	NV	NE	NV
Groundwater in Excavation										
Construction/Excavation Worker			6,300	>S	130,000	>S	>S	>S	NE	1,100,000

Notes:
1. DEQ Generic RBCs dated May 2018
NV: chemical is considered non-volatile
>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.

TABLE 8
Summary of Perched Groundwater Sample Chemical Analytical Results
PAHs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Date	Screen Interval (feet BGS)	PAHs EPA Method 8270D SIM (µg/L)																	
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
DP-6	11/09/17	10 - 15	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U	0.100 U	0.100 U
DEQ Generic RBCs[1]																				
Ingestion and Inhalation from Tapwater																				
Urban Residential			2,400	NE	>S	0.11	0.080	0.8	>S	NE	>S	0.080	>S	1,400	>S	NE	NE	0.78	NE	>S
Occupational			2,500	NE	>S	0.38	0.47	>S	>S	NE	>S	0.47	>S	1,300	>S	NE	NE	0.72	NE	>S
Volatilization to Outdoor Air																				
Urban Residential			>S	NE	>S	>S	NV	NV	NV	NE	NV	NV	NV	>S	NV	NE	NE	8,500	NE	>S
Occupational			>S	NE	>S	>S	NV	NV	NV	NE	NV	NV	NV	>S	NV	NE	NE	16,000	NE	>S
Vapor Intrusion into Buildings																				
Urban Residential			>S	NE	>S	>S	NV	NV	NV	NE	NV	NV	NV	>S	NV	NE	NE	2,000	NE	>S
Occupational			>S	NE	>S	>S	NV	NV	NV	NE	NV	NV	NV	>S	NV	NE	NE	11,000	NE	>S
Groundwater in Excavation																				
Construction/Excavation Worker			>S	NE	>S	>S	>S	>S	>S	NE	>S	>S	>S	>S	>S	NE	NE	500	NE	>S

Notes:
1. DEQ Generic RBCs dated May 2018
NV: chemical is considered non-volatile
>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.

TABLE 9
Summary of Vapor Sample Chemical Analytical Results[1]
Gasoline-Range Hydrocarbons and VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Depth (feet BGS)	Sample Date	Gasoline-Range Hydrocarbons EPA Method TO-15 (µg/m³)	VOCs EPA Method TO-15 (µg/m³)											
				Acetone	Allyl Chloride	Benzene	Benzyl Chloride	Bromodichloromethane	Bromoform	Bromomethane	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
SG-1	4.0	11/02/17	**1,250,000**	2,380 U	501 U	511 U	**1,110**	1,070 U	4,970 U	621 U	3,540 U	**797**	1,010 U	739 U	422 U
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Urban Residential			79,000	NE	NE	170	NE	36	1,200	1,000	NE	NE	220	10,000	2,100,000
Occupational			1,700,000	NE	NE	1,600	NE	330	11,000	22,000	NE	NE	2,000	220,000	43,800,000

TABLE 9
Summary of Vapor Sample Chemical Analytical Results[1]
Gasoline-Range Hydrocarbons and VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Depth (feet BGS)	Sample Date	VOCs EPA Method TO-15 (µg/m³)														
			Chloroform	Chloromethane	2-Chlorotoluene	Cyclohexane	Chlorodibromomethane (Dibromochloromethane)	1,2-Dibromoethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
SG-1	4.0	11/02/17	779 U	330 U	825 U	**2,290**	1,360 U	1,230 U	962 U	962 U	962 U	648 U	641 U	634 U	634 U	634 U
DEQ Generic RBCs[2]																
Vapor Intrusion into Buildings																
Urban Residential			58	19,000	NE	NE	49	2.2	42,000	NE	120	51	830	42,000	>Pv	>Pv
Occupational			530	390,000	NE	NE	450	20	880,000	NE	1100	470	7,700	880,000	>Pv	>Pv

TABLE 9
Summary of Vapor Sample Chemical Analytical Results[1]
Gasoline-Range Hydrocarbons and VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Depth (feet BGS)	Sample Date	VOCs EPA Method TO-15 (µg/m³)													
			1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	1,4-Dioxane	Ethanol	Ethylbenzene	4-Ethyltoluene	Trichlorofluoromethane	Dichlorodifluoromethane	1,1,2-Trichlorotrifluoroethane (Freon 113)	1,2-Dichlorotetrafluoroethane	Heptane	Hexachloro-1,3-butadiene	n-Hexane
SG-1	4.0	11/02/17	739 U	726 U	726 U	577 U	950 U	694 U	**1,280**	899 U	791 U	1,230 U	1,120 U	**991**	5,380 U	**4,740**
DEQ Generic RBCs[2]																
Vapor Intrusion into Buildings																
Urban Residential			NE	NE	NE	270	NE	530	NE	150,000	NE	6,300,000	NE	NE	NE	NE
Occupational			NE	NE	NE	2,500	NE	4,900	NE	3,100,000	NE	131,400,000	NE	NE	NE	NE

TABLE 9
Summary of Vapor Sample Chemical Analytical Results[1]
Gasoline-Range Hydrocarbons and VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Depth (feet BGS)	Sample Date	VOCs EPA Method TO-15 (µg/m³)												
			iso-Propylbenzene	Methylene Chloride (Dichloromethane)	Methyl Butyl Ketone	2-Butanone (MEK)	4-Methyl-2-pentanone	Methyl Methacrylate	MTBE	Naphthalene	2-Propanol	Propene	Styrene	1,1,1,2-Tetrachloroethane	PCE
SG-1	4.0	11/02/17	787 U	556 U	4,090 U	2950 U	4,090 U	**2,350**	577 U	2640 U	2,460	551 U	681 U	**39,500**	1,090 U
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Urban Residential			83,000	37,000	NE	NE	NE	NE	5,100	39	NE	NE	210,000	NE	5,100
Occupational			1,800,000	1,200,000	NE	NE	NE	NE	47,000	360	NE	NE	4,400,000	NE	47,000

TABLE 9
Summary of Vapor Sample Chemical Analytical Results[1]
Gasoline-Range Hydrocarbons and VOCs
Freewell Block 291E
2030 NW Raleigh Street
Portland, Oregon

Sample I.D.	Sample Depth (feet BGS)	Sample Date	VOCs EPA Method TO-15 (µg/m³)												
			Tetrahydrofuran	Toluene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	TCE	1,2,4-TMB	1,3,5-TMB	2,2,4-Trimethylpentane	Vinyl Chloride	Vinyl Bromide	Vinyl Acetate	Total Xylenes
SG-1	4.0	11/02/17	472 U	603 U	3,730 U	870 U	**9,580**	857 U	**8,340**	785 U	747 U	409 U	700 U	563 U	2,084 U
DEQ Generic RBCs[2]															
Vapor Intrusion into Buildings															
Urban Residential			NE	1,000,000	NE	1,000,000	42	200	1,500	>Pv	NE	41	NE	NE	21,000
Occupational			NE	21,900,000	NE	21,900,000	770	2,900	31,000	>Pv	NE	2,800	NE	NE	440,000

Notes:
1. Chemical analyses performed by ESC Lab Sciences of Mt. Juliet, Tennessee.
2. DEQ Generic RBCs dated November 1, 2015
>Pv: The air concentration reported for the RBC exceeds the vapor pressure of the pure chemical. It can be assumed that this constituent cannot create an unnacceptable risk by this pathway.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.

APPENDIX C

Customer Summary Report

Hillsboro Landfill - S03305 (USA) 02/01/2022 12:00 AM - 06/13/2022 11:59 PM Operation Type: All

Customer: All - Ticket Type: All - Customer Type: All - PMT Category: All - Profile: 136850OR

Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Tons
2/10/2022	1632828	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	21.66
2/10/2022	1632833	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	38	Cont Soil Pet-RGC-Tons	22.05
2/10/2022	1632837	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	46-SOLO	Cont Soil Pet-RGC-Tons	28.07
2/10/2022	1632866	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	23.57
2/10/2022	1632867	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	38	Cont Soil Pet-RGC-Tons	21.56
2/10/2022	1632870	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	46-SOLO	Cont Soil Pet-RGC-Tons	23.53
2/10/2022	1632897	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	38	Cont Soil Pet-RGC-Tons	21.26
2/15/2022	1633254	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6	Cont Soil Pet-RGC-Tons	18.59
2/15/2022	1633256	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	124-SOLO	Cont Soil Pet-RGC-Tons	19.55
2/15/2022	1633257	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	20.41
2/15/2022	1633269	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	18.62
2/15/2022	1633278	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	20.02
2/15/2022	1633319	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	20.18
2/15/2022	1633321	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	124-SOLO	Cont Soil Pet-RGC-Tons	17.63
2/15/2022	1633322	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	20.72
2/15/2022	1633323	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	20.71
2/15/2022	1633326	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6	Cont Soil Pet-RGC-Tons	21.93
2/15/2022	1633327	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	20.99
2/16/2022	1633388	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	31.03
2/16/2022	1633406	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	32.38
2/16/2022	1633420	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	32.36
2/16/2022	1633422	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	29.50
2/17/2022	1633526	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-PUP	Cont Soil Pet-RGC-Tons	31.37
2/17/2022	1633533	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	30.52
2/17/2022	1633575	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2154-PUP	Cont Soil Pet-RGC-Tons	31.30
2/17/2022	1633594	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	29.77
2/17/2022	1633595	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	32.77
2/17/2022	1633617	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	28.47
2/17/2022	1633620	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	33.92
2/17/2022	1633632	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8249-PUP	Cont Soil Pet-RGC-Tons	29.08
2/17/2022	1633633	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2154-PUP	Cont Soil Pet-RGC-Tons	31.70
2/17/2022	1633636	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2150-PUP	Cont Soil Pet-RGC-Tons	33.77
2/17/2022	1633637	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8246-PUP	Cont Soil Pet-RGC-Tons	27.49
2/17/2022	1633640	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8247-PUP	Cont Soil Pet-RGC-Tons	33.17
2/18/2022	1633680	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-PUP	Cont Soil Pet-RGC-Tons	33.08
2/18/2022	1633689	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	31.93
2/18/2022	1633709	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2146-PUP	Cont Soil Pet-RGC-Tons	31.65
2/18/2022	1633712	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8343-PUP	Cont Soil Pet-RGC-Tons	36.76
2/18/2022	1633718	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2151-PUP	Cont Soil Pet-RGC-Tons	34.79
2/18/2022	1633723	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8532-PUP	Cont Soil Pet-RGC-Tons	31.59
2/18/2022	1633727	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-PUP	Cont Soil Pet-RGC-Tons	33.39
2/18/2022	1633734	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2154-PUP	Cont Soil Pet-RGC-Tons	34.06
2/18/2022	1633735	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8506-PUP	Cont Soil Pet-RGC-Tons	31.84
2/18/2022	1633742	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8247-PUP	Cont Soil Pet-RGC-Tons	37.82
2/18/2022	1633744	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2146-PUP	Cont Soil Pet-RGC-Tons	30.53
2/18/2022	1633745	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8542-PUP	Cont Soil Pet-RGC-Tons	33.20
2/18/2022	1633753	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2920-PUP	Cont Soil Pet-RGC-Tons	37.98
2/18/2022	1633766	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2151-PUP	Cont Soil Pet-RGC-Tons	33.78
2/18/2022	1633770	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8247-PUP	Cont Soil Pet-RGC-Tons	27.96
2/18/2022	1633776	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8542-PUP	Cont Soil Pet-RGC-Tons	30.37
2/21/2022	1633818	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6810-PUP	Cont Soil Pet-RGC-Tons	43.23
2/21/2022	1633893	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2921-PUP	Cont Soil Pet-RGC-Tons	32.96
2/22/2022	1633977	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	30.14
2/22/2022	1633982	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	25.27
2/22/2022	1633996	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	119-PUP	Cont Soil Pet-RGC-Tons	24.29
2/22/2022	1633998	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-8238-PUP	Cont Soil Pet-RGC-Tons	27.99
2/22/2022	1634052	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	29.29
2/22/2022	1634055	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-PUP	Cont Soil Pet-RGC-Tons	28.55
2/22/2022	1634057	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	31.27
2/22/2022	1634080	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	31.52
2/22/2022	1634087	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	30.65
2/22/2022	1634088	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	28.11
2/22/2022	1634090	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	29.67
2/22/2022	1634094	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-PUP	Cont Soil Pet-RGC-Tons	25.63
2/22/2022	1634103	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	119-PUP	Cont Soil Pet-RGC-Tons	28.01
2/22/2022	1634104	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5-PUP	Cont Soil Pet-RGC-Tons	31.89
2/22/2022	1634106	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	313-PUP	Cont Soil Pet-RGC-Tons	31.73
2/22/2022	1634108	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-420022	Cont Soil Pet-RGC-Tons	32.18

2/23/2022	1634179	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	31.97
2/23/2022	1634182	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	32.73
2/23/2022	1634185	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8246-PUP	Cont Soil Pet-RGC-Tons	32.27
2/23/2022	1634189	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	30.75
2/23/2022	1634201	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022	Cont Soil Pet-RGC-Tons	34.40
2/23/2022	1634206	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	30.68
2/23/2022	1634209	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-PUP	Cont Soil Pet-RGC-Tons	25.31
2/23/2022	1634221	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	31.37
2/23/2022	1634227	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	201-PUP	Cont Soil Pet-RGC-Tons	30.20
2/23/2022	1634236	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	30.82
2/24/2022	1634313	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022	Cont Soil Pet-RGC-Tons	36.73
2/24/2022	1634315	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	29.60
2/24/2022	1634342	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	107-PUP	Cont Soil Pet-RGC-Tons	31.42
2/24/2022	1634373	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5-PUP	Cont Soil Pet-RGC-Tons	31.27
2/25/2022	1634529	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	30.27
2/25/2022	1634534	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	31.91
2/25/2022	1634538	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	313-PUP	Cont Soil Pet-RGC-Tons	29.53
2/25/2022	1634539	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	302-PUP	Cont Soil Pet-RGC-Tons	31.63
2/25/2022	1634540	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	29.91
2/25/2022	1634542	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-PUP	Cont Soil Pet-RGC-Tons	26.68
2/25/2022	1634548	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022	Cont Soil Pet-RGC-Tons	35.66
2/25/2022	1634549	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	126-PUP	Cont Soil Pet-RGC-Tons	27.94
2/25/2022	1634550	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-PUP	Cont Soil Pet-RGC-Tons	29.15
2/28/2022	1634613	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5-PUP	Cont Soil Pet-RGC-Tons	32.42
2/28/2022	1634624	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	171-PUP	Cont Soil Pet-RGC-Tons	32.19
2/28/2022	1634629	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	724-PUP	Cont Soil Pet-RGC-Tons	34.49
2/28/2022	1634632	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-PUP	Cont Soil Pet-RGC-Tons	30.87
2/28/2022	1634652	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-8238-PUP	Cont Soil Pet-RGC-Tons	34.58
2/28/2022	1634653	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022 solo	Cont Soil Pet-RGC-Tons	19.15
2/28/2022	1634658	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022	Cont Soil Pet-RGC-Tons	22.54
2/28/2022	1634668	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	405-PUP	Cont Soil Pet-RGC-Tons	31.60
2/28/2022	1634671	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	171-PUP	Cont Soil Pet-RGC-Tons	30.01
2/28/2022	1634681	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	252-PUP	Cont Soil Pet-RGC-Tons	21.47
2/28/2022	1634686	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-8238-PUP	Cont Soil Pet-RGC-Tons	26.65
2/28/2022	1634694	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-42022	Cont Soil Pet-RGC-Tons	30.29
2/28/2022	1634700	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	405-PUP	Cont Soil Pet-RGC-Tons	31.41
2/28/2022	1634708	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	171-PUP	Cont Soil Pet-RGC-Tons	32.33
2/28/2022	1634713	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	252-PUP	Cont Soil Pet-RGC-Tons	35.19
2/28/2022	1634718	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	107-PUP	Cont Soil Pet-RGC-Tons	32.92
2/28/2022	1634719	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	30.56
3/1/2022	1634755	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-PUP	Cont Soil Pet-RGC-Tons	36.74
3/1/2022	1634757	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	32.79
3/1/2022	1634849	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	31.07
3/1/2022	1634859	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8246-PUP	Cont Soil Pet-RGC-Tons	34.05
3/1/2022	1634871	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-PUP	Cont Soil Pet-RGC-Tons	31.23
3/2/2022	1634929	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8247-PUP	Cont Soil Pet-RGC-Tons	27.47
3/2/2022	1634940	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5-PUP	Cont Soil Pet-RGC-Tons	29.27
3/2/2022	1634942	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	28.41
3/2/2022	1634967	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5-PUP	Cont Soil Pet-RGC-Tons	30.31
3/2/2022	1634968	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	126-PUP	Cont Soil Pet-RGC-Tons	25.84
3/2/2022	1634986	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-PUP	Cont Soil Pet-RGC-Tons	29.38
3/2/2022	1635000	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8247-PUP	Cont Soil Pet-RGC-Tons	32.64
3/3/2022	1635035	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7581-SOLO	Cont Soil Pet-RGC-Tons	23.72
3/3/2022	1635037	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	22.85
3/3/2022	1635117	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7581-SOLO	Cont Soil Pet-RGC-Tons	20.03
3/4/2022	1635169	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7581-SOLO	Cont Soil Pet-RGC-Tons	20.50
3/4/2022	1635216	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7581-SOLO	Cont Soil Pet-RGC-Tons	21.66
3/4/2022	1635233	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	25.93
3/8/2022	1635490	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-PUP	Cont Soil Pet-RGC-Tons	33.80
3/8/2022	1635495	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8007-PUP	Cont Soil Pet-RGC-Tons	30.30
3/8/2022	1635514	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	11-pup	Cont Soil Pet-RGC-Tons	30.61
3/8/2022	1635523	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8505-PUP	Cont Soil Pet-RGC-Tons	31.31
3/9/2022	1635644	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2919-PUP	Cont Soil Pet-RGC-Tons	33.53
3/11/2022	1635851	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.65
3/11/2022	1635856	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-SOLO	Cont Soil Pet-RGC-Tons	17.27
3/11/2022	1635861	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7806	Cont Soil Pet-RGC-Tons	19.89
3/11/2022	1635862	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7804	Cont Soil Pet-RGC-Tons	20.18
3/14/2022	1635988	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7807	Cont Soil Pet-RGC-Tons	20.59
3/14/2022	1636008	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SOLO	Cont Soil Pet-RGC-Tons	23.28
3/14/2022	1636009	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.61
3/14/2022	1636037	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	20.54
3/14/2022	1636056	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SOLO	Cont Soil Pet-RGC-Tons	21.28
3/14/2022	1636066	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7806	Cont Soil Pet-RGC-Tons	22.25
3/14/2022	1636068	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7807	Cont Soil Pet-RGC-Tons	22.03

3/14/2022	1636072	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	22-SOLO	Cont Soil Pet-RGC-Tons	21.69
3/15/2022	1636113	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.57
3/15/2022	1636135	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-SOLO	Cont Soil Pet-RGC-Tons	17.02
3/15/2022	1636137	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-SOLO	Cont Soil Pet-RGC-Tons	16.12
3/15/2022	1636139	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	17.37
3/15/2022	1636143	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	21.90
3/15/2022	1636145	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	21.24
3/15/2022	1636155	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.31
3/15/2022	1636165	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	22-SOLO	Cont Soil Pet-RGC-Tons	21.16
3/15/2022	1636166	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-SOLO	Cont Soil Pet-RGC-Tons	18.35
3/15/2022	1636167	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	16.70
3/15/2022	1636169	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	13.14
3/15/2022	1636173	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.75
3/15/2022	1636188	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-41287	Cont Soil Pet-RGC-Tons	23.93
3/15/2022	1636190	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.43
3/15/2022	1636197	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	20.36
3/15/2022	1636198	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	18.59
3/15/2022	1636200	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.60
3/15/2022	1636204	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	22-SOLO	Cont Soil Pet-RGC-Tons	21.92
3/15/2022	1636210	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-41287	Cont Soil Pet-RGC-Tons	25.54
3/15/2022	1636211	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.37
3/15/2022	1636216	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	22-SOLO	Cont Soil Pet-RGC-Tons	22.25
3/15/2022	1636217	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	14.04
3/15/2022	1636219	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	18.36
3/16/2022	1636243	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.84
3/16/2022	1636244	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	24.63
3/16/2022	1636250	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	17.05
3/16/2022	1636252	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7806	Cont Soil Pet-RGC-Tons	18.88
3/16/2022	1636257	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6412	Cont Soil Pet-RGC-Tons	21.55
3/16/2022	1636270	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.93
3/16/2022	1636271	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7807	Cont Soil Pet-RGC-Tons	20.05
3/16/2022	1636273	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2918	Cont Soil Pet-RGC-Tons	18.52
3/16/2022	1636274	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5336	Cont Soil Pet-RGC-Tons	20.14
3/16/2022	1636275	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	25.03
3/16/2022	1636277	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7804	Cont Soil Pet-RGC-Tons	23.52
3/16/2022	1636279	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	18.29
3/16/2022	1636295	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.57
3/16/2022	1636297	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7807	Cont Soil Pet-RGC-Tons	21.90
3/16/2022	1636299	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	25.34
3/16/2022	1636301	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2918	Cont Soil Pet-RGC-Tons	18.90
3/16/2022	1636302	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5336	Cont Soil Pet-RGC-Tons	22.17
3/16/2022	1636303	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	18.07
3/16/2022	1636314	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.19
3/16/2022	1636317	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2918	Cont Soil Pet-RGC-Tons	20.65
3/16/2022	1636319	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	26.23
3/16/2022	1636335	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	25.71
3/17/2022	1636367	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	26.33
3/17/2022	1636411	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	23.90
3/17/2022	1636424	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	21.68
3/17/2022	1636438	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	22.31
3/17/2022	1636464	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2918	Cont Soil Pet-RGC-Tons	24.90
3/17/2022	1636467	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	124-SOLO	Cont Soil Pet-RGC-Tons	20.52
3/17/2022	1636468	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	20.56
3/17/2022	1636469	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.07
3/17/2022	1636473	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	19.01
3/18/2022	1636530	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.14
3/18/2022	1636561	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.98
3/18/2022	1636575	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2920-SOLO	Cont Soil Pet-RGC-Tons	18.98
3/18/2022	1636586	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.46
3/18/2022	1636611	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2920-SOLO	Cont Soil Pet-RGC-Tons	18.50
3/18/2022	1636620	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6412	Cont Soil Pet-RGC-Tons	20.86
3/18/2022	1636635	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	19.58
3/18/2022	1636639	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2920-SOLO	Cont Soil Pet-RGC-Tons	17.41
3/18/2022	1636641	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.52
3/18/2022	1636644	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2918	Cont Soil Pet-RGC-Tons	19.94
3/21/2022	1636677	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	20.59
3/21/2022	1636678	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2145-SOLO	Cont Soil Pet-RGC-Tons	19.64
3/21/2022	1636679	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.66
3/21/2022	1636684	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2154-SOLO	Cont Soil Pet-RGC-Tons	21.72
3/21/2022	1636685	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-SOLO	Cont Soil Pet-RGC-Tons	17.98
3/21/2022	1636690	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	18.65
3/21/2022	1636691	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4091-SOLO	Cont Soil Pet-RGC-Tons	19.53
3/21/2022	1636692	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5336	Cont Soil Pet-RGC-Tons	18.70
3/21/2022	1636695	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7806	Cont Soil Pet-RGC-Tons	19.80

3/21/2022	1636697	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	19.66
3/21/2022	1636709	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2145-SOLO	Cont Soil Pet-RGC-Tons	19.64
3/21/2022	1636710	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.52
3/21/2022	1636712	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	2154-SOLO	Cont Soil Pet-RGC-Tons	12.72
3/21/2022	1636715	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	19.40
3/21/2022	1636716	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-SOLO	Cont Soil Pet-RGC-Tons	18.11
3/21/2022	1636717	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4091-SOLO	Cont Soil Pet-RGC-Tons	15.65
3/21/2022	1636718	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5336	Cont Soil Pet-RGC-Tons	20.04
3/21/2022	1636721	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	18.67
3/21/2022	1636727	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7806	Cont Soil Pet-RGC-Tons	20.90
3/22/2022	1636802	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	17.24
3/22/2022	1636803	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	20-SOLO	Cont Soil Pet-RGC-Tons	16.21
3/22/2022	1636805	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-SOLO	Cont Soil Pet-RGC-Tons	12.35
3/22/2022	1636806	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-PUP	Cont Soil Pet-RGC-Tons	4.44
3/22/2022	1636815	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7804	Cont Soil Pet-RGC-Tons	18.42
3/22/2022	1636818	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7581-SOLO	Cont Soil Pet-RGC-Tons	18.79
3/22/2022	1636819	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	5336	Cont Soil Pet-RGC-Tons	18.36
3/22/2022	1636820	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6412	Cont Soil Pet-RGC-Tons	19.83
3/22/2022	1636821	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.34
3/22/2022	1636825	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	19.52
3/22/2022	1636829	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	20-SOLO	Cont Soil Pet-RGC-Tons	17.03
3/22/2022	1636832	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	17.44
3/22/2022	1636838	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-SOLO	Cont Soil Pet-RGC-Tons	19.39
3/22/2022	1636841	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-SOLO	Cont Soil Pet-RGC-Tons	17.44
3/22/2022	1636842	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	16.90
3/22/2022	1636855	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	20.21
3/22/2022	1636856	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	19.85
3/22/2022	1636858	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.60
3/22/2022	1636859	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	20-SOLO	Cont Soil Pet-RGC-Tons	17.45
3/22/2022	1636860	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6412	Cont Soil Pet-RGC-Tons	20.20
3/22/2022	1636861	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	17.78
3/22/2022	1636866	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	18.26
3/22/2022	1636867	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-SOLO	Cont Soil Pet-RGC-Tons	15.56
3/22/2022	1636869	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8345-SOLO	Cont Soil Pet-RGC-Tons	18.54
3/22/2022	1636888	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.24
3/22/2022	1636891	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	20-SOLO	Cont Soil Pet-RGC-Tons	16.43
3/22/2022	1636893	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	18.45
3/22/2022	1636895	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	18.78
3/22/2022	1636897	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	6412	Cont Soil Pet-RGC-Tons	16.25
3/22/2022	1636901	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	16.12
3/23/2022	1636968	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8009-SOLO	Cont Soil Pet-RGC-Tons	17.58
3/23/2022	1636969	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.35
3/23/2022	1636972	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-41287	Cont Soil Pet-RGC-Tons	16.58
3/23/2022	1636973	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	16.37
3/23/2022	1636974	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	20.08
3/23/2022	1636975	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	16.65
3/23/2022	1636977	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	16.87
3/23/2022	1636978	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	14.72
3/23/2022	1636979	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	16.18
3/23/2022	1636981	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	19.14
3/23/2022	1636982	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	16.41
3/23/2022	1636983	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	14.93
3/28/2022	1637324	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.93
3/28/2022	1637325	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	18.13
3/28/2022	1637327	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	17.83
3/28/2022	1637328	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	17.42
3/28/2022	1637330	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	20.15
3/28/2022	1637332	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	22.26
3/28/2022	1637334	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-SOLO	Cont Soil Pet-RGC-Tons	14.22
3/28/2022	1637335	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	19.12
3/28/2022	1637336	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	19.24
3/28/2022	1637337	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	56	Cont Soil Pet-RGC-Tons	18.32
3/28/2022	1637339	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	44-SOLO	Cont Soil Pet-RGC-Tons	15.63
3/28/2022	1637341	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	19.21
3/28/2022	1637343	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	16.24
3/28/2022	1637361	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	23.73
3/28/2022	1637362	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	21.69
3/28/2022	1637363	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	17.85
3/28/2022	1637366	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	19.59
3/28/2022	1637367	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	17.88
3/28/2022	1637369	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8248-SOLO	Cont Soil Pet-RGC-Tons	15.62
3/29/2022	1637478	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	26.69
3/29/2022	1637480	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	23.58
3/29/2022	1637491	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	22.74

3/29/2022	1637499	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	20.32
3/29/2022	1637500	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	21.89
3/29/2022	1637501	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	20.29
3/29/2022	1637508	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	18.93
3/29/2022	1637509	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	22.90
3/29/2022	1637510	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	79-SOLO	Cont Soil Pet-RGC-Tons	17.03
3/29/2022	1637511	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	22.73
3/29/2022	1637512	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	19.70
3/29/2022	1637516	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	19.01
3/29/2022	1637519	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT02-SOLO	Cont Soil Pet-RGC-Tons	15.93
3/29/2022	1637523	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	18.53
3/29/2022	1637525	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	22.90
3/29/2022	1637526	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	17.50
3/29/2022	1637532	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.69
3/29/2022	1637536	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	18.62
3/29/2022	1637540	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	19.65
3/29/2022	1637547	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	18.79
3/29/2022	1637572	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	20.64
3/29/2022	1637574	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	15.70
3/29/2022	1637580	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	19.05
3/29/2022	1637581	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	16.80
3/29/2022	1637582	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	18.53
3/29/2022	1637583	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.70
3/29/2022	1637584	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	18.25
3/29/2022	1637588	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	16.15
3/29/2022	1637589	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	19.45
3/29/2022	1637590	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	19.54
3/29/2022	1637609	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	17.46
3/30/2022	1637671	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	19.65
3/30/2022	1637676	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	21.62
3/30/2022	1637698	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	22.06
3/30/2022	1637703	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	20.96
3/30/2022	1637709	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	20.15
3/30/2022	1637712	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	21.44
3/30/2022	1637729	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	22.01
3/30/2022	1637730	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3-SOLO	Cont Soil Pet-RGC-Tons	20.09
3/30/2022	1637740	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	16.38
3/30/2022	1637743	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	19.17
3/30/2022	1637744	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	55-SOLO	Cont Soil Pet-RGC-Tons	21.99
3/30/2022	1637746	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	23.45
3/30/2022	1637747	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	79-SOLO	Cont Soil Pet-RGC-Tons	15.70
3/30/2022	1637750	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	15.17
3/30/2022	1637751	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	20.59
3/30/2022	1637755	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	20.56
3/30/2022	1637760	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	20.30
3/30/2022	1637761	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	17.72
3/30/2022	1637764	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	17.34
3/31/2022	1637825	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	17.58
3/31/2022	1637827	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	20.40
3/31/2022	1637829	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	21.04
3/31/2022	1637831	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	18.94
3/31/2022	1637835	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	79-SOLO	Cont Soil Pet-RGC-Tons	15.64
3/31/2022	1637837	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	04-41287	Cont Soil Pet-RGC-Tons	22.77
3/31/2022	1637850	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	25.60
3/31/2022	1637857	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	21.53
3/31/2022	1637860	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	18.92
3/31/2022	1637861	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	18.84
3/31/2022	1637864	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	21.17
3/31/2022	1637866	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	20.30
3/31/2022	1637875	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.03
3/31/2022	1637891	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	0489-SOLO	Cont Soil Pet-RGC-Tons	27.98
3/31/2022	1637895	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	21.44
3/31/2022	1637908	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	22.33
3/31/2022	1637909	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	18.08
3/31/2022	1637911	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	20.79
4/1/2022	1637983	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	20.91
4/1/2022	1637988	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	26.26
4/1/2022	1637990	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	24.62
4/1/2022	1637992	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	128-SOLO	Cont Soil Pet-RGC-Tons	18.87
4/1/2022	1637993	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-SOLO	Cont Soil Pet-RGC-Tons	19.10
4/1/2022	1638014	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	21.96
4/1/2022	1638015	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	19.94
4/1/2022	1638016	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7805-solo	Cont Soil Pet-RGC-Tons	21.55
4/1/2022	1638019	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	20.68

4/1/2022	1638020	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	21.71
4/4/2022	1638136	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	20.12
4/4/2022	1638140	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	20.07
4/4/2022	1638143	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	20.33
4/4/2022	1638145	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	72-SOLO	Cont Soil Pet-RGC-Tons	18.12
4/4/2022	1638175	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.14
4/4/2022	1638178	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	15.50
4/4/2022	1638181	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	69-SOLO	Cont Soil Pet-RGC-Tons	18.44
4/4/2022	1638182	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	18.05
4/4/2022	1638183	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	20-SOLO	Cont Soil Pet-RGC-Tons	17.57
4/4/2022	1638185	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	15.26
4/4/2022	1638186	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	17.97
4/4/2022	1638188	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	19.59
4/4/2022	1638189	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-SOLO	Cont Soil Pet-RGC-Tons	13.45
4/5/2022	1638276	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	26.26
4/5/2022	1638279	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	22.42
4/5/2022	1638282	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.98
4/5/2022	1638283	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	19.82
4/5/2022	1638309	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	16-SUPER SOLO	Cont Soil Pet-RGC-Tons	15.97
4/5/2022	1638312	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	19.92
4/6/2022	1638381	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	16.72
4/6/2022	1638384	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	123	Cont Soil Pet-RGC-Tons	18.21
4/6/2022	1638385	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8013-SOLO	Cont Soil Pet-RGC-Tons	19.21
4/6/2022	1638389	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	14.38
4/6/2022	1638390	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	17.91
4/6/2022	1638393	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	21.12
4/6/2022	1638455	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	17.43
4/6/2022	1638456	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	16.92
4/6/2022	1638457	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	DT10-SOLO	Cont Soil Pet-RGC-Tons	15.88
4/6/2022	1638461	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	19.76
4/7/2022	1638530	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	122	Cont Soil Pet-RGC-Tons	21.82
4/7/2022	1638531	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	126-SOLO	Cont Soil Pet-RGC-Tons	20.61
4/7/2022	1638532	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	60	Cont Soil Pet-RGC-Tons	16.94
4/7/2022	1638535	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	17.30
4/7/2022	1638538	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	19.63
4/7/2022	1638539	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	1185-SOLO	Cont Soil Pet-RGC-Tons	20.55
4/7/2022	1638577	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	126-SOLO	Cont Soil Pet-RGC-Tons	20.40
4/7/2022	1638578	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	1189-SOLO	Cont Soil Pet-RGC-Tons	21.12
4/7/2022	1638581	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	18.13
4/7/2022	1638603	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	18.92
4/8/2022	1638676	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	120-SOLO	Cont Soil Pet-RGC-Tons	18.06
4/8/2022	1638679	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	125-SOLO	Cont Soil Pet-RGC-Tons	18.20
4/8/2022	1638681	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	126-SOLO	Cont Soil Pet-RGC-Tons	19.69
4/8/2022	1638684	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	127-SOLO	Cont Soil Pet-RGC-Tons	19.03
4/8/2022	1638686	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	121- SOLO	Cont Soil Pet-RGC-Tons	17.64
4/8/2022	1638688	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	3	Cont Soil Pet-RGC-Tons	17.83
4/8/2022	1638689	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	07-SOLO	Cont Soil Pet-RGC-Tons	17.14
4/8/2022	1638690	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	21-SOLO	Cont Soil Pet-RGC-Tons	14.35
4/8/2022	1638691	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	4-SOLO	Cont Soil Pet-RGC-Tons	14.93
4/8/2022	1638695	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	7	Cont Soil Pet-RGC-Tons	17.98
4/8/2022	1638699	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	8-SOLO	Cont Soil Pet-RGC-Tons	21.30
4/25/2022	1640262	WESTECH CONSTRUCTION INC	168-PREG NW PORTLAND LLC	136850OR	18-SOLO	Cont Soil Pet-RGC-Tons	14.41
TOTALS:	**416 loads**						**9,393.60**

APPENDIX D

UST NO. 1 LOCATED ON SOUTHEAST PORTION OF THE SUBJECT PROPERTY.
PHOTOGRAPH TAKEN FACING EAST.

WESTECH DISPOSING OF THE FIVE USTS UNCOVERED AT THE SUBJECT PROPERTY.
PHOTOGRAPH TAKEN FACING NORTHWEST.

NV5	CAIRNPAC-14-08	**SUBJECT PROPERTY PHOTOGRAPHS**	
	NOVEMBER 2022	FREEWELL SITE PORTLAND, OR	**FIGURE D-1**

PETROLEUM-IMPACTED SOIL AT THE BOTTOM OF THE EXCAVATION ON THE WEST PORTION OF THE SUBJECT PROPERTY. PHOTOGRAPH TAKEN FACING WEST.

PETROLEUM-IMPACTED SOIL IN THE WEST EXCAVATION SIDEWALL. PHOTOGRAPH TAKEN FACING NORTHWEST.

NV5	CAIRNPAC-14-08	**SUBJECT PROPERTY PHOTOGRAPHS**	
	NOVEMBER 2022	FREEWELL SITE PORTLAND, OR	**FIGURE D-2**

APPENDIX E

K&S Environmental, Inc.
4475 SW Scholls Ferry Rd., #256 ▲ Portland, OR 97225
(503)291-1454 ▲ Fax (503)291-5425

March 3, 2022

GeoDesign, Inc.
9450 SW Commerce Circle, Ste. 300
Wilsonville, OR 97070

Attn: Kyle Sattler

Re: UST Decommissioning Report
Property Located at 2030 NW Raleigh Street (Block 291E), Portland, OR
DEQ File No. 26-22-0118

Dear Mr. Sattler:

This report presents the procedures, methods and results for the decommissioning of five underground storage tanks (USTs) at the property located at 2030 NW Raleigh Street in Portland, OR. The site is also known as Block 291E. The five abandoned USTs were discovered during excavation activities being performed as part of the redevelopment of the site. The redevelopment of the site requires that the property be excavated to a depth of approximately 20 feet below surface grade.

Procedures

On February 21, 2022, K&S Environmental, Inc. (K&S) was called to the site by GeoDesign to investigate two USTs that had been encountered during site excavation activities. The USTs contained water and K&S was contracted to decommission the two USTs by removal. Based on their site inspection, K&S suspected that the tanks had been used to store petroleum products for heating and/or fueling. Mark Drouin of DEQ was contacted to discuss the status of the tanks. Since the tanks had likely been out of service since prior to 1974 and did not contain measurable product, Mark agreed that they are considered non regulated and did not need to be registered.

On February 23, 2022, K&S returned to the site to supervise the removal of the two USTs by the excavation contractor on site. The two USTs are identified in this report as tank #1 and tank #2 and their locations are noted on the attached Site Maps. K&S cut an access hole in the top of tank #2 and pumped approximately 851 gallons of water using a vacuum truck provided by ORRCO. As tank #2 was being uncovered for removal, a third tank, tank #3, was discovered laying just south of tank #2. Tank #3 also contained water and was pumped by ORRCO. During additional excavation, two additional tanks (tank #4 and tank #5) were discovered adjacent to tanks #2 and #3. Tanks #2, #3, #4 and #5 were all a part of the same tank nest on the west side of the site. Tank #1 was located on the east side of the site.

A total of 3655 gallons of water was pumped from the tanks by ORRCO. The water was taken to ORRCO's permitted facility located at 4150 N. Suttle Rd. in Portland, OR where it was recycled. After the tanks were emptied, K&S entered each tank and wiped the tanks clean and dry. A total of 90 gallons of sludge was generated during the cleaning of the five tanks. The sludge was drummed and transported to ORRCO's facility for recycling. A composite sample of the sludge was collected and analyzed for PCBs and RCRA Metals for disposal purposes. The sludge was deemed to be non-hazardous and was recycled at ORRCO. The five tanks were crushed and taken to a local metal recycling facility where they were salvaged as scrap metal.

Subsequent to removal of the five USTs, eight soil samples were collected from native soil beneath the tanks. The soil samples were obtained directly off the excavator bucket or by using a hand shovel. The samples were packed into EPA approved 4 ounce glass jars, allowing for minimal headspace. The samples were labeled, placed on ice and transported to Apex Laboratories for chemical analyses accompanied by chain of custody documentation.

Samples #1 and #2 were obtained from beneath tank #1. Samples #3 through #8 were obtained from the bottom of the tank nest that housed tanks #2, #3, #4 and #5. The eight soil samples were sent to Apex for chemical analysis using DEQ approved qualitative method NWTPH-HCID. Based upon the HCID analyses, samples #2, #3, #4, #6, #7 and #8 were also analyzed for TPH by quantitative methods NWTPH-Gx and/or NWTPH-Dx. Samples #1 and #5 did not contain detectable levels of TPH by NWTPH-HCID analysis. The results of the soil samples are summarized below in Table 1. The sludge sample results are summarized below in Table 2. Complete certified analytical reports for all samples collected are included with this report.

Table 1
Soil Sample TPH Results in ppm or mg/kg

Sample ID	Location, Depth	NWTPH-HCID gas,diesel,oil	NWTPH-Dx diesel/oil	NWTPH-Gx
#1	Tank #1, East End, 8'	ND, ND, ND	NT	NT
#2	Tank #1, West End, 8'	ND, Det, ND	144/ND	NT
#3	Tank Nest, 8'	Det*, Det, ND	2410/ND	804
#4	Tank Nest, 8'	Det*, Det, ND	14,600/ND	1470
#5	Tank Next, 8'	ND, ND, ND	NT	NT
#6	Tank Nest, 8'	Det*, Det, Det	8650/ND	1950
#7	Tank Nest, 8'	Det*, Det, ND	2910/ND	731
#8	Tank Nest, 8'	Det*, Det, ND	2600/ND	696

Table 2
Sludge Sample Results (reported in ppm)

Sample ID	PCBs	Total Metals (mg/kg)	TCLP Pb
P1, Tank Sludge	ND	Arsenic- 1.97 Barium- 15.3 Cadmium- 3.35 Chromium- 2.57 Lead- 270	0.608 mg/L

Det – TPH detected in gas, diesel, oil range
Det* - TPH detected is predominantly due to overlap from heavier range TPH concentrations
ppm - parts per million or mg/kg

ND - None detected at or above reportable levels
NT – Sample Not Tested for this Analyte

Summary

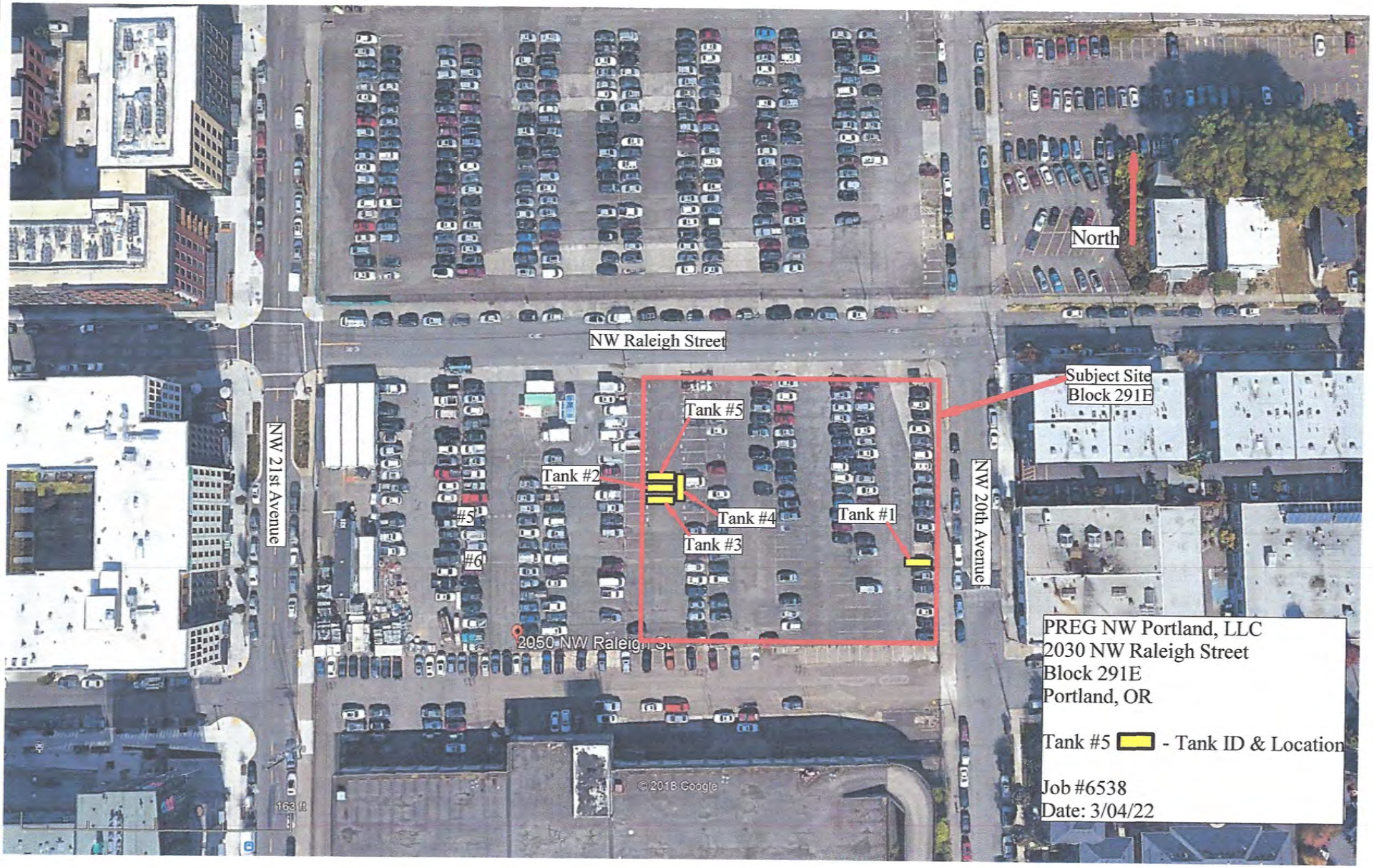
On February 23, 2022, K&S decommissioned by removal five underground storage tanks at 2030 NW Raleigh Street in Portland, OR. The tanks were discovered during excavation activities associated with the redevelopment of the site. The tanks ranged in size from 675 gallons to 1000 gallons and were determined to be non-regulated since they had likely been out of service since prior to 1974 and contained no product. Four of the tanks were positioned side by side on the west side of the site and one of the tanks was located on the southeast side of the site.

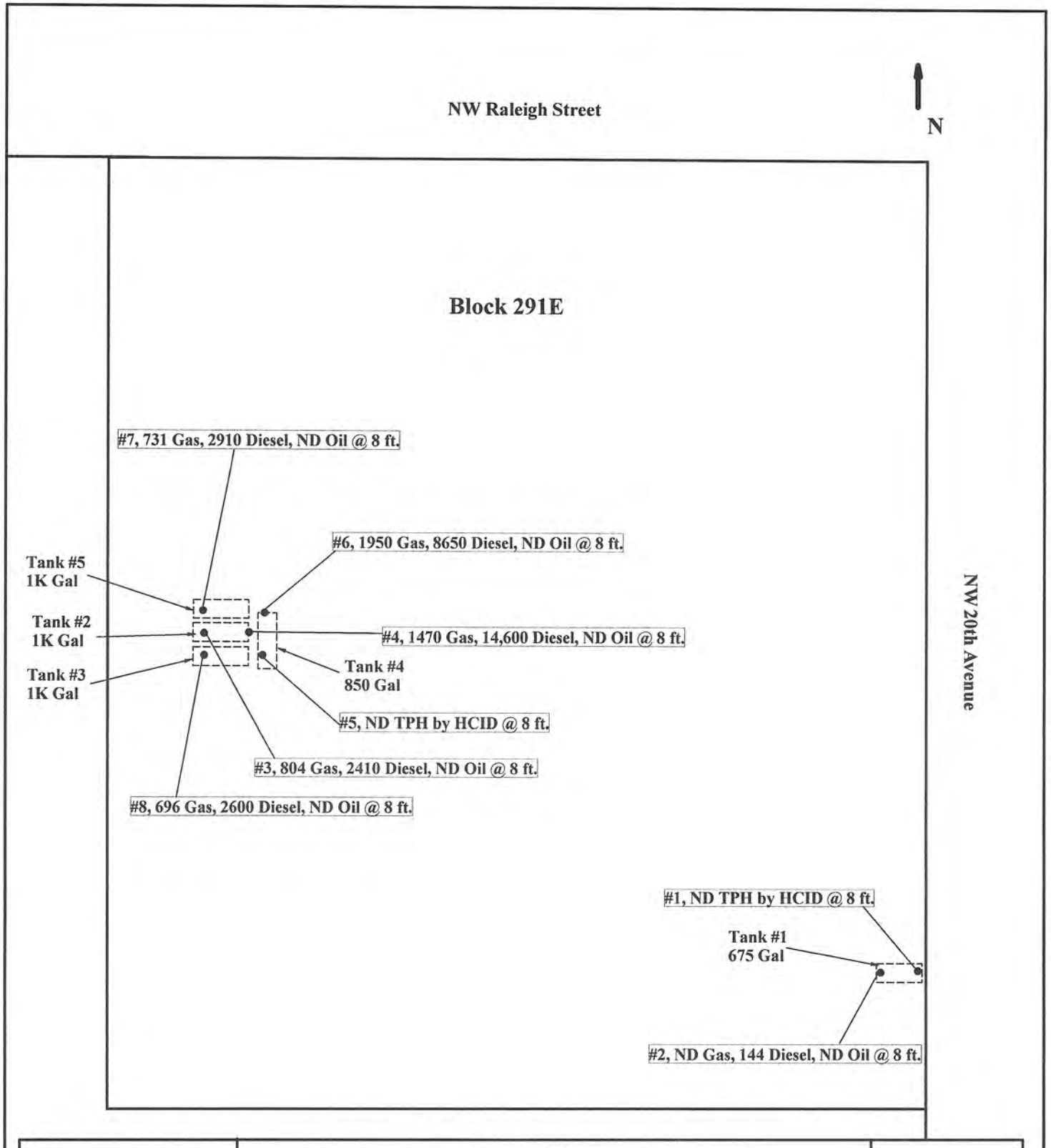
The soil beneath the USTs has been adversely impacted by a suspected release from the USTs, and DEQ File Number 26-22-0118 has been assigned to the property by the Oregon DEQ. K&S was contracted by GeoDesign, Inc. to decommission the USTs only. GeoDesign is the environmental consulting firm for the redevelopment project and will be overseeing any necessary soil cleanup at the site as the project proceeds. Kyle Sattler is the GeoDesign Project Manager for the environmental concerns at the site.

Please do not hesitate to call me if you have any questions or require additional information on this project.

Sincerely,

Bill Knutson, P.E.
Environmental Engineer
K&S Environmental, Inc.


North
NW Raleigh Street
Subject Site
Block 291E
Tank #5
Tank #2
Tank #4
Tank #1
Tank #3
NW 21st Avenue
NW 20th Avenue
#5
#6
2050 NW Raleigh St
© 2018 Google
163 ft
PREG NW Portland, LLC
2030 NW Raleigh Street
Block 291E
Portland, OR
Tank #5 - Tank ID & Location
Job #6538
Date: 3/04/22



Site Map 2 Preg NW Portland 2030 NW Raleigh St. Portland, OR	***K&S Environmental, Inc.*** #1, ND TPH by HCID @ 8 ft. ● - Sample Location w/TPH Results & Depth	Job #6538 Date: 3/04/22 Scale: 1" = 30'

4150 N. Suttle Road
Portland, Oregon 97217
Phone 503-286-8352
Toll Free 800-367-8894
EPA# ORD980975692

Orrco™
The oil recycler.

Hoquiam, WA: EPA# WAD988519419
Klamath Falls, OR: EPA# ORD980980775
Kennewick, WA: EPA# WAH000011577
Medford, OR: EPA# ORD987197092
Coos Bay, OR: EPA# ORD980978266
Spokane, WA: EPA# WAH000011585

LADING 326118

Date: 2-23-22 | Customer #: 7062

Dispatch #

Generator

Name: PREG NW PORTLAND LLC. | BILL 503-407-9482 (Contact Person / Phone)
Address: 2030 NW RALEIGH ST | City: PORTLAND | State: OR. | Zip: 97209 | County:

Billing Information

K & S ENVIRONMENTAL

Check# PO#

Transportation

Consigned To: OIL REREFINING
Destination: 450 N SUTTLE RD PORTLAND, OR. 97217
Via Carrier: ORRCO
Driver: DANNY W Truck # 4102 Load Ticket #

Gal./Brl.	Description	Profile Date	CDT / HCDT	pH	Flash Point	Rate per Gal./Brl.	Rate Per Hour	Charge
3655	FUEL & WATER	2/23/22	DPM		~~>200F~~			
50	SUSPENED SOLIDS	2/23/22	DPM		~~>200F~~			
1	HYDROCLOR TEST							
5 HRS	TRUCK & DRIVER							

Above material is being transported for Recycling | EPA# NONE | Total:

As an authorized representative of the generator of the material described above, I certify that the information contained in this document is 100% accurate and complete. I further certify that this material does NOT constitute a hazardous waste and has NOT been mixed with any hazardous waste such as spent chlorinated solvents or any other contaminants including, without limitation, PCBs, pesticides, or any other hazardous wastes or substances. In the event that the material described in this document is in fact a hazardous waste, or contains 2 ppm or more of PCBs, I guarantee to pay all costs necessary for proper analysis, transportation, storage, and disposal as well as any fines, penalties, attorneys fees, expert witness fees and the loss of the petroleum product resulting from contamination and / or inaccurate and / or incomplete information concerning the material described above.

Signed X

Date: 2-23-22

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

ANALYTICAL REPORT

Wednesday, March 2, 2022

Bill Knutson
K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

RE: A2B0778 - Block 291E--6538

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 A2B0778, which was received by the laboratory on 2/23/2022 at 4:10:00PM.

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)

Cooler #1	2.8 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

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
6538 #1	A2B0778-01	Soil	02/23/22 00:00	02/23/22 16:10
6538 #2	A2B0778-02	Soil	02/23/22 00:00	02/23/22 16:10
6538 #3	A2B0778-03	Soil	02/23/22 00:00	02/23/22 16:10
6538 #4	A2B0778-04	Soil	02/23/22 00:00	02/23/22 16:10
6538 #5	A2B0778-05	Soil	02/23/22 00:00	02/23/22 16:10
6538 #6	A2B0778-06	Soil	02/23/22 00:00	02/23/22 16:10
6538 #7	A2B0778-07	Soil	02/23/22 00:00	02/23/22 16:10
6538 #8	A2B0778-08	Soil	02/23/22 00:00	02/23/22 16:10

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

ANALYTICAL CASE NARRATIVE

Work Order: A2B0778

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

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 #1 (A2B0778-01)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	ND	---	26.9	mg/kg dry	1	02/24/22 08:29	NWTPH-HCID	
Diesel Range Organics	ND	---	67.3	mg/kg dry	1	02/24/22 08:29	NWTPH-HCID	
Oil Range Organics	ND	---	135	mg/kg dry	1	02/24/22 08:29	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*94 %*	*Limits: 50-150 %*	*1*	*02/24/22 08:29*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*88 %*	*50-150 %*	*1*	*02/24/22 08:29*	*NWTPH-HCID*	
6538 #2 (A2B0778-02)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	ND	---	25.5	mg/kg dry	1	02/24/22 09:13	NWTPH-HCID	
Diesel Range Organics	DET	---	63.7	mg/kg dry	1	02/24/22 09:13	NWTPH-HCID	
Oil Range Organics	ND	---	127	mg/kg dry	1	02/24/22 09:13	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*99 %*	*Limits: 50-150 %*	*1*	*02/24/22 09:13*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*86 %*	*50-150 %*	*1*	*02/24/22 09:13*	*NWTPH-HCID*	
6538 #3 (A2B0778-03)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	DET	---	26.6	mg/kg dry	1	02/24/22 09:45	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	66.4	mg/kg dry	1	02/24/22 09:45	NWTPH-HCID	
Oil Range Organics	ND	---	133	mg/kg dry	1	02/24/22 09:45	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*107 %*	*Limits: 50-150 %*	*1*	*02/24/22 09:45*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*86 %*	*50-150 %*	*1*	*02/24/22 09:45*	*NWTPH-HCID*	
6538 #4 (A2B0778-04)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	DET	---	25.0	mg/kg dry	1	02/24/22 10:07	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	62.5	mg/kg dry	1	02/24/22 10:07	NWTPH-HCID	
Oil Range Organics	ND	---	125	mg/kg dry	1	02/24/22 10:07	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*142 %*	*Limits: 50-150 %*	*1*	*02/24/22 10:07*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*56 %*	*50-150 %*	*1*	*02/24/22 10:07*	*NWTPH-HCID*	
6538 #5 (A2B0778-05)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	ND	---	24.8	mg/kg dry	1	02/24/22 10:49	NWTPH-HCID	
Diesel Range Organics	ND	---	61.9	mg/kg dry	1	02/24/22 10:49	NWTPH-HCID	
Oil Range Organics	ND	---	124	mg/kg dry	1	02/24/22 10:49	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*97 %*	*Limits: 50-150 %*	*1*	*02/24/22 10:49*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*83 %*	*50-150 %*	*1*	*02/24/22 10:49*	*NWTPH-HCID*	

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 #6 (A2B0778-06)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	DET	---	27.8	mg/kg dry	1	02/24/22 11:21	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	69.4	mg/kg dry	1	02/24/22 11:21	NWTPH-HCID	
Oil Range Organics	DET	---	139	mg/kg dry	1	02/24/22 11:21	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery: 109 %*		*Limits: 50-150 %*	*1*	*02/24/22 11:21*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*76 %*	*50-150 %*	*1*	*02/24/22 11:21*	*NWTPH-HCID*	
6538 #7 (A2B0778-07)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	DET	---	25.3	mg/kg dry	1	02/24/22 11:43	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	63.2	mg/kg dry	1	02/24/22 11:43	NWTPH-HCID	
Oil Range Organics	ND	---	126	mg/kg dry	1	02/24/22 11:43	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery: 110 %*		*Limits: 50-150 %*	*1*	*02/24/22 11:43*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*65 %*	*50-150 %*	*1*	*02/24/22 11:43*	*NWTPH-HCID*	
6538 #8 (A2B0778-08)				**Matrix: Soil**		**Batch: 22B0886**		
Gasoline Range Organics	DET	---	25.4	mg/kg dry	1	02/24/22 12:06	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	63.5	mg/kg dry	1	02/24/22 12:06	NWTPH-HCID	
Oil Range Organics	ND	---	127	mg/kg dry	1	02/24/22 12:06	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery: 113 %*		*Limits: 50-150 %*	*1*	*02/24/22 12:06*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*70 %*	*50-150 %*	*1*	*02/24/22 12:06*	*NWTPH-HCID*	

Apex Laboratories

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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
6538 #2 (A2B0778-02RE1)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**144**	---	26.6	mg/kg dry	1	03/01/22 21:23	NWTPH-Dx	**Q-39, Q-42**
Oil	ND	---	53.2	mg/kg dry	1	03/01/22 21:23	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 60 %*	*Limits: 50-150 %*		*1*	*03/01/22 21:23*	*NWTPH-Dx*	
6538 #3 (A2B0778-03RE1)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**2410**	---	25.6	mg/kg dry	1	03/01/22 22:04	NWTPH-Dx	
Oil	ND	---	51.3	mg/kg dry	1	03/01/22 22:04	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*1*	*03/01/22 22:04*	*NWTPH-Dx*	
6538 #4 (A2B0778-04RE2)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**14600**	---	521	mg/kg dry	20	03/02/22 08:28	NWTPH-Dx	
Oil	ND	---	1040	mg/kg dry	20	03/02/22 08:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: %*	*Limits: 50-150 %*		*20*	*03/02/22 08:28*	*NWTPH-Dx*	*S-01*
6538 #6 (A2B0778-06RE2)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**8650**	---	551	mg/kg dry	20	03/02/22 08:48	NWTPH-Dx	
Oil	ND	---	1100	mg/kg dry	20	03/02/22 08:48	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: %*	*Limits: 50-150 %*		*20*	*03/02/22 08:48*	*NWTPH-Dx*	*S-01*
6538 #7 (A2B0778-07RE1)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**2910**	---	26.4	mg/kg dry	1	03/01/22 23:05	NWTPH-Dx	
Oil	ND	---	52.8	mg/kg dry	1	03/01/22 23:05	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*1*	*03/01/22 23:05*	*NWTPH-Dx*	
6538 #8 (A2B0778-08RE2)				**Matrix: Soil**		**Batch: 22C0053**		
Diesel	**2600**	---	26.5	mg/kg dry	1	03/01/22 23:26	NWTPH-Dx	
Oil	ND	---	53.0	mg/kg dry	1	03/01/22 23:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*1*	*03/01/22 23:26*	*NWTPH-Dx*	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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
6538 #3 (A2B0778-03)				**Matrix: Soil**		**Batch: 22B0978**		
Gasoline Range Organics	**804**	---	83.8	mg/kg dry	500	02/28/22 18:27	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 107 %*	*Limits: 50-150 %*		*1*	*02/28/22 18:27*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*02/28/22 18:27*	*NWTPH-Gx (MS)*	
6538 #4 (A2B0778-04)				**Matrix: Soil**		**Batch: 22B0978**		
Gasoline Range Organics	**1470**	---	78.6	mg/kg dry	500	02/28/22 18:54	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 109 %*	*Limits: 50-150 %*		*1*	*02/28/22 18:54*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*104 %*	*50-150 %*	*1*	*02/28/22 18:54*	*NWTPH-Gx (MS)*	
6538 #6 (A2B0778-06)				**Matrix: Soil**		**Batch: 22B0978**		
Gasoline Range Organics	**1950**	---	86.2	mg/kg dry	500	02/28/22 19:21	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 111 %*	*Limits: 50-150 %*		*1*	*02/28/22 19:21*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*02/28/22 19:21*	*NWTPH-Gx (MS)*	
6538 #7 (A2B0778-07)				**Matrix: Soil**		**Batch: 22B0978**		
Gasoline Range Organics	**731**	---	83.2	mg/kg dry	500	02/28/22 19:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 113 %*	*Limits: 50-150 %*		*1*	*02/28/22 19:48*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*	*1*	*02/28/22 19:48*	*NWTPH-Gx (MS)*	
6538 #8 (A2B0778-08)				**Matrix: Soil**		**Batch: 22B0978**		
Gasoline Range Organics	**696**	---	80.8	mg/kg dry	500	02/28/22 20:15	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 109 %*	*Limits: 50-150 %*		*1*	*02/28/22 20:15*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*02/28/22 20:15*	*NWTPH-Gx (MS)*	

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 #1 (A2B0778-01)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**74.1**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #2 (A2B0778-02)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**73.4**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #3 (A2B0778-03)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**73.6**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #4 (A2B0778-04)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**75.1**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #5 (A2B0778-05)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**74.7**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #6 (A2B0778-06)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**71.2**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #7 (A2B0778-07)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**74.4**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	
6538 #8 (A2B0778-08)				**Matrix: Soil**		**Batch: 22B0861**		
% Solids	**73.5**	---	1.00	%	1	02/24/22 09:41	EPA 8000D	

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ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 22B0886 - NWTPH-HCID (Soil)							Soil					
Blank (22B0886-BLK1)			Prepared: 02/23/22 19:29 Analyzed: 02/24/22 08:07									
NWTPH-HCID												
Gasoline Range Organics	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	45.5	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	90.9	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*95 %*	*50-150 %*			*"*					
Duplicate (22B0886-DUP1)			Prepared: 02/23/22 19:29 Analyzed: 02/24/22 08:51									
QC Source Sample: 6538 #1 (A2B0778-01)												
NWTPH-HCID												
Gasoline Range Organics	ND	---	26.3	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	65.6	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	131	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*85 %*	*50-150 %*			*"*					

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ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 22B0974 - EPA 3546 (Fuels)							**Soil**					
Blank (22B0974-BLK1)			Prepared: 02/28/22 07:35		Analyzed: 03/01/22 00:09							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (22B0974-BS1)			Prepared: 02/28/22 07:35		Analyzed: 03/01/22 00:31							
NWTPH-Dx												
Diesel	120	---	20.0	mg/kg wet	1	125	---	96	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Duplicate (22B0974-DUP1)			Prepared: 02/28/22 07:35		Analyzed: 03/01/22 01:16							
QC Source Sample: Non-SDG (A2B0776-03)												
Diesel	**67.0**	---	25.0	mg/kg dry	1	---	34.0	---	---	**65**	**30%**	F-11, Q-05
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 92 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 22C0053 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0053-BLK1)			Prepared: 03/01/22 15:32		Analyzed: 03/01/22 20:42							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C0053-BS1)			Prepared: 03/01/22 15:32		Analyzed: 03/01/22 21:02							
NWTPH-Dx												
Diesel	123	---	20.0	mg/kg wet	1	125	---	98	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0053-DUP1)			Prepared: 03/01/22 15:32		Analyzed: 03/01/22 21:43							
QC Source Sample: 6538 #2 (A2B0778-02RE1)												
NWTPH-Dx												
Diesel	**396**	---	26.6	mg/kg dry	1	---	144	---	---	**93**	**30%**	Q-17
Oil	ND	---	53.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0053-DUP2)			Prepared: 03/01/22 15:32		Analyzed: 03/01/22 21:23							
QC Source Sample: Non-SDG (A2B0840-30RE1)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**167**	---	50.0	mg/kg dry	1	---	269	---	---	**47**	**30%**	Q-05
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 22B0978 - EPA 5035A							**Soil**					
Blank (22B0978-BLK1)			Prepared: 02/28/22 08:30 Analyzed: 02/28/22 10:15									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*109 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*104 %*		*50-150 %*			*"*				
LCS (22B0978-BS2)			Prepared: 02/28/22 08:30 Analyzed: 02/28/22 09:48									
NWTPH-Gx (MS)												
Gasoline Range Organics	27.1	---	5.00	mg/kg wet	50	25.0	---	109	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*109 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*105 %*		*50-150 %*			*"*				
Duplicate (22B0978-DUP1)			Prepared: 02/22/22 09:25 Analyzed: 02/28/22 16:12									
QC Source Sample: Non-SDG (A2B0841-03)												
Gasoline Range Organics	**117**	---	2.07	mg/kg dry	50	---	123	---	---	5	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*115 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*106 %*		*50-150 %*			*"*				

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K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 22B0861 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22B0861-DUP1)			Prepared: 02/23/22 11:28			Analyzed: 02/24/22 09:41						**PRO**
QC Source Sample: Non-SDG (A2B0652-02)												
% Solids	**98.1**	---	1.00	%	1	---	98.1	---	---	0.009	10%	
Duplicate (22B0861-DUP2)			Prepared: 02/23/22 18:33			Analyzed: 02/24/22 09:41						
QC Source Sample: Non-SDG (A2B0747-01)												
% Solids	**94.3**	---	1.00	%	1	---	94.1	---	---	0.3	10%	
Duplicate (22B0861-DUP3)			Prepared: 02/23/22 18:33			Analyzed: 02/24/22 09:41						
QC Source Sample: Non-SDG (A2B0774-01)												
% Solids	**93.5**	---	1.00	%	1	---	93.3	---	---	0.2	10%	
Duplicate (22B0861-DUP4)			Prepared: 02/23/22 18:33			Analyzed: 02/24/22 09:41						
QC Source Sample: 6538 #1 (A2B0778-01)												
EPA 8000D												
% Solids	**74.1**	---	1.00	%	1	---	74.1	---	---	0.02	10%	

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

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ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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: 22B0886							
A2B0778-01	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.02g/10mL	10g/10mL	1.00
A2B0778-02	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.7g/10mL	10g/10mL	0.94
A2B0778-03	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.22g/10mL	10g/10mL	0.98
A2B0778-04	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.66g/10mL	10g/10mL	0.94
A2B0778-05	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.8g/10mL	10g/10mL	0.93
A2B0778-06	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.11g/10mL	10g/10mL	0.99
A2B0778-07	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.64g/10mL	10g/10mL	0.94
A2B0778-08	Soil	NWTPH-HCID	02/23/22 00:00	02/23/22 19:29	10.71g/10mL	10g/10mL	0.93

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: 22C0053							
A2B0778-02RE1	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.24g/5mL	10g/5mL	0.98
A2B0778-03RE1	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.59g/5mL	10g/5mL	0.94
A2B0778-04RE2	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.22g/5mL	10g/5mL	0.98
A2B0778-06RE2	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.2g/5mL	10g/5mL	0.98
A2B0778-07RE1	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.19g/5mL	10g/5mL	0.98
A2B0778-08RE2	Soil	NWTPH-Dx	02/23/22 00:00	03/01/22 15:32	10.26g/5mL	10g/5mL	0.98

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: 22B0978							
A2B0778-03	Soil	NWTPH-Gx (MS)	02/23/22 00:00	02/23/22 18:40	5.15g/5mL	5g/5mL	0.97
A2B0778-04	Soil	NWTPH-Gx (MS)	02/23/22 00:00	02/23/22 18:40	5.37g/5mL	5g/5mL	0.93
A2B0778-06	Soil	NWTPH-Gx (MS)	02/23/22 00:00	02/23/22 18:40	5.32g/5mL	5g/5mL	0.94
A2B0778-07	Soil	NWTPH-Gx (MS)	02/23/22 00:00	02/23/22 18:40	5.09g/5mL	5g/5mL	0.98
A2B0778-08	Soil	NWTPH-Gx (MS)	02/23/22 00:00	02/23/22 18:40	5.41g/5mL	5g/5mL	0.92

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor

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ANALYTICAL REPORT

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4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22B0861							
A2B0778-01	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-02	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-03	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-04	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-05	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-06	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-07	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA
A2B0778-08	Soil	EPA 8000D	02/23/22 00:00	02/23/22 18:33			NA

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ANALYTICAL REPORT

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Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-09	Results in the Gasoline Range are impacted by the overlap of a heavier fuel hydrocarbon product.
F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-39	Results for sample duplicate are significantly higher than the sample results. See duplicate results in QC section of the report.
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.)
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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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, LLC
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ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0778 - 03 02 22 1520**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

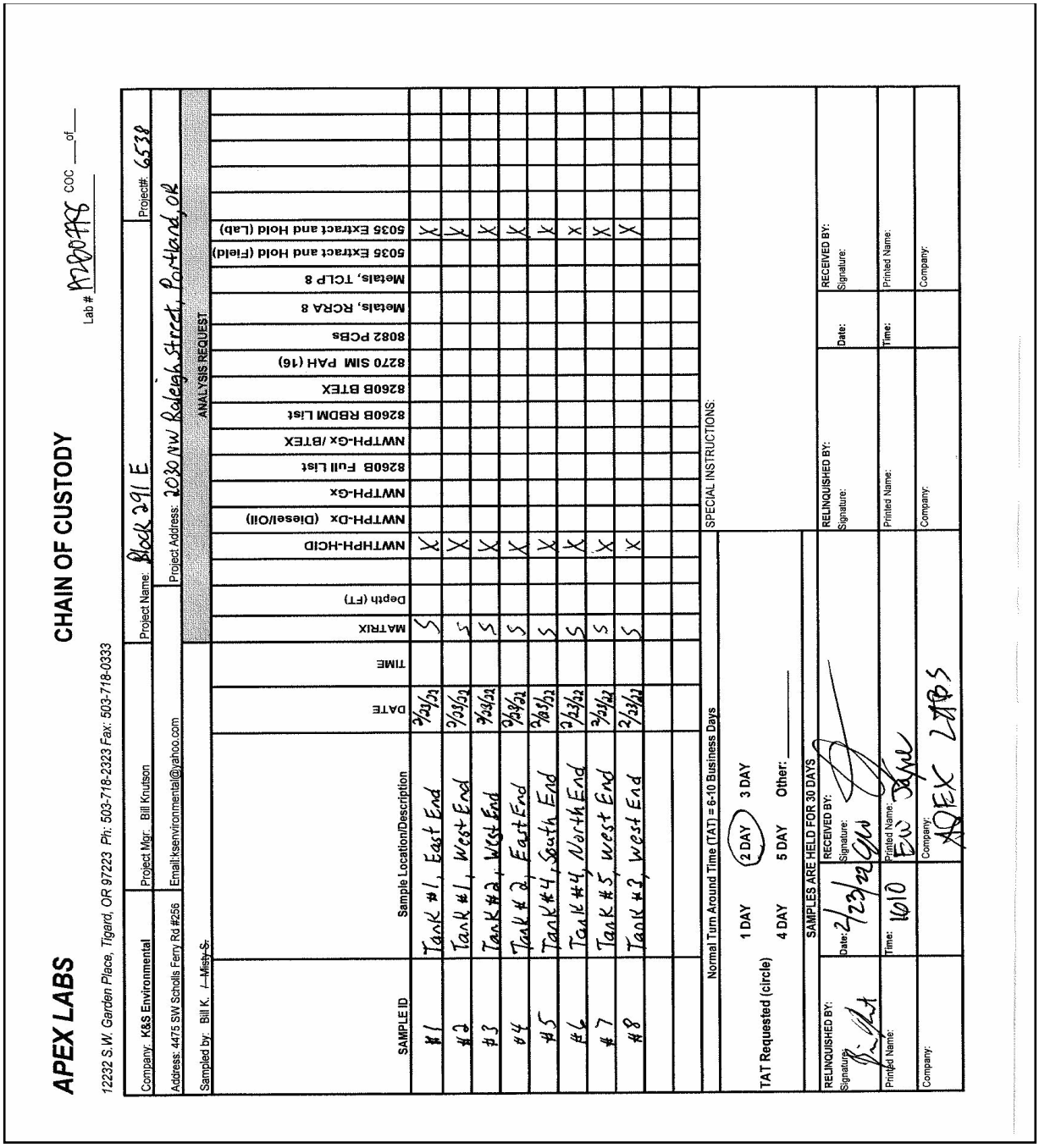
ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**

Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520



APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A2B0778 COC ___ of ___

Company: K&S Environmental | Project Mgr: Bill Knutson | Project Name: Block 291 E | Project#: 6538

Address: 4475 SW Scholls Ferry Rd #256 | Email:kservironmental@yahoo.com | Project Address: 1030 NW Raleigh Street, Portland, OR

Sampled by: Bill K. ~~Misty S.~~

SAMPLE ID	Sample Location/Description	DATE	TIME	MATRIX	Depth (FT)	NWTHPH-HCID	NWTPH-Dx (Diesel/Oil)	NWTPH-Gx	8260B Full List	NWTPH-Gx /BTEX	8260B RBDM List	8260B BTEX	8270 SIM PAH (16)	8082 PCBs	Metals, RCRA 8	Metals, TCLP 8	5035 Extract and Hold (Field)	5035 Extract and Hold (Lab)
#1	Tank #1, East End	2/23/22		S		X												X
#2	Tank #1, West End	2/23/22		S		X												X
#3	Tank #2, West End	2/23/22		S		X												X
#4	Tank # 2, East End	2/23/22		S		X												X
#5	Tank #4, South End	2/23/22		S		X												X
#6	Tank #4, North End	2/23/22		S		X												X
#7	Tank #5, west End	2/23/22		S		X												X
#8	Tank #2, west End	2/23/22		S		X												X

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY (2 DAY) 3 DAY 4 DAY 5 DAY Other: ____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature: Date: 2/23/22 Time: 1610 Printed Name: Company: XAPEX

RECEIVED BY: Signature: Printed Name: Company:

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Printed Name: Company:

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Printed Name: Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**

Project Manager: **Bill Knutson**

Report ID:
A2B0778 - 03 02 22 1520

APEX LABS COOLER RECEIPT FORM

Client: K&S Environmental Element WO#: A2B0778

Project/Project #: Block 291E 6538

Delivery Info:
Date/time received: 2/23/22 @ 1610 By: ET
Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other
Cooler Inspection Date/time inspected: 2/23/22 @ 1640 By: ET
Chain of Custody included? Yes X No Custody seals? Yes No X
Signed/dated by client? Yes X No
Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.8						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:
Green dots applied to out of temperature samples? Yes (No)
Out of temperature samples form initiated? Yes (No)
Sample Inspection: Date/time inspected: 2/23/22 @ 1717 By: AKK
All samples intact? Yes X No Comments:
Bottle labels/COCs agree? Yes X No Comments: No time on col/containers.
COC/container discrepancies form initiated? Yes No X
Containers/volumes received appropriate for analysis? Yes X No Comments:
Do VOA vials have visible headspace? Yes No NA X
Comments
Water samples: pH checked: Yes No NA X pH appropriate? Yes No NA X
Comments:
Additional information:
Labeled by: AKK Witness: AB Cooler Inspected by: ET

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Saturday, March 5, 2022

Bill Knutson
K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

RE: A2B0777 - Block 291E--6538

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 A2B0777, which was received by the laboratory on 2/23/2022 at 4:10:00PM.

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)

Cooler #1 2.8 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

Philip Nerenberg, Lab Director

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Apex Laboratories, LLC
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
6538 P1	**A2B0777-01**	**Solid**	**02/23/22 00:00**	**02/23/22 16:10**

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 P1 (A2B0777-01)				**Matrix: Solid**		**Batch: 22B0894**		**C-07**
Aroclor 1016	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1221	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1232	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1242	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1248	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1254	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Aroclor 1260	ND	---	746	ug/kg	5	02/25/22 10:17	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 60-125 %*	*5*	*02/25/22 10:17*	*EPA 8082A*	

Apex Laboratories

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 P1 (A2B0777-01)				**Matrix: Solid**				
Batch: 22B0903								
Arsenic	**1.97**	---	1.01	mg/kg	10	02/24/22 21:55	EPA 6020B	
Barium	**15.3**	---	1.01	mg/kg	10	02/24/22 21:55	EPA 6020B	
Cadmium	**3.35**	---	0.202	mg/kg	10	02/24/22 21:55	EPA 6020B	
Chromium	**2.57**	---	1.01	mg/kg	10	02/24/22 21:55	EPA 6020B	
Lead	**270**	---	0.202	mg/kg	10	02/24/22 21:55	EPA 6020B	**B-02**
Mercury	ND	---	0.0806	mg/kg	10	02/24/22 21:55	EPA 6020B	
Selenium	ND	---	1.01	mg/kg	10	02/24/22 21:55	EPA 6020B	
Silver	ND	---	0.202	mg/kg	10	02/24/22 21:55	EPA 6020B	

Apex Laboratories

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 P1 (A2B0777-01)				**Matrix: Solid**				
Batch: 22C0101								
Lead	**0.608**	---	0.0500	mg/L	10	03/03/22 01:51	1311/6020B	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
6538 P1 (A2B0777-01)				**Matrix: Solid**		**Batch: 22C0029**		
TCLP Extraction	PREP	---		N/A	1	03/01/22 15:28	EPA 1311	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

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 22B0894 - EPA 3546							**Solid**					
Blank (22B0894-BLK1)			Prepared: 02/24/22 07:59		Analyzed: 02/25/22 09:41							**C-07**
EPA 8082A												
Aroclor 1016	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 120 %*		*Limits: 60-125 %*			*Dilution: 1x*					
LCS (22B0894-BS1)			Prepared: 02/24/22 07:59		Analyzed: 02/25/22 09:59							**C-07**
EPA 8082A												
Aroclor 1016	968	---	50.0	ug/kg	1	1250	---	77	47-134%	---	---	
Aroclor 1260	1160	---	50.0	ug/kg	1	1250	---	93	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 105 %*		*Limits: 60-125 %*			*Dilution: 1x*					
Duplicate (22B0894-DUP1)			Prepared: 02/24/22 07:59		Analyzed: 02/25/22 10:54							**C-07**
QC Source Sample: 6538 P1 (A2B0777-01)												
EPA 8082A												
Aroclor 1016	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	820	ug/kg	5	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 114 %*		*Limits: 60-125 %*			*Dilution: 5x*					
Matrix Spike (22B0894-MS1)			Prepared: 02/24/22 07:59		Analyzed: 02/25/22 11:30							**C-07**
QC Source Sample: 6538 P1 (A2B0777-01)												
EPA 8082A												
Aroclor 1016	3790	---	893	ug/kg	5	4460	ND	85	47-134%	---	---	
Aroclor 1260	3960	---	893	ug/kg	5	4460	ND	89	53-140%	---	---	

Apex Laboratories

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

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 22B0894 - EPA 3546							**Solid**					
Matrix Spike (22B0894-MS1)			Prepared: 02/24/22 07:59		Analyzed: 02/25/22 11:30							**C-07**
QC Source Sample: 6538 P1 (A2B0777-01)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 128 %*		*Limits: 60-125 %*		*Dilution: 5x*					S-06

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: Block 291E--6538	
4475 S.W. Scholls Ferry Rd #256		Report ID:
Portland, OR 97225	Project Manager: Bill Knutson	A2B0777 - 03 05 22 1042

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 22B0903 - EPA 3051A							**Solid**					
Blank (22B0903-BLK1)			Prepared: 02/24/22 10:13 Analyzed: 02/24/22 21:35									
EPA 6020B												
Arsenic	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	B-02
Mercury	ND	---	0.0800	mg/kg	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	
LCS (22B0903-BS1)			Prepared: 02/24/22 10:13 Analyzed: 02/24/22 21:40									
EPA 6020B												
Arsenic	45.6	---	1.00	mg/kg	10	50.0	---	91	80-120%	---	---	
Barium	49.2	---	1.00	mg/kg	10	50.0	---	98	80-120%	---	---	
Cadmium	46.3	---	0.200	mg/kg	10	50.0	---	93	80-120%	---	---	
Chromium	48.0	---	1.00	mg/kg	10	50.0	---	96	80-120%	---	---	
Lead	48.8	---	0.200	mg/kg	10	50.0	---	98	80-120%	---	---	B-02
Mercury	0.939	---	0.0800	mg/kg	10	1.00	---	94	80-120%	---	---	
Selenium	22.9	---	1.00	mg/kg	10	25.0	---	92	80-120%	---	---	
Silver	23.4	---	0.200	mg/kg	10	25.0	---	94	80-120%	---	---	Q-41
Duplicate (22B0903-DUP1)			Prepared: 02/24/22 10:13 Analyzed: 02/24/22 22:11									
QC Source Sample: Non-SDG (A2B0796-01)												
Arsenic	**13.0**	---	1.06	mg/kg	10	---	10.7	---	---	19	20%	
Barium	**147**	---	1.06	mg/kg	10	---	147	---	---	0.3	20%	
Cadmium	**0.370**	---	0.212	mg/kg	10	---	0.308	---	---	18	20%	
Chromium	**9.76**	---	1.06	mg/kg	10	---	9.30	---	---	5	20%	
Lead	**12.5**	---	0.212	mg/kg	10	---	10.1	---	---	**21**	**20%**	B-02, Q-04
Mercury	ND	---	0.0847	mg/kg	10	---	ND	---	---	---	20%	
Selenium	ND	---	1.06	mg/kg	10	---	0.690	---	---	***	20%	
Silver	ND	---	0.212	mg/kg	10	---	ND	---	---	---	20%	
Matrix Spike (22B0903-MS1)			Prepared: 02/24/22 10:13 Analyzed: 02/24/22 22:16									

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

K&S Environmental, Inc	Project/#: **Block 291E--6538**	
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

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 22B0903 - EPA 3051A							**Solid**					
Matrix Spike (22B0903-MS1)			Prepared: 02/24/22 10:13 Analyzed: 02/24/22 22:16									
QC Source Sample: Non-SDG (A2B0796-01)												
EPA 6020B												
Arsenic	60.3	---	1.07	mg/kg	10	53.4	10.7	93	75-125%	---	---	
Barium	189	---	1.07	mg/kg	10	53.4	147	80	75-125%	---	---	
Cadmium	49.2	---	0.214	mg/kg	10	53.4	0.308	91	75-125%	---	---	
Chromium	60.3	---	1.07	mg/kg	10	53.4	9.30	95	75-125%	---	---	
Lead	60.4	---	0.214	mg/kg	10	53.4	10.1	94	75-125%	---	---	B-02
Mercury	0.993	---	0.0855	mg/kg	10	1.07	ND	93	75-125%	---	---	
Selenium	25.9	---	1.07	mg/kg	10	26.7	0.690	94	75-125%	---	---	
Silver	24.6	---	0.214	mg/kg	10	26.7	ND	92	75-125%	---	---	Q-41

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ANALYTICAL REPORT

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4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

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 22C0101 - EPA 1311/3015												**Soil**
Blank (22C0101-BLK1)			Prepared: 03/02/22 13:54 Analyzed: 03/03/22 01:41									
1311/6020B												
Lead	ND	---	0.0500	mg/L	10	---	---	---	---	---	---	TCLP
LCS (22C0101-BS1)			Prepared: 03/02/22 13:54 Analyzed: 03/03/22 01:46									
1311/6020B												
Lead	2.64	---	0.0500	mg/L	10	2.50	---	106	80-120%	---	---	
Matrix Spike (22C0101-MS1)			Prepared: 03/02/22 13:54 Analyzed: 03/03/22 01:56									
QC Source Sample: 6538 P1 (A2B0777-01)												
1311/6020B												
Lead	3.20	---	0.0500	mg/L	10	2.50	0.608	104	50-150%	---	---	

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ANALYTICAL REPORT

K&S Environmental, Inc
4475 S.W. Scholls Ferry Rd #256
Portland, OR 97225

Project/#: **Block 291E--6538**
Project Manager: **Bill Knutson**

Report ID:
A2B0777 - 03 05 22 1042

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
Batch: 22B0894							
A2B0777-01	Solid	EPA 8082A	02/23/22 00:00	02/24/22 07:59	0.67g/5mL	2g/5mL	2.99

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22B0903							
A2B0777-01	Solid	EPA 6020B	02/23/22 00:00	02/24/22 10:13	0.496g/50mL	0.5g/50mL	1.01

TCLP Metals by EPA 6020B (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0101							
A2B0777-01	Solid	1311/6020B	02/23/22 00:00	03/02/22 13:54	10mL/50mL	10mL/50mL	1.00

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: 22C0029							
A2B0777-01	Solid	EPA 1311	02/23/22 00:00	03/01/22 15:28	100g/1987.2g	100g/2000g	NA

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Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

QUALIFIER DEFINITIONS

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

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B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
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.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
S-06	Surrogate recovery is outside of established control limits.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 22B0029.

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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.

Apex Laboratories

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Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

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

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ANALYTICAL REPORT

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Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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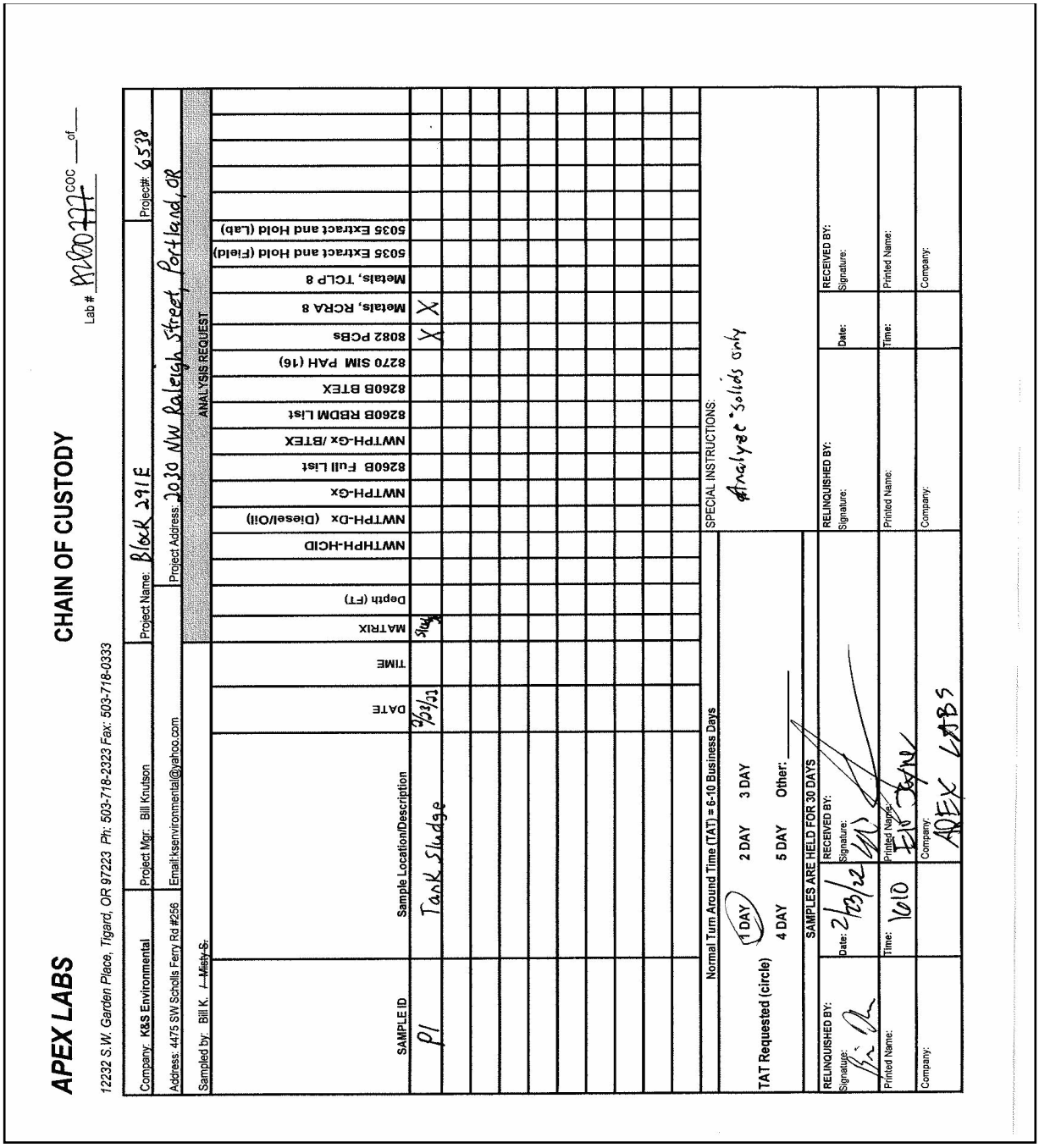
4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**



APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A2B0777 COC ___ of ___

Company: K&S Environmental | Project Mgr: Bill Knutson | Project Name: Block 291E | Project# 6538

Address: 4475 SW Scholls Ferry Rd #256 | Email:kservironmental@yahoo.com | Project Address: 2030 NW Raleigh Street, Portland, OR

Sampled by: Bill K. ~~J. Miley~~ S.

SAMPLE ID	Sample Location/Description	DATE	TIME	MATRIX	Depth (FT)		NWTHPH-HCID	NWTPH-Dx (Diesel/Oil)	NWTPH-Gx	8260B Full List	NWTPH-Gx /BTEX	8260B RBDM List	8260B BTEX	8270 SIM PAH (16)	8082 PCBs	Metals, RCRA 8	Metals, TCLP 8	5035 Extract and Hold (Field)	5035 Extract and Hold (Lab)
P1	Tank Sludge	5/3/22		Sludge											X	X			

ANALYSIS REQUEST

Normal Turn Around Time (TAT) = 6-10 Business Days

TAT Requested (circle): 1 DAY 2 DAY 3 DAY 4 DAY 5 DAY Other: ___

SPECIAL INSTRUCTIONS: Analyze Solids only

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 5/3/22	Date:	Date:	Date:
Time: 1610	Time:	Time:	Time:
Printed Name:	Printed Name: Elio Joyce	Printed Name:	Printed Name:
Company:	Company: APEX LABS	Company:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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4475 S.W. Scholls Ferry Rd #256		**Report ID:**
Portland, OR 97225	Project Manager: **Bill Knutson**	**A2B0777 - 03 05 22 1042**

APEX LABS COOLER RECEIPT FORM

Client: K+S Environmental Element WO#: A2B0777

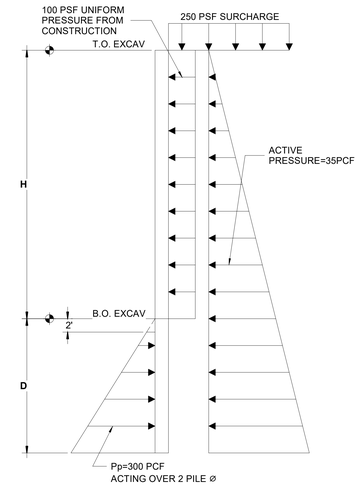
Project/Project #: Block 291E 6538

Delivery Info:
Date/time received: 2/23/22 @ 1610 By: ET
Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other
Cooler Inspection Date/time inspected: 2/23/22 @ 1640 By: ET
Chain of Custody included? Yes X No Custody seals? Yes No X
Signed/dated by client? Yes X No
Signed/dated by Apex? Yes X No

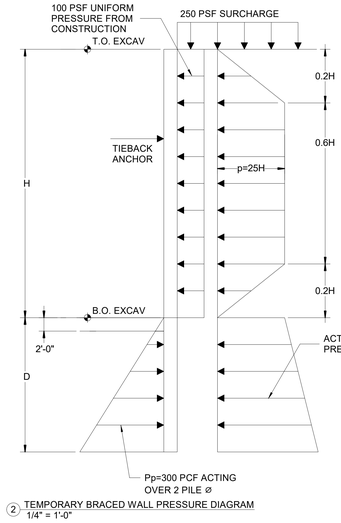
	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.8						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:
Green dots applied to out of temperature samples? Yes (No)
Out of temperature samples form initiated? Yes/No
Sample Inspection: Date/time inspected: 2/23/22 @ 1712 By: AKK
All samples intact? Yes X No Comments:
Bottle labels/COCs agree? Yes X No Comments: No time on COC/container.
COC/container discrepancies form initiated? Yes No X
Containers/volumes received appropriate for analysis? Yes X No Comments:
Do VOA vials have visible headspace? Yes No NA X
Comments
Water samples: pH checked: Yes No NA X pH appropriate? Yes No NA X
Comments:
Additional information:
Labeled by: AKK Witness: Cooler Inspected by: ET

APPENDIX F



1 CANTILEVERED WALL PRESSURE DIAGRAM
NTS



2 TEMPORARY BRACED WALL PRESSURE DIAGRAM
1/4" = 1'-0"

SHORING STRUCTURAL NOTES
1. THE GOVERNING CODE IS THE 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC).
2. ALL TEMPORARY EXCAVATION SHORING HAS BEEN DESIGNED FOR THE FOLLOWING LOADS, UNLESS NOTED OTHERWISE:
   CONSTRUCTION SURCHARGE LIVE LOAD:
   100 PSF LATERAL PRESSURE
   EXISTING STRUCTURE FOUNDATION LOADS
   WIND: TEMPORARY SHORING NOT DESIGNED FOR WIND FORCES
   SEISMIC TEMPORARY SHORING NOT DESIGNED FOR SEISMIC FORCES
3. SUB-SURFACE DESIGN: ALL SUB-SURFACE DESIGN PARAMETERS USED FOR THE SHORING DESIGN ARE BASED ON RECOMMENDATIONS PROVIDED IN THE REPORT OF GEOTECHNICAL ENGINEERING SERVICES TITLED "BLOCK 291 E NW RALEIGH STREET AND NW 20TH AVENUE PORTLAND, OREGON", PREPARED BY GEODESIGN, INC., DATED JUNE 23, 2020.

GENERAL NOTES
1. THESE DOCUMENTS DEPICT CONSTRUCTION OF TEMPORARY SHORING REQUIRED TO CONSTRUCT THE FREEWELL BLOCK 291 EAST PROJECT LOCATED AT NORTHWEST 20TH AVENUE AND NORTHWEST RALEIGH STREET, PORTLAND, OREGON. THE WORK INCLUDES DRILLING HOLES, INSTALLING SOLDIER PILES, INSTALLING TIMBER LAGGING AND INSTALLING SOIL ANCHORS.
2. UNLESS OTHERWISE NOTED, MATERIAL AND DESIGN SPECIFICATIONS CITED HEREIN SHALL BE THOSE CONFORMING WITH THE VERSION OF THE APPLICABLE SPECIFICATION OR CODE MOST RECENTLY ADOPTED BY THE PERMITTING AUTHORITY.
3. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND VERIFY ALL DIMENSIONS AND ELEVATIONS RELATIVE TO THE EXISTING STRUCTURE(S).
4. ALL FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME TYPE AND CHARACTER AS SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE ENGINEER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING SITE RECORDS OF EXISTING UTILITIES AT UTILITY COMPANY OFFICES AND OFFICE OF THE CITY ENGINEER TO DETERMINE CONDITIONS UNDER WHICH WORK WILL BE PERFORMED.
6. THE CONTRACTOR SHALL FORMULATE THE CONTRACTOR'S OWN CONCLUSIONS AS TO THE EXTENT OF EXISTING SUB-SURFACE CONSTRUCTION. NOT ALL UTILITIES AND SUB-SURFACE CONSTRUCTION ARE SHOWN ON THESE DRAWINGS. CONTRACTOR HAS FULL RESPONSIBILITY TO AVOID SUB-SURFACE UTILITIES AND CONSTRUCTION.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION.
8. DURING SHORING, OTHER CONSTRUCTION WORK MAY BE IN PROGRESS. THE CONTRACTOR SHALL BE AWARE OF OTHER WORK BEING PERFORMED AND SHALL COORDINATE HIS WORK WITH OTHER WORK IN PROGRESS, INCLUDING WORK IN PUBLIC RIGHTS-OF-WAY.
9. ELEVATIONS SHOWN FOR TOP-OF-SHORING ARE APPROXIMATE. TOP-OF-SHORING ELEVATION IS TO BE COORDINATED WITH FIELD CONDITIONS. GROUND SURFACE ELEVATIONS MAY BE EXISTING OR REPRESENTATIVE OF EXCAVATED OR FILLED GRADES. ELEVATIONS SHOWN AT THE EXCAVATION LEVEL ARE THE APPROXIMATE DEPTH OF EXCAVATION FOR THE FOUNDATION ADJACENT TO THE SHORING.
10. THE PRIME CONTRACTOR AND SUB-CONTRACTORS ARE RESPONSIBLE FOR THE CONSTRUCTION PROCESS AND SAFETY OF THE WORKERS THIS INCLUDES, BUT IS NOT LIMITED TO, THE CONSTRUCTION SEQUENCE, TEMPORARY HAND RAILS, EXCAVATION ACCESS AND BARRIERS. IT ALSO INCLUDES LIFTING OF MATERIALS AND CONSTRUCTION EQUIPMENT INTO AND OUT OF THE EXCAVATION, TEMPORARY SHORING OF EXCAVATIONS AND STABILITY OF ALL TEMPORARY EXCAVATIONS AND CUT SLOPES.
11. ALL PRODUCTS AND MATERIALS USED BY THE CONTRACTOR SHALL BE APPLIED, PLACED, ERECTED OR INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE SOLDIER PILES. SOLDIER PILES SHALL BE DRILLED TO DIMENSIONS SHOWN ON THE SHORING PLANS. SHAFTS SHOULD BE CLEANED AND FREE OF LOOSE SLOUGH PRIOR TO PLACING CONCRETE. IF WATER ENTERS THE SHAFT, IT SHOULD BE PUMPED FROM THE SHAFT PRIOR TO PLACING OF CONCRETE AND REINFORCING. UNDER NO CIRCUMSTANCES SHOULD CONCRETE BE PLACED IN MORE THAN 2-INCHES OF WATER WITHOUT THE USE OF A TREMIE OR CFA.
13. WHERE CAVING CONDITIONS ARE ENCOUNTERED DURING THE INSTALLATION SEQUENCE, NO FURTHER DRILLING SHALL BE ALLOWED UNTIL THE CONTRACTOR SELECTS A SUITABLE METHOD TO PREVENT GROUND MOVEMENT.
14. NO SOLDIER PILES DRILLING SHALL BE PERFORMED WITHOUT THE PRESENCE OF THE GEOTECHNICAL ENGINEER. ALL SHAFTS SHALL BE FILLED WITH CONCRETE AND SOLDIER PILES/REINFORCING ON THE SAME DAY THEY ARE DRILLED.
15. THE CONCRETE IN SOLDIER PILE SHAFTS SHALL BE PLACED BY MEANS OF ELEPHANT TRUNK, HOPPER,TREMIE METHOD OR CFA METHOD.
16. SPECIAL INSPECTION, SPECIAL TESTING AND REPORTING AND COMPLIANCE PROCEDURES, IN ACCORDANCE WITH CHAPTER 17 OF THE I.B.C., SHALL BE PROVIDED FOR THIS STRUCTURE PER THE FOLLOWING TABLES:

SPECIAL INSPECTION AND TESTING PROGRAM

TYPES OF WORK	CONTINUOUS	PERIODIC	COMMENTS
SOILS			
GRADING AND EXCAVATION		X	BY THE GEOTECHNICAL ENGINEER
PILES			
COMPLETE INSTALLATION	X		BY THE GEOTECHNICAL ENGINEER
STRUCTRUAL WELDING			
FILLET WELDS		X	5/16" OR LESS
STRUCTURAL CONCRETE			
MAKING TEST CYLINDERS			NOT REQUIRED FOR LEAN CONCRETE
TIEBACK ANCHORS			
COMPLETE INSTALLATION	X		BY THE GEOTECHNICAL ENGINEER
LOAD TESTING	X		BY THE GEOTECHNICAL ENGINEER
SETTLEMENT MONITORING OF ADJACENT STRUCTURE		X	BY THE GEOTECHNICAL ENGINEER

SPECIAL INSPECTION PROGRAM FOOTNOTES:
1. PROVIDE SPECIAL INSPECTION, SPECIAL TESTING, REPORTING AND COMPLIANCE PROCEDURES ACCORDING TO CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE WITH THE OREGON STRUCTURAL SPECIALTY CODE AMENDMENTS.
2. SPECIAL INSPECTOR QUALIFICATIONS: DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION IN QUESTION.
3. PRIOR TO THE BEGINNING OF CONSTRUCTION, REVIEW THE SPECIAL INSPECTION REQUIREMENTS WITH THE ENGINEER, BUILDING OFFICIAL, GENERAL CONTRACTOR AND SPECIAL INSPECTORS.
4. DUTIES OF THE SPECIAL INSPECTOR INCLUDE, BUT ARE NOT LIMITED TO:
   A. OBSERVE THE WORK FOR CONFORMANCE WITH THE APPROVED PERMIT DRAWINGS AND SPECIFICATIONS. BRING DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE GENERAL CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE ENGINEER AND TO THE BUILDING OFFICIAL.
   B. FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, ARCHITECT, ENGINEER, GENERAL CONTRACTOR AND OWNER IN A TIMELY MANNER.
   C. SUBMIT A FINAL REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED, AND WHETHER THE WORK IS IN CONFORMANCE WITH THE APPROVED PERMIT DRAWING AND SPECIFICATIONS.
5. DUTIES OF THE GENERAL CONTRACTOR INCLUDE, BUT ARE NOT LIMITED TO:
   A. NOTIFY SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST 24 HOURS BEFORE INSPECTION IS REQUIRED.
   B. MAINTAIN ACCESS TO WORK REQUIRING SPECIAL INSPECTION UNTIL IT HAS BEEN OBSERVED AND INDICATED TO BE IN CONFORMANCE BY THE SPECIAL INSPECTOR AND APPROVED BY THE BUILDING OFFICIAL.
   C. PROVIDE THE SPECIAL INSPECTOR WITH ACCESS TO APPROVED PERMIT DRAWINGS AND SPECIFICATIONS AT THE JOB SITE.
   D. MAINTAIN JOB-SITE COPIES OF ALL REPORTS SUBMITTED BY THE SPECIAL INSPECTOR.
6. DEFINITIONS:
   A. CONTINUOUS INSPECTION: THE SPECIAL INSPECTOR IS OBSERVING THE WORK REQUIRING SPECIAL INSPECTION AT ALL TIMES.
   B. PERIODIC INSPECTION: THE SPECIAL INSPECTOR IS ON SITE AS REQUIRED TO CONFIRM THAT THE WORK REQUIRING SPECIAL INSPECTION IS IN CONFORMANCE.
7. ALL PRESTRESSED ANCHORS TO BE PROOF TESTED AT 133% OF THE DESIGN LOAD. NOTIFY ENGINEER IF LOADS ARE NOT ACHIEVED.

STRUCTURAL OBSERVATION PROGRAM
1. STRUCTURAL OBSERVATION NOT REQUIRED FOR TEMPORARY SHORING.

TIMBER LAGGING
1. THE CONTRACTOR SHALL EXCAVATE THE WALL FACE AND INSTALL THE LAGGING IN SUCH A MANNER AS TO MAINTAIN A SAFE WORK PLACE AND AVOID EXCESSIVE SLOUGHING AND OVERBREAK. AS A MINIMUM, PRIOR TO PLACING THE SUBSEQUENT SET OF TIMBER LAGGING, DO NOT EXCAVATE MORE THAN 4' BELOW THE CURRENT DEPTH OF LAGGED WALL FACE. BACK FILL ANY VOIDS BEHIND LAGGING WITH A FREE-DRAINING GRANULAR MATERIAL OR GROUT.
2. LAGGING SHALL BE ROUGH SAWN DOUGLAS FIR-LARCH (OR HEM-FIR).
3. TIMBER LAGGING IS NOT REQUIRED TO BE PRESSURE TREATED FOR TEMPORARY SHORING.
4. TIMBER LAGGING IS TO BE CONSTRUCTION GRADE LUMBER OR BETTER.

STRUCTURAL STEEL AND MISCELLANEOUS IRON
1. STRUCUTRAL STEEL FOR ANGLES, CHANNELS AND PLATE: ASTM A36, ASTM A572 GR50.
2. STEEL HEADED STUDS: ASTM A108.
3. STRUCTURAL STEEL WF SHAPES: ASTM A572, GRADE 50 OR ASTM A992, GRADE 50.
4. RECTANGULAR HSS: ASTM A500 GRADE C.
5. ALL WELDING SHALL CONFORM WITH A.W.S. SPECIFICATIONS.
   A. ALL WELDERS SHALL BE QUALIFIED UNDER A.W.S. SPECIFICATIONS.
   B. WELDS SHALL BE MADE WITH 70 KSI FILLER METAL, UNLESS NOTED OTHERWISE.
6. HIGH STRENGTH BOLTS:ASTM A490N

CAST-IN-PLACE CONCRETE
1. DESIGN MIXES FOR THE FOLLOWING CLASSES OF CONCRETE SHALL BE PROPORTIONED TO PROVIDE THE SPECIFIED COMPRESSIVE STRENGTH.
   A. 250 PSI MINIMUM FOR SOLDIER PILE CONCRETE

SHORING WALL MONITORING
1. SURVEY MONITORING OF THE SHORING WALLS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTROLLED SURVEYING SHALL BE PERFORMED TO DETERMINE THE INITIAL ELEVATION AND PLAN LOCATION OF THE MONITORING POINTS, AND THE VERTICAL AND HORIZONTAL MOVEMENT OF THE MONITORING POINTS THEREAFTER.
2. MONITORING POINTS SHALL CONSIST OF BOLTS OR RODS EMBEDDED INTO THE OBJECT OF INTEREST, OR CROSS-HAIRS SCRIBED ONTO A PLATE THAT IS ATTACHED TO THE FACE OF THE OBJECT OF INTEREST. ACCURACY SHALL BE TO ±0.005 FEET.
3. MONITORING POINTS SHALL BE ESTABLISHED:
   A. AT THE TOP OF THE SHORING WALLS AND SPACED NO MORE THAN TWENTY-FIVE FEET (25') ON CENTER AROUND THE ENTIRE WALL PERIMETER; AND
   B. ON ALL EXISTING STRUCTURES THAT ARE SENSITIVE TO MOVEMENT (AS DETERMINED BY THE OWNER'S REPRESENTATIVE AND GEOTECHNICAL ENGINEER OF RECORD) AND WITHIN A DISTANCE FROM THE EXCAVATION EQUAL TO THE FINAL HEIGHT OF THE EXCAVATION.
4. IN GENERAL, SURVEY MONITORING AND REPORTING OF DATA SHALL OCCUR TWICE WEEKLY, UNLESS THE PROGRESS OF CONSTRUCTION DICTATES A LESS OR MORE FREQUENT SURVEY, AS DETERMINED BY THE OWNER'S GEOTECHNICAL ENGINEER OF RECORD (GEOR). IF ANY MOVEMENTS EXCEED 1/4", MONITORING FREQUENCY SHALL BE INCREASED TO A DAILY SURVEY IN THE AREAS OF CONCERN AND THE GEOR NOTIFIED. IF ANY MOVEMENTS EXCEED 1/2" THE ENGINEER SHALL BE NOTIFIED. IF ANY MOVEMENTS EXCEED 1", WORK SHALL BE HALTED AND REMEDIAL MEASURES SHALL BE CONSIDERED AND IMPLEMENTED IF DETERMINED NECESSARY.

DEWATERING SYSTEM
1. THE SHORING SYSTEM HAS BEEN DESIGNED ASSUMING THE WATER TABLE WILL BE BELOW THE BOTTOM OF THE EXCAVATION. IF THE TABLE IS ABOVE THE BOTTOM OF THE EXCAVATION, A COMPREHENSIVE DEWATERING SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER FOR THE PROJECT. THIS REQUIREMENT REMAINS IN EFFECT UNTIL THE BASEMENT WALL AND BASEMENT SLAB-ON-GRADE HAVE BEEN INSTALLED AND REACHED FULL TWENTY-EIGHT (28) DAY STRENGTH.

TIEBACK ANCHOR INSTALLATION
CONTRACTOR TO PROVIDE A TIEBACK INSTALLATION PLAN AND SHALL INCLUDE THE FOLLOWING AS A MINIMUM:
1. DRILLING METHODS AND EQUIPMENT
   A. EQUIPMENT
   B. SITE PREPARATION
   C. DRILLING
   D. CAPACITIES
   E. PROCEDURES
2. GROUTING METHODS. GROUT STRENGTH TO BE A MINIMUM 4000 PSI.
3. TIEBACK STRAND TO BE 0.6 INCH DIAMETER, 7 WIRE, ASTM A416 WITH fpu=270 KSI.
4. WEDGE PLATES ARE TO BE DUCTILE IRON ASTM A536.
5. CENTRALIZERS TO BE SPACED AT A MAXIMUM OF 8'-0" ON CENTER.
6. ALL TEIBACK ANCHORS AND INSTALLATION SHALL FOLLOW THE RECOMMENDATIONS IN THE PTI PUBLICATION PTI DC35.1-14 RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS.
7. CAPACITY BASED ON 25 PSI ULTIMATE BOND IN SILTY SAND. ACTUAL BOND TO BE DETERMINED IN FIELD BY TESTING.

TIEBACK ANCHOR LOAD TESTING
1. TIEBACK ANCHOR TESTING IS TO FOLLOW THE PROCEDURES NOTED IN CHAPTER 8 OF THE PTI PUBLICATION PTI DC35.1-14 RECOMMENDTATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS.
2. THE FIRST TWO ANCHORS ARE TO BE PERFORMANCE TESTED AND THEN AN ADDITIONAL 2 ANCHORS, EACH ON A DIFFERENT WALL, ARE TO BE PERFORMANCE TESTED. ALL REMAINING ANCHORS ARE TO BE PROOF TESTED.
3. IF THE RESULTS FROM THE ANCHORS THAT ARE PERFORMANCE TESTED ARE ACCEPTABLE, THE ANCHORS MAY BE LEFT IN PLACE AS PRODUCTION ANCHORS.
4. PROOF TESTED ANCHRS ARE TO BE LOCKED OFF AT THEIR DESIGN LOAD.
5. IF ANANCHOR FAILS EITHER THE PREFORMANCE OR PROOF TEST, IT MAY BE POST-GROUTED AND RESTESTED. IF THE ANCHOR FAILS THE RETEST, IT SHALL BE REPLACED.

WORK BY OTHERS
1. NO EXCAVATIONS OR DRILLED SHAFTS SHALL BE MADE WITHIN A HORIZONTAL DISTANCE OF 10 FT FROM THE EDGE OF ANY SHORING PILE BELOW THE BOTTOM OF EXCAVATION INDICATED ON THESE DRAWINGS UNLESS THE EXCAVATION IS SHORED OR THE DRILLED SHAFTS ARE STEEL CASED.

SHORING WALL DECOMMISSIONING
1. TIEBACK ANCHORS ARE TO BE DETENSIONED AFTER THE GRADE LEVEL CONCRETE SLAB IS COMPLETELY CONSTRUCTED AND HAS REACHED DESIGN STRENGTH.
2. AFTER TIEBACK ANCHORS ARE DETENSIONED, REMOVE THE TOP OF PILE AND LAGGING TO AN ELEVATION 5 FEET BELOW FINISH GRADE IN PUBLIC RIGHT-OF-WAY.

PERFORMANCE TEST STEPS

LOAD	TOTAL MOVEMENT AT LOAD CYCLE MAXIMUM dt	RESIDUAL MOVEMENT AT AL AFTER CYCLE MAXIMUM dr	ELASTIC MOVEMENT AT LOAD CYCLE MAXIMUM de
AL 0.25 DL	dt1		dt1-dr1=de1
AL 0.25 DL 0.50 DL	dt2	dr1	dt2-dr2=de2
AL 0.25 DL 0.50 DL 0.75DL	dt3	dr2	dt3-dr3=de3
AL 0.25 DL 0.50 DL 0.75DL 1.00 DL	dt4	dr3	dt4-dr4=de4
AL 0.25 DL 0.50 DL 0.75DL 1.00 DL 1.20 DL	dt5	dr4	dt5-dr5=de5
AL 0.25 DL 0.50 DL 0.75DL 1.00 DL 1.20 DL 1.50 DL	dt6 AT TEST LOAD (ZERO READING FOR CREEP TEST) dtN AT FINAL LOAD HOLD READING	dr5	dt6-dr6=de6
AL ADJUST TO LOCK-OFF LOAD		dr6	

AL=ALIGNMENT LOAD
DL=DESIGN LOAD

AT EACH LOAD INCREMENT, THE TOTAL MOVEMENT OF THE PULLING HEAD SHALL BE RECORDED TO THE NEAREST 0.001 IN. WITH RESPECT TO THE INDEPENDENT FIXED REFERENCE POINT. THE LOAD SHALL BE HELD AT EACH INCREMENT JUST LONG ENOUGH TO OBTAIN THE MOVEMENT READING BUT NO LONGER THAN 1 MINUTE. MOVEMENT READINGS AT THE TEST LOAD SHALL BE TAKEN AT 1, 2, 3, 4, 5, 6 AND 10 MINUTES AFTER REACHING THE TEST LOAD. IF THE TOTAL CREEP MOVEMENT BETWEEN 1 AND 10 MINUTES EXCEEDS 0.040 IN., THE TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES. TOTAL MOVEMENTS SHALL THEN BE RECORDED AT 20, 30, 40, 50 AND 60 MINUTES AND TOTAL CREEP MOVEMENT SHALL NOT EXCEED 0.080 IN.

DURING THE LOAD HOLD PERIODS, THE HYDRAULIC PRESSURE TO SUSTAIN THE ANCHOR LOAD SHALL NOT BE ALLOWED TO DEVIATE FROM THE TEST PRESSURE BY MORE THAN 50 PSI. RE-PUMPING BACK TO TEST LOAD WILL COMPENSATE FOR SMALL MOVEMENTS. HYDRAULIC OIL SEEPAGE AND CHANGES IN TEMPERATURE OF THE HYDRAULIC OIL. THE LOAD SHALL ALWAYS BE RETURNED TO THE SPECIFIED TEST LOAD PRIOR TO TAKING THE MOVEMENT READING AT THE SPECIFIED INTERVAL. THE TEST LOAD SHALL NOT BE EXCEEDED DURING THE PERIOD OF OBSERVATION

PROOF TEST STEPS
0.25 DL
0.50 DL
0.75DL
1.00 DL
1.20 DL
1.33 DL [TEST LOAD] (10 MINUTE...
AL (OPTIONAL)
ADJUST TO LOCK-OFF LOAD

AL=ALIGNMENT LOAD
DL=DESIGN LOAD

AT EACH LOAD INCREMENT, THE TOTAL MOVEMENT OF THE PULLING HEAD SHALL BE RECORDED TO THE NEAREST 0.001 IN. WITH RESPECT TO THE INDEPENDENT FIXED REFERENCE POINT. THE LOAD SHALL BE HELD AT EACH INCREMENT JUST LONG ENOUGH TO OBTAIN THE MOVEMENT READING BUT NO LONGER THAN 1 MINUTE. MOVEMENT READINGS AT THE TEST LOAD SHALL BE TAKEN AT 1, 2, 3, 4, 5, 6 AND 10 MINUTES AFTER REACHING THE TEST LOAD. IF THE TOTAL CREEP MOVEMENT BETWEEN 1 AND 10 MINUTES EXCEEDS 0.040 IN., THE TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES. TOTAL MOVEMENTS SHALL THEN BE RECORDED AT 20, 30, 40, 50 AND 60 MINUTES AND TOTAL CREEP MOVEMENT SHALL NOT EXCEED 0.080 IN.

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2

BES PUBLIC SEWER MAIN & LATERAL PROTECTION NOTES
1. THE BES CONTACT FOR SHORING/TIEBACK/PILE SUBMITTALS IS THE NW DISTRICT ENGINEER: JOHN BUSHARD, JOHN.BUSHARD@PORTLANDOREGON.GOV, 503-823-6566.
2. APPLICANT/CONTRACTOR REQUIRED TO MEET SECTION 4.11 "MINIMUM SHORING AND TIE BACK CLEARANCES TO BES ASSETS IN THE PUBLIC RIGHT-OF-WAY", BES SEWER & DRAINAGE FACILITIES DESIGN MANUAL, PCC 17.32.50, ENB 4-14.
3. 7 DAYS PRIOR TO CONSTRUCTION, THE PERMITTEE IS REQUIRED TO PROVIDE TO BES A QUALITY CONTROL PLAN THAT DETAILS METHODS TO BE USED THAT WILL LIMIT INSTALLATION ERROR AND SHALL INCLUDE A METHOD TO TRACK GROUT PLACEMENT AND DETERMINE IF GROUT IS INADVERTENTLY ENTERING BES PIPES DURING ACTIVITIES CONDUCTED BY THE CONTRACTOR. SUBMIT QUALITY CONTROL PLAN AND MONITORING DATA TO THE BES DISTRICT ENGINEER AT BASELINE, 25%, 50%, 75%, AND AT COMPLETION OF SHORING/TUNNEL INSTALLATION.
4. THE PERMITTEE IS REQUIRED TO CONDUCT TV INSPECTION OF PUBLIC SEWERS MAIN LINES BEFORE AND AFTER THE COMPLETION OF DRILLING FOR TIEBACK SHORING & SOLDIER PILE/SOIL NAILS/SOIL ANCHORS. THE PERMITTEE SHALL COORDINATE SEWER SYSTEM ACCESS WITH THE BES DISTRICT ENGINEER TWO WEEKS IN ADVANCE TO PRE & POST TV INSPECTION. THE INITIAL TV INSPECTION SHALL BE PROVIDED NO LATER THAN TWO WEEKS BEFORE THE DRILLING OPERATION AND WITHIN 30 DAYS AFTER THE SUPPORT SYSTEM IS COMPLETED. CONTRACTOR SHALL USE BES MAINTENANCE HOLE IDENTIFICATION/ASSET NUMBERS AS IDENTIFICATION ON SEWER INSPECTION VIDEOS AND ASSOCIATED MONITORING DATA.
5. THE PERMITTEE IS TO LOCATE AND CAP ALL EXISTING OR PROPOSED ABANDONED LATERALS THAT CAN BE AFFECTED BY THE SHORING OPERATION/DRILLING ACTIVITIES PRIOR TO INSTALLATION OF SOLDIER PILES TO AVOID GROUT FROM ENTERING PUBLIC SEWER MAIN LINES.
6. MINIMJM OF 3 FEET OF CLEARANCE, EDGE TO EDGE, PLUS A 5% ANGLE DEVIATION BETWEEN TIE BACKS AND SEWER MAIN PIPES; MINIMUM 5 FEET OF CLEARANCE, EDGE TO EDGE, BETWEEN SHORING AND SEWER MAIN PIPES REQUIRED.
7. EXCAVATION ACTIVITIES INVOLVING SHORING, TIE BACKS, AND GROUTING OCCURING WITH THE PUBLIC RIGHT-OF-WAY CAN RESULT IN DAMAGE TO BES PUBLIC SEWERS. THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR THE EXPENSE TO REPAIR AND/OR RECONSTRUCTION OF ALL DAMAGED PUBLIC SEWER ASSETS INCLUDING DAMAGE TO PRIVATE PROPERTY RESULTING FROM DEVELOPMENT ACTIVITIES, SEWER BACKUPS, AND/OR THE INTRODUCTION OF GROUT INTO PUBLIC LATERALS/MAIN SEWERS.
8. APPLICANT/CONTRACTOR REQUIRED TO LOCATE PUBLIC SEWER INVERT ELEVATIONS VIA SURVEY AND POTHOLING TO VERIFY DEPTHS AND LOCATION, PER SECTION 3.7 "SURVEY REQUIREMENTS", BES SEWER & DRAINAGE FACILITIES DESIGN MANUAL. (COP 17.32.030 ENB 4.07)"

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FREEWELL

BLOCK 291 EAST
NW 20TH AVE AND NW RALEIGH ST
PORTLAND, OR

REVISIONS
2 PERMIT RESPONSE #1 6/14/21

DRAWN BY: N/A
CHECKED BY: DAW
DATE: 15 FEBRUARY 2021
PROJECT NO: S20050

NOTES

SH1

PERMIT SET

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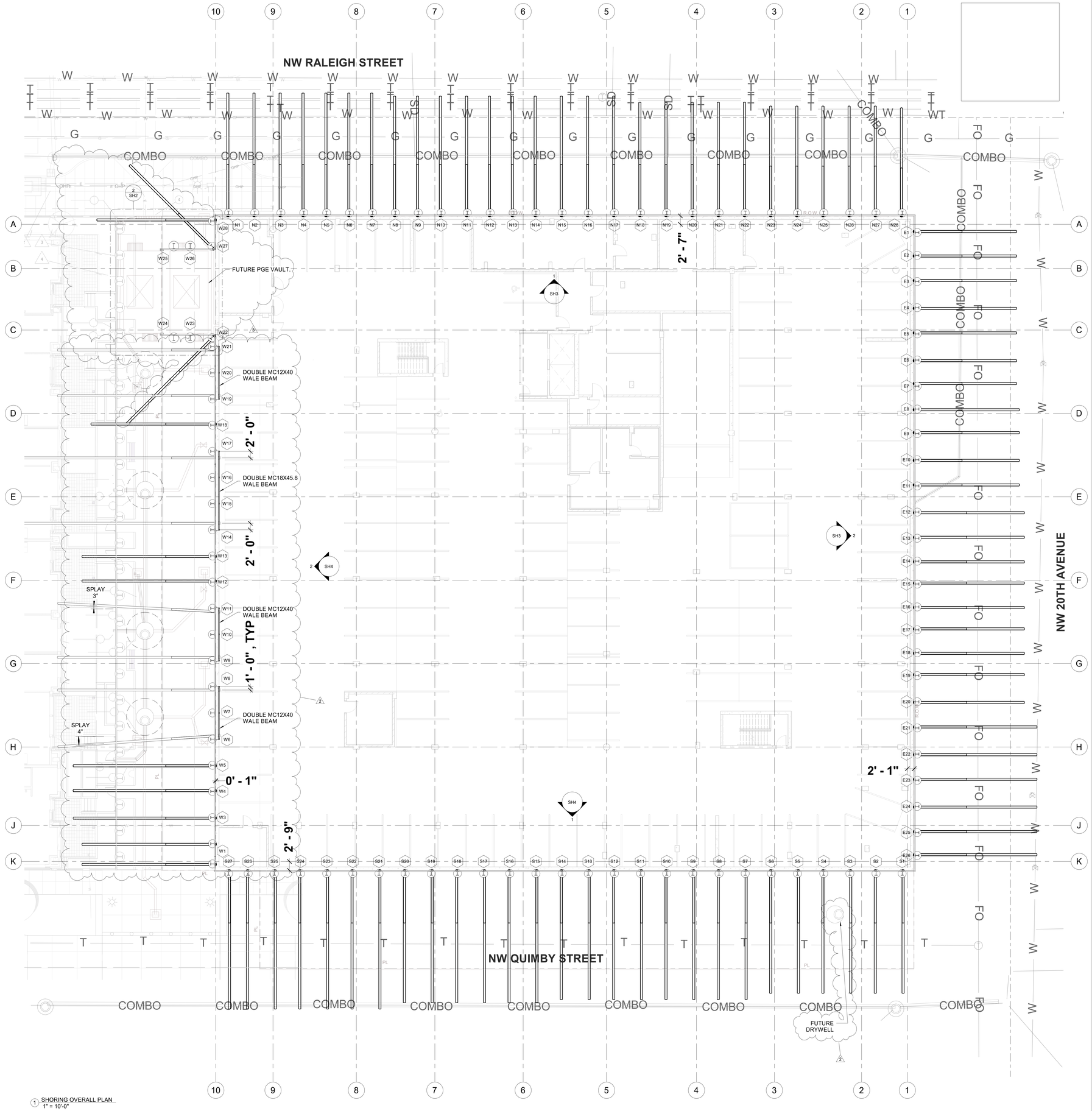

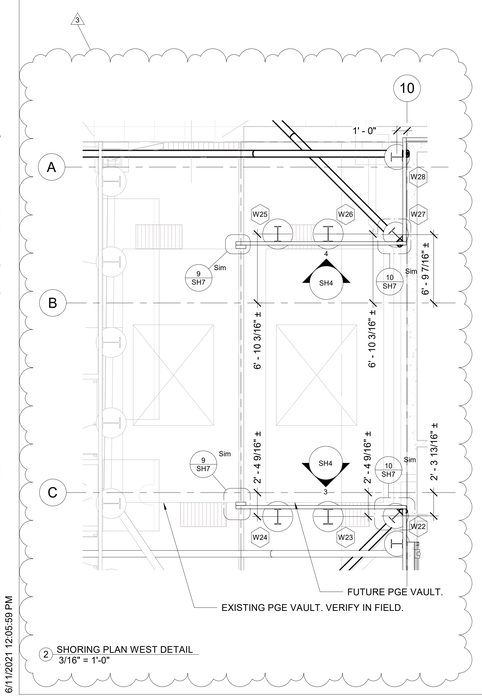

2 SHORING PLAN WEST DETAIL
3/16" = 1'-0"

1 SHORING OVERALL PLAN
1" = 10'-0"

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FREEWELL

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1	ADDED WALES AND DRYWELLS.	2/8/21
2	PERMIT RESPONSE #1	6/14/21
3	ADDENDUM #2	6/14/21

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SHORING PLAN

SH2

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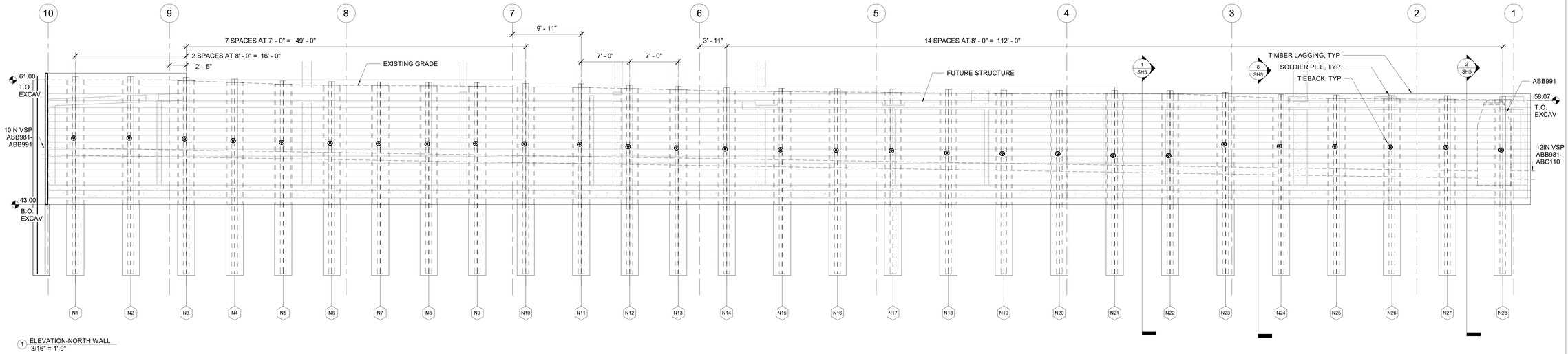
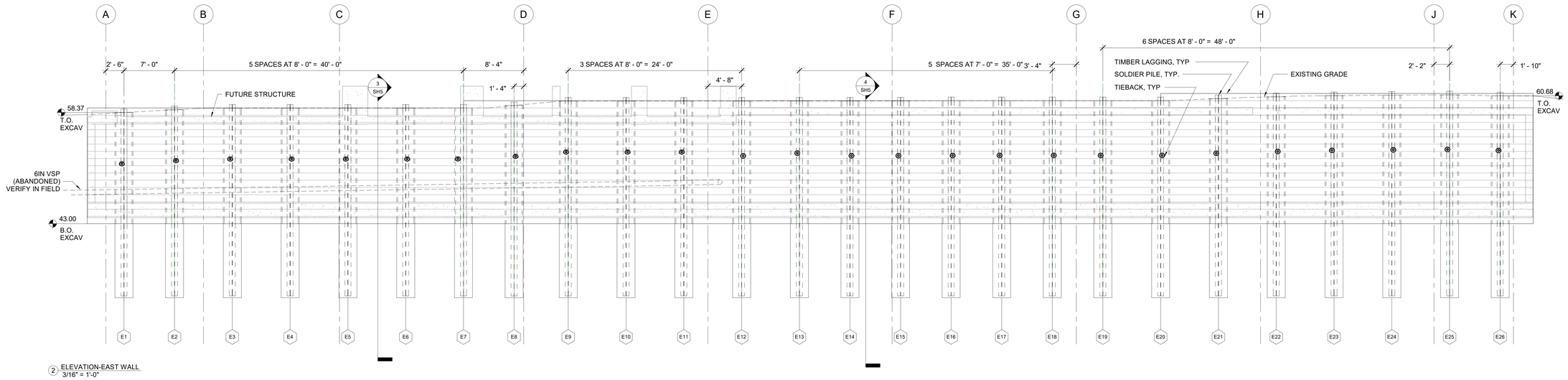


1 ELEVATION-NORTH WALL
3/16" = 1'-0"



2 ELEVATION-EAST WALL
3/16" = 1'-0"

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SHORING ELEVATIONS

SH3

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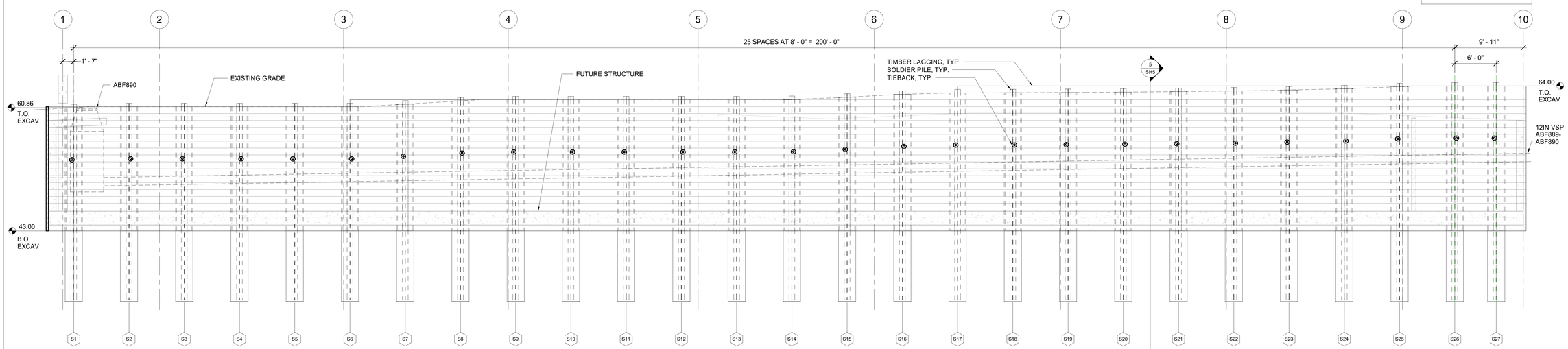
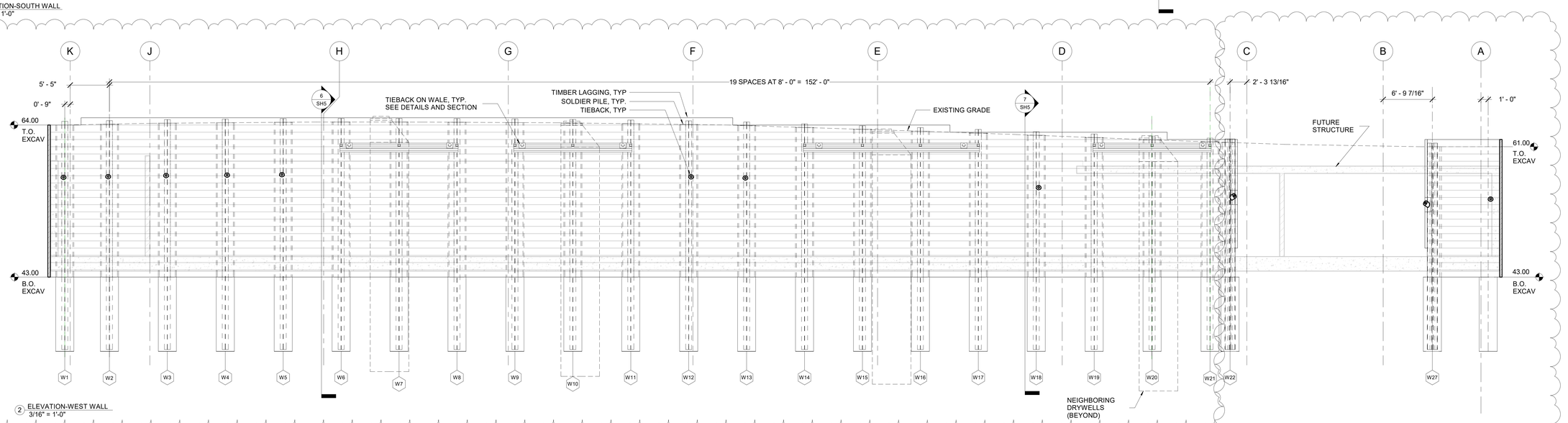
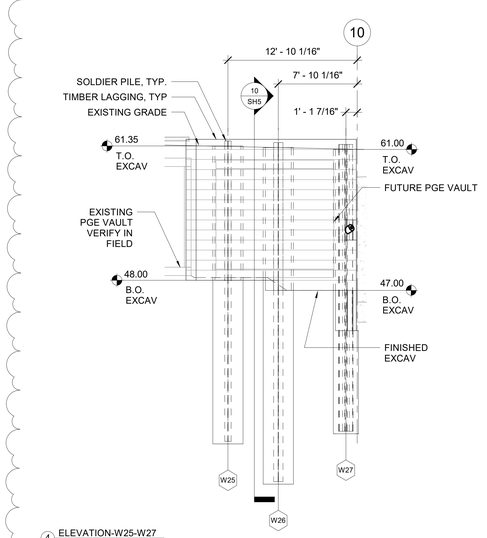


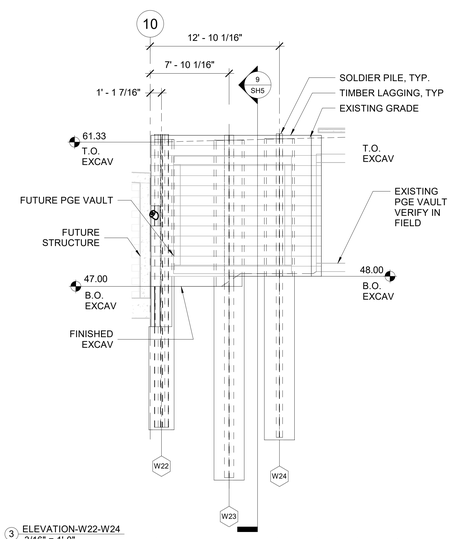
1 ELEVATION-SOUTH WALL
3/16" = 1'-0"



2 ELEVATION-WEST WALL
3/16" = 1'-0"



4 ELEVATION-W25-W27
3/16" = 1'-0"



3 ELEVATION-W22-W24
3/16" = 1'-0"

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FREEWELL

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1	ADDED WALES AND DRYWELLS.	2/8/21
2	PERMIT RESPONSE #1	6/14/21
3	ADDENDUM #2	6/14/21

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PROJECT NO.: S20050

SHORING ELEVATIONS

SH4

PERMIT SET

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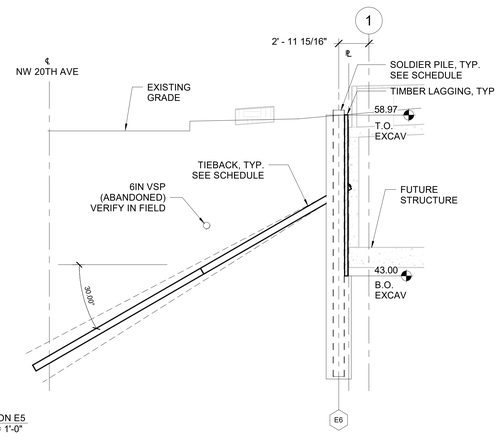
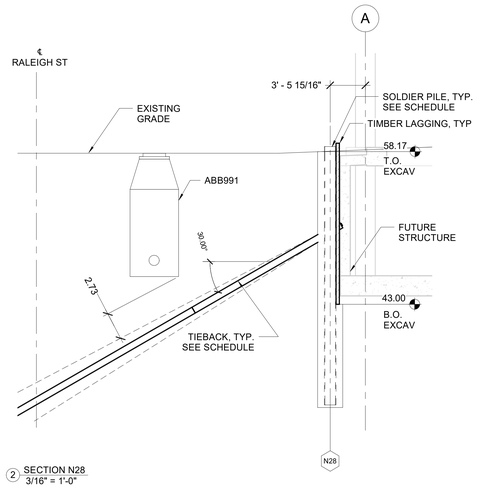
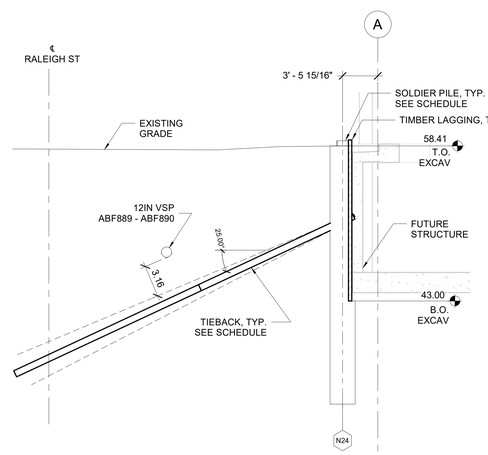


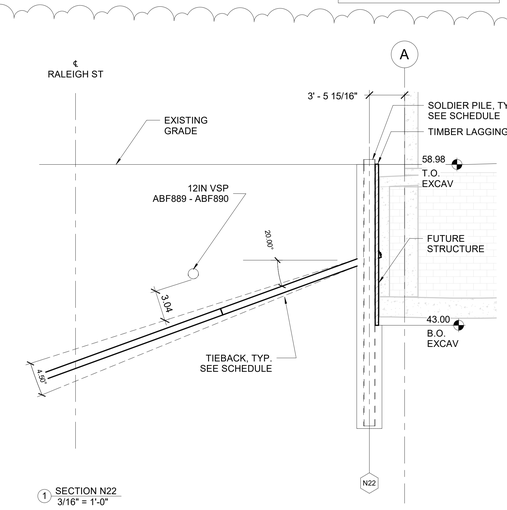
3 SECTION E5
3/16" = 1'-0"



2 SECTION N28
3/16" = 1'-0"



8 SECTION N24
3/16" = 1'-0"

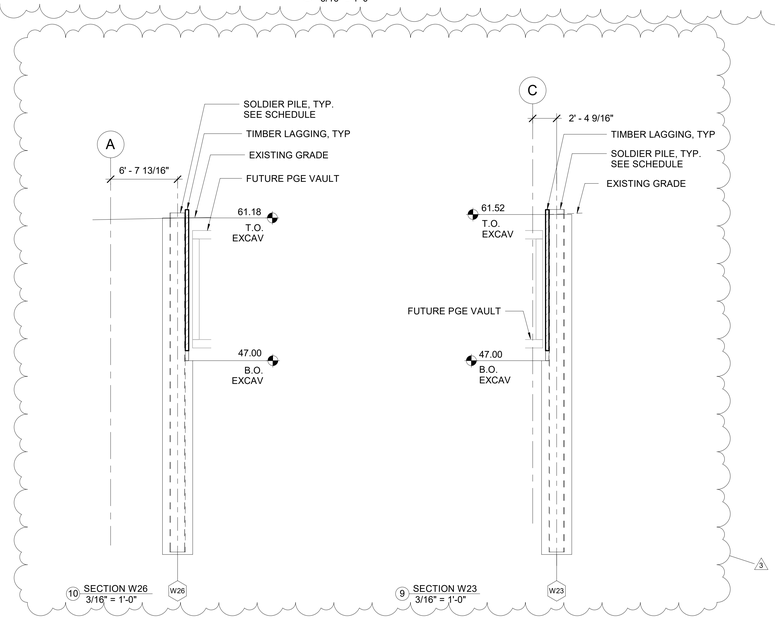


1 SECTION N22
3/16" = 1'-0"

6 SECTION W6
3/16" = 1'-0"

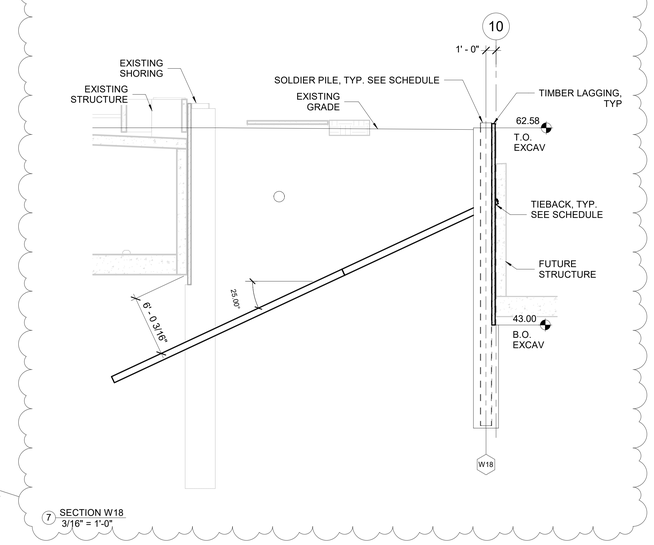
5 SECTION S21
3/16" = 1'-0"

4 SECTION E15
3/16" = 1'-0"



10 SECTION W26
3/16" = 1'-0"

9 SECTION W23
3/16" = 1'-0"



7 SECTION W18
3/16" = 1'-0"

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PRELIMINARY
NOT FOR CONSTRUCTION

FREEWELL

BLOCK 291 EAST
NW 20TH AVE AND NW RALEIGH
ST
PORTLAND, OR

REVISIONS

1	ADDED WALES AND DRYWELLS.	2/8/21
2	PERMIT RESPONSE #1	6/14/21
3	ADDENDUM #2	6/14/21

DRAWN BY: N/A
CHECKED BY: DAW
DATE: 15 FEBRUARY 2021
PROJECT NO: S20050

SHORING SECTIONS

SH5

PERMIT SET

W:\Project Server\20\XX Pacific Structural Solutions\2020 Jobs\S20050 Freewell Block 291 East (20342)\CAD\S20050 Freewell Shoring.rvt
6/11/2021 12:06:15 PM

Pile	Size	Top of Pile	Top of Excavation	Bottom of Pile	Pile Embedment	Total Pile Length	Tieback Elevation	Tieback Angle	Tieback Design Load: DL	Proof Test Load: 133% DL	Verification Test Load: 150% DL	# of Strand	# of Test Strand	Unbonded Length	Bond Length	Tail Length	Total Anchor Length
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(degrees)	(kip)	(kip)	(kip)			(ft)	(ft)	(ft)	(ft)
N1	W14X61	61.50	61.00	33	10	28.50	52.00	20	66	88	99	2	3	15	23	4	41
N2	W14X61	61.50	61.00	33	10	28.50	52.00	20	66	88	99	2	3	15	23	4	41
N3	W14X61	61.39	60.89	33	10	28.39	51.89	20	66	88	99	2	3	15	23	4	41
N4	W14X61	61.14	60.64	33	10	28.14	51.64	20	66	88	99	2	3	15	23	4	41
N5	W14X61	60.89	60.39	33	10	27.89	51.39	20	66	88	99	2	3	15	23	4	41
N6	W14X61	60.76	60.26	33	10	27.76	51.26	20	66	88	99	2	3	15	23	4	41
N7	W14X61	60.71	60.21	33	10	27.71	51.21	20	66	88	99	2	3	15	23	4	41
N8	W14X61	60.66	60.16	33	10	27.66	51.16	20	66	88	99	2	3	15	22	4	41
N9	W14X61	60.61	60.11	33	10	27.61	51.21	20	54	72	81	2	2	15	22	4	38
N10	W14X61	60.50	60.00	33	10	27.50	51.16	20	54	72	81	2	2	15	22	4	38
N11	W14X61	60.44	59.94	33	10	27.44	51.11	20	54	72	81	2	2	15	22	4	38
N12	W14X61	60.26	59.76	33	10	27.26	50.76	20	54	72	81	2	2	15	22	4	38
N13	W14X61	60.08	59.58	33	10	27.08	50.58	20	54	72	81	2	2	15	22	4	38
N14	W14X61	59.91	59.41	33	10	26.91	50.41	20	54	72	81	2	2	15	22	4	38
N15	W14X61	59.82	59.32	33	10	26.82	50.32	20	54	72	81	2	2	15	22	4	38
N16	W14X61	59.76	59.26	33	10	26.76	50.26	20	54	72	81	2	2	15	22	4	38
N17	W14X61	59.69	59.19	33	10	26.69	50.19	20	54	72	81	2	2	15	22	4	38
N18	W14X61	59.61	59.11	33	10	26.61	49.86	20	50	67	75	2	2	15	20	4	36
N19	W14X61	59.53	59.03	33	10	26.53	49.78	20	50	67	75	2	2	15	20	4	36
N20	W14X61	59.50	59.00	33	10	26.50	49.75	20	50	67	75	2	2	15	20	4	36
N21	W14X61	59.50	59.00	33	10	26.50	49.50	20	50	67	75	2	2	15	20	4	36
N22	W14X61	59.48	58.98	33	10	26.48	49.48	20	50	67	75	2	2	15	20	4	36
N23	W14X61	59.21	58.71	33	10	26.21	50.96	25	52	69	78	2	2	15	20	4	37
N24	W14X61	58.91	58.41	33	10	25.91	50.66	25	52	69	78	2	2	15	20	4	37
N25	W14X61	58.85	58.35	33	10	25.85	50.60	25	52	69	78	2	2	15	20	4	37
N26	W14X61	58.78	58.28	33	10	25.78	50.53	25	52	69	78	2	2	15	20	4	37
N27	W14X61	58.73	58.23	33	10	25.73	50.48	25	52	69	78	2	2	15	20	4	37
N28	W14X61	58.67	58.17	33	10	25.67	49.92	30	54	72	81	2	2	15	21	4	38
E1	W14X61	58.87	58.37	33	10	25.87	50.31	30	50	67	75	2	2	15	19	4	36
E2	W14X61	59.25	58.75	33	10	26.25	50.75	30	50	67	75	2	2	15	19	4	36
E3	W14X61	59.47	58.97	33	10	26.47	50.97	30	50	67	75	2	2	15	19	4	36
E4	W14X61	59.47	58.97	33	10	26.47	50.97	30	50	67	75	2	2	15	19	4	36
E5	W14X61	59.47	58.97	33	10	26.47	50.97	30	50	67	75	2	2	15	19	4	36
E6	W14X61	59.47	58.97	33	10	26.47	50.97	30	50	67	75	2	2	15	19	4	36
E7	W14X61	59.49	58.99	33	10	26.49	50.99	30	54	72	81	2	2	15	19	4	38
E8	W14X61	59.84	59.34	33	10	26.84	51.34	30	54	72	81	2	2	15	20	4	38
E9	W14X61	60.44	59.94	33	10	27.44	51.94	30	53	70	79	2	2	15	20	4	37
E10	W14X61	60.44	59.94	33	10	27.44	51.94	30	53	70	79	2	2	15	20	4	37
E11	W14X61	60.44	59.94	33	10	27.44	51.94	30	53	70	79	2	2	15	20	4	37
E12	W14X61	60.44	59.94	33	10	27.44	51.94	15	53	70	79	2	2	15	18	4	37
E13	W14X61	60.46	59.96	33	10	27.46	52.32	15	53	70	79	2	2	15	18	4	37
E14	W14X61	60.46	59.96	33	10	27.46	51.96	15	53	70	79	2	2	15	18	4	37
E15	W14X61	60.48	59.98	33	10	27.48	51.96	15	53	70	79	2	2	15	18	4	37
E16	W14X61	60.50	60.00	33	10	27.50	51.98	15	53	70	79	2	2	15	18	4	37
E17	W14X61	60.50	60.00	33	10	27.50	52.00	15	53	70	79	2	2	15	18	4	37
E18	W14X61	60.50	60.00	33	10	27.50	52.00	15	53	70	79	2	2	15	18	4	37
E19	W14X61	60.50	60.00	33	10	27.50	52.00	15	53	70	79	2	2	15	18	4	37
E20	W14X61	60.50	60.00	33	10	27.50	52.00	15	53	70	79	2	2	15	18	4	37
E21	W14X61	60.79	60.29	33	10	27.79	52.29	15	64	85	96	2	3	15	22	4	41
E22	W14X61	61.04	60.54	33	10	28.04	52.54	15	64	85	96	2	3	15	22	4	41
E23	W14X61	61.20	60.70	33	10	28.20	52.70	15	64	85	96	2	3	15	22	4	41
E24	W14X61	61.27	60.77	33	10	28.27	52.77	15	64	85	96	2	3	15	22	4	41
E25	W14X61	61.32	60.82	33	10	28.32	52.82	15	64	85	96	2	3	15	22	4	41
E26	W14X61	61.18	60.68	33	10	28.18	52.68	15	64	85	96	2	3	15	22	4	41
S1	W14X61	61.36	60.86	33	10	28.36	52.86	15	64	85	96	2	3	15	22	4	41
S2	W14X61	61.50	61.00	33	10	28.50	53.00	15	64	85	96	2	3	15	22	4	41
S3	W14X61	61.50	61.00	33	10	28.50	53.00	15	64	85	96	2	3	15	22	4	41
S4	W14X61	61.50	61.00	33	10	28.50	53.00	15	64	85	96	2	3	15	22	4	41
S5	W14X61	61.50	61.00	33	10	28.50	53.00	15	64	85	96	2	3	15	22	4	41
S6	W14X61	61.50	61.00	33	10	28.50	53.00	15	64	85	96	2	3	15	22	4	41
S7	W14X61	61.86	61.36	33	10	28.86	53.36	15	69	92	104	2	3	15	24	4	43
S8	W14X61	62.34	61.84	33	10	29.34	53.84	15	69	92	104	2	3	15	24	4	43
S9	W14X61	62.50	62.00	33	10	29.50	54.00	15	69	92	104	2	3	15	24	4	43
S10	W14X61	62.50	62.00	33	10	29.50	54.00	15	69	92	104	2	3	15	24	4	43
S11	W14X61	62.50	62.00	33	10	29.50	54.00	15	69	92	104	2	3	15	24	4	43
S12	W14X61	62.50	62.00	33	10	29.50	54.00	15	69	92	104	2	3	15	24	4	43
S13	W14X61	62.50	62.00	33	10	29.50	54.00	15	69	92	104	2	3	15	24	4	43
S14	W14X61	62.54	62.04	33	10	29.54	54.04	15	69	92	104	2	3	15	24	4	43
S15	W14X61	62.88	62.38	33	10	29.88	54.38	15	74	98	110	3	3	15	25	4	44
S16	W14X61	63.29	62.79	33	10	30.29	54.79	15	74	98	110	3	3	15	25	4	44
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S21	W14X61	63.69	63.19	33	10	30.69	55.19	15	79	105	118	3	3	15	27	4	46
S22	W14X61	63.78	63.28	33	10	30.78	55.28	15	79	105	118	3	3	15	27	4	46
S23	W14X61	63.92	63.42	33	10	30.92	55.42	15	79	105	118	3	3	15	27	4	46
S24	W14X61	64.10	63.60	33	10	31.10	55.60	15	79	105	118	3	3	15	27	4	46
S25	W14X61	64.40	63.90	33	10	31.40	55.90	15	79	105	118	3	3	15	27	4	46
S26	W14X61	64.50	64.00	33	10	31.50	56.00	15	79	105	118	3	3	15	27	4	46
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W1	W14X61	64.50	64.00	33	10	31.50	56.00	25	84	112	126	3	3	15	28	4	47
W2	W14X61	64.60	64.10	33	10	31.60	56.10	25	84	112	126	3	3	15	28	4	47
W3	W14X61	64.75	64.25	33	10	31.75	56.25	25	90	120	136	3	3	15	31	4	50
W4	W14X61	64.81	64.31	33	10	31.81	56.31	25	90	120	136	3	3	15	31	4	50
W5	W14X61	64.87	64.37	33	10	31.87	56.37	25	90	120	136	3	3	15	31	4	50
W6	W14X61	64.91	64.41	33	10	31.91											
							60.33	30	119.5	159	179	4	4	15	40	4	59
W7	W14X61	64.90	64.40	33	10	31.90											
							60.33	30	119.5	159	179	4	4	15	40	4	59
W8	W14X61	64.88	64.38	33	10	31.88											
W9	W14X61	64.84	64.34	33	10	31.84											
							60.33	30	119.5	159	179	4	4	15	40	4	59
W10	W14X61	64.78	64.28	33	10	31.78											
							60.33	30	119.5	159	179	4	4	15	40	4	59
W11	W14X61	64.68	64.18	33	10	31.68											
W12	W14X61	64.57	64.07	33	10	31.57	56.07	25	84	112	126	3	3	15	28	4	47
W13	W14X61	64.42	63.92	33	10	31.42	55.92	25	84	112	126	3	3	15	28	4	47
W14	W14X61	64.16	63.66	33	10	31.16											
							60.33	30	159	212	239	5	6	15	54	4	73
W15	W14X61	63.90	63.40	33	10	30.90											
W16	W14X61	63.65	63.15	33	10	30.65											
							60.33	30	159	212	239	5	6	15	54	4	73
W17	W14X61	63.38	62.88	33	10	30.38											
W18	W14X61	63.08	62.58	33	10	30.08	54.58	25	74	98	111	3	3	15	25	4	44
W19	W14X61	62.77	62.27	33	10	29.77											
							60.33	30	120	159	179	4	4	15	40	4	59
W20	W14X61	62.46	61.96	33	10	29.46											
							60.33	30	120	159	179	4	4	15	40	4	59
W21	W14X61	62.18	61.68	33	10	29.18											
W22	W14X61	62.09	61.59	33	10	29.09	53.46	25	68	91	103	2	3	15	25	4	44
W23	W18X86	62.02	61.52	28	19	34.02											
W24	W18X65	62.17	61.67	32	16	30.17											
W25	W18X65	61.85	61.35	32	16	29.85											
W26	W18X86	61.68	61.18	28	19	33.68											
W27	W14X61	61.50	61.00	33	10	28.50	52.46	25	68	91	103	2	3	15	23	4	42
W28	W14X61	61.50	61.00	33	10	28.50	53.00	25	68	91	103	2	3	15	23	4	42

1 PILE SCHEDULE
NTS

2

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FREEWELL

BLOCK 291 EAST
NW 20TH AVE AND NW RALEIGH
ST
PORTLAND, OR

REVISIONS

1	ADDED WALES AND DRYWELLS.	2/8/21
2	PERMIT RESPONSE #1	6/14/21

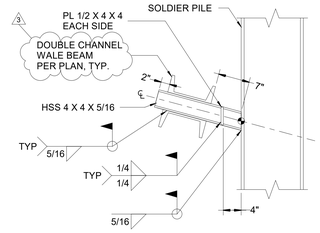
DRAWN BY: N/A
CHECKED BY: DAW
DATE: 15 FEBRUARY 2021
PROJECT NO: S20050

PILE SCHEDULE

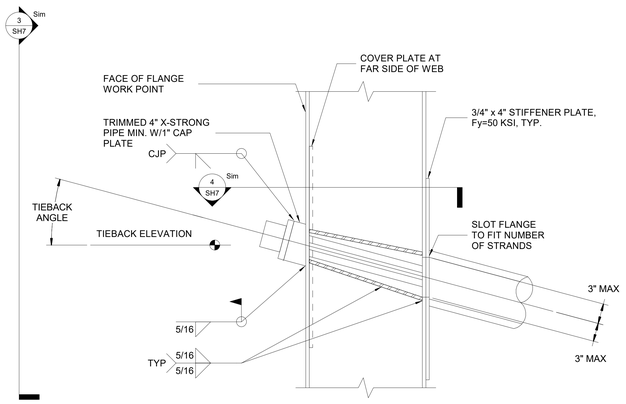
SH6

PERMIT SET

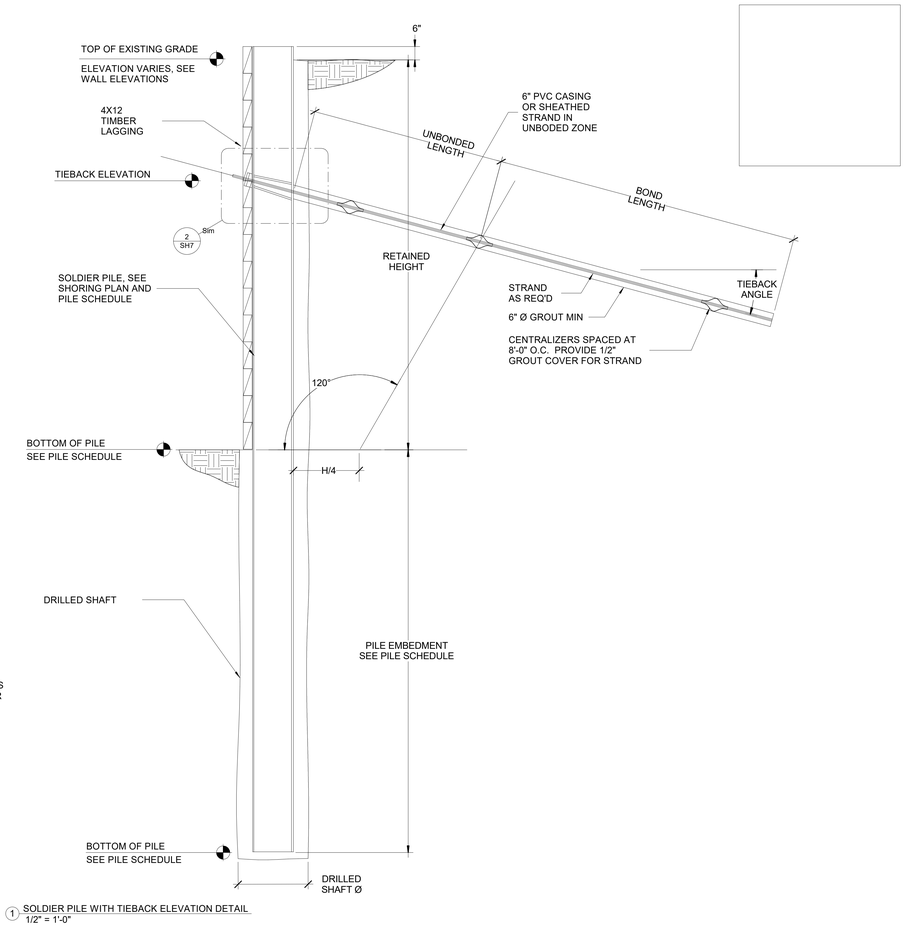
W:\Project Server\20XX Pacific Structural Solutions\2020 Jobs\S20050 Freewell Block 291 East (20342)\CAD\S20050 Freewell Shoring.rvt
6/11/2021 12:06:16 PM



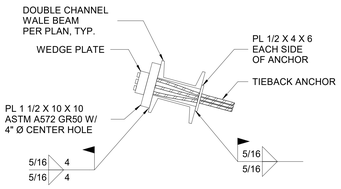
5 WALE BEAM CONNECTION DETAIL
1" = 1'-0"



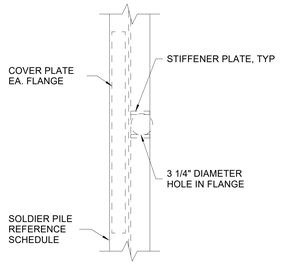
2 TYPICAL TIEBACK DETAIL
1 1/2" = 1'-0"



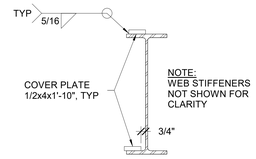
1 SOLDIER PILE WITH TIEBACK ELEVATION DETAIL
1/2" = 1'-0"



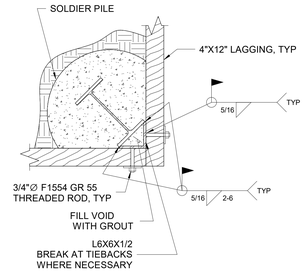
6 TIEBACK ANCHOR CONNECTION DETAIL
1" = 1'-0"



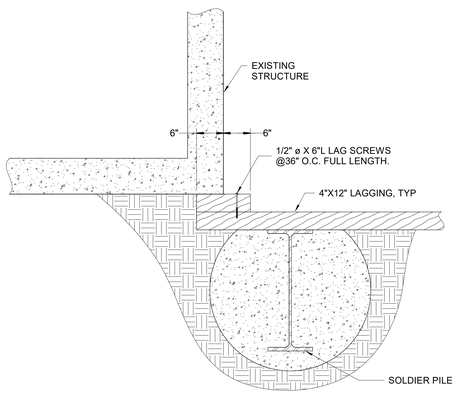
3 TYPICAL TIEBACK ELEVATION
1 1/2" = 1'-0"



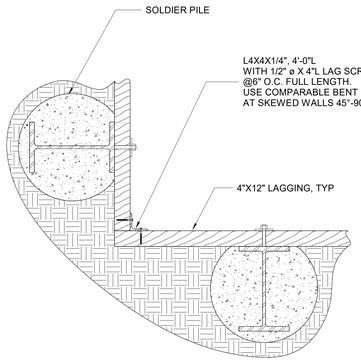
4 TYPICAL TIEBACK SECTION
1 1/2" = 1'-0"



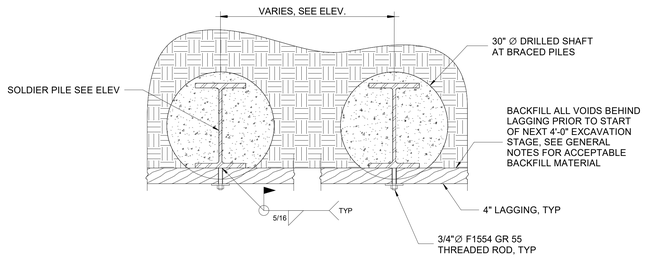
10 SOLDIER PILE OUTSIDE CORNER DETAIL
NTS



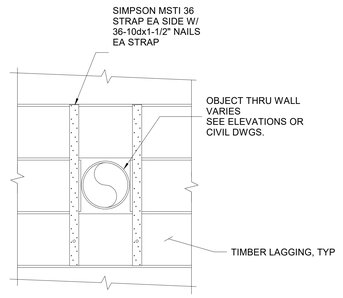
9 LAGGING SHIM DETAIL
NTS



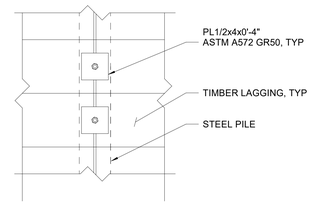
8 INSIDE CORNER CONNECTION DETAIL
NTS



7 SOLDIER PILE PLAN DETAIL
1" = 1'-0"



12 WALL PENETRATION DETAIL
NTS



11 SOLDIER PILE LAGGING DETAIL
1" = 1'-0"

PACIFIC FOUNDATION
PACIFIC FOUNDATION, INC
1400 COLUMBIA STREET
VANCOUVER, WA 98660
P: 360.200.6608
WWW.PACIFIC-FOUNDATION.COM
PACIFIC STRUCTURAL SOLUTIONS
PACIFIC STRUCTURAL SOLUTIONS, LLC
1400 COLUMBIA STREET
VANCOUVER, WA 98660
P: 360.356.0306

FREEWELL

BLOCK 291 EAST
NW 20TH AVE AND NW RALEIGH ST
PORTLAND, OR

REVISIONS

1	ADDED WALES AND DRYWELLS.	2/8/21
3	ADDENDUM #2	6/14/21

DRAWN BY: N/A
CHECKED BY: DAW
DATE: 15 FEBRUARY 2021
PROJECT NO: S20050

DETAILS

SH7

PERMIT SET

W:\Project Server\20XX Pacific Structural Solutions\2020 Jobs\S20050 Freewell Block 291 East (20342)\CAD\S20050 Freewell Shoring.rvt
6/11/2021 12:06:17 PM

APPENDIX G

APPENDIX G

CHEMICAL ANALYTICAL PROGRAM

GENERAL

Chain-of-custody procedures were followed during handling and transport of the soil samples to the analytical laboratory. The laboratory holds the soil samples in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference, and laboratory QC records are included in this appendix. The analytical results are also summarized in the tables of this report.

REVIEW OF ANALYTICAL DATA

The analytical laboratory maintains an internal quality assurance program consisting of a combination of the following:

Blanks: Blanks are laboratory-prepared water samples that are free of contaminants. The blanks are carried through the analysis procedure along with the field samples to document that contaminants were not introduced to the samples during sample handling and analysis.

Surrogate Recoveries: Surrogates are organic compounds that are similar in nature to the analytes of concern but are not normally found in nature. The surrogates are added to QC and field samples prior to analysis. The percent recovery of the surrogate is calculated to demonstrate acceptable method performance.

Duplicates: Duplicates are obtained by splitting a sample into two parts. The two separate parts are carried through the analyses. The analytical results are then compared by calculating the RPD between the samples.

MS/MSD Recoveries: An MS sample is a sample that has been split into a second portion. The MSD is obtained by further splitting the MS sample. A known concentration of the analyte of interest is added to the MS and MSD samples. The analytical results for both samples are then compared for RPD and percent recovery to demonstrate acceptable method performance.

BS/BSD Recoveries: BS and BSD samples are obtained and analyzed in the same procedure as the MS/MSD samples; however, the laboratory blank sample is used to obtain the BS/BSD samples. The percent recovery and RPD of the known concentration of analyte of interest added to the BS/BSD sample is calculated after chemical analyses to demonstrate acceptable method performance.

SUMMARY OF ANALYTICAL DATA REVIEW

NV5 reviewed the attached analytical data reports for data quality exceptions and deviations from acceptable method performance criteria. The reported concentrations of select analytes are estimates between the laboratory's MDLs (the lowest level the instrument can detect) and the MRLs (the lowest concentrations that can be accurately quantified. In addition, follow-up

analyses for select samples was conducted outside the laboratory recommended hold time. Based on our review of the analytical reports, it is our opinion that the analytical data are acceptable for their intended use.

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

ANALYTICAL REPORT

Monday, March 14, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2B0889 - Freewell - CairnPac-14-08

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 A2B0889, which was received by the laboratory on 2/25/2022 at 3:50:00PM.

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)

Cooler #1	2.8 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

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWN-1(2)	A2B0889-01	Soil	02/25/22 13:31	02/25/22 15:50
SWN-2(2)	A2B0889-02	Soil	02/25/22 13:35	02/25/22 15:50
SWN-3(2)	A2B0889-03	Soil	02/25/22 13:39	02/25/22 15:50
SWE-1(6)	A2B0889-04	Soil	02/24/22 14:01	02/25/22 15:50
SWE-2(6)	A2B0889-05	Soil	02/24/22 14:07	02/25/22 15:50
SWE-3(6)	A2B0889-06	Soil	02/24/22 14:11	02/25/22 15:50

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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
SWN-1(2) (A2B0889-01)				**Matrix: Soil**		**Batch: 22C0147**		
Diesel	**866**	---	27.4	mg/kg dry	1	03/04/22 04:58	NWTPH-Dx	
Oil	**151**	---	54.8	mg/kg dry	1	03/04/22 04:58	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 72 %*		*Limits: 50-150 %*	*1*	*03/04/22 04:58*	*NWTPH-Dx*	
SWN-2(2) (A2B0889-02)				**Matrix: Soil**		**Batch: 22C0147**		
Diesel	ND	---	25.4	mg/kg dry	1	03/04/22 05:20	NWTPH-Dx	
Oil	ND	---	50.8	mg/kg dry	1	03/04/22 05:20	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 54 %*		*Limits: 50-150 %*	*1*	*03/04/22 05:20*	*NWTPH-Dx*	
SWN-3(2) (A2B0889-03)				**Matrix: Soil**		**Batch: 22C0147**		
Diesel	ND	---	25.0	mg/kg dry	1	03/04/22 05:43	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/04/22 05:43	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 60 %*		*Limits: 50-150 %*	*1*	*03/04/22 05:43*	*NWTPH-Dx*	
SWE-1(6) (A2B0889-04)				**Matrix: Soil**		**Batch: 22C0147**		
Diesel	**247**	---	26.9	mg/kg dry	1	03/04/22 06:05	NWTPH-Dx	
Oil	ND	---	53.8	mg/kg dry	1	03/04/22 06:05	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 78 %*		*Limits: 50-150 %*	*1*	*03/04/22 06:05*	*NWTPH-Dx*	
SWE-2(6) (A2B0889-05)				**Matrix: Soil**		**Batch: 22C0147**		
Diesel	ND	---	25.0	mg/kg dry	1	03/04/22 06:27	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/04/22 06:27	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 60 %*		*Limits: 50-150 %*	*1*	*03/04/22 06:27*	*NWTPH-Dx*	
SWE-3(6) (A2B0889-06)				**Matrix: Soil**		**Batch: 22B0971**		
Diesel	ND	---	28.0	mg/kg dry	1	02/28/22 10:02	NWTPH-Dx	
Oil	ND	---	56.0	mg/kg dry	1	02/28/22 10:02	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*02/28/22 10:02*	*NWTPH-Dx*	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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
SWN-1(2) (A2B0889-01)				**Matrix: Soil**		**Batch: 22B1012**		
Gasoline Range Organics	**221**	---	79.2	mg/kg dry	500	03/01/22 09:45	NWTPH-Gx (MS)	**F-09**
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*105 %*	*Limits: 50-150 %*	*1*	*03/01/22 09:45*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*03/01/22 09:45*	*NWTPH-Gx (MS)*	
SWN-2(2) (A2B0889-02)				**Matrix: Soil**		**Batch: 22B1012**		
Gasoline Range Organics	ND	---	6.07	mg/kg dry	50	03/01/22 06:09	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*110 %*	*Limits: 50-150 %*	*1*	*03/01/22 06:09*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*	*1*	*03/01/22 06:09*	*NWTPH-Gx (MS)*	
SWN-3(2) (A2B0889-03)				**Matrix: Soil**		**Batch: 22B1012**		
Gasoline Range Organics	ND	---	6.36	mg/kg dry	50	03/01/22 06:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*110 %*	*Limits: 50-150 %*	*1*	*03/01/22 06:36*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*107 %*	*50-150 %*	*1*	*03/01/22 06:36*	*NWTPH-Gx (MS)*	
SWE-1(6) (A2B0889-04RE1)				**Matrix: Soil**		**Batch: 22C0196**		
Gasoline Range Organics	**56.1**	---	7.93	mg/kg dry	50	03/04/22 14:23	NWTPH-Gx (MS)	**F-09**
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*118 %*	*Limits: 50-150 %*	*1*	*03/04/22 14:23*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/04/22 14:23*	*NWTPH-Gx (MS)*	
SWE-2(6) (A2B0889-05)				**Matrix: Soil**		**Batch: 22B1012**		
Gasoline Range Organics	ND	---	8.64	mg/kg dry	50	03/01/22 07:03	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*111 %*	*Limits: 50-150 %*	*1*	*03/01/22 07:03*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*	*1*	*03/01/22 07:03*	*NWTPH-Gx (MS)*	
SWE-3(6) (A2B0889-06)				**Matrix: Soil**		**Batch: 22B1012**		
Gasoline Range Organics	ND	---	7.73	mg/kg dry	50	03/01/22 07:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*107 %*	*Limits: 50-150 %*	*1*	*03/01/22 07:30*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*03/01/22 07:30*	*NWTPH-Gx (MS)*	

Apex Laboratories

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-1(2) (A2B0889-01)				**Matrix: Soil**		**Batch: 22B1012**		**R-04**
Benzene	ND	---	0.158	mg/kg dry	500	03/01/22 09:45	5035A/8260D	
Toluene	ND	---	0.792	mg/kg dry	500	03/01/22 09:45	5035A/8260D	
Ethylbenzene	ND	---	0.396	mg/kg dry	500	03/01/22 09:45	5035A/8260D	
Xylenes, total	ND	---	1.19	mg/kg dry	500	03/01/22 09:45	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*03/01/22 09:45*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*03/01/22 09:45*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*94 %*	*79-120 %*	*1*	*03/01/22 09:45*	*5035A/8260D*	
SWE-1(6) (A2B0889-04RE1)				**Matrix: Soil**		**Batch: 22C0196**		
Benzene	ND	---	0.0159	mg/kg dry	50	03/04/22 14:23	5035A/8260D	
Toluene	ND	---	0.0793	mg/kg dry	50	03/04/22 14:23	5035A/8260D	
Ethylbenzene	ND	---	0.0396	mg/kg dry	50	03/04/22 14:23	5035A/8260D	
Xylenes, total	ND	---	0.119	mg/kg dry	50	03/04/22 14:23	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*03/04/22 14:23*	*5035A/8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*03/04/22 14:23*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*95 %*	*79-120 %*	*1*	*03/04/22 14:23*	*5035A/8260D*	

Apex Laboratories

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-1(2) (A2B0889-01)				**Matrix: Soil**		**Batch: 22C0379**		
Acenaphthene	ND	---	0.186	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Anthracene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Chrysene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Fluoranthene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Fluorene	**0.360**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	**Q-42**
Indeno(1,2,3-cd)pyrene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
1-Methylnaphthalene	**1.66**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	**Q-42**
2-Methylnaphthalene	**0.262**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	**Q-42**
Naphthalene	ND	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Phenanthrene	**0.826**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	**Q-42**
Pyrene	**0.0557**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	
Dibenzofuran	**0.174**	---	0.0546	mg/kg dry	4	03/10/22 10:12	EPA 8270E SIM	**Q-42**
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*80 %*	*Limits: 44-120 %*	*4*	*03/10/22 10:12*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*4*	*03/10/22 10:12*	*EPA 8270E SIM*	
SWE-1(6) (A2B0889-04)				**Matrix: Soil**		**Batch: 22C0379**		
Acenaphthene	**0.383**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Acenaphthylene	**0.215**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Anthracene	**3.83**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Benz(a)anthracene	**13.9**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Benzo(a)pyrene	**14.7**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Benzo(b)fluoranthene	**13.7**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	**M-05**
Benzo(k)fluoranthene	**5.26**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	**M-05**
Benzo(g,h,i)perylene	**6.48**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Chrysene	**18.6**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Dibenz(a,h)anthracene	**1.84**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	

Apex Laboratories

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWE-1(6) (A2B0889-04)				**Matrix: Soil**		**Batch: 22C0379**		
Fluoranthene	**17.9**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Fluorene	**0.713**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**7.14**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
1-Methylnaphthalene	**0.105**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
2-Methylnaphthalene	**0.102**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Naphthalene	**0.322**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	**M-04**
Phenanthrene	**3.89**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Dibenzofuran	**0.108**	---	0.0562	mg/kg dry	4	03/11/22 17:24	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*71 %*	*Limits: 44-120 %*	*4*	*03/11/22 17:24*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*88 %*	*54-127 %*	*4*	*03/11/22 17:24*	*EPA 8270E SIM*	
SWE-1(6) (A2B0889-04RE1)				**Matrix: Soil**		**Batch: 22C0379**		
Pyrene	**27.3**	---	0.562	mg/kg dry	40	03/11/22 19:55	EPA 8270E SIM	

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-1(2) (A2B0889-01)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**70.8**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	
SWN-2(2) (A2B0889-02)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**76.6**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	
SWN-3(2) (A2B0889-03)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**79.3**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	
SWE-1(6) (A2B0889-04)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**70.4**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	
SWE-2(6) (A2B0889-05)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**75.2**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	
SWE-3(6) (A2B0889-06)				**Matrix: Soil**		**Batch: 22C0027**		
% Solids	**70.3**	---	1.00	%	1	03/02/22 10:44	EPA 8000D	

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ORELAP ID: **OR100062**

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 22B0971 - EPA 3546 (Fuels)							**Soil**					
Blank (22B0971-BLK1)			Prepared: 02/28/22 06:00		Analyzed: 02/28/22 08:13							
NWTPH-Dx												
Diesel	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22B0971-BS1)			Prepared: 02/28/22 06:00		Analyzed: 02/28/22 08:33							
NWTPH-Dx												
Diesel	125	---	20.0	mg/kg wet	1	125	---	100	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22B0971-DUP1)			Prepared: 02/28/22 06:00		Analyzed: 02/28/22 09:14							
QC Source Sample: Non-SDG (A2B0873-01)												
Diesel	ND	---	28.6	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	57.1	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 91 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22B0971-DUP2)			Prepared: 02/28/22 06:00		Analyzed: 02/28/22 10:22							
QC Source Sample: SWE-3(6) (A2B0889-06)												
NWTPH-Dx												
Diesel	ND	---	27.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	55.3	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 71 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Batch 22C0147 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0147-BLK1)			Prepared: 03/03/22 11:37		Analyzed: 03/03/22 21:53							
NWTPH-Dx												
Diesel	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 78 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C0147-BS1)			Prepared: 03/03/22 11:37		Analyzed: 03/03/22 22:16							

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

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 22C0147 - EPA 3546 (Fuels)							**Soil**					
LCS (22C0147-BS1)			Prepared: 03/03/22 11:37 Analyzed: 03/03/22 22:16									
NWTPH-Dx												
Diesel	114	---	20.0	mg/kg wet	1	125	---	91	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0147-DUP1)			Prepared: 03/03/22 11:37 Analyzed: 03/03/22 23:00									**H-02**
QC Source Sample: Non-SDG (A1I0255-07)												
Diesel	ND	---	221	mg/kg dry	10	---	ND	---	---	---	30%	
Oil	**1300**	---	441	mg/kg dry	10	---	1300	---	---	0.6	30%	F-03
Mineral Oil	ND	---	441	mg/kg dry	10	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 78 %*	*Limits: 50-150 %*		*Dilution: 10x*							
Duplicate (22C0147-DUP2)			Prepared: 03/03/22 11:37 Analyzed: 03/04/22 07:34									
QC Source Sample: Non-SDG (A2C0178-01)												
Diesel	ND	---	446	mg/kg dry	20	---	ND	---	---	---	30%	
Oil	**1270**	---	892	mg/kg dry	20	---	983	---	---	25	30%	
Mineral Oil	ND	---	892	mg/kg dry	20	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: %*	*Limits: 50-150 %*		*Dilution: 20x*							S-01

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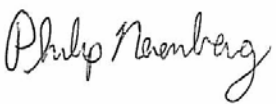

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 22B1012 - EPA 5035A							**Soil**					
Blank (22B1012-BLK1)			Prepared: 02/28/22 17:08 Analyzed: 03/01/22 01:12									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*119 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*104 %*		*50-150 %*			*"*				
LCS (22B1012-BS2)			Prepared: 02/28/22 17:08 Analyzed: 03/01/22 00:45									
NWTPH-Gx (MS)												
Gasoline Range Organics	23.9	---	5.00	mg/kg wet	50	25.0	---	96	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*107 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*104 %*		*50-150 %*			*"*				
Duplicate (22B1012-DUP1)			Prepared: 02/22/22 10:15 Analyzed: 03/01/22 02:06									
QC Source Sample: Non-SDG (A2B0882-02)												
Gasoline Range Organics	**252**	---	7.02	mg/kg dry	50	---	78.5	---	---	**105**	**30%**	Q-04
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*109 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*107 %*		*50-150 %*			*"*				
Duplicate (22B1012-DUP2)			Prepared: 02/23/22 10:00 Analyzed: 03/01/22 11:06									
QC Source Sample: Non-SDG (A2B0785-02)												
Gasoline Range Organics	**613**	---	65.1	mg/kg dry	500	---	623	---	---	2	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*111 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*107 %*		*50-150 %*			*"*				

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 22C0196 - EPA 5035A							**Soil**					
Blank (22C0196-BLK1)			Prepared: 03/04/22 07:00		Analyzed: 03/04/22 12:35							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*95 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				
LCS (22C0196-BS1)			Prepared: 03/04/22 07:00		Analyzed: 03/04/22 11:03							
NWTPH-Gx (MS)												
Gasoline Range Organics	24.2	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*			*"*				
Duplicate (22C0196-DUP1)			Prepared: 03/01/22 11:30		Analyzed: 03/04/22 17:58							
QC Source Sample: Non-SDG (A2C0196-01)												
Gasoline Range Organics	ND	---	7.14	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22C0196-DUP2)			Prepared: 03/01/22 14:00		Analyzed: 03/04/22 18:51							
QC Source Sample: Non-SDG (A2C0228-01)												
Gasoline Range Organics	**307**	---	7.74	mg/kg dry	50	---	335	---	---	9	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*155 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				S-08
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*			*"*				

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22B1012 - EPA 5035A							**Soil**					
Blank (22B1012-BLK1)			Prepared: 02/28/22 17:08 Analyzed: 03/01/22 01:12									
5035A/8260D												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
LCS (22B1012-BS1)			Prepared: 02/28/22 17:08 Analyzed: 03/01/22 00:18									
5035A/8260D												
Benzene	1.21	---	0.0100	mg/kg wet	50	1.00	---	**121**	**80-120%**	---	---	Q-56
Toluene	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Ethylbenzene	1.08	---	0.0250	mg/kg wet	50	1.00	---	108	80-120%	---	---	
Xylenes, total	3.20	---	0.0750	mg/kg wet	50	3.00	---	107	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Duplicate (22B1012-DUP1)			Prepared: 02/22/22 10:15 Analyzed: 03/01/22 02:06									
QC Source Sample: Non-SDG (A2B0882-02)												
Benzene	ND	---	0.0140	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0702	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0351	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	**0.105**	---	0.105	mg/kg dry	50	---	ND	---	---		30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*94 %*		*79-120 %*			*"*				
Duplicate (22B1012-DUP2)			Prepared: 02/23/22 10:00 Analyzed: 03/01/22 11:06									
QC Source Sample: Non-SDG (A2B0785-02)												
Benzene	ND	---	0.130	mg/kg dry	500	---	ND	---	---	---	30%	
Toluene	ND	---	0.651	mg/kg dry	500	---	ND	---	---	---	30%	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22B1012 - EPA 5035A							**Soil**					
Duplicate (22B1012-DUP2)			Prepared: 02/23/22 10:00 Analyzed: 03/01/22 11:06									
QC Source Sample: Non-SDG (A2B0785-02)												
Ethylbenzene	**0.475**	---	0.325	mg/kg dry	500	---	0.527	---	---	10	30%	
Xylenes, total	**3.17**	---	0.976	mg/kg dry	500	---	3.53	---	---	11	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*79-120 %*			*"*				
Matrix Spike (22B1012-MS1)			Prepared: 02/24/22 14:11 Analyzed: 03/01/22 11:33									
QC Source Sample: SWE-3(6) (A2B0889-06)												
5035A/8260D												
Benzene	1.92	---	0.0155	mg/kg dry	50	1.55	ND	**124**	**77-121%**	---	---	Q-54
Toluene	1.60	---	0.0773	mg/kg dry	50	1.55	ND	104	77-121%	---	---	
Ethylbenzene	1.62	---	0.0387	mg/kg dry	50	1.55	ND	105	76-122%	---	---	
Xylenes, total	4.81	---	0.116	mg/kg dry	50	4.64	ND	104	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*79-120 %*			*"*				

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C0196 - EPA 5035A							**Soil**					
Blank (22C0196-BLK1)			Prepared: 03/04/22 07:00 Analyzed: 03/04/22 12:35									
5035A/8260D												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*105 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*			*"*				
LCS (22C0196-BS2)			Prepared: 03/04/22 07:00 Analyzed: 03/04/22 11:42									
5035A/8260D												
Benzene	0.977	---	0.0100	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Toluene	0.971	---	0.0500	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Ethylbenzene	0.975	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Xylenes, total	2.89	---	0.0750	mg/kg wet	50	3.00	---	96	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*103 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*			*"*				
Duplicate (22C0196-DUP1)			Prepared: 03/01/22 11:30 Analyzed: 03/04/22 17:58									
QC Source Sample: Non-SDG (A2C0196-01)												
Benzene	ND	---	0.0143	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0714	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0357	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.107	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Duplicate (22C0196-DUP2)			Prepared: 03/01/22 14:00 Analyzed: 03/04/22 18:51									
QC Source Sample: Non-SDG (A2C0228-01)												
Benzene	ND	---	0.0155	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C0196 - EPA 5035A							**Soil**					
Duplicate (22C0196-DUP2)			Prepared: 03/01/22 14:00 Analyzed: 03/04/22 18:51									
QC Source Sample: Non-SDG (A2C0228-01)												
Ethylbenzene	**0.0461**	---	0.0387	mg/kg dry	50	---	0.0469	---	---	2	30%	
Xylenes, total	ND	---	0.116	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*			*"*				
Matrix Spike (22C0196-MS1)			Prepared: 03/03/22 12:30 Analyzed: 03/04/22 19:45									
QC Source Sample: Non-SDG (A2C0221-01)												
5035A/8260D												
Benzene	1.44	---	0.0128	mg/kg dry	50	1.29	ND	112	77-121%	---	---	
Toluene	1.33	---	0.0642	mg/kg dry	50	1.29	ND	103	77-121%	---	---	
Ethylbenzene	1.30	---	0.0321	mg/kg dry	50	1.29	ND	101	76-122%	---	---	
Xylenes, total	3.91	---	0.0963	mg/kg dry	50	3.86	ND	101	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 22C0379 - EPA 3546							**Soil**					
Blank (22C0379-BLK1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 09:22							
EPA 8270E SIM												
Acenaphthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 90 %*		*Limits: 44-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*102 %*		*54-127 %*			*"*				
LCS (22C0379-BS1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 09:47							
EPA 8270E SIM												
Acenaphthene	0.699	---	0.0100	mg/kg wet	1	0.800	---	87	40-123%	---	---	
Acenaphthylene	0.695	---	0.0100	mg/kg wet	1	0.800	---	87	32-132%	---	---	
Anthracene	0.695	---	0.0100	mg/kg wet	1	0.800	---	87	47-123%	---	---	
Benz(a)anthracene	0.712	---	0.0100	mg/kg wet	1	0.800	---	89	49-126%	---	---	
Benzo(a)pyrene	0.728	---	0.0100	mg/kg wet	1	0.800	---	91	45-129%	---	---	
Benzo(b)fluoranthene	0.728	---	0.0100	mg/kg wet	1	0.800	---	91	45-132%	---	---	
Benzo(k)fluoranthene	0.740	---	0.0100	mg/kg wet	1	0.800	---	92	47-132%	---	---	
Benzo(g,h,i)perylene	0.710	---	0.0100	mg/kg wet	1	0.800	---	89	43-134%	---	---	
Chrysene	0.691	---	0.0100	mg/kg wet	1	0.800	---	86	50-124%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

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 22C0379 - EPA 3546							Soil					
LCS (22C0379-BS1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 09:47							
Dibenz(a,h)anthracene	0.768	---	0.0100	mg/kg wet	1	0.800	---	96	45-134%	---	---	
Fluoranthene	0.745	---	0.0100	mg/kg wet	1	0.800	---	93	50-127%	---	---	
Fluorene	0.699	---	0.0100	mg/kg wet	1	0.800	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.690	---	0.0100	mg/kg wet	1	0.800	---	86	45-133%	---	---	
1-Methylnaphthalene	0.683	---	0.0100	mg/kg wet	1	0.800	---	85	40-120%	---	---	
2-Methylnaphthalene	0.643	---	0.0100	mg/kg wet	1	0.800	---	80	38-122%	---	---	
Naphthalene	0.716	---	0.0100	mg/kg wet	1	0.800	---	90	35-123%	---	---	
Phenanthrene	0.680	---	0.0100	mg/kg wet	1	0.800	---	85	50-121%	---	---	
Pyrene	0.744	---	0.0100	mg/kg wet	1	0.800	---	93	47-127%	---	---	
Dibenzofuran	0.698	---	0.0100	mg/kg wet	1	0.800	---	87	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 86 %*		*Limits: 44-120 %*				*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*				*"*			
Duplicate (22C0379-DUP1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 10:37							
QC Source Sample: SWN-1(2) (A2B0889-01)												
EPA 8270E SIM												
Acenaphthene	ND	---	0.0881	mg/kg dry	4	---	ND	---	---	---	30%	R-02
Acenaphthylene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Anthracene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Chrysene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Fluorene	**0.163**	---	0.0518	mg/kg dry	4	---	0.360	---	---	**76**	**30%**	Q-04
Indeno(1,2,3-cd)pyrene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
1-Methylnaphthalene	**0.690**	---	0.0518	mg/kg dry	4	---	1.66	---	---	**83**	**30%**	Q-04
2-Methylnaphthalene	**0.0705**	---	0.0518	mg/kg dry	4	---	0.262	---	---	**115**	**30%**	Q-04
Naphthalene	ND	---	0.0518	mg/kg dry	4	---	ND	---	---	---	30%	
Phenanthrene	**0.360**	---	0.0518	mg/kg dry	4	---	0.826	---	---	**79**	**30%**	Q-04
Pyrene	ND	---	0.0518	mg/kg dry	4	---	0.0557	---	---	***	**30%**	Q-05

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 22C0379 - EPA 3546							**Soil**					
Duplicate (22C0379-DUP1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 10:37							
QC Source Sample: SWN-1(2) (A2B0889-01)												
Dibenzofuran	**0.0774**	---	0.0518	mg/kg dry	4	---	0.174	---	---	**77**	**30%**	Q-04
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 62 %*		*Limits: 44-120 %*			*Dilution: 4x*				
p-Terphenyl-d14 (Surr)			*75 %*		*54-127 %*			*"*				
Matrix Spike (22C0379-MS1)			Prepared: 03/09/22 14:31		Analyzed: 03/10/22 11:27							
QC Source Sample: Non-SDG (A2C0395-12)												
EPA 8270E SIM												
Acenaphthene	0.756	---	0.0438	mg/kg dry	4	0.875	ND	86	40-123%	---	---	
Acenaphthylene	0.775	---	0.0438	mg/kg dry	4	0.875	ND	88	32-132%	---	---	
Anthracene	0.751	---	0.0438	mg/kg dry	4	0.875	ND	86	47-123%	---	---	
Benz(a)anthracene	0.760	---	0.0438	mg/kg dry	4	0.875	ND	87	49-126%	---	---	
Benzo(a)pyrene	0.749	---	0.0438	mg/kg dry	4	0.875	ND	86	45-129%	---	---	
Benzo(b)fluoranthene	0.758	---	0.0438	mg/kg dry	4	0.875	ND	87	45-132%	---	---	
Benzo(k)fluoranthene	0.743	---	0.0438	mg/kg dry	4	0.875	ND	85	47-132%	---	---	
Benzo(g,h,i)perylene	0.683	---	0.0438	mg/kg dry	4	0.875	ND	78	43-134%	---	---	
Chrysene	0.728	---	0.0438	mg/kg dry	4	0.875	ND	83	50-124%	---	---	
Dibenz(a,h)anthracene	0.769	---	0.0438	mg/kg dry	4	0.875	ND	88	45-134%	---	---	
Fluoranthene	0.758	---	0.0438	mg/kg dry	4	0.875	ND	87	50-127%	---	---	
Fluorene	0.750	---	0.0438	mg/kg dry	4	0.875	ND	86	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.675	---	0.0438	mg/kg dry	4	0.875	ND	77	45-133%	---	---	
1-Methylnaphthalene	0.717	---	0.0438	mg/kg dry	4	0.875	ND	82	40-120%	---	---	
2-Methylnaphthalene	0.696	---	0.0438	mg/kg dry	4	0.875	ND	79	38-122%	---	---	
Naphthalene	0.783	---	0.0438	mg/kg dry	4	0.875	ND	89	35-123%	---	---	
Phenanthrene	0.737	---	0.0438	mg/kg dry	4	0.875	ND	84	50-121%	---	---	
Pyrene	0.765	---	0.0438	mg/kg dry	4	0.875	0.0225	85	47-127%	---	---	
Dibenzofuran	0.750	---	0.0438	mg/kg dry	4	0.875	ND	86	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 86 %*		*Limits: 44-120 %*			*Dilution: 4x*				
p-Terphenyl-d14 (Surr)			*90 %*		*54-127 %*			*"*				

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ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

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 22C0027 - Total Solids (Dry Weight)							Soil					
Duplicate (22C0027-DUP1)			Prepared: 03/01/22 11:32		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2B0784-01)												
% Solids	**26.6**	---	1.00	%	1	---	26.4	---	---	0.6	10%	
Duplicate (22C0027-DUP2)			Prepared: 03/01/22 11:32		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2B0864-01)												
% Solids	**89.1**	---	1.00	%	1	---	87.9	---	---	1	10%	
Duplicate (22C0027-DUP3)			Prepared: 03/01/22 11:32		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2B0864-02)												
% Solids	**83.3**	---	1.00	%	1	---	83.1	---	---	0.2	10%	
Duplicate (22C0027-DUP4)			Prepared: 03/01/22 11:32		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2B0864-03)												
% Solids	**76.4**	---	1.00	%	1	---	75.3	---	---	1	10%	
Duplicate (22C0027-DUP5)			Prepared: 03/01/22 11:32		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2B0864-05)												
% Solids	**67.5**	---	1.00	%	1	---	71.9	---	---	6	10%	
Duplicate (22C0027-DUP6)			Prepared: 03/01/22 19:45		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2C0080-01)												
% Solids	**88.6**	---	1.00	%	1	---	88.5	---	---	0.08	10%	
Duplicate (22C0027-DUP7)			Prepared: 03/01/22 19:45		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2C0094-01)												
% Solids	**73.7**	---	1.00	%	1	---	73.7	---	---	0.007	10%	
Duplicate (22C0027-DUP8)			Prepared: 03/01/22 19:45		Analyzed: 03/02/22 10:44							
QC Source Sample: Non-SDG (A2C0098-04)												
% Solids	**74.2**	---	1.00	%	1	---	73.8	---	---	0.6	10%	

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ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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

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

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Philip Nerenberg

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ANALYTICAL REPORT

NV5	Project: Freewell	
9450 SW Commerce Circle	Project Number: CairnPac-14-08	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2B0889 - 03 14 22 1340

SAMPLE PREPARATION INFORMATION

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: 22B0971							
A2B0889-06	Soil	NWTPH-Dx	02/24/22 14:11	02/28/22 05:59	10.16g/5mL	10g/5mL	0.98
Batch: 22C0147							
A2B0889-01	Soil	NWTPH-Dx	02/25/22 13:31	03/03/22 11:37	10.32g/5mL	10g/5mL	0.97
A2B0889-02	Soil	NWTPH-Dx	02/25/22 13:35	03/03/22 11:37	10.27g/5mL	10g/5mL	0.97
A2B0889-03	Soil	NWTPH-Dx	02/25/22 13:39	03/03/22 11:37	10.68g/5mL	10g/5mL	0.94
A2B0889-04	Soil	NWTPH-Dx	02/24/22 14:01	03/03/22 11:37	10.56g/5mL	10g/5mL	0.95
A2B0889-05	Soil	NWTPH-Dx	02/24/22 14:07	03/03/22 11:37	10.71g/5mL	10g/5mL	0.93

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: 22B1012							
A2B0889-01	Soil	NWTPH-Gx (MS)	02/25/22 13:31	02/25/22 13:31	6.04g/5mL	5g/5mL	0.83
A2B0889-02	Soil	NWTPH-Gx (MS)	02/25/22 13:35	02/25/22 13:35	7.19g/5mL	5g/5mL	0.70
A2B0889-03	Soil	NWTPH-Gx (MS)	02/25/22 13:39	02/25/22 13:39	6.24g/5mL	5g/5mL	0.80
A2B0889-05	Soil	NWTPH-Gx (MS)	02/24/22 14:07	02/24/22 14:07	4.75g/5mL	5g/5mL	1.05
A2B0889-06	Soil	NWTPH-Gx (MS)	02/24/22 14:11	02/24/22 14:11	6.33g/5mL	5g/5mL	0.79
Batch: 22C0196							
A2B0889-04RE1	Soil	NWTPH-Gx (MS)	02/24/22 14:01	02/24/22 14:01	6.09g/5mL	5g/5mL	0.82

BTEX Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22B1012							
A2B0889-01	Soil	5035A/8260D	02/25/22 13:31	02/25/22 13:31	6.04g/5mL	5g/5mL	0.83
Batch: 22C0196							
A2B0889-04RE1	Soil	5035A/8260D	02/24/22 14:01	02/24/22 14:01	6.09g/5mL	5g/5mL	0.82

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
Batch: 22C0379							

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

SAMPLE PREPARATION INFORMATION

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
A2B0889-01	Soil	EPA 8270E SIM	02/25/22 13:31	03/09/22 14:42	10.35g/5mL	10g/5mL	0.97
A2B0889-04	Soil	EPA 8270E SIM	02/24/22 14:01	03/09/22 14:42	10.1g/5mL	10g/5mL	0.99
A2B0889-04RE1	Soil	EPA 8270E SIM	02/24/22 14:01	03/09/22 14:42	10.1g/5mL	10g/5mL	0.99

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0027							
A2B0889-01	Soil	EPA 8000D	02/25/22 13:31	03/01/22 11:32			NA
A2B0889-02	Soil	EPA 8000D	02/25/22 13:35	03/01/22 11:32			NA
A2B0889-03	Soil	EPA 8000D	02/25/22 13:39	03/01/22 11:32			NA
A2B0889-04	Soil	EPA 8000D	02/24/22 14:01	03/01/22 11:32			NA
A2B0889-05	Soil	EPA 8000D	02/24/22 14:07	03/01/22 11:32			NA
A2B0889-06	Soil	EPA 8000D	02/24/22 14:11	03/01/22 11:32			NA

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ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
F-09	Results in the Gasoline Range are impacted by the overlap of a heavier fuel hydrocarbon product.
H-02	This sample was extracted outside of the recommended holding time.
M-04	Due to matrix interference, this analyte cannot be accurately quantified. The reported result may contain a high bias.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
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-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 +1%. 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.
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-08	TPH-Gx Surrogate recovery cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract. See 8260 results for accurate Surrogate recovery.

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ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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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NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **Freewell**	
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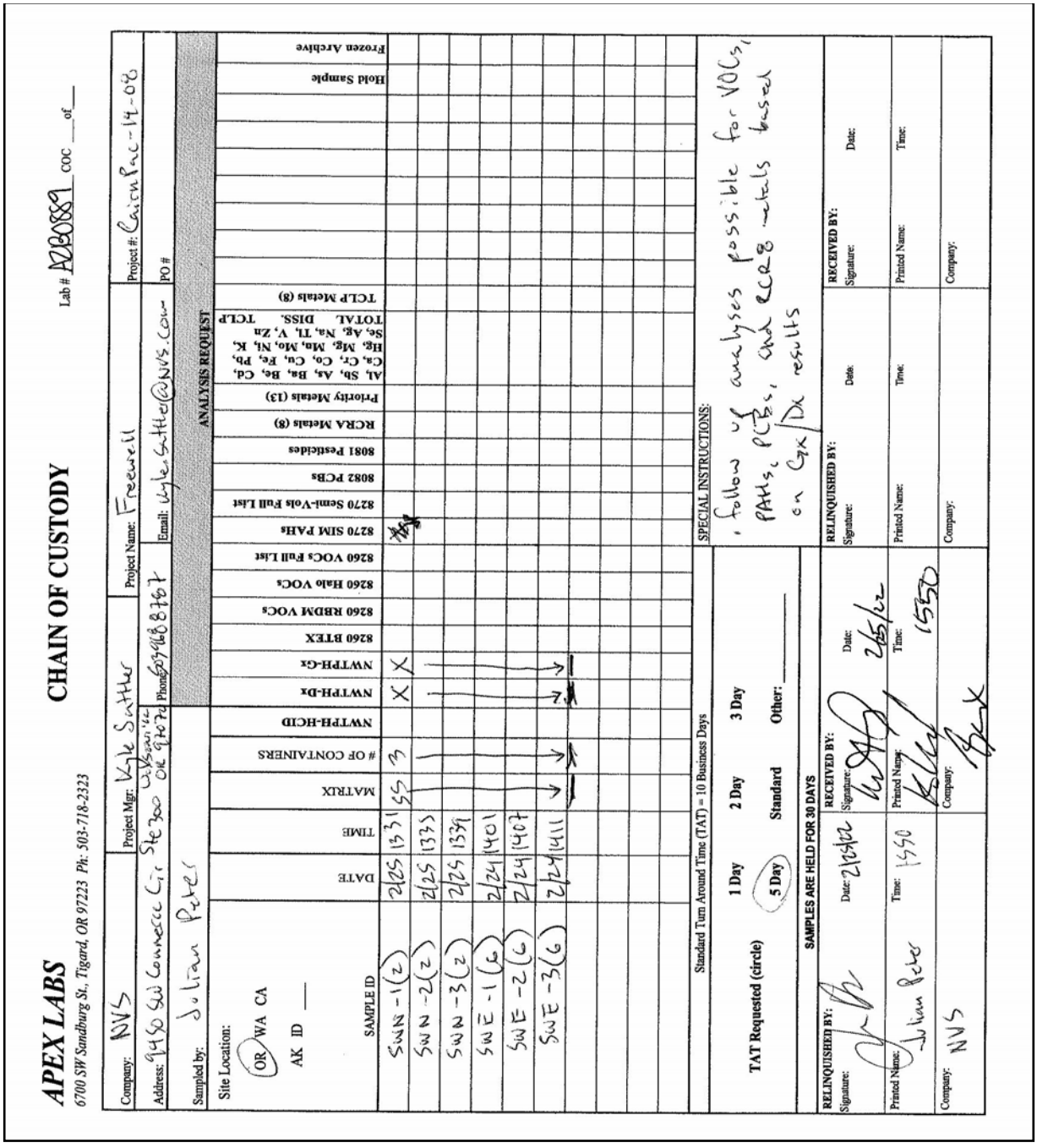
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2B0889 COC __ of __

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: Freewell | Project #: CairnPac-14-08
Address: 9450 SW Commerce Cir, Ste 300 Wilsonville OR 97070 | Phone: 503 668 8767 | Email: kyle.sattler@NV5.com | PO #
Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

ANALYSIS REQUEST

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWN-1(2)	2/25	1331	SS	3		X	X					X									
SWN-2(2)	2/25	1373																			
SWN-3(2)	2/25	1339																			
SWE-1(6)	2/24	1401																			
SWE-2(6)	2/24	1407																			
SWE-3(6)	2/24	1411	↓	↓		↓	↓					↓									

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | (5 Day) Standard | Other: ___

SPECIAL INSTRUCTIONS:
Follow up analyses possible for VOCs, PAHs, PCBs, and each levels based on GX/DX results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature:	Signature:	Date: 2/25/22	Signature:	Date:	Signature:	Date:
Printed Name: Julian Peter	Printed Name:	Time: 1550	Printed Name:	Time:	Printed Name:	Time:
Company: NV5	Company:		Company:		Company:	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **Freewell**	
9450 SW Commerce Circle	Project Number: **CairnPac-14-08**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2B0889 - 03 14 22 1340**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2B0889

Project/Project #: Freewell / CairnPac-14-08

Delivery Info:

Date/time received: 2/25/22 @ 15:50 By: MS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 2/25/22 @ 15:50 By: MS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.8						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 2/26/22 @ 1051 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: MK Cooler Inspected by: HAS

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Friday, March 11, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0297 - CairnPac-14-08 - [None]

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 A2C0297, which was received by the laboratory on 3/4/2022 at 2:05:00PM.

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)

Cooler #1	5.9 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

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
UST-1(13)	**A2C0297-01**	**Soil**	**03/04/22 11:50**	**03/04/22 14:05**

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ANALYTICAL REPORT

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9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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
UST-1(13) (A2C0297-01)				**Matrix: Soil**		**Batch: 22C0449**		
Diesel	ND	---	26.5	mg/kg dry	1	03/10/22 22:05	NWTPH-Dx	
Oil	ND	---	53.0	mg/kg dry	1	03/10/22 22:05	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*03/10/22 22:05*	*NWTPH-Dx*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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
UST-1(13) (A2C0297-01)				**Matrix: Soil**		**Batch: 22C0325**		
Gasoline Range Organics	ND	---	7.36	mg/kg dry	50	03/09/22 06:15	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 102 %*		*Limits: 50-150 %*	*1*	*03/09/22 06:15*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*03/09/22 06:15*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
UST-1(13) (A2C0297-01)				**Matrix: Soil**		**Batch: 22C0249**		
% Solids	**72.2**	---	1.00	%	1	03/08/22 09:29	EPA 8000D	

Apex Laboratories

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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 22C0449 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0449-BLK1)			Prepared: 03/10/22 17:11		Analyzed: 03/10/22 21:22							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C0449-BS1)			Prepared: 03/10/22 17:11		Analyzed: 03/10/22 21:43							
NWTPH-Dx												
Diesel	114	---	20.0	mg/kg wet	1	125	---	92	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 104 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0449-DUP1)			Prepared: 03/10/22 17:11		Analyzed: 03/10/22 22:26							
QC Source Sample: UST-1(13) (A2C0297-01)												
NWTPH-Dx												
Diesel	ND	---	26.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	53.3	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	53.3	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0449-DUP2)			Prepared: 03/10/22 18:18		Analyzed: 03/11/22 01:17							
QC Source Sample: Non-SDG (A2C0531-02)												
Diesel	ND	---	22.1	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	44.3	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	44.3	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 105 %*	*Limits: 50-150 %*		*Dilution: 1x*							

Apex Laboratories

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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 22C0325 - EPA 5035A								**Soil**				
Blank (22C0325-BLK1)				Prepared: 03/08/22 08:00		Analyzed: 03/08/22 23:59						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*			*"*					
LCS (22C0325-BS2)				Prepared: 03/08/22 08:00		Analyzed: 03/08/22 23:32						
NWTPH-Gx (MS)												
Gasoline Range Organics	24.2	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*			*"*					
Duplicate (22C0325-DUP1)				Prepared: 03/02/22 11:40		Analyzed: 03/09/22 05:48						
QC Source Sample: Non-SDG (A2C0196-08)												
Gasoline Range Organics	ND	---	6.04	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*			*"*					

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [None]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0297 - 03 11 22 1044

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 22C0249 - Total Solids (Dry Weight)							Soil					
Duplicate (22C0249-DUP1)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							H-01
QC Source Sample: Non-SDG (A1J0996-71)												
% Solids	**98.5**	---	1.00	%	1	---	98.5	---	---	0.07	10%	
Duplicate (22C0249-DUP2)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0234-06)												
% Solids	**80.3**	---	1.00	%	1	---	79.2	---	---	1	10%	
Duplicate (22C0249-DUP3)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0234-12)												
% Solids	**78.4**	---	1.00	%	1	---	78.1	---	---	0.3	10%	
Duplicate (22C0249-DUP4)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0243-06)												
% Solids	**81.3**	---	1.00	%	1	---	80.4	---	---	1	10%	
Duplicate (22C0249-DUP5)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0243-12)												
% Solids	**81.3**	---	1.00	%	1	---	81.2	---	---	0.1	10%	
Duplicate (22C0249-DUP6)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0243-17)												
% Solids	**80.6**	---	1.00	%	1	---	80.6	---	---	0.1	10%	
Duplicate (22C0249-DUP7)			Prepared: 03/07/22 09:53		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0243-22)												
% Solids	**79.8**	---	1.00	%	1	---	80.0	---	---	0.2	10%	
Duplicate (22C0249-DUP8)			Prepared: 03/07/22 21:46		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0370-01)												
% Solids	**76.1**	---	1.00	%	1	---	76.2	---	---	0.07	10%	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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 22C0249 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0249-DUP9)			Prepared: 03/07/22 21:46		Analyzed: 03/08/22 09:29							
QC Source Sample: Non-SDG (A2C0400-04)												
% Solids	**93.2**	---	1.00	%	1	---	93.7	---	---	0.6	10%	

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

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

SAMPLE PREPARATION INFORMATION

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: 22C0449							
A2C0297-01	Soil	NWTPH-Dx	03/04/22 11:50	03/10/22 17:11	10.45g/5mL	10g/5mL	0.96

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

Prep: EPA 5035A

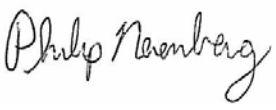
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0325							
A2C0297-01	Soil	NWTPH-Gx (MS)	03/04/22 11:50	03/04/22 11:50	6.37g/5mL	5g/5mL	0.79

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0249							
A2C0297-01	Soil	EPA 8000D	03/04/22 11:50	03/07/22 09:53			NA

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Laboratories, LLC
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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

QUALIFIER DEFINITIONS

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

Apex Laboratories

H-01 This sample was analyzed outside the recommended holding time.

Apex Laboratories

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

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.

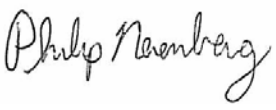
Subcontract Laboratory Accreditations

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



Philip Nerenberg, Lab Director

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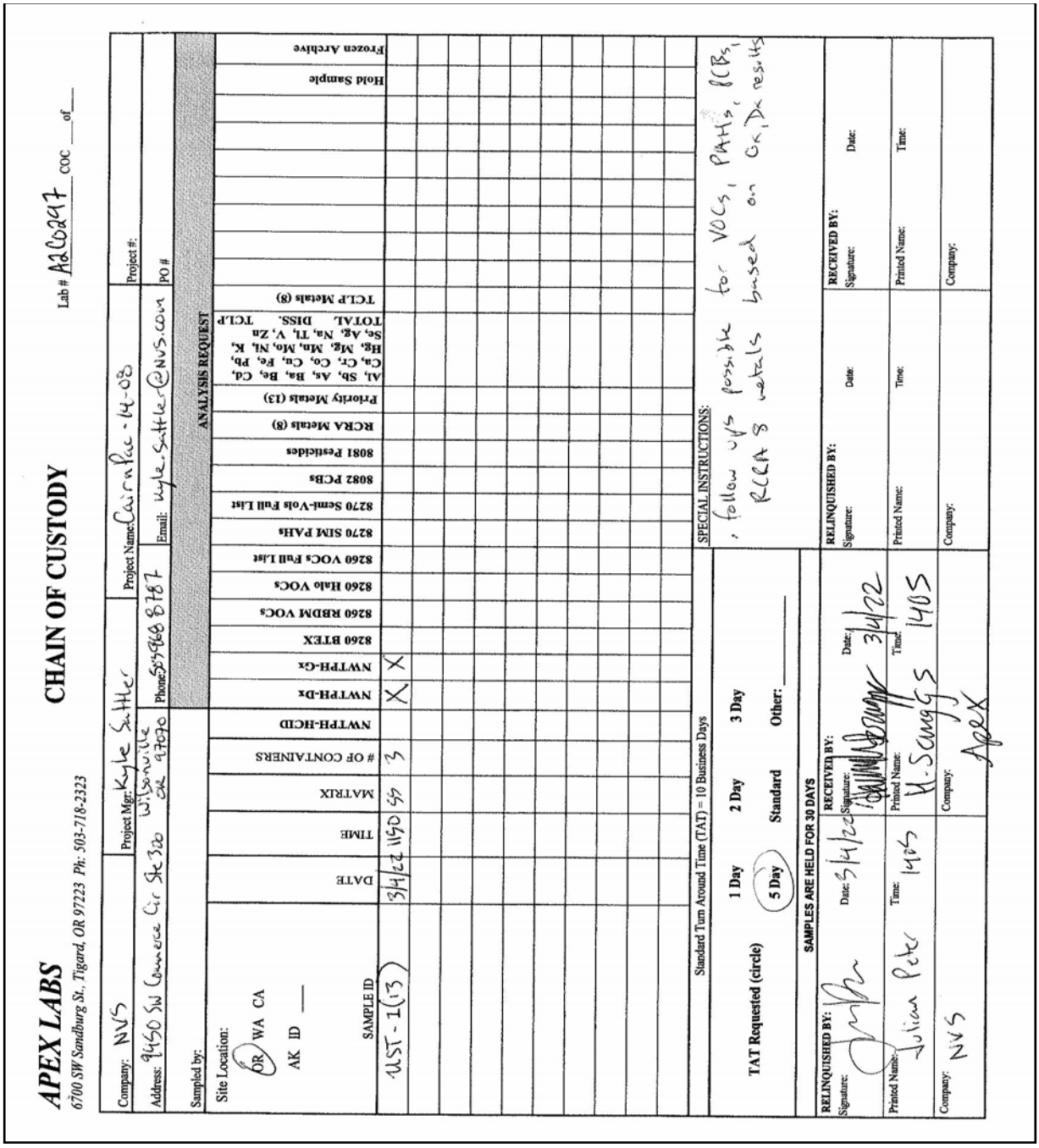
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2C0297 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac - 14-08 | Project #:
Address: 9450 SW Commerce Cir Ste 320 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #
Sampled by:

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
UST-1(13)	3/4/22	1150	SS	3		X	X														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- follow WPS possible for VOCs, PAHs, PCBs, RCRA 8 metals based on CA, DK results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: | Date: 3/4/22 | Time: 1405 | Printed Name: Julian Peter | Company: NV5
RECEIVED BY: Signature: | Date: 3/4/22 | Time: 1405 | Printed Name: H. Scruggs | Company: Apex
RELINQUISHED BY: Signature: | Date: | Time: | Printed Name: | Company:
RECEIVED BY: Signature: | Date: | Time: | Printed Name: | Company:
RELINQUISHED BY: Signature: | Date: | Time: | Printed Name: | Company:
RECEIVED BY: Signature: | Date: | Time: | Printed Name: | Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[None]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0297 - 03 11 22 1044**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C0297

Project/Project #: CairnPac - 14-08

Delivery Info:
Date/time received: 3/4/22 @ 1405 By: MAS
Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy ___SDS___Other_____
Cooler Inspection Date/time inspected: 3/4/22 @ 1405 By: MAS
Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X
Signed/dated by client? Yes X No _____
Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/4/22 @ 15:47 By: ZKM
All samples intact? Yes X No ___ Comments:_____
Bottle labels/COCs agree? Yes X No ___ Comments: _____
COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____
Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments_____
Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X
Comments: _____
Additional information:_____
Labeled by: ZKM Witness: Cooler Inspected by: ZKM

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0664 - CairnPac-14-08 - [none]

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 A2C0664, which was received by the laboratory on 3/15/2022 at 3:39:00PM.

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)

Cooler #1	5.2 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

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW-1(6)	A2C0664-01	Soil	03/15/22 12:21	03/15/22 15:39
SWW-2(6)	A2C0664-02	Soil	03/15/22 12:28	03/15/22 15:39
SWW-3(6)	A2C0664-03	Soil	03/15/22 13:44	03/15/22 15:39

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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
SWW-1(6) (A2C0664-01)				**Matrix: Soil**		**Batch: 22C0853**		
Diesel	**254**	---	27.8	mg/kg dry	1	03/22/22 21:21	NWTPH-Dx	
Oil	ND	---	55.6	mg/kg dry	1	03/22/22 21:21	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 76 %*		*Limits: 50-150 %*	*1*	*03/22/22 21:21*	*NWTPH-Dx*	
SWW-2(6) (A2C0664-02)				**Matrix: Soil**		**Batch: 22C0853**		
Diesel	ND	---	27.0	mg/kg dry	1	03/22/22 21:41	NWTPH-Dx	
Oil	ND	---	54.0	mg/kg dry	1	03/22/22 21:41	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 74 %*		*Limits: 50-150 %*	*1*	*03/22/22 21:41*	*NWTPH-Dx*	
SWW-3(6) (A2C0664-03RE1)				**Matrix: Soil**		**Batch: 22C0853**		
Diesel	**7730**	---	267	mg/kg dry	10	03/23/22 07:46	NWTPH-Dx	
Oil	ND	---	534	mg/kg dry	10	03/23/22 07:46	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 104 %*		*Limits: 50-150 %*	*10*	*03/23/22 07:46*	*NWTPH-Dx*	*S-05*

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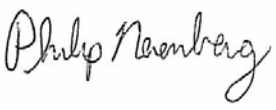

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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
SWW-1(6) (A2C0664-01RE1)				**Matrix: Soil**		**Batch: 22C0643**		
Gasoline Range Organics	**142**	---	7.69	mg/kg dry	50	03/16/22 12:54	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 150 %*	*Limits: 50-150 %*		*1*	*03/16/22 12:54*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/16/22 12:54*	*NWTPH-Gx (MS)*	
SWW-2(6) (A2C0664-02)				**Matrix: Soil**		**Batch: 22C0585**		
Gasoline Range Organics	ND	---	7.02	mg/kg dry	50	03/15/22 19:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*03/15/22 19:36*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/15/22 19:36*	*NWTPH-Gx (MS)*	
SWW-3(6) (A2C0664-03)				**Matrix: Soil**		**Batch: 22C0585**		
Gasoline Range Organics	**417**	---	72.8	mg/kg dry	500	03/15/22 21:50	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 115 %*	*Limits: 50-150 %*		*1*	*03/15/22 21:50*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*03/15/22 21:50*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-1(6) (A2C0664-01)				**Matrix: Soil**		**Batch: 22C0659**		
% Solids	**71.0**	---	1.00	%	1	03/17/22 10:37	EPA 8000D	
SWW-2(6) (A2C0664-02)				**Matrix: Soil**		**Batch: 22C0659**		
% Solids	**72.8**	---	1.00	%	1	03/17/22 10:37	EPA 8000D	
SWW-3(6) (A2C0664-03)				**Matrix: Soil**		**Batch: 22C0659**		
% Solids	**74.2**	---	1.00	%	1	03/17/22 10:37	EPA 8000D	

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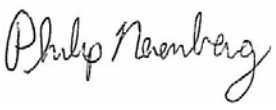

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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 22C0853 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0853-BLK1)			Prepared: 03/22/22 06:08		Analyzed: 03/22/22 08:37							
NWTPH-Dx												
Diesel	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 94 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C0853-BS1)			Prepared: 03/22/22 06:08		Analyzed: 03/22/22 08:58							
NWTPH-Dx												
Diesel	125	---	20.0	mg/kg wet	1	125	---	100	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0853-DUP1)			Prepared: 03/22/22 06:08		Analyzed: 03/22/22 09:24							
QC Source Sample: Non-SDG (A2C0823-02)												
Diesel	ND	---	22.5	mg/kg dry	1	---	55.2	---	---	***	**30%**	Q-04
Oil	**248**	---	45.0	mg/kg dry	1	---	149	---	---	**50**	**30%**	Q-04
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C0853-DUP2)			Prepared: 03/22/22 10:55		Analyzed: 03/23/22 01:04							
QC Source Sample: Non-SDG (A2C0728-03RE1)												
Diesel	ND	---	25.0	mg/kg wet	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg wet	1	---	30.2	---	---	***	**30%**	
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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 22C0585 - EPA 5035A									Soil			
Blank (22C0585-BLK1)			Prepared: 03/15/22 09:06		Analyzed: 03/15/22 13:47							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*94 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*91 %*		*50-150 %*			*"*				
LCS (22C0585-BS2)			Prepared: 03/15/22 09:06		Analyzed: 03/15/22 12:53							
NWTPH-Gx (MS)												
Gasoline Range Organics	25.1	---	5.00	mg/kg wet	50	25.0	---	100	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				
Duplicate (22C0585-DUP1)			Prepared: 03/14/22 11:15		Analyzed: 03/15/22 16:01							
QC Source Sample: Non-SDG (A2C0627-04)												
Gasoline Range Organics	ND	---	8.97	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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 22C0643 - EPA 5035A							**Soil**					
Blank (22C0643-BLK1)			Prepared: 03/16/22 08:00 Analyzed: 03/16/22 12:27									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*92 %*	*50-150 %*		*"*							
LCS (22C0643-BS2)			Prepared: 03/16/22 08:00 Analyzed: 03/16/22 12:00									
NWTPH-Gx (MS)												
Gasoline Range Organics	24.3	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
Duplicate (22C0643-DUP1)			Prepared: 03/11/22 11:30 Analyzed: 03/16/22 15:08									
QC Source Sample: Non-SDG (A2C0672-02)												
Gasoline Range Organics	ND	---	7.46	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (22C0643-DUP2)			Prepared: 03/16/22 09:29 Analyzed: 03/16/22 21:51									
QC Source Sample: Non-SDG (A2C0726-01)												
Gasoline Range Organics	ND	---	7.27	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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 22C0659 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0659-DUP1)			Prepared: 03/16/22 12:23		Analyzed: 03/17/22 10:37							
QC Source Sample: Non-SDG (A2C0612-01)												
% Solids	**68.4**	---	1.00	%	1	---	68.8	---	---	0.7	10%	
Duplicate (22C0659-DUP2)			Prepared: 03/16/22 12:23		Analyzed: 03/17/22 10:37							
QC Source Sample: Non-SDG (A2C0612-02)												
% Solids	**68.9**	---	1.00	%	1	---	70.5	---	---	2	10%	
Duplicate (22C0659-DUP3)			Prepared: 03/16/22 19:19		Analyzed: 03/17/22 10:37							
QC Source Sample: Non-SDG (A2C0730-01)												
% Solids	**78.9**	---	1.00	%	1	---	82.2	---	---	4	10%	
Duplicate (22C0659-DUP4)			Prepared: 03/16/22 19:19		Analyzed: 03/17/22 10:37							
QC Source Sample: Non-SDG (A2C0740-01)												
% Solids	**85.6**	---	1.00	%	1	---	84.4	---	---	1	10%	
Duplicate (22C0659-DUP5)			Prepared: 03/16/22 19:19		Analyzed: 03/17/22 10:37							
QC Source Sample: Non-SDG (A2C0747-04)												
% Solids	**83.9**	---	1.00	%	1	---	84.6	---	---	0.8	10%	

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

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

SAMPLE PREPARATION INFORMATION

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: 22C0853							
A2C0664-01	Soil	NWTPH-Dx	03/15/22 12:21	03/22/22 10:55	10.13g/5mL	10g/5mL	0.99
A2C0664-02	Soil	NWTPH-Dx	03/15/22 12:28	03/22/22 10:55	10.17g/5mL	10g/5mL	0.98
A2C0664-03RE1	Soil	NWTPH-Dx	03/15/22 13:44	03/22/22 10:55	10.09g/5mL	10g/5mL	0.99

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: 22C0585							
A2C0664-02	Soil	NWTPH-Gx (MS)	03/15/22 12:28	03/15/22 12:28	6.65g/5mL	5g/5mL	0.75
A2C0664-03	Soil	NWTPH-Gx (MS)	03/15/22 13:44	03/15/22 13:44	6.08g/5mL	5g/5mL	0.82
Batch: 22C0643							
A2C0664-01RE1	Soil	NWTPH-Gx (MS)	03/15/22 12:21	03/15/22 12:21	6.23g/5mL	5g/5mL	0.80

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0659							
A2C0664-01	Soil	EPA 8000D	03/15/22 12:21	03/16/22 12:23			NA
A2C0664-02	Soil	EPA 8000D	03/15/22 12:28	03/16/22 12:23			NA
A2C0664-03	Soil	EPA 8000D	03/15/22 13:44	03/16/22 12:23			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

QUALIFIER DEFINITIONS

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

Apex Laboratories

Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Apex Laboratories

Philip Nerenberg

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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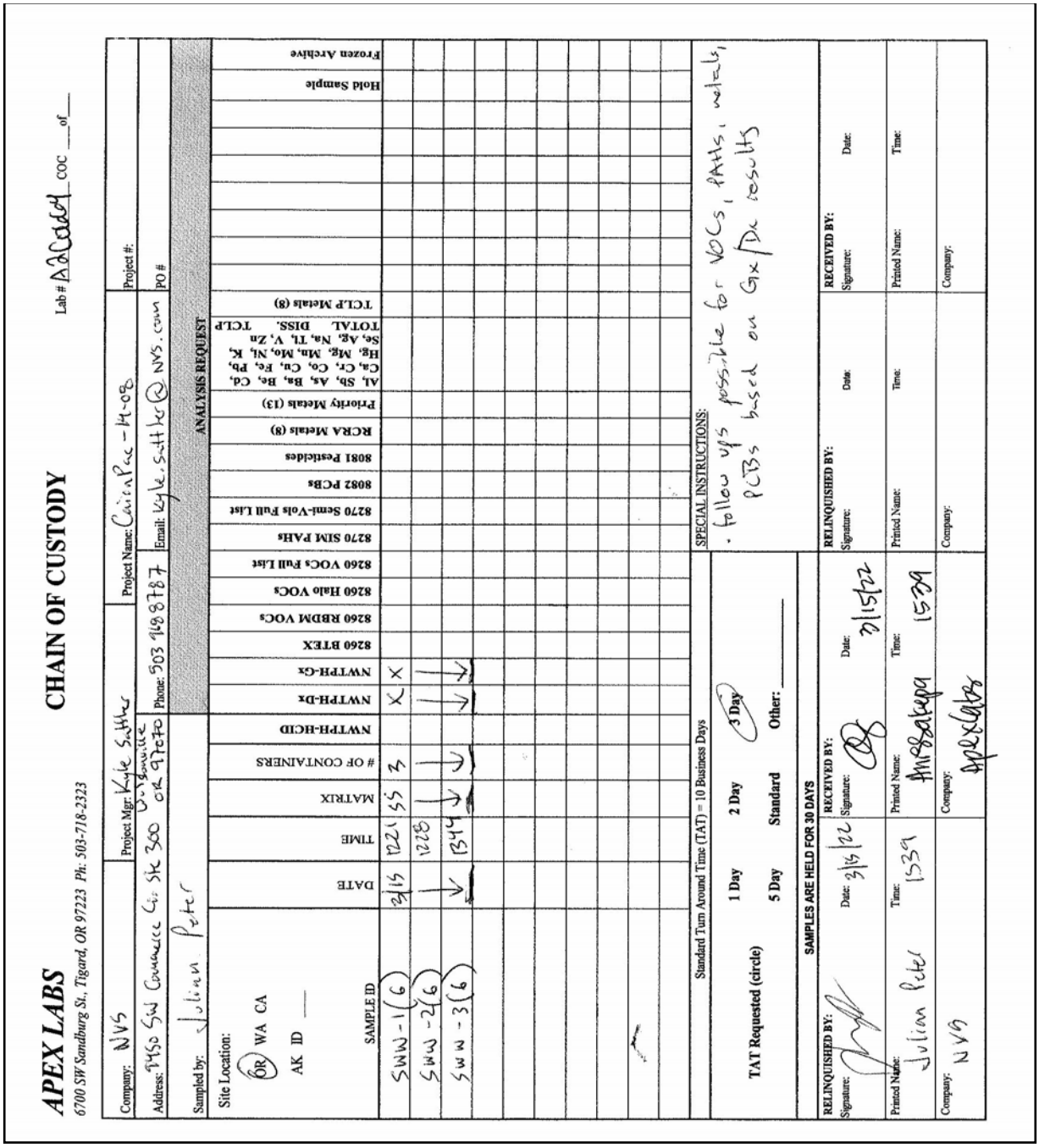
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**



APEX LABS — **CHAIN OF CUSTODY** — Lab # A2C0664 COC ___ of ___

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac - 14-08 | Project #:

Address: 9450 SW Commerce Cir Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #

Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWW-1(6)	3/15	1221	SS	3		X	X														
SWW-2(6)		1228		1																	
SWW-3(6)		1344																			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- Follow up possible for VOCs, PAHs, select PCBs based on GX/DX results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/16/22	Date: 3/15/22	Date:	Date:
Time: 1539	Time: 1539	Time:	Time:
Printed Name: Julian Peter	Printed Name: Philip Nerenberg	Printed Name:	Printed Name:
Company: NV5	Company: Apex Labs	Company:	Company:

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0664 - 04 04 22 2110**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C0664

Project/Project #: Cairn Pac-14-08

Delivery Info:

Date/time received: 3/15/22 @ 1539 By: AKK

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other_____

Cooler Inspection Date/time inspected: 3/15/22 @ 1539 By: AKK

Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No _____

Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.2						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	Melty						

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: 3/15/22 @ 16:10 By: KAM

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments _____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments: _____

Additional information: _____

Labeled by:	Witness:	Cooler Inspected by:
KAM	MAS	KAM

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0726 - CairnPac-14-08 - [none]

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 A2C0726, which was received by the laboratory on 3/16/2022 at 3:35:00PM.

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)

Cooler #1	0.8 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW-4(6)	A2C0726-01	Soil	03/16/22 09:29	03/16/22 15:35
SWN-4(6)	A2C0726-02	Soil	03/16/22 12:49	03/16/22 15:35

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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
SWW-4(6) (A2C0726-01)				**Matrix: Soil**		**Batch: 22C0874**		
Diesel	ND	---	27.2	mg/kg dry	1	03/22/22 22:17	NWTPH-Dx	
Oil	ND	---	54.4	mg/kg dry	1	03/22/22 22:17	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 62 %*		*Limits: 50-150 %*	*1*	*03/22/22 22:17*	*NWTPH-Dx*	
SWN-4(6) (A2C0726-02)				**Matrix: Soil**		**Batch: 22C0874**		
Diesel	**1270**	---	28.5	mg/kg dry	1	03/22/22 23:02	NWTPH-Dx	
Oil	**357**	---	56.9	mg/kg dry	1	03/22/22 23:02	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*03/22/22 23:02*	*NWTPH-Dx*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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
SWW-4(6) (A2C0726-01)				**Matrix: Soil**		**Batch: 22C0643**		
Gasoline Range Organics	ND	---	7.27	mg/kg dry	50	03/16/22 21:24	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits: 50-150 %*	*1*	*03/16/22 21:24*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/16/22 21:24*	*NWTPH-Gx (MS)*	
SWN-4(6) (A2C0726-02)				**Matrix: Soil**		**Batch: 22C0643**		
Gasoline Range Organics	**12.7**	---	7.54	mg/kg dry	50	03/16/22 22:18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*106 %*	*Limits: 50-150 %*	*1*	*03/16/22 22:18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*03/16/22 22:18*	*NWTPH-Gx (MS)*	

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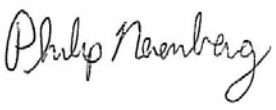

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-4(6) (A2C0726-01)				**Matrix: Soil**		**Batch: 22C0690**		
% Solids	**72.7**	---	1.00	%	1	03/18/22 09:36	EPA 8000D	
SWN-4(6) (A2C0726-02)				**Matrix: Soil**		**Batch: 22C0690**		
% Solids	**69.0**	---	1.00	%	1	03/18/22 09:36	EPA 8000D	

Apex Laboratories

Philip Nerenberg

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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 22C0874 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0874-BLK1)			Prepared: 03/22/22 10:57		Analyzed: 03/22/22 21:32							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 79 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (22C0874-BS1)			Prepared: 03/22/22 10:57		Analyzed: 03/22/22 21:54							
NWTPH-Dx												
Diesel	100	---	25.0	mg/kg wet	1	125	---	80	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 78 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Duplicate (22C0874-DUP1)			Prepared: 03/22/22 10:57		Analyzed: 03/22/22 22:39							
QC Source Sample: SWW-4(6) (A2C0726-01)												
NWTPH-Dx												
Diesel	ND	---	26.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	52.6	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 77 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Duplicate (22C0874-DUP2)			Prepared: 03/22/22 10:57		Analyzed: 03/23/22 00:32							
QC Source Sample: Non-SDG (A2C0789-11)												
Diesel	ND	---	25.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.8	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 82 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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 22C0643 - EPA 5035A							**Soil**					
Blank (22C0643-BLK1)			Prepared: 03/16/22 08:00 Analyzed: 03/16/22 12:27									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*92 %*	*50-150 %*		*"*							
LCS (22C0643-BS2)			Prepared: 03/16/22 08:00 Analyzed: 03/16/22 12:00									
NWTPH-Gx (MS)												
Gasoline Range Organics	24.3	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
Duplicate (22C0643-DUP1)			Prepared: 03/11/22 11:30 Analyzed: 03/16/22 15:08									
QC Source Sample: Non-SDG (A2C0672-02)												
Gasoline Range Organics	ND	---	7.46	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (22C0643-DUP2)			Prepared: 03/16/22 09:29 Analyzed: 03/16/22 21:51									
QC Source Sample: SWW-4(6) (A2C0726-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	7.27	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0726 - 04 04 22 2114

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 22C0690 - Total Solids (Dry Weight)							Soil					
Duplicate (22C0690-DUP1)			Prepared: 03/17/22 10:48		Analyzed: 03/18/22 09:36							H-01
QC Source Sample: Non-SDG (A2B0839-03)												
% Solids	**79.6**	---	1.00	%	1	---	78.4	---	---	2	10%	
Duplicate (22C0690-DUP2)			Prepared: 03/17/22 10:48		Analyzed: 03/18/22 09:36							H-01
QC Source Sample: Non-SDG (A2B0839-06)												
% Solids	**80.2**	---	1.00	%	1	---	80.5	---	---	0.4	10%	
Duplicate (22C0690-DUP3)			Prepared: 03/17/22 10:48		Analyzed: 03/18/22 09:36							H-01
QC Source Sample: Non-SDG (A2B0839-10)												
% Solids	**80.5**	---	1.00	%	1	---	80.0	---	---	0.6	10%	
Duplicate (22C0690-DUP4)			Prepared: 03/17/22 10:48		Analyzed: 03/18/22 09:36							PRO
QC Source Sample: Non-SDG (A2C0472-02)												
% Solids	**97.8**	---	1.00	%	1	---	97.9	---	---	0.09	10%	
Duplicate (22C0690-DUP5)			Prepared: 03/17/22 19:15		Analyzed: 03/18/22 09:36							
QC Source Sample: Non-SDG (A2C0779-01)												
% Solids	**85.2**	---	1.00	%	1	---	85.4	---	---	0.3	10%	
Duplicate (22C0690-DUP6)			Prepared: 03/17/22 19:15		Analyzed: 03/18/22 09:36							
QC Source Sample: Non-SDG (A2C0792-02)												
% Solids	**75.5**	---	1.00	%	1	---	76.1	---	---	0.8	10%	

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

Apex Laboratories

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

SAMPLE PREPARATION INFORMATION

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: 22C0874							
A2C0726-01	Soil	NWTPH-Dx	03/16/22 09:29	03/22/22 10:57	10.11g/5mL	10g/5mL	0.99
A2C0726-02	Soil	NWTPH-Dx	03/16/22 12:49	03/22/22 10:57	10.19g/5mL	10g/5mL	0.98

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: 22C0643							
A2C0726-01	Soil	NWTPH-Gx (MS)	03/16/22 09:29	03/16/22 09:29	6.38g/5mL	5g/5mL	0.78
A2C0726-02	Soil	NWTPH-Gx (MS)	03/16/22 12:49	03/16/22 12:49	6.86g/5mL	5g/5mL	0.73

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0690							
A2C0726-01	Soil	EPA 8000D	03/16/22 09:29	03/17/22 10:48			NA
A2C0726-02	Soil	EPA 8000D	03/16/22 12:49	03/17/22 10:48			NA

Apex Laboratories

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

QUALIFIER DEFINITIONS

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

Apex Laboratories

H-01	This sample was analyzed outside the recommended holding time.
PRO	Sample has undergone sample processing prior to extraction and analysis.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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

Philip Nerenberg, Lab Director

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
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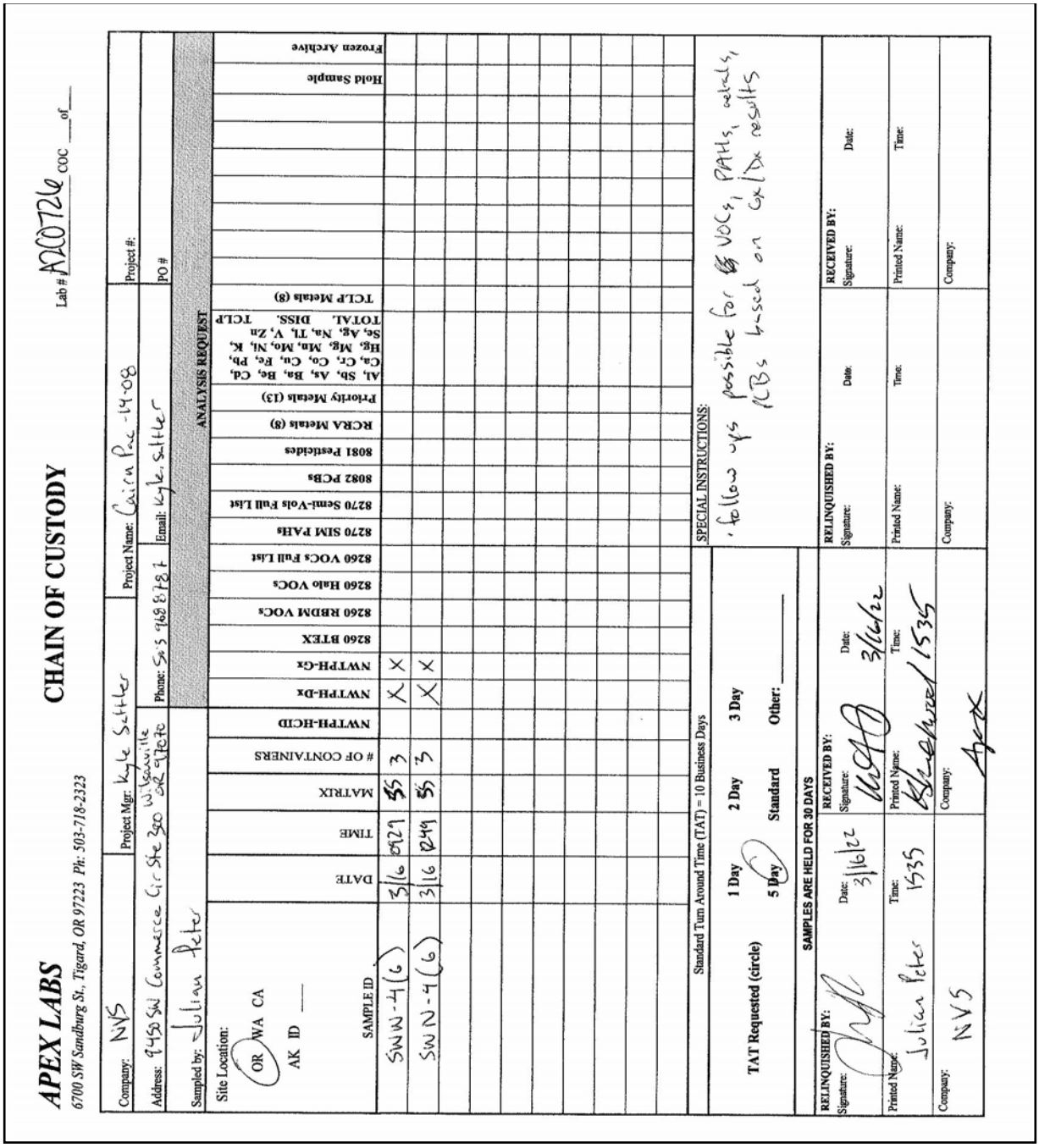

APEX LABS — **CHAIN OF CUSTODY** — Lab # A2C0726 COC ___ of ___

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: Cairn Pac -14-08 | Project #:

Address: 9450 SW Commerce Cir Ste 320 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler | PO #

Sampled by: Julian Peters

Site Location: OR WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWN-4(6)	3/16	0929	SS	3		X	X														
SWN-4(6)	3/16	0949	SS	3		X	X														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
Follow up possible for VOCs, PAHs, select PCBs based on Cx IDx results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/16/22	Date: 3/16/22	Date:	Date:
Printed Name: Julian Peters	Printed Name:	Printed Name:	Printed Name:
Time: 1535	Time:	Time:	Time:
Company: NV5	Company: Apex	Company:	Company:

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0726 - 04 04 22 2114**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2 C0726

Project/Project #: Cairn Pac- 14-08

Delivery Info:

Date/time received: 3/16/22 @ 1535 By: MA

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other_____

Cooler Inspection Date/time inspected: 3/16/22 @ 1535 By: MA

Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No _____

Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.8						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

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: 3/16/22 @ 1607 By: MAS

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments _____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments: _____

Additional information: _____

Labeled by: MAS Witness: XX Cooler Inspected by: MAS

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0793 - CairnPac-14-08 - [none]

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 A2C0793, which was received by the laboratory on 3/17/2022 at 9:25:00AM.

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)

Cooler #1	1.9 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWN-5(2)	**A2C0793-01**	**Soil**	**03/17/22 07:28**	**03/17/22 09:25**

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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
SWN-5(2) (A2C0793-01)				**Matrix: Soil**		**Batch: 22C0917**		
Diesel	ND	---	25.0	mg/kg dry	1	03/24/22 00:23	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/24/22 00:23	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*03/24/22 00:23*	*NWTPH-Dx*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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
SWN-5(2) (A2C0793-01)				**Matrix: Soil**		**Batch: 22C0756**		
Gasoline Range Organics	ND	---	7.09	mg/kg dry	50	03/18/22 17:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits: 50-150 %*	*1*	*03/18/22 17:32*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/18/22 17:32*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-5(2) (A2C0793-01)				**Matrix: Soil**		**Batch: 22C0755**		
% Solids	**79.3**	---	1.00	%	1	03/21/22 10:42	EPA 8000D	

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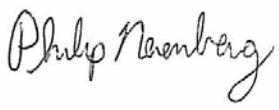

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0793 - 04 04 22 2112

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 22C0917 - EPA 3546 (Fuels)							Soil					
Blank (22C0917-BLK1)			Prepared: 03/23/22 10:34		Analyzed: 03/23/22 21:54							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (22C0917-BS1)			Prepared: 03/23/22 10:34		Analyzed: 03/23/22 22:37							
NWTPH-Dx												
Diesel	117	---	25.0	mg/kg wet	1	125	---	93	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22C0917-DUP2)			Prepared: 03/23/22 15:02		Analyzed: 03/23/22 22:15							
QC Source Sample: Non-SDG (A2C0761-12)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22C0917-DUP3)			Prepared: 03/23/22 10:34		Analyzed: 03/24/22 08:38							
QC Source Sample: Non-SDG (A2C0558-03RE1)												
Diesel	**18400**	---	901	mg/kg dry	40	---	16600	---	---	10	30%	
Oil	ND	---	1800	mg/kg dry	40	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*			*Dilution: 40x*					S-01

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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 22C0756 - EPA 5035A									Soil			
Blank (22C0756-BLK1)			Prepared: 03/18/22 08:09 Analyzed: 03/18/22 13:57									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*			*"*					
LCS (22C0756-BS2)			Prepared: 03/18/22 08:09 Analyzed: 03/18/22 12:37									
NWTPH-Gx (MS)												
Gasoline Range Organics	23.9	---	5.00	mg/kg wet	50	25.0	---	96	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*			*"*					
Duplicate (22C0756-DUP1)			Prepared: 03/17/22 07:28 Analyzed: 03/18/22 17:59									
QC Source Sample: SWN-5(2) (A2C0793-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	7.09	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*			*"*					

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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 22C0755 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0755-DUP1)			Prepared: 03/18/22 10:22		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0754-05)												
% Solids	**83.5**	---	1.00	%	1	---	85.0	---	---	2	10%	
Duplicate (22C0755-DUP2)			Prepared: 03/18/22 10:22		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0754-11)												
% Solids	**81.5**	---	1.00	%	1	---	82.7	---	---	2	10%	
Duplicate (22C0755-DUP3)			Prepared: 03/18/22 10:22		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0754-17)												
% Solids	**88.7**	---	1.00	%	1	---	90.2	---	---	2	10%	
Duplicate (22C0755-DUP4)			Prepared: 03/18/22 10:22		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0756-06)												
% Solids	**80.8**	---	1.00	%	1	---	81.8	---	---	1	10%	
Duplicate (22C0755-DUP5)			Prepared: 03/18/22 17:28		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0830-01)												
% Solids	**76.4**	---	1.00	%	1	---	75.9	---	---	0.6	10%	
Duplicate (22C0755-DUP6)			Prepared: 03/18/22 18:35		Analyzed: 03/21/22 10:42							
QC Source Sample: Non-SDG (A2C0838-01)												
% Solids	**79.6**	---	1.00	%	1	---	80.1	---	---	0.6	10%	

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

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

SAMPLE PREPARATION INFORMATION

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: 22C0917							
A2C0793-01	Soil	NWTPH-Dx	03/17/22 07:28	03/23/22 15:02	10.32g/5mL	10g/5mL	0.97

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: 22C0756							
A2C0793-01	Soil	NWTPH-Gx (MS)	03/17/22 07:28	03/17/22 07:28	5.45g/5mL	5g/5mL	0.92

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0755							
A2C0793-01	Soil	EPA 8000D	03/17/22 07:28	03/18/22 10:22			NA

Apex Laboratories

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

QUALIFIER DEFINITIONS

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

Apex Laboratories

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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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

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.

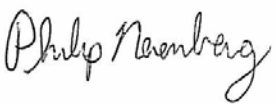
Subcontract Laboratory Accreditations

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



Philip Nerenberg, Lab Director

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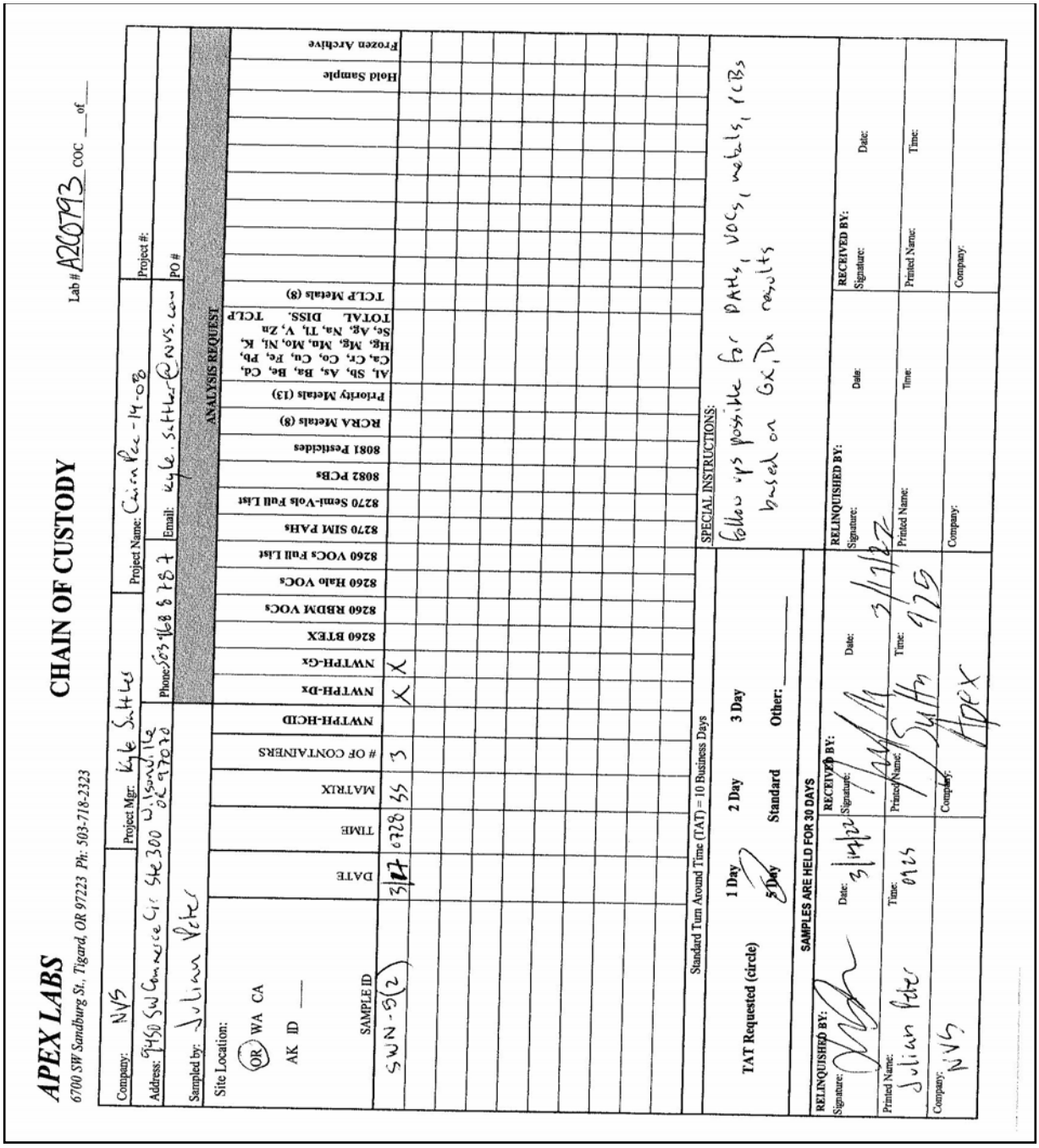
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2C0793 COC __ of __

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:
Address: 9450 SW Commerce Cir. Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@nv5.com | PO #
Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWN-S(2)	3/17	0728	SS	3		X	X														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: ___

SPECIAL INSTRUCTIONS: Follow up possible for PAHs, VOCs, metals, PCBs based on GX, Dx results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:	RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	3/17/22		Signature:			Signature:			Signature:		
Printed Name: Julian Peter		0745	Printed Name:			Printed Name:			Printed Name:		
Company: NV5			Company:			Company:			Company:		

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0793 - 04 04 22 2112**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C0793

Project/Project #: CairnPac-14-08

Delivery Info:

Date/time received: 3/17/22@ 925 By: JS

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other_____

Cooler Inspection Date/time inspected: 3/17/22@ 930 By: JS

Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No _____

Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

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: 3/17/22 @ 1835 By: MAS

All samples intact? Yes X No ___ Comments:_____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments_____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments: _____

Additional information: _____

Labeled by: MAS Witness: DSS / AKK Cooler Inspected by: MAS

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Wednesday, April 20, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0917 - CairnPac-14-08 - [none]

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 A2C0917, which was received by the laboratory on 3/21/2022 at 3:25:00PM.

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)

Cooler #1	0.1 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

Philip Nerenberg, Lab Director

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Apex Laboratories, LLC

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW-5(12)	A2C0917-01	Soil	03/21/22 08:11	03/21/22 15:25
SWW-6(12)	A2C0917-02	Soil	03/21/22 08:29	03/21/22 15:25
SWW-7(12)	A2C0917-03	Soil	03/21/22 09:32	03/21/22 15:25
SWW-8(12)	A2C0917-04	Soil	03/21/22 09:36	03/21/22 15:25
SWW-9(12)	A2C0917-05	Soil	03/21/22 09:45	03/21/22 15:25

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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
SWW-5(12) (A2C0917-01RE1)				**Matrix: Soil**		**Batch: 22C1033**		
Diesel	**3380**	---	53.1	mg/kg dry	2	03/26/22 12:28	NWTPH-Dx	
Oil	ND	---	106	mg/kg dry	2	03/26/22 12:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 91 %*		*Limits: 50-150 %*	*2*	*03/26/22 12:28*	*NWTPH-Dx*	*S-05*
SWW-6(12) (A2C0917-02)				**Matrix: Soil**		**Batch: 22C1033**		
Diesel	ND	---	27.9	mg/kg dry	1	03/25/22 21:40	NWTPH-Dx	
Oil	ND	---	55.9	mg/kg dry	1	03/25/22 21:40	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 84 %*		*Limits: 50-150 %*	*1*	*03/25/22 21:40*	*NWTPH-Dx*	
SWW-7(12) (A2C0917-03)				**Matrix: Soil**		**Batch: 22C1033**		
Diesel	ND	---	27.0	mg/kg dry	1	03/25/22 22:03	NWTPH-Dx	
Oil	ND	---	53.9	mg/kg dry	1	03/25/22 22:03	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*1*	*03/25/22 22:03*	*NWTPH-Dx*	
SWW-8(12) (A2C0917-04)				**Matrix: Soil**		**Batch: 22C1033**		
Diesel	ND	---	26.2	mg/kg dry	1	03/25/22 22:25	NWTPH-Dx	
Oil	ND	---	52.4	mg/kg dry	1	03/25/22 22:25	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*03/25/22 22:25*	*NWTPH-Dx*	
SWW-9(12) (A2C0917-05)				**Matrix: Soil**		**Batch: 22C1033**		
Diesel	ND	---	29.1	mg/kg dry	1	03/25/22 22:48	NWTPH-Dx	
Oil	ND	---	58.1	mg/kg dry	1	03/25/22 22:48	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*03/25/22 22:48*	*NWTPH-Dx*	

Apex Laboratories

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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
SWW-5(12) (A2C0917-01RE1)				**Matrix: Soil**		**Batch: 22C0922**		
Gasoline Range Organics	**1690**	---	143	mg/kg dry	1000	03/23/22 22:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 116 %*	*Limits: 50-150 %*		*1*	*03/23/22 22:47*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/23/22 22:47*	*NWTPH-Gx (MS)*	
SWW-6(12) (A2C0917-02)				**Matrix: Soil**		**Batch: 22C0873**		
Gasoline Range Organics	ND	---	8.47	mg/kg dry	50	03/22/22 17:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/22/22 17:47*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*03/22/22 17:47*	*NWTPH-Gx (MS)*	
SWW-7(12) (A2C0917-03)				**Matrix: Soil**		**Batch: 22C0873**		
Gasoline Range Organics	ND	---	8.60	mg/kg dry	50	03/22/22 18:14	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*03/22/22 18:14*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*03/22/22 18:14*	*NWTPH-Gx (MS)*	
SWW-8(12) (A2C0917-04)				**Matrix: Soil**		**Batch: 22C0873**		
Gasoline Range Organics	ND	---	8.41	mg/kg dry	50	03/22/22 19:08	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/22/22 19:08*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*03/22/22 19:08*	*NWTPH-Gx (MS)*	
SWW-9(12) (A2C0917-05)				**Matrix: Soil**		**Batch: 22C0873**		
Gasoline Range Organics	ND	---	12.8	mg/kg dry	50	03/22/22 19:35	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/22/22 19:35*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*03/22/22 19:35*	*NWTPH-Gx (MS)*	

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-5(12) (A2C0917-01)				**Matrix: Soil**		**Batch: 22C0873**		
Benzene	ND	---	0.0571	mg/kg dry	200	03/22/22 20:29	5035A/8260D	
Toluene	ND	---	0.285	mg/kg dry	200	03/22/22 20:29	5035A/8260D	
Ethylbenzene	**0.351**	---	0.143	mg/kg dry	200	03/22/22 20:29	5035A/8260D	
Xylenes, total	ND	---	0.999	mg/kg dry	200	03/22/22 20:29	5035A/8260D	R-06
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*03/22/22 20:29*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*03/22/22 20:29*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*	*1*	*03/22/22 20:29*	*5035A/8260D*	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-5(12) (A2C0917-01)				**Matrix: Soil**		**Batch: 22D0281**		**H-06**
Acenaphthene	ND	---	0.308	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.131	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	R-02
Anthracene	ND	---	0.141	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Chrysene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Fluoranthene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Fluorene	**0.908**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
1-Methylnaphthalene	**3.77**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
2-Methylnaphthalene	**5.33**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Naphthalene	ND	---	0.929	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	R-02
Phenanthrene	**1.41**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Pyrene	**0.0542**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Dibenzofuran	**0.220**	---	0.0505	mg/kg dry	4	04/08/22 18:46	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*84 %*	*Limits: 44-120 %*	*4*	*04/08/22 18:46*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*94 %*	*54-127 %*	*4*	*04/08/22 18:46*	*EPA 8270E SIM*	

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Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-5(12) (A2C0917-01RE1)				**Matrix: Soil**				
Batch: 22D0559								
Arsenic	**4.37**	---	1.39	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Barium	**145**	---	1.39	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Cadmium	ND	---	0.278	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Chromium	**14.6**	---	1.39	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Lead	**15.4**	---	0.278	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Mercury	ND	---	0.111	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Selenium	ND	---	1.39	mg/kg dry	10	04/15/22 15:44	EPA 6020B	
Silver	ND	---	0.278	mg/kg dry	10	04/15/22 15:44	EPA 6020B	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-5(12) (A2C0917-01)				**Matrix: Soil**		**Batch: 22C0921**		
% Solids	**75.0**	---	1.00	%	1	03/24/22 10:26	EPA 8000D	
SWW-6(12) (A2C0917-02)				**Matrix: Soil**		**Batch: 22C0921**		
% Solids	**69.1**	---	1.00	%	1	03/24/22 10:26	EPA 8000D	
SWW-7(12) (A2C0917-03)				**Matrix: Soil**		**Batch: 22C0921**		
% Solids	**71.5**	---	1.00	%	1	03/24/22 10:26	EPA 8000D	
SWW-8(12) (A2C0917-04)				**Matrix: Soil**		**Batch: 22C0921**		
% Solids	**71.3**	---	1.00	%	1	03/24/22 10:26	EPA 8000D	
SWW-9(12) (A2C0917-05)				**Matrix: Soil**		**Batch: 22C0921**		
% Solids	**68.6**	---	1.00	%	1	03/24/22 10:26	EPA 8000D	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22C1033 - EPA 3546 (Fuels)							**Soil**					
Blank (22C1033-BLK1)			Prepared: 03/25/22 11:34		Analyzed: 03/25/22 20:55							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 94 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C1033-BS1)			Prepared: 03/25/22 11:34		Analyzed: 03/25/22 21:18							
NWTPH-Dx												
Diesel	117	---	20.0	mg/kg wet	1	125	---	94	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 91 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1033-DUP1)			Prepared: 03/25/22 11:34		Analyzed: 03/25/22 22:03							
QC Source Sample: Non-SDG (A2C0854-02)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	**30%**	
Mineral Oil	ND	---	48.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 91 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1033-DUP3)			Prepared: 03/25/22 11:34		Analyzed: 03/26/22 16:31							
QC Source Sample: Non-SDG (A2C0924-05RE1)												
Diesel	ND	---	21.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**166**	---	43.4	mg/kg dry	1	---	229	---	---	**32**	**30%**	Q-05
Surr: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22C0873 - EPA 5035A							**Soil**					
Blank (22C0873-BLK1)			Prepared: 03/22/22 10:00 Analyzed: 03/22/22 12:52									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*94 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				
LCS (22C0873-BS2)			Prepared: 03/22/22 10:00 Analyzed: 03/22/22 12:25									
NWTPH-Gx (MS)												
Gasoline Range Organics	24.2	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*			*"*				
Duplicate (22C0873-DUP1)			Prepared: 03/16/22 13:13 Analyzed: 03/22/22 14:40									
QC Source Sample: Non-SDG (A2C0854-03)												
Gasoline Range Organics	ND	---	6.82	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*94 %*		*50-150 %*			*"*				
Duplicate (22C0873-DUP2)			Prepared: 03/21/22 09:32 Analyzed: 03/22/22 18:41									
QC Source Sample: SWW-7(12) (A2C0917-03)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	8.60	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				

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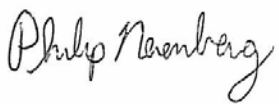

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22C0922 - EPA 5035A							**Soil**					
Blank (22C0922-BLK1)			Prepared: 03/23/22 08:00		Analyzed: 03/23/22 13:24							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*95 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				
LCS (22C0922-BS2)			Prepared: 03/23/22 08:00		Analyzed: 03/23/22 12:57							
NWTPH-Gx (MS)												
Gasoline Range Organics	25.2	---	5.00	mg/kg wet	50	25.0	---	101	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22C0922-DUP1)			Prepared: 03/22/22 07:52		Analyzed: 03/23/22 17:25							
QC Source Sample: Non-SDG (A2C0931-21)												
Gasoline Range Organics	ND	---	8.59	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22C0922-DUP2)			Prepared: 03/22/22 07:58		Analyzed: 03/23/22 18:46							
QC Source Sample: Non-SDG (A2C0931-23)												
Gasoline Range Organics	ND	---	8.11	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C0873 - EPA 5035A							**Soil**					
Blank (22C0873-BLK1)			Prepared: 03/22/22 10:00 Analyzed: 03/22/22 12:52									
5035A/8260D												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*79-120 %*			*"*				
LCS (22C0873-BS1)			Prepared: 03/22/22 10:00 Analyzed: 03/22/22 11:59									
5035A/8260D												
Benzene	1.05	---	0.0100	mg/kg wet	50	1.00	---	105	80-120%	---	---	
Toluene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Ethylbenzene	0.993	---	0.0250	mg/kg wet	50	1.00	---	99	80-120%	---	---	
Xylenes, total	2.90	---	0.0750	mg/kg wet	50	3.00	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				
Duplicate (22C0873-DUP1)			Prepared: 03/16/22 13:13 Analyzed: 03/22/22 14:40									
QC Source Sample: Non-SDG (A2C0854-03)												
Benzene	ND	---	0.0136	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0682	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0341	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.102	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Duplicate (22C0873-DUP2)			Prepared: 03/21/22 09:32 Analyzed: 03/22/22 18:41									
QC Source Sample: SWW-7(12) (A2C0917-03)												
5035A/8260D												
Benzene	ND	---	0.0172	mg/kg dry	50	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C0873 - EPA 5035A							**Soil**					
Duplicate (22C0873-DUP2)			Prepared: 03/21/22 09:32 Analyzed: 03/22/22 18:41									
QC Source Sample: SWW-7(12) (A2C0917-03)												
Toluene	ND	---	0.0860	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0430	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.129	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				
Matrix Spike (22C0873-MS1)			Prepared: 03/21/22 17:10 Analyzed: 03/22/22 16:54									**V-15**
QC Source Sample: Non-SDG (A2C0888-02)												
5035A/8260D												
Benzene	1.74	---	0.0160	mg/kg dry	50	1.60	ND	109	77-121%	---	---	
Toluene	1.58	---	0.0800	mg/kg dry	50	1.60	ND	99	77-121%	---	---	
Ethylbenzene	1.58	---	0.0400	mg/kg dry	50	1.60	ND	99	76-122%	---	---	
Xylenes, total	4.69	---	0.120	mg/kg dry	50	4.81	ND	98	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*79-120 %*			*"*				

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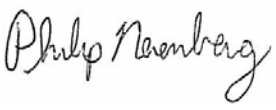

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0917 - 04 20 22 1805

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 22D0281 - EPA 3546							Soil					
Blank (22D0281-BLK1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 13:17									
EPA 8270E SIM												
Acenaphthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 92 %*			*Limits: 44-120 %*			*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*102 %*			*54-127 %*			*"*			
LCS (22D0281-BS1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 13:42									
EPA 8270E SIM												
Acenaphthene	0.443	---	0.00267	mg/kg wet	1	0.533	---	83	40-123%	---	---	
Acenaphthylene	0.455	---	0.00267	mg/kg wet	1	0.533	---	85	32-132%	---	---	
Anthracene	0.441	---	0.00267	mg/kg wet	1	0.533	---	83	47-123%	---	---	
Benz(a)anthracene	0.434	---	0.00267	mg/kg wet	1	0.533	---	81	49-126%	---	---	
Benzo(a)pyrene	0.460	---	0.00267	mg/kg wet	1	0.533	---	86	45-129%	---	---	
Benzo(b)fluoranthene	0.470	---	0.00267	mg/kg wet	1	0.533	---	88	45-132%	---	---	
Benzo(k)fluoranthene	0.475	---	0.00267	mg/kg wet	1	0.533	---	89	47-132%	---	---	
Benzo(g,h,i)perylene	0.377	---	0.00267	mg/kg wet	1	0.533	---	71	43-134%	---	---	
Chrysene	0.425	---	0.00267	mg/kg wet	1	0.533	---	80	50-124%	---	---	

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0917 - 04 20 22 1805

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 22D0281 - EPA 3546							Soil					
LCS (22D0281-BS1)			Prepared: 04/08/22 10:18		Analyzed: 04/08/22 13:42							
Dibenz(a,h)anthracene	0.461	---	0.00267	mg/kg wet	1	0.533	---	87	45-134%	---	---	
Fluoranthene	0.477	---	0.00267	mg/kg wet	1	0.533	---	89	50-127%	---	---	
Fluorene	0.445	---	0.00267	mg/kg wet	1	0.533	---	84	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.398	---	0.00267	mg/kg wet	1	0.533	---	75	45-133%	---	---	
1-Methylnaphthalene	0.442	---	0.00267	mg/kg wet	1	0.533	---	83	40-120%	---	---	
2-Methylnaphthalene	0.420	---	0.00267	mg/kg wet	1	0.533	---	79	38-122%	---	---	
Naphthalene	0.426	---	0.00267	mg/kg wet	1	0.533	---	80	35-123%	---	---	
Phenanthrene	0.426	---	0.00267	mg/kg wet	1	0.533	---	80	50-121%	---	---	
Pyrene	0.472	---	0.00267	mg/kg wet	1	0.533	---	88	47-127%	---	---	
Dibenzofuran	0.445	---	0.00267	mg/kg wet	1	0.533	---	83	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 44-120 %*				*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*95 %*		*54-127 %*				*"*			
Duplicate (22D0281-DUP1)			Prepared: 04/08/22 10:18		Analyzed: 04/08/22 14:58							
QC Source Sample: Non-SDG (A2C1217-01)												
Acenaphthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22D0281 - EPA 3546							**Soil**					
Duplicate (22D0281-DUP1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 14:58									
QC Source Sample: Non-SDG (A2C1217-01)												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 51 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*47 %*	*54-127 %*			*"*					S-06
Matrix Spike (22D0281-MS1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 15:49									
QC Source Sample: Non-SDG (A2C1217-02)												
EPA 8270E SIM												
Acenaphthene	0.499	---	0.161	mg/kg dry	40	0.805	ND	62	40-123%	---	---	
Acenaphthylene	0.550	---	0.161	mg/kg dry	40	0.805	ND	68	32-132%	---	---	
Anthracene	0.474	---	0.161	mg/kg dry	40	0.805	ND	59	47-123%	---	---	
Benz(a)anthracene	0.596	---	0.161	mg/kg dry	40	0.805	0.102	61	49-126%	---	---	
Benzo(a)pyrene	0.557	---	0.161	mg/kg dry	40	0.805	0.119	54	45-129%	---	---	
Benzo(b)fluoranthene	0.580	---	0.161	mg/kg dry	40	0.805	0.170	51	45-132%	---	---	
Benzo(k)fluoranthene	0.602	---	0.161	mg/kg dry	40	0.805	ND	75	47-132%	---	---	
Benzo(g,h,i)perylene	0.463	---	0.161	mg/kg dry	40	0.805	0.0838	47	43-134%	---	---	
Chrysene	0.593	---	0.161	mg/kg dry	40	0.805	0.200	**49**	**50-124%**	---	---	Q-01
Dibenz(a,h)anthracene	0.465	---	0.161	mg/kg dry	40	0.805	ND	58	45-134%	---	---	
Fluoranthene	0.657	---	0.161	mg/kg dry	40	0.805	0.186	58	50-127%	---	---	
Fluorene	0.531	---	0.161	mg/kg dry	40	0.805	ND	66	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.631	---	0.161	mg/kg dry	40	0.805	0.113	64	45-133%	---	---	
1-Methylnaphthalene	0.546	---	0.161	mg/kg dry	40	0.805	ND	68	40-120%	---	---	
2-Methylnaphthalene	0.461	---	0.161	mg/kg dry	40	0.805	ND	57	38-122%	---	---	
Naphthalene	0.599	---	0.161	mg/kg dry	40	0.805	ND	74	35-123%	---	---	
Phenanthrene	0.610	---	0.161	mg/kg dry	40	0.805	0.123	60	50-121%	---	---	
Pyrene	0.724	---	0.161	mg/kg dry	40	0.805	0.271	56	47-127%	---	---	
Dibenzofuran	0.518	---	0.161	mg/kg dry	40	0.805	ND	64	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 44-120 %*			*Dilution: 40x*					S-05
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*			*"*					S-05

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0917 - 04 20 22 1805

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 22D0559 - EPA 3051A							**Soil**					
Blank (22D0559-BLK1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:29									
EPA 6020B												
Arsenic	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Blank (22D0559-BLK3)			Prepared: 04/14/22 15:49 Analyzed: 04/16/22 02:01									
EPA 6020B												
Mercury	ND	---	0.0684	mg/kg wet	10	---	---	---	---	---	---	Q-16, RR-8
LCS (22D0559-BS1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:39									
EPA 6020B												
Arsenic	49.0	---	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Barium	50.3	---	1.00	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Cadmium	49.5	---	0.200	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Chromium	50.0	---	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Lead	50.8	---	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Mercury	0.954	---	0.0800	mg/kg wet	10	1.00	---	95	80-120%	---	---	
Selenium	23.0	---	1.00	mg/kg wet	10	25.0	---	92	80-120%	---	---	
Silver	25.5	---	0.200	mg/kg wet	10	25.0	---	102	80-120%	---	---	
Duplicate (22D0559-DUP1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:54									
QC Source Sample: Non-SDG (A2C1072-02RE1)												
Arsenic	**6.54**	---	0.980	mg/kg wet	10	---	4.42	---	---	**39**	**20%**	PRO,Q-17
Barium	**313**	---	0.980	mg/kg wet	10	---	235	---	---	**28**	**20%**	PRO,Q-17
Cadmium	**1.26**	---	0.196	mg/kg wet	10	---	0.907	---	---	**33**	**20%**	PRO,Q-05
Chromium	**28.2**	---	0.980	mg/kg wet	10	---	19.9	---	---	**34**	**20%**	PRO,Q-17
Lead	**348**	---	0.196	mg/kg wet	10	---	268	---	---	**26**	**20%**	PRO,Q-17
Mercury	**0.275**	---	0.0784	mg/kg wet	10	---	0.224	---	---	20	20%	PRO
Selenium	ND	---	0.980	mg/kg wet	10	---	ND	---	---	**---**	**20%**	PRO
Silver	**0.269**	---	0.196	mg/kg wet	10	---	0.195	---	---	**32**	**20%**	PRO,Q-05

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22D0559 - EPA 3051A							**Soil**					
Matrix Spike (22D0559-MS1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 16:00									
QC Source Sample: Non-SDG (A2C1072-02RE1)												
EPA 6020B												
Arsenic	49.0	---	0.971	mg/kg wet	10	48.5	4.42	92	75-125%	---	---	PRO
Barium	310	---	0.971	mg/kg wet	10	48.5	235	**154**	**75-125%**	---	---	PRO
Cadmium	47.2	---	0.194	mg/kg wet	10	48.5	0.907	95	75-125%	---	---	PRO
Chromium	70.1	---	0.971	mg/kg wet	10	48.5	19.9	103	75-125%	---	---	PRO
Lead	339	---	0.194	mg/kg wet	10	48.5	268	**147**	**75-125%**	---	---	PRO
Mercury	1.10	---	0.0777	mg/kg wet	10	0.971	0.224	90	75-125%	---	---	PRO
Selenium	20.6	---	0.971	mg/kg wet	10	24.3	ND	85	75-125%	---	---	PRO
Silver	23.9	---	0.194	mg/kg wet	10	24.3	0.195	98	75-125%	---	---	PRO

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22C0921 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0921-DUP1)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: SWW-5(12) (A2C0917-01)												
EPA 8000D												
% Solids	**73.0**	---	1.00	%	1	---	75.0	---	---	3	10%	
Duplicate (22C0921-DUP2)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: SWW-6(12) (A2C0917-02)												
EPA 8000D												
% Solids	**68.8**	---	1.00	%	1	---	69.1	---	---	0.5	10%	
Duplicate (22C0921-DUP3)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: SWW-7(12) (A2C0917-03)												
EPA 8000D												
% Solids	**71.5**	---	1.00	%	1	---	71.5	---	---	0.008	10%	
Duplicate (22C0921-DUP4)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: SWW-8(12) (A2C0917-04)												
EPA 8000D												
% Solids	**70.0**	---	1.00	%	1	---	71.3	---	---	2	10%	
Duplicate (22C0921-DUP5)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: SWW-9(12) (A2C0917-05)												
EPA 8000D												
% Solids	**68.1**	---	1.00	%	1	---	68.6	---	---	0.8	10%	
Duplicate (22C0921-DUP6)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: Non-SDG (A2C0924-01)												
% Solids	**91.3**	---	1.00	%	1	---	91.8	---	---	0.5	10%	
Duplicate (22C0921-DUP7)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: Non-SDG (A2C0924-02)												
% Solids	**84.6**	---	1.00	%	1	---	81.5	---	---	4	10%	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 22C0921 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0921-DUP8)			Prepared: 03/23/22 10:55		Analyzed: 03/24/22 10:26							
QC Source Sample: Non-SDG (A2C0924-03)												
% Solids	**84.8**	---	1.00	%	1	---	82.5	---	---	3	10%	
Duplicate (22C0921-DUP9)			Prepared: 03/23/22 19:05		Analyzed: 03/24/22 10:26							
QC Source Sample: Non-SDG (A2C1000-01)												
% Solids	**97.2**	---	1.00	%	1	---	96.8	---	---	0.4	10%	

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

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C0917 - 04 20 22 1805

SAMPLE PREPARATION INFORMATION

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: 22C1033							
A2C0917-01RE1	Soil	NWTPH-Dx	03/21/22 08:11	03/25/22 11:34	10.05g/5mL	10g/5mL	1.00
A2C0917-02	Soil	NWTPH-Dx	03/21/22 08:29	03/25/22 11:34	10.36g/5mL	10g/5mL	0.97
A2C0917-03	Soil	NWTPH-Dx	03/21/22 09:32	03/25/22 11:34	10.37g/5mL	10g/5mL	0.96
A2C0917-04	Soil	NWTPH-Dx	03/21/22 09:36	03/25/22 11:34	10.71g/5mL	10g/5mL	0.93
A2C0917-05	Soil	NWTPH-Dx	03/21/22 09:45	03/25/22 11:34	10.03g/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: 22C0873							
A2C0917-02	Soil	NWTPH-Gx (MS)	03/21/22 08:29	03/21/22 08:29	5.8g/5mL	5g/5mL	0.86
A2C0917-03	Soil	NWTPH-Gx (MS)	03/21/22 09:32	03/21/22 09:32	5.29g/5mL	5g/5mL	0.95
A2C0917-04	Soil	NWTPH-Gx (MS)	03/21/22 09:36	03/21/22 09:36	5.49g/5mL	5g/5mL	0.91
A2C0917-05	Soil	NWTPH-Gx (MS)	03/21/22 09:45	03/21/22 09:45	3.47g/5mL	5g/5mL	1.44
Batch: 22C0922							
A2C0917-01RE1	Soil	NWTPH-Gx (MS)	03/21/22 08:11	03/21/22 08:11	6.1g/5mL	5g/5mL	0.82

BTEX Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0873							
A2C0917-01	Soil	5035A/8260D	03/21/22 08:11	03/21/22 08:11	6.1g/5mL	5g/5mL	0.82

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
Batch: 22D0281							
A2C0917-01	Soil	EPA 8270E SIM	03/21/22 08:11	04/08/22 14:03	10.57g/5mL	10g/5mL	0.95

Total Metals by EPA 6020B (ICPMS)

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D0559							
A2C0917-01RE1	Soil	EPA 6020B	03/21/22 08:11	04/14/22 15:49	0.479g/50mL	0.5g/50mL	1.04

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0921							
A2C0917-01	Soil	EPA 8000D	03/21/22 08:11	03/23/22 10:55			NA
A2C0917-02	Soil	EPA 8000D	03/21/22 08:29	03/23/22 10:55			NA
A2C0917-03	Soil	EPA 8000D	03/21/22 09:32	03/23/22 10:55			NA
A2C0917-04	Soil	EPA 8000D	03/21/22 09:36	03/23/22 10:55			NA
A2C0917-05	Soil	EPA 8000D	03/21/22 09:45	03/23/22 10:55			NA

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

QUALIFIER DEFINITIONS

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

Apex Laboratories

H-06	This sample was received, or the analysis requested, outside the recommended holding time.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
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.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
R-06	Reporting level raised due to possible carryover from a previous sample.
RR-8	Not Reported. Sample was rerun to confirm original result. Original sample is reported.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
S-06	Surrogate recovery is outside of established control limits.
V-15	Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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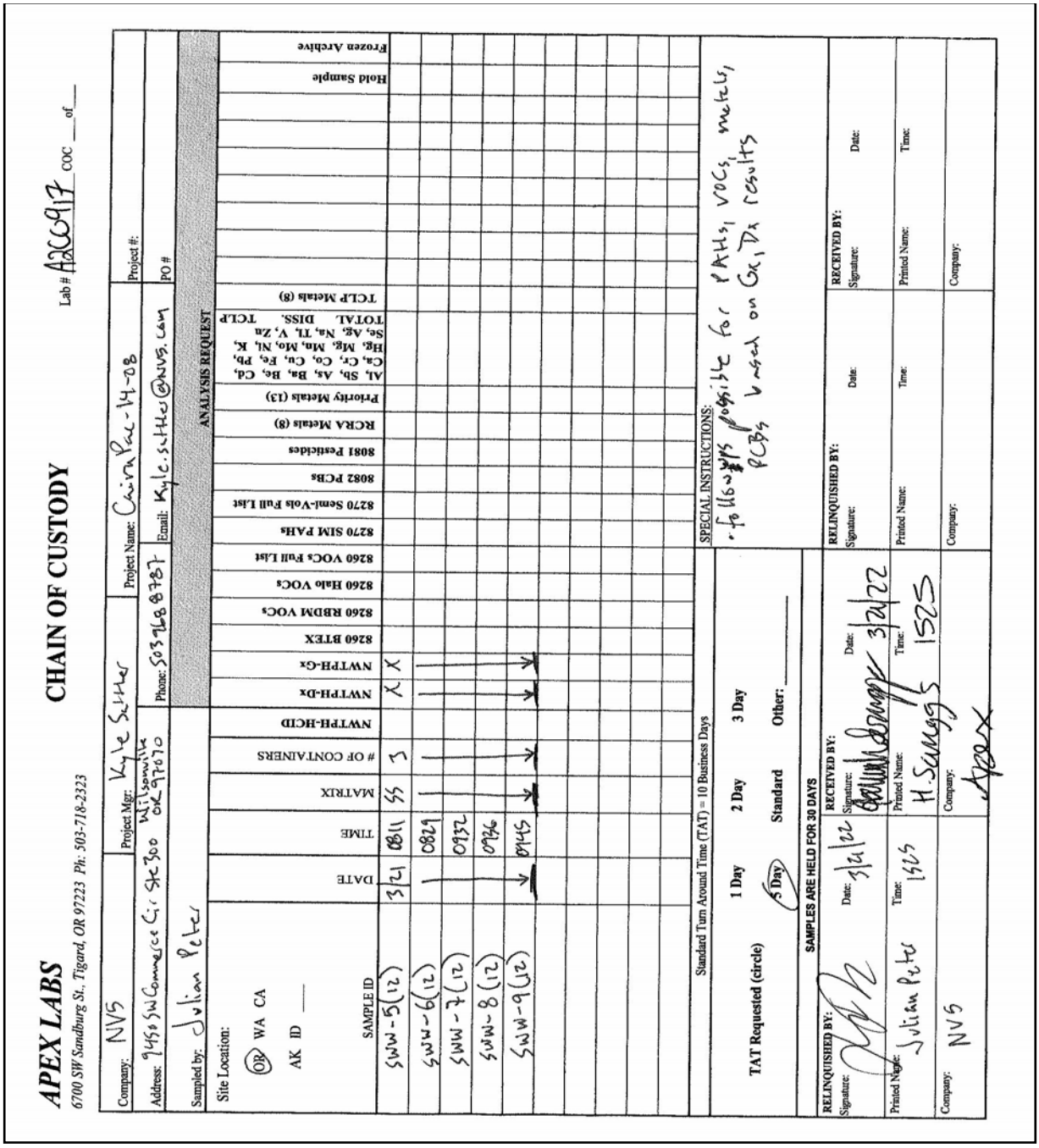
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2C0917 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:
Address: 9450 SW Commerce Cir. Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@nv5.com | PO #
Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

ANALYSIS REQUEST

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWW-5(12)	3/21	0811	SS	3		X	X														
SWW-6(12)		0829																			
SWW-7(12)		0932																			
SWW-8(12)		0936																			
SWW-9(12)		0945																			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: ___

SPECIAL INSTRUCTIONS:
• Please analyze for PAHs, VOCs, metals, PCBs & run on Gx, Dx results

SAMPLES ARE HELD FOR 30 DAYS

	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:		Date: 3/24/22		
Printed Name:	Julian Peter	H. Samuels		
Time:	1445	1525		
Company:	NV5	Apex		

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0917 - 04 20 22 1805**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C0917

Project/Project #: CairnPac-14-08

Delivery Info:
Date/time received: 3/21/22 @ 1525 By: HAS
Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___
Cooler Inspection Date/time inspected: 3/21/22 @ 1525 By: HAS
Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X
Signed/dated by client? Yes X No ___
Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/22/22 @ 12:54 By: ZKAM
All samples intact? Yes X No ___ Comments: ___
Bottle labels/COCs agree? Yes X No ___ Comments: ___
COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___
Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments ___
Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X
Comments: ___
Additional information: ___

Labeled by: ZKAM Witness: HAS Cooler Inspected by: HAS

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C0987 - CairnPac-14-08 - [none]

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 A2C0987, which was received by the laboratory on 3/22/2022 at 3:15:00PM.

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)

Cooler #1 4.7 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-1(17)	A2C0987-01	Soil	03/22/22 08:56	03/22/22 15:15
HA-2(18)	A2C0987-02	Soil	03/22/22 09:11	03/22/22 15:15
HA-3(19)	A2C0987-03	Soil	03/22/22 09:27	03/22/22 15:15
HA-4(19)	A2C0987-04	Soil	03/22/22 09:45	03/22/22 15:15
HA-5(18)	A2C0987-05	Soil	03/22/22 10:00	03/22/22 15:15
HA-6(20)	A2C0987-06	Soil	03/22/22 10:27	03/22/22 15:15
HA-7(19)	A2C0987-07	Soil	03/22/22 12:11	03/22/22 15:15
SWW-10(18)	A2C0987-08	Soil	03/22/22 13:18	03/22/22 15:15
SWW-11(18)	A2C0987-09	Soil	03/22/22 13:25	03/22/22 15:15
SWW-12(18)	A2C0987-10	Soil	03/22/22 13:37	03/22/22 15:15

Apex Laboratories

Philip Nerenberg

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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
HA-1(17) (A2C0987-01)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.7	mg/kg dry	1	03/28/22 22:13	NWTPH-Dx	
Oil	ND	---	51.3	mg/kg dry	1	03/28/22 22:13	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*03/28/22 22:13*	*NWTPH-Dx*	
HA-2(18) (A2C0987-02)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	27.5	mg/kg dry	1	03/28/22 22:34	NWTPH-Dx	
Oil	ND	---	55.0	mg/kg dry	1	03/28/22 22:34	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 79 %*		*Limits: 50-150 %*	*1*	*03/28/22 22:34*	*NWTPH-Dx*	
HA-3(19) (A2C0987-03)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	28.2	mg/kg dry	1	03/28/22 22:54	NWTPH-Dx	
Oil	ND	---	56.4	mg/kg dry	1	03/28/22 22:54	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 75 %*		*Limits: 50-150 %*	*1*	*03/28/22 22:54*	*NWTPH-Dx*	
HA-4(19) (A2C0987-04)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.0	mg/kg dry	1	03/28/22 23:15	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/28/22 23:15	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:15*	*NWTPH-Dx*	
HA-5(18) (A2C0987-05)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.8	mg/kg dry	1	03/28/22 23:36	NWTPH-Dx	
Oil	ND	---	51.5	mg/kg dry	1	03/28/22 23:36	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 84 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:36*	*NWTPH-Dx*	
HA-6(20) (A2C0987-06)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.0	mg/kg dry	1	03/28/22 23:56	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/28/22 23:56	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:56*	*NWTPH-Dx*	
HA-7(19) (A2C0987-07)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 00:17	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:17	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*1*	*03/29/22 00:17*	*NWTPH-Dx*	

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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
SWW-10(18) (A2C0987-08)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	**42.0**	---	25.0	mg/kg dry	1	03/29/22 00:37	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:37	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 69 %*	*Limits: 50-150 %*		*1*	*03/29/22 00:37*	*NWTPH-Dx*	
SWW-11(18) (A2C0987-09)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 00:58	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:58	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 72 %*	*Limits: 50-150 %*		*1*	*03/29/22 00:58*	*NWTPH-Dx*	
SWW-12(18) (A2C0987-10)				**Matrix: Soil**		**Batch: 22C1061**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 01:18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 01:18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*	*Limits: 50-150 %*		*1*	*03/29/22 01:18*	*NWTPH-Dx*	

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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
HA-1(17) (A2C0987-01)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	7.74	mg/kg dry	50	03/24/22 14:40	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*03/24/22 14:40*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*117 %*	*50-150 %*	*1*	*03/24/22 14:40*	*NWTPH-Gx (MS)*	
HA-2(18) (A2C0987-02)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	10.3	mg/kg dry	50	03/24/22 15:34	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*		*Limits: 50-150 %*	*1*	*03/24/22 15:34*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*116 %*	*50-150 %*	*1*	*03/24/22 15:34*	*NWTPH-Gx (MS)*	
HA-3(19) (A2C0987-03)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	8.51	mg/kg dry	50	03/24/22 16:00	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*		*Limits: 50-150 %*	*1*	*03/24/22 16:00*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*117 %*	*50-150 %*	*1*	*03/24/22 16:00*	*NWTPH-Gx (MS)*	
HA-4(19) (A2C0987-04)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	7.33	mg/kg dry	50	03/24/22 16:27	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*03/24/22 16:27*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*118 %*	*50-150 %*	*1*	*03/24/22 16:27*	*NWTPH-Gx (MS)*	
HA-5(18) (A2C0987-05)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	8.64	mg/kg dry	50	03/24/22 16:54	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*03/24/22 16:54*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*118 %*	*50-150 %*	*1*	*03/24/22 16:54*	*NWTPH-Gx (MS)*	
HA-6(20) (A2C0987-06)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	7.17	mg/kg dry	50	03/24/22 17:21	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*		*Limits: 50-150 %*	*1*	*03/24/22 17:21*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*117 %*	*50-150 %*	*1*	*03/24/22 17:21*	*NWTPH-Gx (MS)*	
HA-7(19) (A2C0987-07)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	6.61	mg/kg dry	50	03/24/22 17:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*		*Limits: 50-150 %*	*1*	*03/24/22 17:48*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*117 %*	*50-150 %*	*1*	*03/24/22 17:48*	*NWTPH-Gx (MS)*	
SWW-10(18) (A2C0987-08)				**Matrix: Soil**		**Batch: 22C0969**		

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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
SWW-10(18) (A2C0987-08)				**Matrix: Soil**		**Batch: 22C0969**		
Gasoline Range Organics	**9.46**	---	7.57	mg/kg dry	50	03/24/22 15:05	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*03/24/22 15:05*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*03/24/22 15:05*	*NWTPH-Gx (MS)*	
SWW-11(18) (A2C0987-09)				**Matrix: Soil**		**Batch: 22C0969**		
Gasoline Range Organics	ND	---	8.10	mg/kg dry	50	03/24/22 15:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*03/24/22 15:32*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*03/24/22 15:32*	*NWTPH-Gx (MS)*	
SWW-12(18) (A2C0987-10)				**Matrix: Soil**		**Batch: 22C0969**		
Gasoline Range Organics	ND	---	7.31	mg/kg dry	50	03/24/22 15:59	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/24/22 15:59*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*03/24/22 15:59*	*NWTPH-Gx (MS)*	

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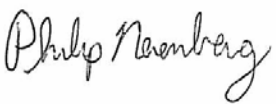

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-1(17) (A2C0987-01)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**75.4**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-2(18) (A2C0987-02)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**71.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-3(19) (A2C0987-03)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**69.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-4(19) (A2C0987-04)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**81.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-5(18) (A2C0987-05)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**74.3**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-6(20) (A2C0987-06)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**81.4**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-7(19) (A2C0987-07)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**83.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
SWW-10(18) (A2C0987-08)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**83.3**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
SWW-11(18) (A2C0987-09)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**82.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
SWW-12(18) (A2C0987-10)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**81.4**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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 22C1061 - EPA 3546 (Fuels)							**Soil**					
Blank (22C1061-BLK1)			Prepared: 03/28/22 05:49		Analyzed: 03/28/22 08:10							
NWTPH-Dx												
Diesel	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C1061-BS1)			Prepared: 03/28/22 05:49		Analyzed: 03/28/22 08:30							
NWTPH-Dx												
Diesel	118	---	20.0	mg/kg wet	1	125	---	95	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 89 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1061-DUP1)			Prepared: 03/28/22 05:49		Analyzed: 03/28/22 09:11							
QC Source Sample: Non-SDG (A2C1130-01)												
Diesel	**28.1**	---	21.1	mg/kg dry	1	---	21.1	---	---	29	30%	
Oil	ND	---	42.2	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	42.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 81 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1061-DUP2)			Prepared: 03/28/22 07:40		Analyzed: 03/29/22 01:39							
QC Source Sample: SWW-12(18) (A2C0987-10)												
NWTPH-Dx												
Diesel	ND	---	24.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	48.9	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	48.9	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 77 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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 22C0969 - EPA 5035A							**Soil**					
Blank (22C0969-BLK1)			Prepared: 03/24/22 08:30 Analyzed: 03/24/22 12:24									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				
LCS (22C0969-BS2)			Prepared: 03/24/22 08:30 Analyzed: 03/24/22 11:57									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.4	---	5.00	mg/kg wet	50	25.0	---	101	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*			*"*				
Duplicate (22C0969-DUP1)			Prepared: 03/23/22 14:30 Analyzed: 03/24/22 14:38									
QC Source Sample: Non-SDG (A2C1010-04)												
Gasoline Range Organics	ND	---	7.94	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22C0969-DUP2)			Prepared: 03/22/22 09:15 Analyzed: 03/24/22 19:07									
QC Source Sample: Non-SDG (A2C1005-04)												
Gasoline Range Organics	ND	---	5.92	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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 22C0987 - EPA 5035A								Soil				
Blank (22C0987-BLK1)				Prepared: 03/24/22 12:00 Analyzed: 03/24/22 14:13								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*114 %*	*50-150 %*			*"*					
LCS (22C0987-BS2)				Prepared: 03/24/22 12:00 Analyzed: 03/24/22 13:46								
NWTPH-Gx (MS)												
Gasoline Range Organics	28.6	---	5.00	mg/kg wet	50	25.0	---	114	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 106 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*111 %*	*50-150 %*			*"*					
Duplicate (22C0987-DUP1)				Prepared: 03/22/22 08:56 Analyzed: 03/24/22 15:07								
QC Source Sample: HA-1(17) (A2C0987-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	7.74	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*116 %*	*50-150 %*			*"*					
Duplicate (22C0987-DUP2)				Prepared: 03/23/22 08:59 Analyzed: 03/24/22 19:35								
QC Source Sample: Non-SDG (A2C1034-01)												
Gasoline Range Organics	ND	---	8.56	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*118 %*	*50-150 %*			*"*					

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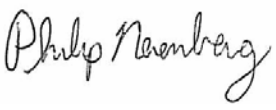

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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 22C0988 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C0988-DUP1)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: HA-1(17) (A2C0987-01)												
EPA 8000D												
% Solids	**74.7**	---	1.00	%	1	---	75.4	---	---	0.9	10%	
Duplicate (22C0988-DUP2)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: HA-2(18) (A2C0987-02)												
EPA 8000D												
% Solids	**71.7**	---	1.00	%	1	---	71.5	---	---	0.3	10%	
Duplicate (22C0988-DUP3)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: HA-3(19) (A2C0987-03)												
EPA 8000D												
% Solids	**69.4**	---	1.00	%	1	---	69.5	---	---	0.2	10%	
Duplicate (22C0988-DUP4)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: HA-4(19) (A2C0987-04)												
EPA 8000D												
% Solids	**81.5**	---	1.00	%	1	---	81.5	---	---	0.09	10%	
Duplicate (22C0988-DUP5)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1083-01)												
% Solids	**78.1**	---	1.00	%	1	---	78.3	---	---	0.3	10%	
Duplicate (22C0988-DUP6)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1084-01)												
% Solids	**78.1**	---	1.00	%	1	---	79.2	---	---	1	10%	
Duplicate (22C0988-DUP7)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1088-01)												
% Solids	**75.4**	---	1.00	%	1	---	75.3	---	---	0.2	10%	

Apex Laboratories

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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

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

Apex Laboratories

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

SAMPLE PREPARATION INFORMATION

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: 22C1061							
A2C0987-01	Soil	NWTPH-Dx	03/22/22 08:56	03/28/22 07:40	10.34g/5mL	10g/5mL	0.97
A2C0987-02	Soil	NWTPH-Dx	03/22/22 09:11	03/28/22 07:40	10.17g/5mL	10g/5mL	0.98
A2C0987-03	Soil	NWTPH-Dx	03/22/22 09:27	03/28/22 07:40	10.2g/5mL	10g/5mL	0.98
A2C0987-04	Soil	NWTPH-Dx	03/22/22 09:45	03/28/22 07:40	10.35g/5mL	10g/5mL	0.97
A2C0987-05	Soil	NWTPH-Dx	03/22/22 10:00	03/28/22 07:40	10.45g/5mL	10g/5mL	0.96
A2C0987-06	Soil	NWTPH-Dx	03/22/22 10:27	03/28/22 07:40	10.21g/5mL	10g/5mL	0.98
A2C0987-07	Soil	NWTPH-Dx	03/22/22 12:11	03/28/22 07:40	10.22g/5mL	10g/5mL	0.98
A2C0987-08	Soil	NWTPH-Dx	03/22/22 13:18	03/28/22 07:40	10.08g/5mL	10g/5mL	0.99
A2C0987-09	Soil	NWTPH-Dx	03/22/22 13:25	03/28/22 07:40	10.59g/5mL	10g/5mL	0.94
A2C0987-10	Soil	NWTPH-Dx	03/22/22 13:37	03/28/22 07:40	10.2g/5mL	10g/5mL	0.98

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: 22C0969							
A2C0987-08	Soil	NWTPH-Gx (MS)	03/22/22 13:18	03/22/22 13:18	4.57g/5mL	5g/5mL	1.09
A2C0987-09	Soil	NWTPH-Gx (MS)	03/22/22 13:25	03/22/22 13:25	4.31g/5mL	5g/5mL	1.16
A2C0987-10	Soil	NWTPH-Gx (MS)	03/22/22 13:37	03/22/22 13:37	4.98g/5mL	5g/5mL	1.00
Batch: 22C0987							
A2C0987-01	Soil	NWTPH-Gx (MS)	03/22/22 08:56	03/22/22 08:56	5.43g/5mL	5g/5mL	0.92
A2C0987-02	Soil	NWTPH-Gx (MS)	03/22/22 09:11	03/22/22 09:11	4.21g/5mL	5g/5mL	1.19
A2C0987-03	Soil	NWTPH-Gx (MS)	03/22/22 09:27	03/22/22 09:27	5.69g/5mL	5g/5mL	0.88
A2C0987-04	Soil	NWTPH-Gx (MS)	03/22/22 09:45	03/22/22 09:45	4.95g/5mL	5g/5mL	1.01
A2C0987-05	Soil	NWTPH-Gx (MS)	03/22/22 10:00	03/22/22 10:00	4.87g/5mL	5g/5mL	1.03
A2C0987-06	Soil	NWTPH-Gx (MS)	03/22/22 10:27	03/22/22 10:27	5.1g/5mL	5g/5mL	0.98
A2C0987-07	Soil	NWTPH-Gx (MS)	03/22/22 12:11	03/22/22 12:11	5.32g/5mL	5g/5mL	0.94

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0988							
A2C0987-01	Soil	EPA 8000D	03/22/22 08:56	03/24/22 12:33			NA
A2C0987-02	Soil	EPA 8000D	03/22/22 09:11	03/24/22 12:33			NA
A2C0987-03	Soil	EPA 8000D	03/22/22 09:27	03/24/22 12:33			NA

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2C0987-04	Soil	EPA 8000D	03/22/22 09:45	03/24/22 12:33			NA
A2C0987-05	Soil	EPA 8000D	03/22/22 10:00	03/24/22 12:33			NA
A2C0987-06	Soil	EPA 8000D	03/22/22 10:27	03/24/22 12:33			NA
A2C0987-07	Soil	EPA 8000D	03/22/22 12:11	03/24/22 12:33			NA
A2C0987-08	Soil	EPA 8000D	03/22/22 13:18	03/24/22 12:33			NA
A2C0987-09	Soil	EPA 8000D	03/22/22 13:25	03/24/22 12:33			NA
A2C0987-10	Soil	EPA 8000D	03/22/22 13:37	03/24/22 12:33			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

QUALIFIER DEFINITIONS

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

There are No Qualifiers on Sample or QC Data for this report

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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:

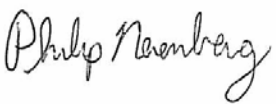
" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " 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.

Apex Laboratories



Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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.

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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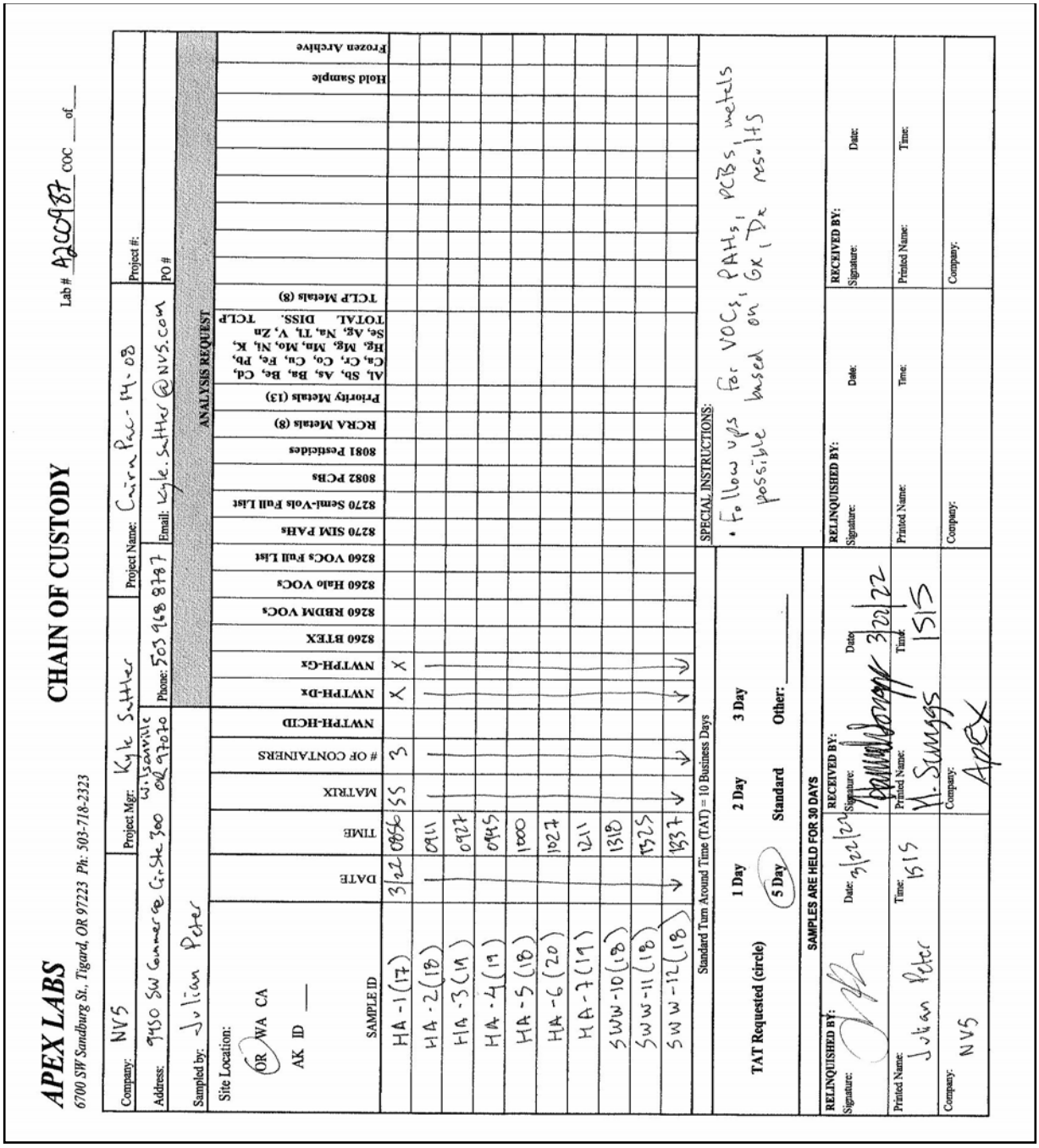
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2C0987 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:
Address: 9450 SW Commerce Circle Suite 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #
Sampled by: Julian Peter

Site Location: OR WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
HA-1(17)	3/22	0856	SS	3		X	X														
HA-2(18)		0911																			
HA-3(18)		0927																			
HA-4(19)		0945																			
HA-5(18)		1000																			
HA-6(20)		1027																			
HA-7(19)		1211																			
SWW-10(18)		1318																			
SWW-11(18)		1525																			
SWW-12(18)	↓	1337	↓	↓		↓	↓														

Standard Turn Around Time (TAT) = 10 Business Days

SPECIAL INSTRUCTIONS:
• Follow ups for VOCs, PAHs, PCBs, metals possible based on GX, Dx results

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/22/22	Date: 3/22/22	Date:	Date:
Time: 1515	Time: 1515	Time:	Time:
Printed Name: Julian Peter	Printed Name: M. Suggs	Printed Name:	Printed Name:
Company: NV5	Company: Apex	Company:	Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C0987 - 04 04 22 2132**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C0987

Project/Project #: CairnPac - 14-08

Delivery Info:
Date/time received: 3/22/22 @ 1515 By: MAS
Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___
Cooler Inspection Date/time inspected: 3/22/22 @ ___ By: MAS
Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X
Signed/dated by client? Yes X No ___
Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.7						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/23/22 @ 11:4 By: KAM
All samples intact? Yes X No ___ Comments: ___
Bottle labels/COCs agree? Yes X No ___ Comments: ___
COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___
Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments ___
Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X
Comments: ___
Additional information: ___

Labeled by: KAM Witness: [illegible] Cooler Inspected by: ___

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1034 - CairnPac-14-08 - [none]

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 A2C1034, which was received by the laboratory on 3/23/2022 at 3:45:00PM.

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)

Cooler #1	2.1 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

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-8(20)	A2C1034-01	Soil	03/23/22 08:59	03/23/22 15:45
HA-8(25)	A2C1034-02	Soil	03/23/22 09:23	03/23/22 15:45
HA-9(21)	A2C1034-03	Soil	03/23/22 09:58	03/23/22 15:45
HA-9(26)	A2C1034-04	Soil	03/23/22 10:18	03/23/22 15:45
HA-10(21)	A2C1034-05	Soil	03/23/22 10:58	03/23/22 15:45
HA-10(26)	A2C1034-06	Soil	03/23/22 11:29	03/23/22 15:45
HA-11(21)	A2C1034-07	Soil	03/23/22 13:20	03/23/22 15:45
HA-11(26)	A2C1034-08	Soil	03/23/22 13:31	03/23/22 15:45
HA-12(21)	A2C1034-09	Soil	03/23/22 13:46	03/23/22 15:45
HA-12(26)	A2C1034-10	Soil	03/23/22 14:26	03/23/22 15:45

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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
HA-8(20) (A2C1034-01)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	ND	---	28.6	mg/kg dry	1	03/25/22 00:40	NWTPH-Dx	
Oil	ND	---	57.2	mg/kg dry	1	03/25/22 00:40	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*03/25/22 00:40*	*NWTPH-Dx*	
HA-8(25) (A2C1034-02)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	ND	---	25.0	mg/kg dry	1	03/25/22 01:25	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/25/22 01:25	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*03/25/22 01:25*	*NWTPH-Dx*	
HA-9(21) (A2C1034-03)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	**45.3**	---	25.0	mg/kg dry	1	03/25/22 01:47	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/25/22 01:47	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*03/25/22 01:47*	*NWTPH-Dx*	
HA-9(26) (A2C1034-04)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	ND	---	26.8	mg/kg dry	1	03/24/22 21:16	NWTPH-Dx	
Oil	ND	---	53.7	mg/kg dry	1	03/24/22 21:16	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*03/24/22 21:16*	*NWTPH-Dx*	
HA-10(21) (A2C1034-05RE1)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	**14700**	---	1280	mg/kg dry	50	03/25/22 09:57	NWTPH-Dx	**F-20**
Oil	ND	---	2560	mg/kg dry	50	03/25/22 09:57	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: %*		*Limits: 50-150 %*	*50*	*03/25/22 09:57*	*NWTPH-Dx*	*S-01*
HA-10(26) (A2C1034-06RE1)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	**3750**	---	118	mg/kg dry	5	03/25/22 10:18	NWTPH-Dx	
Oil	ND	---	236	mg/kg dry	5	03/25/22 10:18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 99 %*		*Limits: 50-150 %*	*5*	*03/25/22 10:18*	*NWTPH-Dx*	*S-05*
HA-11(21) (A2C1034-07)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	ND	---	25.0	mg/kg dry	1	03/24/22 22:24	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/24/22 22:24	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*03/24/22 22:24*	*NWTPH-Dx*	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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
HA-11(26) (A2C1034-08)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	ND	---	25.0	mg/kg dry	1	03/24/22 22:47	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/24/22 22:47	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 95 %*		*Limits: 50-150 %*	*1*	*03/24/22 22:47*	*NWTPH-Dx*	
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	**1270**	---	28.0	mg/kg dry	1	03/24/22 23:09	NWTPH-Dx	**F-20**
Oil	ND	---	56.0	mg/kg dry	1	03/24/22 23:09	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*03/24/22 23:09*	*NWTPH-Dx*	
HA-12(26) (A2C1034-10)				**Matrix: Soil**		**Batch: 22C0983**		
Diesel	**1560**	---	25.0	mg/kg dry	1	03/24/22 23:32	NWTPH-Dx	**F-20**
Oil	ND	---	50.0	mg/kg dry	1	03/24/22 23:32	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*03/24/22 23:32*	*NWTPH-Dx*	

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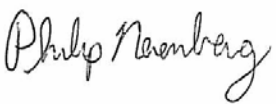

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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
HA-8(20) (A2C1034-01)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	8.56	mg/kg dry	50	03/24/22 19:08	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*03/24/22 19:08*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*118 %*		*50-150 %*	*1*	*03/24/22 19:08*	*NWTPH-Gx (MS)*	
HA-8(25) (A2C1034-02)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	5.92	mg/kg dry	50	03/24/22 20:02	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*03/24/22 20:02*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*120 %*		*50-150 %*	*1*	*03/24/22 20:02*	*NWTPH-Gx (MS)*	
HA-9(21) (A2C1034-03)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	7.59	mg/kg dry	50	03/24/22 20:29	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*03/24/22 20:29*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*118 %*		*50-150 %*	*1*	*03/24/22 20:29*	*NWTPH-Gx (MS)*	
HA-9(26) (A2C1034-04)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	6.73	mg/kg dry	50	03/24/22 20:56	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*03/24/22 20:56*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*117 %*		*50-150 %*	*1*	*03/24/22 20:56*	*NWTPH-Gx (MS)*	
HA-10(21) (A2C1034-05RE1)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	**4820**	---	285	mg/kg dry	2000	03/25/22 21:53	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*03/25/22 21:53*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*90 %*		*50-150 %*	*1*	*03/25/22 21:53*	*NWTPH-Gx (MS)*	
HA-10(26) (A2C1034-06)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	6.51	mg/kg dry	50	03/24/22 21:23	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 103 %*		*Limits: 50-150 %*	*1*	*03/24/22 21:23*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*119 %*		*50-150 %*	*1*	*03/24/22 21:23*	*NWTPH-Gx (MS)*	
HA-11(21) (A2C1034-07)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	7.25	mg/kg dry	50	03/24/22 21:50	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*		*Limits: 50-150 %*	*1*	*03/24/22 21:50*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)		*117 %*		*50-150 %*	*1*	*03/24/22 21:50*	*NWTPH-Gx (MS)*	
HA-11(26) (A2C1034-08)				**Matrix: Soil**		**Batch: 22C0987**		

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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
HA-11(26) (A2C1034-08)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	ND	---	6.74	mg/kg dry	50	03/24/22 22:17	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*100 %*	*Limits:* *50-150 %*	*1*	*03/24/22 22:17*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*117 %*	*50-150 %*	*1*	*03/24/22 22:17*	*NWTPH-Gx (MS)*	
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0987**		
Gasoline Range Organics	**451**	---	32.2	mg/kg dry	200	03/24/22 22:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*115 %*	*Limits:* *50-150 %*	*1*	*03/24/22 22:43*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*119 %*	*50-150 %*	*1*	*03/24/22 22:43*	*NWTPH-Gx (MS)*	
HA-12(26) (A2C1034-10RE1)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	**5650**	---	287	mg/kg dry	2000	03/25/22 22:20	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*112 %*	*Limits:* *50-150 %*	*1*	*03/25/22 22:20*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/25/22 22:20*	*NWTPH-Gx (MS)*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-10(21) (A2C1034-05)				**Matrix: Soil**		**Batch: 22C0987**		
Acetone	ND	---	5.69	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Acrylonitrile	ND	---	1.99	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
Benzene	ND	---	0.0854	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Bromobenzene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Bromochloromethane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Bromodichloromethane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Bromoform	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Bromomethane	ND	---	2.85	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
2-Butanone (MEK)	ND	---	2.85	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
n-Butylbenzene	**7.02**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
sec-Butylbenzene	**5.86**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
tert-Butylbenzene	ND	---	0.626	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
Carbon disulfide	ND	---	2.85	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Carbon tetrachloride	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Chlorobenzene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Chloroethane	ND	---	2.85	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Chloroform	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Chloromethane	ND	---	1.42	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
2-Chlorotoluene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
4-Chlorotoluene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Dibromochloromethane	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	1.42	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
Dibromomethane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,2-Dichlorobenzene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1-Dichloroethane	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1-Dichloroethene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-10(21) (A2C1034-05)				**Matrix: Soil**		**Batch: 22C0987**		
1,2-Dichloropropane	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,3-Dichloropropane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
2,2-Dichloropropane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1-Dichloropropene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Ethylbenzene	**18.8**	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Hexachlorobutadiene	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
2-Hexanone	**11.7**	---	11.7	mg/kg dry	200	03/24/22 23:37	5035A/8260D	**R-02**
Isopropylbenzene	**11.2**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
4-Isopropyltoluene	**11.2**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	**M-02**
Methylene chloride	ND	---	2.85	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	37.3	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
Methyl tert-butyl ether (MTBE)	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Naphthalene	**37.6**	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
n-Propylbenzene	**14.1**	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Styrene	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	1.14	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
1,1,2,2-Tetrachloroethane	ND	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Toluene	**0.666**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	**M-04**
1,2,3-Trichlorobenzene	ND	---	1.42	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	1.42	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
1,1,2-Trichloroethane	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Trichlorofluoromethane	ND	---	0.569	mg/kg dry	200	03/24/22 23:37	5035A/8260D	Q-30, ICV-02
1,2,3-Trichloropropane	ND	---	2.56	mg/kg dry	200	03/24/22 23:37	5035A/8260D	R-02
1,3,5-Trimethylbenzene	**33.4**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Vinyl chloride	ND	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
m,p-Xylene	**60.0**	---	0.285	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
o-Xylene	**26.6**	---	0.142	mg/kg dry	200	03/24/22 23:37	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 108 %*		*Limits: 80-120 %*	*1*	*03/24/22 23:37*	*5035A/8260D*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-10(21) (A2C1034-05)				**Matrix: Soil**		**Batch: 22C0987**		
Surrogate: Toluene-d8 (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*03/24/22 23:37*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*94 %*	*79-120 %*	*1*	*03/24/22 23:37*	*5035A/8260D*	
HA-10(21) (A2C1034-05RE1)				**Matrix: Soil**		**Batch: 22C1017**		
1,2,4-Trimethylbenzene	**88.6**	---	2.85	mg/kg dry	2000	03/25/22 21:53	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits: 80-120 %*	*1*	*03/25/22 21:53*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*03/25/22 21:53*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*	*1*	*03/25/22 21:53*	*5035A/8260D*	
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0987**		
Acetone	ND	---	6.43	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Acrylonitrile	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Benzene	ND	---	0.0643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Bromobenzene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Bromochloromethane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Bromodichloromethane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Bromoform	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Bromomethane	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
2-Butanone (MEK)	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
n-Butylbenzene	**0.322**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
sec-Butylbenzene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
tert-Butylbenzene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Carbon disulfide	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Carbon tetrachloride	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Chlorobenzene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Chloroethane	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Chloroform	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Chloromethane	ND	---	1.61	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
2-Chlorotoluene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
4-Chlorotoluene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Dibromochloromethane	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	1.61	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Dibromomethane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0987**		
1,2-Dichlorobenzene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1-Dichloroethane	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1-Dichloroethene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2-Dichloropropane	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,3-Dichloropropane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
2,2-Dichloropropane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1-Dichloropropene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Ethylbenzene	**0.717**	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Hexachlorobutadiene	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
2-Hexanone	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Isopropylbenzene	**0.376**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
4-Isopropyltoluene	**0.476**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	**M-02**
Methylene chloride	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	3.22	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Naphthalene	**1.07**	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
n-Propylbenzene	**0.653**	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Styrene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Toluene	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	1.61	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	1.61	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0987**		
1,1,2-Trichloroethane	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Trichlorofluoromethane	ND	---	0.643	mg/kg dry	200	03/24/22 22:43	5035A/8260D	Q-30, ICV-02
1,2,3-Trichloropropane	ND	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,2,4-Trimethylbenzene	**3.74**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
1,3,5-Trimethylbenzene	**0.981**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Vinyl chloride	ND	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
m,p-Xylene	**1.13**	---	0.322	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
o-Xylene	**0.190**	---	0.161	mg/kg dry	200	03/24/22 22:43	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*03/24/22 22:43*	*5035A/8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*03/24/22 22:43*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*91 %*	*79-120 %*	*1*	*03/24/22 22:43*	*5035A/8260D*	
HA-12(26) (A2C1034-10)				**Matrix: Soil**		**Batch: 22C0987**		
Acetone	ND	---	5.73	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Acrylonitrile	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Benzene	ND	---	0.0573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Bromobenzene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Bromochloromethane	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Bromodichloromethane	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Bromoform	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Bromomethane	ND	---	2.87	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
2-Butanone (MEK)	ND	---	2.87	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
n-Butylbenzene	**6.13**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
sec-Butylbenzene	**4.30**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
tert-Butylbenzene	ND	---	0.602	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
Carbon disulfide	ND	---	2.87	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Carbon tetrachloride	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Chlorobenzene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
Chloroethane	ND	---	2.87	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Chloroform	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Chloromethane	ND	---	1.43	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
2-Chlorotoluene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-12(26) (A2C1034-10)				**Matrix: Soil**		**Batch: 22C0987**		
4-Chlorotoluene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Dibromochloromethane	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	1.43	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.516	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
Dibromomethane	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2-Dichlorobenzene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1-Dichloroethane	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1-Dichloroethene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2-Dichloropropane	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,3-Dichloropropane	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
2,2-Dichloropropane	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1-Dichloropropene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Ethylbenzene	**5.99**	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Hexachlorobutadiene	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
2-Hexanone	ND	---	11.2	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
Isopropylbenzene	**5.34**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
4-Isopropyltoluene	**8.60**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	**M-02**
Methylene chloride	ND	---	2.87	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	37.3	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
Methyl tert-butyl ether (MTBE)	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Naphthalene	**19.4**	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
n-Propylbenzene	**7.75**	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Styrene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	6.45	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-12(26) (A2C1034-10)				**Matrix: Soil**		**Batch: 22C0987**		
Tetrachloroethene (PCE)	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Toluene	ND	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	1.43	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	1.43	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,1,2-Trichloroethane	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Trichlorofluoromethane	ND	---	0.573	mg/kg dry	200	03/24/22 23:10	5035A/8260D	Q-30, ICV-02
1,2,3-Trichloropropane	ND	---	3.15	mg/kg dry	200	03/24/22 23:10	5035A/8260D	R-02
1,2,4-Trimethylbenzene	**45.7**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
1,3,5-Trimethylbenzene	**18.6**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Vinyl chloride	ND	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
m,p-Xylene	**8.35**	---	0.287	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
o-Xylene	**1.43**	---	0.143	mg/kg dry	200	03/24/22 23:10	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*03/24/22 23:10*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*03/24/22 23:10*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*94 %*	*79-120 %*	*1*	*03/24/22 23:10*	*5035A/8260D*	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-8(20) (A2C1034-01)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**68.7**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-8(25) (A2C1034-02)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**80.8**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-9(21) (A2C1034-03)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**80.9**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-9(26) (A2C1034-04)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**74.0**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-10(21) (A2C1034-05)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**74.2**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-10(26) (A2C1034-06)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**83.3**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-11(21) (A2C1034-07)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**84.2**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-11(26) (A2C1034-08)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**78.6**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-12(21) (A2C1034-09)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**71.2**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	
HA-12(26) (A2C1034-10)				**Matrix: Soil**		**Batch: 22C0988**		
% Solids	**81.5**	---	1.00	%	1	03/25/22 10:21	EPA 8000D	

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0983 - EPA 3546 (Fuels)							**Soil**					
Blank (22C0983-BLK1)			Prepared: 03/24/22 12:08 Analyzed: 03/24/22 21:16									
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (22C0983-BS1)			Prepared: 03/24/22 12:08 Analyzed: 03/24/22 21:39									
NWTPH-Dx												
Diesel	117	---	25.0	mg/kg wet	1	125	---	94	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22C0983-DUP1)			Prepared: 03/24/22 12:08 Analyzed: 03/25/22 01:02									
QC Source Sample: HA-8(20) (A2C1034-01)												
NWTPH-Dx												
Diesel	ND	---	27.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	55.4	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	55.4	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 81 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22C0983-DUP3)			Prepared: 03/24/22 16:55 Analyzed: 03/25/22 08:36									
QC Source Sample: Non-SDG (A2C1074-02RE1)												
Diesel	**14100**	---	625	mg/kg dry	25	---	13700	---	---	3	30%	
Oil	ND	---	1250	mg/kg dry	25	---	ND	---	---	---	30%	
Mineral Oil	ND	---	1250	mg/kg dry	25	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*			*Dilution: 25x*					S-01

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1034 - 04 04 22 2122

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 22C0987 - EPA 5035A							Soil					
Blank (22C0987-BLK1)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 14:13									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*114 %*	*50-150 %*		*"*							
LCS (22C0987-BS2)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 13:46									
NWTPH-Gx (MS)												
Gasoline Range Organics	28.6	---	5.00	mg/kg wet	50	25.0	---	114	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 106 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*111 %*	*50-150 %*		*"*							
Duplicate (22C0987-DUP1)			Prepared: 03/22/22 08:56 Analyzed: 03/24/22 15:07									
QC Source Sample: Non-SDG (A2C0987-01)												
Gasoline Range Organics	ND	---	7.74	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*116 %*	*50-150 %*		*"*							
Duplicate (22C0987-DUP2)			Prepared: 03/23/22 08:59 Analyzed: 03/24/22 19:35									
QC Source Sample: HA-8(20) (A2C1034-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	8.56	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*118 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*97 %*	*50-150 %*		*"*							
LCS (22C1017-BS2)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:30									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.0	---	5.00	mg/kg wet	50	25.0	---	100	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*97 %*	*50-150 %*		*"*							
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Gasoline Range Organics	**555**	---	11.3	mg/kg dry	100	---	648	---	---	15	30%	E
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 148 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: Non-SDG (A2C1080-07)												
Gasoline Range Organics	**65.0**	---	13.2	mg/kg dry	100	---	84.5	---	---	26	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 110 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*96 %*	*50-150 %*		*"*							

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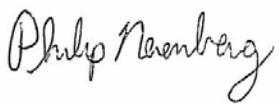

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Blank (22C0987-BLK1)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 14:13									
5035A/8260D												
Acetone	ND	---	0.667	mg/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Blank (22C0987-BLK1)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 14:13									
1,2-Dichloropropane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Styrene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	ICV-02, Q-30
1,2,3-Trichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 104 %* *Limits: 80-120 %* *Dilution: 1x*

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A								**Soil**				
Blank (22C0987-BLK1)				Prepared: 03/24/22 12:00 Analyzed: 03/24/22 14:13								
Surr: Toluene-d8 (Surr)			*Recovery: 104 %*	*Limits: 80-120 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*92 %*	*79-120 %*			*"*					
LCS (22C0987-BS1)				Prepared: 03/24/22 12:00 Analyzed: 03/24/22 13:12								
5035A/8260D												
Acetone	2.42	---	1.00	mg/kg wet	50	2.00	---	**121**	**80-120%**	---	---	Q-56
Acrylonitrile	1.16	---	0.100	mg/kg wet	50	1.00	---	116	80-120%	---	---	
Benzene	1.11	---	0.0100	mg/kg wet	50	1.00	---	111	80-120%	---	---	
Bromobenzene	0.970	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Bromochloromethane	1.25	---	0.0500	mg/kg wet	50	1.00	---	**125**	**80-120%**	---	---	Q-56
Bromodichloromethane	1.05	---	0.0500	mg/kg wet	50	1.00	---	105	80-120%	---	---	
Bromoform	0.714	---	0.100	mg/kg wet	50	1.00	---	**71**	**80-120%**	---	---	Q-55
Bromomethane	1.95	---	0.500	mg/kg wet	50	1.00	---	**195**	**80-120%**	---	---	Q-56
2-Butanone (MEK)	2.28	---	0.500	mg/kg wet	50	2.00	---	114	80-120%	---	---	
n-Butylbenzene	1.12	---	0.0500	mg/kg wet	50	1.00	---	112	80-120%	---	---	
sec-Butylbenzene	1.11	---	0.0500	mg/kg wet	50	1.00	---	111	80-120%	---	---	
tert-Butylbenzene	1.06	---	0.0500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Carbon disulfide	0.808	---	0.500	mg/kg wet	50	1.00	---	81	80-120%	---	---	
Carbon tetrachloride	0.858	---	0.0500	mg/kg wet	50	1.00	---	86	80-120%	---	---	
Chlorobenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
Chloroethane	2.10	---	0.500	mg/kg wet	50	1.00	---	**210**	**80-120%**	---	---	Q-56
Chloroform	1.21	---	0.0500	mg/kg wet	50	1.00	---	**121**	**80-120%**	---	---	Q-56
Chloromethane	1.04	---	0.250	mg/kg wet	50	1.00	---	104	80-120%	---	---	
2-Chlorotoluene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
4-Chlorotoluene	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
Dibromochloromethane	0.792	---	0.100	mg/kg wet	50	1.00	---	**79**	**80-120%**	---	---	Q-55
1,2-Dibromo-3-chloropropane	0.726	---	0.250	mg/kg wet	50	1.00	---	**73**	**80-120%**	---	---	Q-55
1,2-Dibromoethane (EDB)	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Dibromomethane	1.18	---	0.0500	mg/kg wet	50	1.00	---	118	80-120%	---	---	
1,2-Dichlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,3-Dichlorobenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,4-Dichlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Dichlorodifluoromethane	1.04	---	0.100	mg/kg wet	50	1.00	---	104	80-120%	---	---	
1,1-Dichloroethane	1.20	---	0.0250	mg/kg wet	50	1.00	---	120	80-120%	---	---	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
LCS (22C0987-BS1)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 13:12									
1,2-Dichloroethane (EDC)	1.26	---	0.0250	mg/kg wet	50	1.00	---	**126**	**80-120%**	---	---	Q-56
1,1-Dichloroethene	1.21	---	0.0250	mg/kg wet	50	1.00	---	**121**	**80-120%**	---	---	Q-56
cis-1,2-Dichloroethene	1.13	---	0.0250	mg/kg wet	50	1.00	---	113	80-120%	---	---	
trans-1,2-Dichloroethene	1.13	---	0.0250	mg/kg wet	50	1.00	---	113	80-120%	---	---	
1,2-Dichloropropane	1.23	---	0.0250	mg/kg wet	50	1.00	---	**123**	**80-120%**	---	---	Q-56
1,3-Dichloropropane	1.14	---	0.0500	mg/kg wet	50	1.00	---	114	80-120%	---	---	
2,2-Dichloropropane	1.09	---	0.0500	mg/kg wet	50	1.00	---	109	80-120%	---	---	
1,1-Dichloropropene	1.18	---	0.0500	mg/kg wet	50	1.00	---	118	80-120%	---	---	
cis-1,3-Dichloropropene	0.905	---	0.0500	mg/kg wet	50	1.00	---	91	80-120%	---	---	
trans-1,3-Dichloropropene	0.901	---	0.0500	mg/kg wet	50	1.00	---	90	80-120%	---	---	
Ethylbenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Hexachlorobutadiene	0.921	---	0.100	mg/kg wet	50	1.00	---	92	80-120%	---	---	
2-Hexanone	2.17	---	0.500	mg/kg wet	50	2.00	---	109	80-120%	---	---	
Isopropylbenzene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
4-Isopropyltoluene	1.06	---	0.0500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Methylene chloride	1.06	---	0.500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2.09	---	0.500	mg/kg wet	50	2.00	---	104	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
Naphthalene	0.861	---	0.100	mg/kg wet	50	1.00	---	86	80-120%	---	---	
n-Propylbenzene	1.08	---	0.0250	mg/kg wet	50	1.00	---	108	80-120%	---	---	
Styrene	0.966	---	0.0500	mg/kg wet	50	1.00	---	97	80-120%	---	---	
1,1,1,2-Tetrachloroethane	0.810	---	0.0250	mg/kg wet	50	1.00	---	81	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.17	---	0.0500	mg/kg wet	50	1.00	---	117	80-120%	---	---	
Tetrachloroethene (PCE)	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
Toluene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	0.928	---	0.250	mg/kg wet	50	1.00	---	93	80-120%	---	---	
1,2,4-Trichlorobenzene	0.858	---	0.250	mg/kg wet	50	1.00	---	86	80-120%	---	---	
1,1,1-Trichloroethane	1.08	---	0.0250	mg/kg wet	50	1.00	---	108	80-120%	---	---	
1,1,2-Trichloroethane	1.14	---	0.0250	mg/kg wet	50	1.00	---	114	80-120%	---	---	
Trichloroethene (TCE)	1.12	---	0.0250	mg/kg wet	50	1.00	---	112	80-120%	---	---	
Trichlorofluoromethane	0.341	---	0.100	mg/kg wet	50	1.00	---	**34**	**80-120%**	---	---	Q-30, ICV-02
1,2,3-Trichloropropane	1.11	---	0.0500	mg/kg wet	50	1.00	---	111	80-120%	---	---	
1,2,4-Trimethylbenzene	1.07	---	0.0500	mg/kg wet	50	1.00	---	107	80-120%	---	---	
1,3,5-Trimethylbenzene	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1034 - 04 04 22 2122

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 22C0987 - EPA 5035A							Soil					
LCS (22C0987-BS1)			Prepared: 03/24/22 12:00 Analyzed: 03/24/22 13:12									
Vinyl chloride	1.33	---	0.0250	mg/kg wet	50	1.00	---	**133**	**80-120%**	---	---	Q-56
m,p-Xylene	2.08	---	0.0500	mg/kg wet	50	2.00	---	104	80-120%	---	---	
o-Xylene	0.978	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*105 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*85 %*		*79-120 %*			*"*				
Duplicate (22C0987-DUP1)			Prepared: 03/22/22 08:56 Analyzed: 03/24/22 15:07									
QC Source Sample: Non-SDG (A2C0987-01)												
Acetone	ND	---	1.55	mg/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	---	0.0155	mg/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.387	mg/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.387	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Duplicate (22C0987-DUP1)			Prepared: 03/22/22 08:56 Analyzed: 03/24/22 15:07									
QC Source Sample: Non-SDG (A2C0987-01)												
1,3-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	0.774	mg/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.387	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.387	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Duplicate (22C0987-DUP1)			Prepared: 03/22/22 08:56 Analyzed: 03/24/22 15:07									
QC Source Sample: Non-SDG (A2C0987-01)												
Trichloroethene (TCE)	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.155	mg/kg dry	50	---	ND	---	---	---	30%	ICV-02, Q-30
1,2,3-Trichloropropane	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	0.0774	mg/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	0.0387	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*107 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*91 %*		*79-120 %*		*"*					
Duplicate (22C0987-DUP2)			Prepared: 03/23/22 08:59 Analyzed: 03/24/22 19:35									
QC Source Sample: HA-8(20) (A2C1034-01)												
5035A/8260D												
Acetone	ND	---	1.71	mg/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	---	0.0171	mg/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.428	mg/kg dry	50	---	ND	---	---	---	30%	

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Duplicate (22C0987-DUP2)			Prepared: 03/23/22 08:59 Analyzed: 03/24/22 19:35									
QC Source Sample: HA-8(20) (A2C1034-01)												
2-Chlorotoluene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.428	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	0.856	mg/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Duplicate (22C0987-DUP2)			Prepared: 03/23/22 08:59		Analyzed: 03/24/22 19:35							
QC Source Sample: HA-8(20) (A2C1034-01)												
1,1,2,2-Tetrachloroethane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.428	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.428	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.171	mg/kg dry	50	---	ND	---	---	---	30%	ICV-02, Q-30
1,2,3-Trichloropropane	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	0.0856	mg/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	0.0428	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*106 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*88 %*		*79-120 %*			*"*				
Matrix Spike (22C0987-MS1)			Prepared: 03/22/22 12:11		Analyzed: 03/24/22 18:15							
QC Source Sample: Non-SDG (A2C0987-07)												
5035A/8260D												
Acetone	3.74	---	1.32	mg/kg dry	50	2.65	ND	141	36-164%	---	---	Q-54
Acrylonitrile	1.52	---	0.132	mg/kg dry	50	1.32	ND	115	65-134%	---	---	
Benzene	1.50	---	0.0132	mg/kg dry	50	1.32	ND	113	77-121%	---	---	
Bromobenzene	1.25	---	0.0331	mg/kg dry	50	1.32	ND	94	78-121%	---	---	
Bromochloromethane	1.67	---	0.0661	mg/kg dry	50	1.32	ND	**126**	**78-125%**	---	---	Q-54c
Bromodichloromethane	1.39	---	0.0661	mg/kg dry	50	1.32	ND	105	75-127%	---	---	
Bromoform	0.915	---	0.132	mg/kg dry	50	1.32	ND	69	67-132%	---	---	Q-54k
Bromomethane	2.85	---	0.661	mg/kg dry	50	1.32	ND	**215**	**53-143%**	---	---	Q-54f
2-Butanone (MEK)	3.35	---	0.661	mg/kg dry	50	2.65	ND	127	51-148%	---	---	
n-Butylbenzene	1.51	---	0.0661	mg/kg dry	50	1.32	ND	114	70-128%	---	---	
sec-Butylbenzene	1.49	---	0.0661	mg/kg dry	50	1.32	ND	113	73-126%	---	---	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Matrix Spike (22C0987-MS1)			Prepared: 03/22/22 12:11		Analyzed: 03/24/22 18:15							
QC Source Sample: Non-SDG (A2C0987-07)												
tert-Butylbenzene	1.45	---	0.0661	mg/kg dry	50	1.32	ND	109	73-125%	---	---	
Carbon disulfide	1.02	---	0.661	mg/kg dry	50	1.32	ND	77	63-132%	---	---	
Carbon tetrachloride	1.23	---	0.0661	mg/kg dry	50	1.32	ND	93	70-135%	---	---	
Chlorobenzene	1.33	---	0.0331	mg/kg dry	50	1.32	ND	101	79-120%	---	---	
Chloroethane	3.21	---	0.661	mg/kg dry	50	1.32	ND	**242**	**59-139%**	---	---	Q-54h
Chloroform	1.60	---	0.0661	mg/kg dry	50	1.32	ND	121	78-123%	---	---	Q-54
Chloromethane	1.45	---	0.331	mg/kg dry	50	1.32	ND	110	50-136%	---	---	
2-Chlorotoluene	1.39	---	0.0661	mg/kg dry	50	1.32	ND	105	75-122%	---	---	
4-Chlorotoluene	1.44	---	0.0661	mg/kg dry	50	1.32	ND	109	72-124%	---	---	
Dibromochloromethane	0.972	---	0.132	mg/kg dry	50	1.32	ND	**73**	**74-126%**	---	---	Q-54i
1,2-Dibromo-3-chloropropane	0.914	---	0.331	mg/kg dry	50	1.32	ND	69	61-132%	---	---	Q-54j
1,2-Dibromoethane (EDB)	1.36	---	0.0661	mg/kg dry	50	1.32	ND	103	78-122%	---	---	
Dibromomethane	1.56	---	0.0661	mg/kg dry	50	1.32	ND	118	78-125%	---	---	
1,2-Dichlorobenzene	1.36	---	0.0331	mg/kg dry	50	1.32	ND	103	78-121%	---	---	
1,3-Dichlorobenzene	1.32	---	0.0331	mg/kg dry	50	1.32	ND	100	77-121%	---	---	
1,4-Dichlorobenzene	1.34	---	0.0331	mg/kg dry	50	1.32	ND	101	75-120%	---	---	
Dichlorodifluoromethane	1.49	---	0.132	mg/kg dry	50	1.32	ND	113	29-149%	---	---	
1,1-Dichloroethane	1.61	---	0.0331	mg/kg dry	50	1.32	ND	121	76-125%	---	---	
1,2-Dichloroethane (EDC)	1.64	---	0.0331	mg/kg dry	50	1.32	ND	124	73-128%	---	---	Q-54d
1,1-Dichloroethene	1.43	---	0.0331	mg/kg dry	50	1.32	ND	108	70-131%	---	---	Q-54
cis-1,2-Dichloroethene	1.48	---	0.0331	mg/kg dry	50	1.32	ND	112	77-123%	---	---	
trans-1,2-Dichloroethene	1.48	---	0.0331	mg/kg dry	50	1.32	ND	112	74-125%	---	---	
1,2-Dichloropropane	1.66	---	0.0331	mg/kg dry	50	1.32	ND	**126**	**76-123%**	---	---	Q-54b
1,3-Dichloropropane	1.45	---	0.0661	mg/kg dry	50	1.32	ND	110	77-121%	---	---	
2,2-Dichloropropane	1.43	---	0.0661	mg/kg dry	50	1.32	ND	108	67-133%	---	---	
1,1-Dichloropropene	1.60	---	0.0661	mg/kg dry	50	1.32	ND	121	76-125%	---	---	
cis-1,3-Dichloropropene	1.13	---	0.0661	mg/kg dry	50	1.32	ND	86	74-126%	---	---	
trans-1,3-Dichloropropene	1.17	---	0.0661	mg/kg dry	50	1.32	ND	88	71-130%	---	---	
Ethylbenzene	1.37	---	0.0331	mg/kg dry	50	1.32	ND	104	76-122%	---	---	
Hexachlorobutadiene	1.20	---	0.132	mg/kg dry	50	1.32	ND	91	61-135%	---	---	
2-Hexanone	3.03	---	0.661	mg/kg dry	50	2.65	ND	114	53-145%	---	---	
Isopropylbenzene	1.37	---	0.0661	mg/kg dry	50	1.32	ND	103	68-134%	---	---	
4-Isopropyltoluene	1.46	---	0.0661	mg/kg dry	50	1.32	ND	110	73-127%	---	---	

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C0987 - EPA 5035A							**Soil**					
Matrix Spike (22C0987-MS1)			Prepared: 03/22/22 12:11		Analyzed: 03/24/22 18:15							
QC Source Sample: Non-SDG (A2C0987-07)												
Methylene chloride	1.39	---	0.661	mg/kg dry	50	1.32	ND	105	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	2.73	---	0.661	mg/kg dry	50	2.65	ND	103	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1.32	---	0.0661	mg/kg dry	50	1.32	ND	100	73-125%	---	---	
Naphthalene	1.12	---	0.132	mg/kg dry	50	1.32	ND	85	62-129%	---	---	
n-Propylbenzene	1.45	---	0.0331	mg/kg dry	50	1.32	ND	110	73-125%	---	---	
Styrene	1.26	---	0.0661	mg/kg dry	50	1.32	ND	95	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1.05	---	0.0331	mg/kg dry	50	1.32	ND	79	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1.56	---	0.0661	mg/kg dry	50	1.32	ND	118	70-124%	---	---	
Tetrachloroethene (PCE)	1.29	---	0.0331	mg/kg dry	50	1.32	ND	98	73-128%	---	---	
Toluene	1.37	---	0.0661	mg/kg dry	50	1.32	ND	104	77-121%	---	---	
1,2,3-Trichlorobenzene	1.20	---	0.331	mg/kg dry	50	1.32	ND	91	66-130%	---	---	
1,2,4-Trichlorobenzene	1.11	---	0.331	mg/kg dry	50	1.32	ND	84	67-129%	---	---	
1,1,1-Trichloroethane	1.49	---	0.0331	mg/kg dry	50	1.32	ND	113	73-130%	---	---	
1,1,2-Trichloroethane	1.43	---	0.0331	mg/kg dry	50	1.32	ND	108	78-121%	---	---	
Trichloroethene (TCE)	1.53	---	0.0331	mg/kg dry	50	1.32	ND	116	77-123%	---	---	
Trichlorofluoromethane	ND	---	0.132	mg/kg dry	50	1.32	ND		**62-140%**	---	---	Q-30, ICV-02
1,2,3-Trichloropropane	1.53	---	0.0661	mg/kg dry	50	1.32	ND	116	73-125%	---	---	
1,2,4-Trimethylbenzene	1.43	---	0.0661	mg/kg dry	50	1.32	ND	108	75-123%	---	---	
1,3,5-Trimethylbenzene	1.46	---	0.0661	mg/kg dry	50	1.32	ND	110	73-124%	---	---	
Vinyl chloride	1.76	---	0.0331	mg/kg dry	50	1.32	ND	133	56-135%	---	---	Q-54a
m,p-Xylene	2.76	---	0.0661	mg/kg dry	50	2.65	ND	104	77-124%	---	---	
o-Xylene	1.30	---	0.0331	mg/kg dry	50	1.32	ND	98	77-123%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 103 %*	*Limits: 80-120 %*	*Dilution: 1x*	
Toluene-d8 (Surr)	*101 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*87 %*	*79-120 %*	*"*	

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
5035A/8260D												
Acetone	ND	---	0.667	mg/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
1,2-Dichloropropane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Styrene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 105 %* *Limits: 80-120 %* *Dilution: 1x*

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A								**Soil**				
Blank (22C1017-BLK1)				Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56								
Surr: Toluene-d8 (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*				*"*				
LCS (22C1017-BS1)				Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03								
5035A/8260D												
Acetone	1.48	---	1.00	mg/kg wet	50	2.00	---	**74**	**80-120%**	---	---	Q-55
Acrylonitrile	0.943	---	0.100	mg/kg wet	50	1.00	---	94	80-120%	---	---	
Benzene	1.07	---	0.0100	mg/kg wet	50	1.00	---	107	80-120%	---	---	
Bromobenzene	0.996	---	0.0250	mg/kg wet	50	1.00	---	100	80-120%	---	---	
Bromochloromethane	1.07	---	0.0500	mg/kg wet	50	1.00	---	107	80-120%	---	---	
Bromodichloromethane	0.957	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
Bromoform	0.933	---	0.100	mg/kg wet	50	1.00	---	93	80-120%	---	---	
Bromomethane	1.85	---	0.500	mg/kg wet	50	1.00	---	**185**	**80-120%**	---	---	Q-56
2-Butanone (MEK)	1.74	---	0.500	mg/kg wet	50	2.00	---	87	80-120%	---	---	
n-Butylbenzene	1.05	---	0.0500	mg/kg wet	50	1.00	---	105	80-120%	---	---	
sec-Butylbenzene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
tert-Butylbenzene	0.947	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Carbon disulfide	0.828	---	0.500	mg/kg wet	50	1.00	---	83	80-120%	---	---	
Carbon tetrachloride	0.982	---	0.0500	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Chlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Chloroethane	3.71	---	0.500	mg/kg wet	50	1.00	---	**371**	**80-120%**	---	---	ICV-01
Chloroform	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Chloromethane	0.962	---	0.250	mg/kg wet	50	1.00	---	96	80-120%	---	---	
2-Chlorotoluene	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
4-Chlorotoluene	0.992	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
Dibromochloromethane	0.880	---	0.100	mg/kg wet	50	1.00	---	88	80-120%	---	---	
1,2-Dibromo-3-chloropropane	0.816	---	0.250	mg/kg wet	50	1.00	---	82	80-120%	---	---	
1,2-Dibromoethane (EDB)	1.06	---	0.0500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Dibromomethane	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
1,2-Dichlorobenzene	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,3-Dichlorobenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,4-Dichlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Dichlorodifluoromethane	0.952	---	0.100	mg/kg wet	50	1.00	---	95	80-120%	---	---	ICV-01
1,1-Dichloroethane	1.06	---	0.0250	mg/kg wet	50	1.00	---	106	80-120%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
LCS (22C1017-BS1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03									
1,2-Dichloroethane (EDC)	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,1-Dichloroethene	1.13	---	0.0250	mg/kg wet	50	1.00	---	113	80-120%	---	---	
cis-1,2-Dichloroethene	1.04	---	0.0250	mg/kg wet	50	1.00	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2-Dichloropropane	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,3-Dichloropropane	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
2,2-Dichloropropane	0.958	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
1,1-Dichloropropene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	0.900	---	0.0500	mg/kg wet	50	1.00	---	90	80-120%	---	---	
trans-1,3-Dichloropropene	0.895	---	0.0500	mg/kg wet	50	1.00	---	90	80-120%	---	---	
Ethylbenzene	0.972	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Hexachlorobutadiene	0.999	---	0.100	mg/kg wet	50	1.00	---	100	80-120%	---	---	
2-Hexanone	1.78	---	0.500	mg/kg wet	50	2.00	---	89	80-120%	---	---	
Isopropylbenzene	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
4-Isopropyltoluene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
Methylene chloride	1.05	---	0.500	mg/kg wet	50	1.00	---	105	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1.83	---	0.500	mg/kg wet	50	2.00	---	92	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	0.952	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Naphthalene	0.948	---	0.100	mg/kg wet	50	1.00	---	95	80-120%	---	---	
n-Propylbenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
Styrene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	0.941	---	0.0250	mg/kg wet	50	1.00	---	94	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
Tetrachloroethene (PCE)	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Toluene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	1.01	---	0.250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2,4-Trichlorobenzene	1.07	---	0.250	mg/kg wet	50	1.00	---	107	80-120%	---	---	
1,1,1-Trichloroethane	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,1,2-Trichloroethane	1.06	---	0.0250	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Trichloroethene (TCE)	1.04	---	0.0250	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Trichlorofluoromethane	3.01	---	0.100	mg/kg wet	50	1.00	---	**301**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	0.992	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
1,2,4-Trimethylbenzene	0.989	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
1,3,5-Trimethylbenzene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1034 - 04 04 22 2122

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 22C1017 - EPA 5035A							Soil					
LCS (22C1017-BS1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03									
Vinyl chloride	1.23	---	0.0250	mg/kg wet	50	1.00	---	**123**	**80-120%**	---	---	Q-56
m,p-Xylene	1.91	---	0.0500	mg/kg wet	50	2.00	---	96	80-120%	---	---	
o-Xylene	0.980	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*92 %*		*79-120 %*			*"*				
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Acetone	ND	---	2.25	mg/kg dry	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
Benzene	ND	---	0.0225	mg/kg dry	100	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Bromoform	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
n-Butylbenzene	**0.441**	---	0.113	mg/kg dry	100	---	0.466	---	---	6	30%	M-02
sec-Butylbenzene	**0.276**	---	0.113	mg/kg dry	100	---	0.293	---	---	6	30%	
tert-Butylbenzene	ND	---	0.124	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Carbon disulfide	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroform	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.451	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Dibromochloromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
1,3-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Ethylbenzene	**0.101**	---	0.0563	mg/kg dry	100	---	0.107	---	---	5	30%	
Hexachlorobutadiene	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
2-Hexanone	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Isopropylbenzene	**0.143**	---	0.113	mg/kg dry	100	---	0.140	---	---	2	30%	
4-Isopropyltoluene	**0.380**	---	0.113	mg/kg dry	100	---	0.417	---	---	9	30%	M-02
Methylene chloride	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	**1.32**	---	0.225	mg/kg dry	100	---	1.39	---	---	5	30%	
n-Propylbenzene	**0.357**	---	0.0563	mg/kg dry	100	---	0.345	---	---	4	30%	
Styrene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.507	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Tetrachloroethene (PCE)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Toluene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.676	mg/kg dry	100	---	ND	---	---	---	30%	R-02

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Trichloroethene (TCE)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.507	mg/kg dry	100	---	ND	---	---	---	30%	R-02
1,2,4-Trimethylbenzene	**2.32**	---	0.113	mg/kg dry	100	---	2.36	---	---	2	30%	
1,3,5-Trimethylbenzene	**2.12**	---	0.113	mg/kg dry	100	---	2.12	---	---	0.4	30%	
Vinyl chloride	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
m,p-Xylene	**0.506**	---	0.113	mg/kg dry	100	---	0.506	---	---	0.07	30%	
o-Xylene	**0.713**	---	0.0563	mg/kg dry	100	---	0.718	---	---	0.6	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*		*"*					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: Non-SDG (A2C1080-07)												
Acetone	ND	---	2.63	mg/kg dry	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
Benzene	ND	---	0.0263	mg/kg dry	100	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Bromoform	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	0.121	---	---	***	30%	M-02
sec-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	0.0934	---	---	***	**30%**	Q-05
tert-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroform	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: Non-SDG (A2C1080-07)												
4-Chlorotoluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Ethylbenzene	**0.0893**	---	0.0658	mg/kg dry	100	---	0.0947	---	---	6	30%	
Hexachlorobutadiene	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
2-Hexanone	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	0.132	mg/kg dry	100	---	0.146	---	---	***	**30%**	M-02, Q-05
Methylene chloride	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.263	mg/kg dry	100	---	0.317	---	---	***	**30%**	Q-05
n-Propylbenzene	**0.0844**	---	0.0658	mg/kg dry	100	---	0.112	---	---	28	30%	
Styrene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: Non-SDG (A2C1080-07)												
Tetrachloroethene (PCE)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Toluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**0.374**	---	0.132	mg/kg dry	100	---	0.554	---	---	**39**	**30%**	Q-05
1,3,5-Trimethylbenzene	**0.167**	---	0.132	mg/kg dry	100	---	0.260	---	---	**44**	**30%**	Q-05
Vinyl chloride	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	0.132	mg/kg dry	100	---	0.118	---	---	***	30%	
o-Xylene	ND	---	0.0658	mg/kg dry	100	---	0.0345	---	---	***	**30%**	Q-05
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45 Analyzed: 03/25/22 15:11									
QC Source Sample: Non-SDG (A2C1087-01)												
5035A/8260D												
Acetone	2.02	---	1.33	mg/kg dry	50	2.66	ND	76	36-164%	---	---	Q-17
Acrylonitrile	1.27	---	0.133	mg/kg dry	50	1.33	ND	95	65-134%	---	---	
Benzene	1.96	---	0.0133	mg/kg dry	50	1.33	0.542	106	77-121%	---	---	
Bromobenzene	1.36	---	0.0332	mg/kg dry	50	1.33	ND	103	78-121%	---	---	
Bromochloromethane	1.42	---	0.0665	mg/kg dry	50	1.33	ND	107	78-125%	---	---	
Bromodichloromethane	1.29	---	0.0665	mg/kg dry	50	1.33	ND	97	75-127%	---	---	
Bromoform	1.30	---	0.133	mg/kg dry	50	1.33	ND	98	67-132%	---	---	
Bromomethane	2.23	---	0.665	mg/kg dry	50	1.33	ND	**168**	**53-143%**	---	---	Q-54e
2-Butanone (MEK)	2.22	---	0.665	mg/kg dry	50	2.66	ND	84	51-148%	---	---	
n-Butylbenzene	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	70-128%	---	---	
sec-Butylbenzene	1.42	---	0.0665	mg/kg dry	50	1.33	ND	107	73-126%	---	---	
tert-Butylbenzene	1.33	---	0.0665	mg/kg dry	50	1.33	ND	100	73-125%	---	---	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45		Analyzed: 03/25/22 15:11							
QC Source Sample: Non-SDG (A2C1087-01)												
Carbon disulfide	1.08	---	0.665	mg/kg dry	50	1.33	ND	81	63-132%	---	---	
Carbon tetrachloride	1.39	---	0.0665	mg/kg dry	50	1.33	ND	105	70-135%	---	---	
Chlorobenzene	1.34	---	0.0332	mg/kg dry	50	1.33	ND	101	79-120%	---	---	
Chloroethane	5.06	---	0.665	mg/kg dry	50	1.33	ND	**381**	**59-139%**	---	---	ICV-01
Chloroform	1.41	---	0.0665	mg/kg dry	50	1.33	ND	106	78-123%	---	---	
Chloromethane	1.39	---	0.332	mg/kg dry	50	1.33	ND	105	50-136%	---	---	
2-Chlorotoluene	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	75-122%	---	---	
4-Chlorotoluene	1.34	---	0.0665	mg/kg dry	50	1.33	ND	101	72-124%	---	---	
Dibromochloromethane	1.21	---	0.133	mg/kg dry	50	1.33	ND	91	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1.16	---	0.332	mg/kg dry	50	1.33	ND	87	61-132%	---	---	
1,2-Dibromoethane (EDB)	1.48	---	0.0665	mg/kg dry	50	1.33	ND	111	78-122%	---	---	
Dibromomethane	1.37	---	0.0665	mg/kg dry	50	1.33	ND	103	78-125%	---	---	
1,2-Dichlorobenzene	1.43	---	0.0332	mg/kg dry	50	1.33	ND	108	78-121%	---	---	
1,3-Dichlorobenzene	1.38	---	0.0332	mg/kg dry	50	1.33	ND	104	77-121%	---	---	
1,4-Dichlorobenzene	1.34	---	0.0332	mg/kg dry	50	1.33	ND	101	75-120%	---	---	
Dichlorodifluoromethane	1.37	---	0.133	mg/kg dry	50	1.33	ND	103	29-149%	---	---	
1,1-Dichloroethane	1.43	---	0.0332	mg/kg dry	50	1.33	ND	107	76-125%	---	---	
1,2-Dichloroethane (EDC)	1.37	---	0.0332	mg/kg dry	50	1.33	0.0534	99	73-128%	---	---	
1,1-Dichloroethene	1.38	---	0.0332	mg/kg dry	50	1.33	ND	104	70-131%	---	---	
cis-1,2-Dichloroethene	1.39	---	0.0332	mg/kg dry	50	1.33	ND	104	77-123%	---	---	
trans-1,2-Dichloroethene	1.37	---	0.0332	mg/kg dry	50	1.33	ND	103	74-125%	---	---	
1,2-Dichloropropane	1.43	---	0.0332	mg/kg dry	50	1.33	ND	108	76-123%	---	---	
1,3-Dichloropropane	1.43	---	0.0665	mg/kg dry	50	1.33	ND	107	77-121%	---	---	
2,2-Dichloropropane	1.30	---	0.0665	mg/kg dry	50	1.33	ND	98	67-133%	---	---	
1,1-Dichloropropene	1.47	---	0.0665	mg/kg dry	50	1.33	ND	111	76-125%	---	---	
cis-1,3-Dichloropropene	1.25	---	0.0665	mg/kg dry	50	1.33	ND	94	74-126%	---	---	
trans-1,3-Dichloropropene	1.19	---	0.0665	mg/kg dry	50	1.33	ND	90	71-130%	---	---	
Ethylbenzene	1.44	---	0.0332	mg/kg dry	50	1.33	0.114	100	76-122%	---	---	
Hexachlorobutadiene	1.61	---	0.133	mg/kg dry	50	1.33	ND	121	61-135%	---	---	
2-Hexanone	2.45	---	0.665	mg/kg dry	50	2.66	ND	92	53-145%	---	---	
Isopropylbenzene	1.45	---	0.0665	mg/kg dry	50	1.33	ND	109	68-134%	---	---	
4-Isopropyltoluene	1.46	---	0.0665	mg/kg dry	50	1.33	ND	110	73-127%	---	---	
Methylene chloride	1.41	---	0.665	mg/kg dry	50	1.33	ND	106	70-128%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 22C1017 - EPA 5035A							**Soil**					
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45 Analyzed: 03/25/22 15:11									
QC Source Sample: Non-SDG (A2C1087-01)												
4-Methyl-2-pentanone (MiBK)	2.53	---	0.665	mg/kg dry	50	2.66	ND	95	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1.27	---	0.0665	mg/kg dry	50	1.33	ND	96	73-125%	---	---	
Naphthalene	1.62	---	0.133	mg/kg dry	50	1.33	0.140	111	62-129%	---	---	
n-Propylbenzene	1.41	---	0.0332	mg/kg dry	50	1.33	0.0248	104	73-125%	---	---	
Styrene	1.44	---	0.0665	mg/kg dry	50	1.33	ND	108	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1.31	---	0.0332	mg/kg dry	50	1.33	ND	98	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	70-124%	---	---	
Tetrachloroethene (PCE)	1.42	---	0.0332	mg/kg dry	50	1.33	ND	107	73-128%	---	---	
Toluene	2.64	---	0.0665	mg/kg dry	50	1.33	1.34	98	77-121%	---	---	
1,2,3-Trichlorobenzene	1.43	---	0.332	mg/kg dry	50	1.33	ND	108	66-130%	---	---	
1,2,4-Trichlorobenzene	1.54	---	0.332	mg/kg dry	50	1.33	ND	116	67-129%	---	---	
1,1,1-Trichloroethane	1.48	---	0.0332	mg/kg dry	50	1.33	ND	111	73-130%	---	---	
1,1,2-Trichloroethane	1.42	---	0.0332	mg/kg dry	50	1.33	ND	107	78-121%	---	---	
Trichloroethene (TCE)	1.45	---	0.0332	mg/kg dry	50	1.33	ND	109	77-123%	---	---	
Trichlorofluoromethane	3.85	---	0.133	mg/kg dry	50	1.33	ND	**290**	**62-140%**	---	---	Q-54g
1,2,3-Trichloropropane	1.33	---	0.0665	mg/kg dry	50	1.33	ND	100	73-125%	---	---	
1,2,4-Trimethylbenzene	1.52	---	0.0665	mg/kg dry	50	1.33	0.182	101	75-123%	---	---	
1,3,5-Trimethylbenzene	1.42	---	0.0665	mg/kg dry	50	1.33	0.0666	102	73-124%	---	---	
Vinyl chloride	1.55	---	0.0332	mg/kg dry	50	1.33	ND	117	56-135%	---	---	
m,p-Xylene	3.31	---	0.0665	mg/kg dry	50	2.66	0.695	98	77-124%	---	---	
o-Xylene	1.70	---	0.0332	mg/kg dry	50	1.33	0.356	101	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1034 - 04 04 22 2122

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 22C0988 - Total Solids (Dry Weight)							Soil					
Duplicate (22C0988-DUP1)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C0987-01)												
% Solids	**74.7**	---	1.00	%	1	---	75.4	---	---	0.9	10%	
Duplicate (22C0988-DUP2)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C0987-02)												
% Solids	**71.7**	---	1.00	%	1	---	71.5	---	---	0.3	10%	
Duplicate (22C0988-DUP3)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C0987-03)												
% Solids	**69.4**	---	1.00	%	1	---	69.5	---	---	0.2	10%	
Duplicate (22C0988-DUP4)			Prepared: 03/24/22 12:33		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C0987-04)												
% Solids	**81.5**	---	1.00	%	1	---	81.5	---	---	0.09	10%	
Duplicate (22C0988-DUP5)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1083-01)												
% Solids	**78.1**	---	1.00	%	1	---	78.3	---	---	0.3	10%	
Duplicate (22C0988-DUP6)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1084-01)												
% Solids	**78.1**	---	1.00	%	1	---	79.2	---	---	1	10%	
Duplicate (22C0988-DUP7)			Prepared: 03/24/22 19:22		Analyzed: 03/25/22 10:21							
QC Source Sample: Non-SDG (A2C1088-01)												
% Solids	**75.4**	---	1.00	%	1	---	75.3	---	---	0.2	10%	

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

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

SAMPLE PREPARATION INFORMATION

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: 22C0983							
A2C1034-01	Soil	NWTPH-Dx	03/23/22 08:59	03/24/22 12:08	10.18g/5mL	10g/5mL	0.98
A2C1034-02	Soil	NWTPH-Dx	03/23/22 09:23	03/24/22 12:08	10.39g/5mL	10g/5mL	0.96
A2C1034-03	Soil	NWTPH-Dx	03/23/22 09:58	03/24/22 12:08	10.42g/5mL	10g/5mL	0.96
A2C1034-04	Soil	NWTPH-Dx	03/23/22 10:18	03/24/22 12:08	10.07g/5mL	10g/5mL	0.99
A2C1034-05RE1	Soil	NWTPH-Dx	03/23/22 10:58	03/24/22 12:08	10.52g/5mL	10g/5mL	0.95
A2C1034-06RE1	Soil	NWTPH-Dx	03/23/22 11:29	03/24/22 12:08	10.17g/5mL	10g/5mL	0.98
A2C1034-07	Soil	NWTPH-Dx	03/23/22 13:20	03/24/22 12:08	10.51g/5mL	10g/5mL	0.95
A2C1034-08	Soil	NWTPH-Dx	03/23/22 13:31	03/24/22 12:08	10.43g/5mL	10g/5mL	0.96
A2C1034-09	Soil	NWTPH-Dx	03/23/22 13:46	03/24/22 12:08	10.04g/5mL	10g/5mL	1.00
A2C1034-10	Soil	NWTPH-Dx	03/23/22 14:26	03/24/22 12:08	10.1g/5mL	10g/5mL	0.99

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: 22C0987							
A2C1034-01	Soil	NWTPH-Gx (MS)	03/23/22 08:59	03/23/22 08:59	5.8g/5mL	5g/5mL	0.86
A2C1034-02	Soil	NWTPH-Gx (MS)	03/23/22 09:23	03/23/22 09:23	6.54g/5mL	5g/5mL	0.77
A2C1034-03	Soil	NWTPH-Gx (MS)	03/23/22 09:58	03/23/22 09:58	4.82g/5mL	5g/5mL	1.04
A2C1034-04	Soil	NWTPH-Gx (MS)	03/23/22 10:18	03/23/22 10:18	6.79g/5mL	5g/5mL	0.74
A2C1034-06	Soil	NWTPH-Gx (MS)	03/23/22 11:29	03/23/22 11:29	5.46g/5mL	5g/5mL	0.92
A2C1034-07	Soil	NWTPH-Gx (MS)	03/23/22 13:20	03/23/22 13:20	4.71g/5mL	5g/5mL	1.06
A2C1034-08	Soil	NWTPH-Gx (MS)	03/23/22 13:31	03/23/22 13:31	5.91g/5mL	5g/5mL	0.85
A2C1034-09	Soil	NWTPH-Gx (MS)	03/23/22 13:46	03/23/22 13:46	5.84g/5mL	5g/5mL	0.86
Batch: 22C1017							
A2C1034-05RE1	Soil	NWTPH-Gx (MS)	03/23/22 10:58	03/23/22 10:58	6.27g/5mL	5g/5mL	0.80
A2C1034-10RE1	Soil	NWTPH-Gx (MS)	03/23/22 14:26	03/23/22 14:26	5.09g/5mL	5g/5mL	0.98

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: 22C0987							
A2C1034-05	Soil	5035A/8260D	03/23/22 10:58	03/23/22 10:58	6.27g/5mL	5g/5mL	0.80
A2C1034-09	Soil	5035A/8260D	03/23/22 13:46	03/23/22 13:46	5.84g/5mL	5g/5mL	0.86
A2C1034-10	Soil	5035A/8260D	03/23/22 14:26	03/23/22 14:26	5.09g/5mL	5g/5mL	0.98

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

SAMPLE PREPARATION INFORMATION

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: 22C1017							
A2C1034-05RE1	Soil	5035A/8260D	03/23/22 10:58	03/23/22 10:58	6.27g/5mL	5g/5mL	0.80

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C0988							
A2C1034-01	Soil	EPA 8000D	03/23/22 08:59	03/24/22 12:33			NA
A2C1034-02	Soil	EPA 8000D	03/23/22 09:23	03/24/22 12:33			NA
A2C1034-03	Soil	EPA 8000D	03/23/22 09:58	03/24/22 12:33			NA
A2C1034-04	Soil	EPA 8000D	03/23/22 10:18	03/24/22 12:33			NA
A2C1034-05	Soil	EPA 8000D	03/23/22 10:58	03/24/22 12:33			NA
A2C1034-06	Soil	EPA 8000D	03/23/22 11:29	03/24/22 12:33			NA
A2C1034-07	Soil	EPA 8000D	03/23/22 13:20	03/24/22 12:33			NA
A2C1034-08	Soil	EPA 8000D	03/23/22 13:31	03/24/22 12:33			NA
A2C1034-09	Soil	EPA 8000D	03/23/22 13:46	03/24/22 12:33			NA
A2C1034-10	Soil	EPA 8000D	03/23/22 14:26	03/24/22 12:33			NA

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

QUALIFIER DEFINITIONS

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

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
F-20	Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
ICV-01	Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
ICV-02	Estimated Result. Initial Calibration Verification (ICV) failed low.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
M-04	Due to matrix interference, this analyte cannot be accurately quantified. The reported result may contain a high bias.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. 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 +13%. 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 +3%. 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 +5%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +6%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +65%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +75%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +81%. The results are reported as Estimated Values.
Q-54h	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-54i	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
Q-54j	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -7%. The results are reported as Estimated Values.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

Q-54k	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -9%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
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.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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:

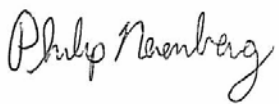
" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " 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.

Apex Laboratories



Philip Nerenberg, Lab Director

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

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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.

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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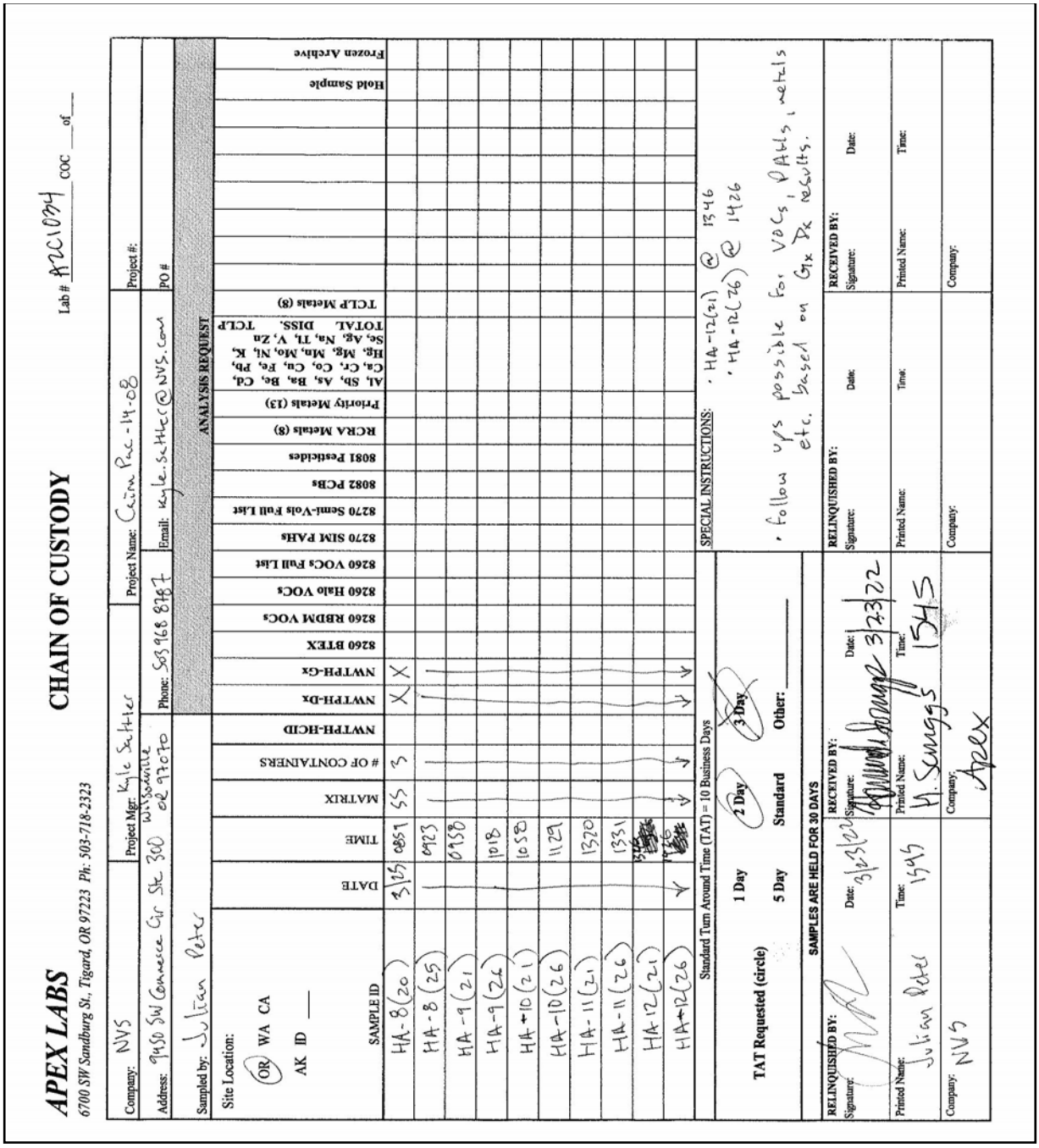
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY — Lab # A2C1034 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: Cairn Pac-14-08 | Project #:
Address: 9450 SW Commerce Cir Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #
Sampled by: Julian Peter
Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
HA-8(20)	3/25	0851	SS	3		X	X														
HA-8(25)		0923																			
HA-9(21)		0938																			
HA-9(26)		1018																			
HA-10(21)		1058																			
HA-10(26)		1129																			
HA-11(21)		1320																			
HA-11(26)		1331																			
HA-12(21)																					
HA-12(26)	↓	↓	↓	↓		↓	↓														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS: • HA-12(21) @ 1346 • HA-12(26) @ 1426 • Follow up's possible for VOCs, PAHs, metals etc. based on Gx & Dx results.

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/25/22	Date: 3/25/22	Date:	Date:
Printed Name: Julian Peter	Printed Name: H. Scruggs	Printed Name:	Printed Name:
Time: 1545	Time: 1545	Time:	Time:
Company: NV5	Company: Apex	Company:	Company:

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1034 - 04 04 22 2122**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C1034

Project/Project #: CairnPac-14-08

Delivery Info:

Date/time received: 3/23/22 @ 1545 By: MAS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 3/23/22 @ 1545 By: MAS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/23/22 @ 1906 By: DJS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: AWL Witness: ZM Cooler Inspected by: DJS

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1080 - CairnPac-14-08 - [none]

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 A2C1080, which was received by the laboratory on 3/24/2022 at 3:14:00PM.

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)

Cooler #1 1.9 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-13(21)	A2C1080-01	Soil	03/24/22 10:19	03/24/22 15:14
HA-13(26)	A2C1080-02	Soil	03/24/22 10:42	03/24/22 15:14
HA-14(21)	A2C1080-03	Soil	03/24/22 11:01	03/24/22 15:14
HA-14(26)	A2C1080-04	Soil	03/24/22 11:16	03/24/22 15:14
HA-15(21)	A2C1080-05	Soil	03/24/22 11:53	03/24/22 15:14
HA-15(26)	A2C1080-06	Soil	03/24/22 12:02	03/24/22 15:14
HA-16(27)	A2C1080-07	Soil	03/24/22 13:02	03/24/22 15:14

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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
HA-13(21) (A2C1080-01)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	**798**	---	27.5	mg/kg dry	1	03/28/22 22:55	NWTPH-Dx	
Oil	ND	---	55.0	mg/kg dry	1	03/28/22 22:55	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 78 %*		*Limits: 50-150 %*	*1*	*03/28/22 22:55*	*NWTPH-Dx*	
HA-13(26) (A2C1080-02)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	ND	---	25.0	mg/kg dry	1	03/28/22 23:15	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/28/22 23:15	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 74 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:15*	*NWTPH-Dx*	
HA-14(21) (A2C1080-03)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	ND	---	25.0	mg/kg dry	1	03/28/22 23:36	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/28/22 23:36	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:36*	*NWTPH-Dx*	
HA-14(26) (A2C1080-04)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	ND	---	25.9	mg/kg dry	1	03/28/22 23:56	NWTPH-Dx	
Oil	ND	---	51.9	mg/kg dry	1	03/28/22 23:56	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 70 %*		*Limits: 50-150 %*	*1*	*03/28/22 23:56*	*NWTPH-Dx*	
HA-15(21) (A2C1080-05)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 00:16	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:16	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 69 %*		*Limits: 50-150 %*	*1*	*03/29/22 00:16*	*NWTPH-Dx*	
HA-15(26) (A2C1080-06)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 00:36	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:36	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 68 %*		*Limits: 50-150 %*	*1*	*03/29/22 00:36*	*NWTPH-Dx*	
HA-16(27) (A2C1080-07)				**Matrix: Soil**		**Batch: 22C1092**		
Diesel	**121**	---	25.0	mg/kg dry	1	03/29/22 00:57	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 00:57	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 78 %*		*Limits: 50-150 %*	*1*	*03/29/22 00:57*	*NWTPH-Dx*	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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
HA-13(21) (A2C1080-01RE1)				**Matrix: Soil**		**Batch: 22C1069**		
Gasoline Range Organics	**2830**	---	154	mg/kg dry	1000	03/28/22 20:42	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 110 %*	*Limits: 50-150 %*		*1*	*03/28/22 20:42*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/28/22 20:42*	*NWTPH-Gx (MS)*	
HA-13(26) (A2C1080-02)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	ND	---	8.76	mg/kg dry	50	03/25/22 16:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*03/25/22 16:58*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/25/22 16:58*	*NWTPH-Gx (MS)*	
HA-14(21) (A2C1080-03)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	ND	---	6.76	mg/kg dry	50	03/25/22 17:25	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 96 %*	*Limits: 50-150 %*		*1*	*03/25/22 17:25*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/25/22 17:25*	*NWTPH-Gx (MS)*	
HA-14(26) (A2C1080-04)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	ND	---	7.09	mg/kg dry	50	03/25/22 17:52	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*03/25/22 17:52*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*03/25/22 17:52*	*NWTPH-Gx (MS)*	
HA-15(21) (A2C1080-05)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	ND	---	8.56	mg/kg dry	50	03/25/22 18:19	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*03/25/22 18:19*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/25/22 18:19*	*NWTPH-Gx (MS)*	
HA-15(26) (A2C1080-06)				**Matrix: Soil**		**Batch: 22C1017**		
Gasoline Range Organics	ND	---	6.85	mg/kg dry	50	03/25/22 18:46	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*03/25/22 18:46*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/25/22 18:46*	*NWTPH-Gx (MS)*	
HA-16(27) (A2C1080-07RE1)				**Matrix: Soil**		**Batch: 22C1069**		
Gasoline Range Organics	**46.6**	---	6.58	mg/kg dry	50	03/28/22 19:21	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 106 %*	*Limits: 50-150 %*		*1*	*03/28/22 19:21*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*03/28/22 19:21*	*NWTPH-Gx (MS)*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-13(21) (A2C1080-01)				**Matrix: Soil**		**Batch: 22C1017**		
Acetone	ND	---	3.08	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Acrylonitrile	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Benzene	ND	---	0.0308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Bromobenzene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Bromochloromethane	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Bromodichloromethane	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Bromoform	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Bromomethane	ND	---	1.54	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
2-Butanone (MEK)	ND	---	1.85	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
n-Butylbenzene	**4.28**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	**M-02**
sec-Butylbenzene	**2.75**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
tert-Butylbenzene	**0.266**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Carbon disulfide	ND	---	1.54	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Carbon tetrachloride	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Chlorobenzene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Chloroethane	ND	---	1.54	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Chloroform	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Chloromethane	ND	---	0.770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
2-Chlorotoluene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
4-Chlorotoluene	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
Dibromochloromethane	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	0.770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
Dibromomethane	ND	---	0.231	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
1,2-Dichlorobenzene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1-Dichloroethane	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1-Dichloroethene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-13(21) (A2C1080-01)				**Matrix: Soil**		**Batch: 22C1017**		
1,2-Dichloropropane	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,3-Dichloropropane	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
2,2-Dichloropropane	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1-Dichloropropene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Ethylbenzene	**0.183**	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Hexachlorobutadiene	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
2-Hexanone	ND	---	3.54	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
Isopropylbenzene	**1.18**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
4-Isopropyltoluene	**5.50**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	**M-02**
Methylene chloride	ND	---	1.54	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	13.9	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
Methyl tert-butyl ether (MTBE)	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Naphthalene	**5.62**	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
n-Propylbenzene	**2.31**	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Styrene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Toluene	ND	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	0.770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	0.770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,1,2-Trichloroethane	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Trichlorofluoromethane	ND	---	0.308	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,2,3-Trichloropropane	ND	---	1.39	mg/kg dry	100	03/25/22 20:06	5035A/8260D	R-02
1,2,4-Trimethylbenzene	**14.2**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
1,3,5-Trimethylbenzene	**6.44**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
Vinyl chloride	ND	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
m,p-Xylene	**0.456**	---	0.154	mg/kg dry	100	03/25/22 20:06	5035A/8260D	
o-Xylene	**0.257**	---	0.0770	mg/kg dry	100	03/25/22 20:06	5035A/8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-13(21) (A2C1080-01)				**Matrix: Soil**		**Batch: 22C1017**		
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits: 80-120 %*	*1*	*03/25/22 20:06*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*03/25/22 20:06*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*79-120 %*	*1*	*03/25/22 20:06*	*5035A/8260D*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-13(21) (A2C1080-01)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**71.3**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-13(26) (A2C1080-02)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**82.8**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-14(21) (A2C1080-03)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**89.6**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-14(26) (A2C1080-04)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**75.8**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-15(21) (A2C1080-05)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**79.9**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-15(26) (A2C1080-06)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**77.2**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	
HA-16(27) (A2C1080-07)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**78.2**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1080 - 04 04 22 2125

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 22C1092 - EPA 3546 (Fuels)							Soil					
Blank (22C1092-BLK1)			Prepared: 03/28/22 11:17		Analyzed: 03/28/22 21:34							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C1092-BS1)			Prepared: 03/28/22 11:17		Analyzed: 03/28/22 21:54							
NWTPH-Dx												
Diesel	127	---	25.0	mg/kg wet	1	125	---	101	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1092-DUP1)			Prepared: 03/28/22 11:17		Analyzed: 03/28/22 22:55							
QC Source Sample: Non-SDG (A2C1053-05)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**77.4**	---	50.0	mg/kg dry	1	---	87.4	---	---	12	30%	F-03
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1092-DUP2)			Prepared: 03/28/22 11:17		Analyzed: 03/29/22 01:17							
QC Source Sample: HA-16(27) (A2C1080-07)												
NWTPH-Dx												
Diesel	**133**	---	25.0	mg/kg dry	1	---	121	---	---	10	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 75 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*97 %*	*50-150 %*		*"*							
LCS (22C1017-BS2)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:30									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.0	---	5.00	mg/kg wet	50	25.0	---	100	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*97 %*	*50-150 %*		*"*							
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Gasoline Range Organics	**555**	---	11.3	mg/kg dry	100	---	648	---	---	15	30%	E
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 148 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: HA-16(27) (A2C1080-07)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**65.0**	---	13.2	mg/kg dry	100	---	84.5	---	---	26	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 110 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*96 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1069 - EPA 5035A							**Soil**					
Blank (22C1069-BLK1)			Prepared: 03/28/22 08:00 Analyzed: 03/28/22 11:18									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 93 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*92 %*	*50-150 %*		*"*							
LCS (22C1069-BS2)			Prepared: 03/28/22 08:00 Analyzed: 03/28/22 10:24									
NWTPH-Gx (MS)												
Gasoline Range Organics	23.7	---	5.00	mg/kg wet	50	25.0	---	95	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 96 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (22C1069-DUP1)			Prepared: 03/22/22 11:49 Analyzed: 03/28/22 12:11									
QC Source Sample: Non-SDG (A2C1104-01)												
Gasoline Range Organics	ND	---	8.86	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (22C1069-DUP2)			Prepared: 03/22/22 13:43 Analyzed: 03/28/22 15:46									
QC Source Sample: Non-SDG (A2C1104-05)												
Gasoline Range Organics	**70.2**	---	9.80	mg/kg dry	100	---	71.3	---	---	2	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
5035A/8260D												
Acetone	ND	---	0.667	mg/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Blank (22C1017-BLK1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56									
1,2-Dichloropropane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Styrene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 105 %* *Limits: 80-120 %* *Dilution: 1x*

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A								**Soil**				
Blank (22C1017-BLK1)				Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:56								
Surr: Toluene-d8 (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*				*"*				
LCS (22C1017-BS1)				Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03								
5035A/8260D												
Acetone	1.48	---	1.00	mg/kg wet	50	2.00	---	**74**	**80-120%**	---	---	Q-55
Acrylonitrile	0.943	---	0.100	mg/kg wet	50	1.00	---	94	80-120%	---	---	
Benzene	1.07	---	0.0100	mg/kg wet	50	1.00	---	107	80-120%	---	---	
Bromobenzene	0.996	---	0.0250	mg/kg wet	50	1.00	---	100	80-120%	---	---	
Bromochloromethane	1.07	---	0.0500	mg/kg wet	50	1.00	---	107	80-120%	---	---	
Bromodichloromethane	0.957	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
Bromoform	0.933	---	0.100	mg/kg wet	50	1.00	---	93	80-120%	---	---	
Bromomethane	1.85	---	0.500	mg/kg wet	50	1.00	---	**185**	**80-120%**	---	---	Q-56
2-Butanone (MEK)	1.74	---	0.500	mg/kg wet	50	2.00	---	87	80-120%	---	---	
n-Butylbenzene	1.05	---	0.0500	mg/kg wet	50	1.00	---	105	80-120%	---	---	
sec-Butylbenzene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
tert-Butylbenzene	0.947	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Carbon disulfide	0.828	---	0.500	mg/kg wet	50	1.00	---	83	80-120%	---	---	
Carbon tetrachloride	0.982	---	0.0500	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Chlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Chloroethane	3.71	---	0.500	mg/kg wet	50	1.00	---	**371**	**80-120%**	---	---	ICV-01
Chloroform	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Chloromethane	0.962	---	0.250	mg/kg wet	50	1.00	---	96	80-120%	---	---	
2-Chlorotoluene	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
4-Chlorotoluene	0.992	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
Dibromochloromethane	0.880	---	0.100	mg/kg wet	50	1.00	---	88	80-120%	---	---	
1,2-Dibromo-3-chloropropane	0.816	---	0.250	mg/kg wet	50	1.00	---	82	80-120%	---	---	
1,2-Dibromoethane (EDB)	1.06	---	0.0500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Dibromomethane	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
1,2-Dichlorobenzene	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,3-Dichlorobenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,4-Dichlorobenzene	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Dichlorodifluoromethane	0.952	---	0.100	mg/kg wet	50	1.00	---	95	80-120%	---	---	ICV-01
1,1-Dichloroethane	1.06	---	0.0250	mg/kg wet	50	1.00	---	106	80-120%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
LCS (22C1017-BS1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03									
1,2-Dichloroethane (EDC)	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,1-Dichloroethene	1.13	---	0.0250	mg/kg wet	50	1.00	---	113	80-120%	---	---	
cis-1,2-Dichloroethene	1.04	---	0.0250	mg/kg wet	50	1.00	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2-Dichloropropane	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,3-Dichloropropane	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
2,2-Dichloropropane	0.958	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
1,1-Dichloropropene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	0.900	---	0.0500	mg/kg wet	50	1.00	---	90	80-120%	---	---	
trans-1,3-Dichloropropene	0.895	---	0.0500	mg/kg wet	50	1.00	---	90	80-120%	---	---	
Ethylbenzene	0.972	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Hexachlorobutadiene	0.999	---	0.100	mg/kg wet	50	1.00	---	100	80-120%	---	---	
2-Hexanone	1.78	---	0.500	mg/kg wet	50	2.00	---	89	80-120%	---	---	
Isopropylbenzene	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
4-Isopropyltoluene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
Methylene chloride	1.05	---	0.500	mg/kg wet	50	1.00	---	105	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1.83	---	0.500	mg/kg wet	50	2.00	---	92	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	0.952	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Naphthalene	0.948	---	0.100	mg/kg wet	50	1.00	---	95	80-120%	---	---	
n-Propylbenzene	1.01	---	0.0250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
Styrene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	0.941	---	0.0250	mg/kg wet	50	1.00	---	94	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.08	---	0.0500	mg/kg wet	50	1.00	---	108	80-120%	---	---	
Tetrachloroethene (PCE)	1.02	---	0.0250	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Toluene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	1.01	---	0.250	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2,4-Trichlorobenzene	1.07	---	0.250	mg/kg wet	50	1.00	---	107	80-120%	---	---	
1,1,1-Trichloroethane	1.05	---	0.0250	mg/kg wet	50	1.00	---	105	80-120%	---	---	
1,1,2-Trichloroethane	1.06	---	0.0250	mg/kg wet	50	1.00	---	106	80-120%	---	---	
Trichloroethene (TCE)	1.04	---	0.0250	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Trichlorofluoromethane	3.01	---	0.100	mg/kg wet	50	1.00	---	**301**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	0.992	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
1,2,4-Trimethylbenzene	0.989	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	
1,3,5-Trimethylbenzene	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
LCS (22C1017-BS1)			Prepared: 03/25/22 08:15 Analyzed: 03/25/22 12:03									
Vinyl chloride	1.23	---	0.0250	mg/kg wet	50	1.00	---	**123**	**80-120%**	---	---	Q-56
m,p-Xylene	1.91	---	0.0500	mg/kg wet	50	2.00	---	96	80-120%	---	---	
o-Xylene	0.980	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*92 %*		*79-120 %*			*"*				
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Acetone	ND	---	2.25	mg/kg dry	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
Benzene	ND	---	0.0225	mg/kg dry	100	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Bromoform	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
n-Butylbenzene	**0.441**	---	0.113	mg/kg dry	100	---	0.466	---	---	6	30%	M-02
sec-Butylbenzene	**0.276**	---	0.113	mg/kg dry	100	---	0.293	---	---	6	30%	
tert-Butylbenzene	ND	---	0.124	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Carbon disulfide	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroform	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.451	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Dibromochloromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
1,3-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Ethylbenzene	**0.101**	---	0.0563	mg/kg dry	100	---	0.107	---	---	5	30%	
Hexachlorobutadiene	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
2-Hexanone	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Isopropylbenzene	**0.143**	---	0.113	mg/kg dry	100	---	0.140	---	---	2	30%	
4-Isopropyltoluene	**0.380**	---	0.113	mg/kg dry	100	---	0.417	---	---	9	30%	M-02
Methylene chloride	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	1.13	mg/kg dry	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	**1.32**	---	0.225	mg/kg dry	100	---	1.39	---	---	5	30%	
n-Propylbenzene	**0.357**	---	0.0563	mg/kg dry	100	---	0.345	---	---	4	30%	
Styrene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.507	mg/kg dry	100	---	ND	---	---	---	30%	R-02
Tetrachloroethene (PCE)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Toluene	ND	---	0.113	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.676	mg/kg dry	100	---	ND	---	---	---	30%	R-02

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP1)			Prepared: 03/23/22 15:00 Analyzed: 03/25/22 14:17									
QC Source Sample: Non-SDG (A2C1030-03)												
Trichloroethene (TCE)	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.225	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.507	mg/kg dry	100	---	ND	---	---	---	30%	R-02
1,2,4-Trimethylbenzene	**2.32**	---	0.113	mg/kg dry	100	---	2.36	---	---	2	30%	
1,3,5-Trimethylbenzene	**2.12**	---	0.113	mg/kg dry	100	---	2.12	---	---	0.4	30%	
Vinyl chloride	ND	---	0.0563	mg/kg dry	100	---	ND	---	---	---	30%	
m,p-Xylene	**0.506**	---	0.113	mg/kg dry	100	---	0.506	---	---	0.07	30%	
o-Xylene	**0.713**	---	0.0563	mg/kg dry	100	---	0.718	---	---	0.6	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:*	*80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*		*"*					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: HA-16(27) (A2C1080-07)												
5035A/8260D												
Acetone	ND	---	2.63	mg/kg dry	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
Benzene	ND	---	0.0263	mg/kg dry	100	---	ND	---	---	---	30%	
Bromobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Bromoform	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
Bromomethane	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	0.121	---	---	***	30%	M-02
sec-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	0.0934	---	---	***	**30%**	Q-05
tert-Butylbenzene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroethane	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Chloroform	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: HA-16(27) (A2C1080-07)												
2-Chlorotoluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Ethylbenzene	**0.0893**	---	0.0658	mg/kg dry	100	---	0.0947	---	---	6	30%	
Hexachlorobutadiene	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
2-Hexanone	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	0.132	mg/kg dry	100	---	0.146	---	---	***	**30%**	M-02, Q-05
Methylene chloride	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	1.32	mg/kg dry	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.263	mg/kg dry	100	---	0.317	---	---	***	**30%**	Q-05
n-Propylbenzene	**0.0844**	---	0.0658	mg/kg dry	100	---	0.112	---	---	28	30%	
Styrene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Duplicate (22C1017-DUP2)			Prepared: 03/24/22 13:02 Analyzed: 03/25/22 21:00									
QC Source Sample: HA-16(27) (A2C1080-07)												
1,1,2,2-Tetrachloroethane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Toluene	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.263	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.132	mg/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**0.374**	---	0.132	mg/kg dry	100	---	0.554	---	---	**39**	**30%**	Q-05
1,3,5-Trimethylbenzene	**0.167**	---	0.132	mg/kg dry	100	---	0.260	---	---	**44**	**30%**	Q-05
Vinyl chloride	ND	---	0.0658	mg/kg dry	100	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	0.132	mg/kg dry	100	---	0.118	---	---	***	30%	
o-Xylene	ND	---	0.0658	mg/kg dry	100	---	0.0345	---	---	***	**30%**	Q-05
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45 Analyzed: 03/25/22 15:11									
QC Source Sample: Non-SDG (A2C1087-01)												
5035A/8260D												
Acetone	2.02	---	1.33	mg/kg dry	50	2.66	ND	76	36-164%	---	---	Q-17
Acrylonitrile	1.27	---	0.133	mg/kg dry	50	1.33	ND	95	65-134%	---	---	
Benzene	1.96	---	0.0133	mg/kg dry	50	1.33	0.542	106	77-121%	---	---	
Bromobenzene	1.36	---	0.0332	mg/kg dry	50	1.33	ND	103	78-121%	---	---	
Bromochloromethane	1.42	---	0.0665	mg/kg dry	50	1.33	ND	107	78-125%	---	---	
Bromodichloromethane	1.29	---	0.0665	mg/kg dry	50	1.33	ND	97	75-127%	---	---	
Bromoform	1.30	---	0.133	mg/kg dry	50	1.33	ND	98	67-132%	---	---	
Bromomethane	2.23	---	0.665	mg/kg dry	50	1.33	ND	**168**	**53-143%**	---	---	Q-54
2-Butanone (MEK)	2.22	---	0.665	mg/kg dry	50	2.66	ND	84	51-148%	---	---	
n-Butylbenzene	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	70-128%	---	---	
sec-Butylbenzene	1.42	---	0.0665	mg/kg dry	50	1.33	ND	107	73-126%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45		Analyzed: 03/25/22 15:11							
QC Source Sample: Non-SDG (A2C1087-01)												
tert-Butylbenzene	1.33	---	0.0665	mg/kg dry	50	1.33	ND	100	73-125%	---	---	
Carbon disulfide	1.08	---	0.665	mg/kg dry	50	1.33	ND	81	63-132%	---	---	
Carbon tetrachloride	1.39	---	0.0665	mg/kg dry	50	1.33	ND	105	70-135%	---	---	
Chlorobenzene	1.34	---	0.0332	mg/kg dry	50	1.33	ND	101	79-120%	---	---	
Chloroethane	5.06	---	0.665	mg/kg dry	50	1.33	ND	**381**	**59-139%**	---	---	ICV-01
Chloroform	1.41	---	0.0665	mg/kg dry	50	1.33	ND	106	78-123%	---	---	
Chloromethane	1.39	---	0.332	mg/kg dry	50	1.33	ND	105	50-136%	---	---	
2-Chlorotoluene	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	75-122%	---	---	
4-Chlorotoluene	1.34	---	0.0665	mg/kg dry	50	1.33	ND	101	72-124%	---	---	
Dibromochloromethane	1.21	---	0.133	mg/kg dry	50	1.33	ND	91	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1.16	---	0.332	mg/kg dry	50	1.33	ND	87	61-132%	---	---	
1,2-Dibromoethane (EDB)	1.48	---	0.0665	mg/kg dry	50	1.33	ND	111	78-122%	---	---	
Dibromomethane	1.37	---	0.0665	mg/kg dry	50	1.33	ND	103	78-125%	---	---	
1,2-Dichlorobenzene	1.43	---	0.0332	mg/kg dry	50	1.33	ND	108	78-121%	---	---	
1,3-Dichlorobenzene	1.38	---	0.0332	mg/kg dry	50	1.33	ND	104	77-121%	---	---	
1,4-Dichlorobenzene	1.34	---	0.0332	mg/kg dry	50	1.33	ND	101	75-120%	---	---	
Dichlorodifluoromethane	1.37	---	0.133	mg/kg dry	50	1.33	ND	103	29-149%	---	---	
1,1-Dichloroethane	1.43	---	0.0332	mg/kg dry	50	1.33	ND	107	76-125%	---	---	
1,2-Dichloroethane (EDC)	1.37	---	0.0332	mg/kg dry	50	1.33	0.0534	99	73-128%	---	---	
1,1-Dichloroethene	1.38	---	0.0332	mg/kg dry	50	1.33	ND	104	70-131%	---	---	
cis-1,2-Dichloroethene	1.39	---	0.0332	mg/kg dry	50	1.33	ND	104	77-123%	---	---	
trans-1,2-Dichloroethene	1.37	---	0.0332	mg/kg dry	50	1.33	ND	103	74-125%	---	---	
1,2-Dichloropropane	1.43	---	0.0332	mg/kg dry	50	1.33	ND	108	76-123%	---	---	
1,3-Dichloropropane	1.43	---	0.0665	mg/kg dry	50	1.33	ND	107	77-121%	---	---	
2,2-Dichloropropane	1.30	---	0.0665	mg/kg dry	50	1.33	ND	98	67-133%	---	---	
1,1-Dichloropropene	1.47	---	0.0665	mg/kg dry	50	1.33	ND	111	76-125%	---	---	
cis-1,3-Dichloropropene	1.25	---	0.0665	mg/kg dry	50	1.33	ND	94	74-126%	---	---	
trans-1,3-Dichloropropene	1.19	---	0.0665	mg/kg dry	50	1.33	ND	90	71-130%	---	---	
Ethylbenzene	1.44	---	0.0332	mg/kg dry	50	1.33	0.114	100	76-122%	---	---	
Hexachlorobutadiene	1.61	---	0.133	mg/kg dry	50	1.33	ND	121	61-135%	---	---	
2-Hexanone	2.45	---	0.665	mg/kg dry	50	2.66	ND	92	53-145%	---	---	
Isopropylbenzene	1.45	---	0.0665	mg/kg dry	50	1.33	ND	109	68-134%	---	---	
4-Isopropyltoluene	1.46	---	0.0665	mg/kg dry	50	1.33	ND	110	73-127%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1017 - EPA 5035A							**Soil**					
Matrix Spike (22C1017-MS1)			Prepared: 03/23/22 16:45 Analyzed: 03/25/22 15:11									
QC Source Sample: Non-SDG (A2C1087-01)												
Methylene chloride	1.41	---	0.665	mg/kg dry	50	1.33	ND	106	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	2.53	---	0.665	mg/kg dry	50	2.66	ND	95	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1.27	---	0.0665	mg/kg dry	50	1.33	ND	96	73-125%	---	---	
Naphthalene	1.62	---	0.133	mg/kg dry	50	1.33	0.140	111	62-129%	---	---	
n-Propylbenzene	1.41	---	0.0332	mg/kg dry	50	1.33	0.0248	104	73-125%	---	---	
Styrene	1.44	---	0.0665	mg/kg dry	50	1.33	ND	108	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1.31	---	0.0332	mg/kg dry	50	1.33	ND	98	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1.50	---	0.0665	mg/kg dry	50	1.33	ND	113	70-124%	---	---	
Tetrachloroethene (PCE)	1.42	---	0.0332	mg/kg dry	50	1.33	ND	107	73-128%	---	---	
Toluene	2.64	---	0.0665	mg/kg dry	50	1.33	1.34	98	77-121%	---	---	
1,2,3-Trichlorobenzene	1.43	---	0.332	mg/kg dry	50	1.33	ND	108	66-130%	---	---	
1,2,4-Trichlorobenzene	1.54	---	0.332	mg/kg dry	50	1.33	ND	116	67-129%	---	---	
1,1,1-Trichloroethane	1.48	---	0.0332	mg/kg dry	50	1.33	ND	111	73-130%	---	---	
1,1,2-Trichloroethane	1.42	---	0.0332	mg/kg dry	50	1.33	ND	107	78-121%	---	---	
Trichloroethene (TCE)	1.45	---	0.0332	mg/kg dry	50	1.33	ND	109	77-123%	---	---	
Trichlorofluoromethane	3.85	---	0.133	mg/kg dry	50	1.33	ND	**290**	**62-140%**	---	---	Q-54a
1,2,3-Trichloropropane	1.33	---	0.0665	mg/kg dry	50	1.33	ND	100	73-125%	---	---	
1,2,4-Trimethylbenzene	1.52	---	0.0665	mg/kg dry	50	1.33	0.182	101	75-123%	---	---	
1,3,5-Trimethylbenzene	1.42	---	0.0665	mg/kg dry	50	1.33	0.0666	102	73-124%	---	---	
Vinyl chloride	1.55	---	0.0332	mg/kg dry	50	1.33	ND	117	56-135%	---	---	
m,p-Xylene	3.31	---	0.0665	mg/kg dry	50	2.66	0.695	98	77-124%	---	---	
o-Xylene	1.70	---	0.0332	mg/kg dry	50	1.33	0.356	101	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 22C1096 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C1096-DUP1)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-02)												
% Solids	**96.6**	---	1.00	%	1	---	96.8	---	---	0.2	10%	
Duplicate (22C1096-DUP2)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-09)												
% Solids	**96.9**	---	1.00	%	1	---	97.0	---	---	0.1	10%	
Duplicate (22C1096-DUP3)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-14)												
% Solids	**96.6**	---	1.00	%	1	---	96.7	---	---	0.2	10%	
Duplicate (22C1096-DUP4)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-19)												
% Solids	**96.9**	---	1.00	%	1	---	97.0	---	---	0.07	10%	
Duplicate (22C1096-DUP5)			Prepared: 03/28/22 12:16		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-24)												
% Solids	**96.6**	---	1.00	%	1	---	96.6	---	---	0.02	10%	
Duplicate (22C1096-DUP6)			Prepared: 03/28/22 19:40		Analyzed: 03/29/22 10:01							
QC Source Sample: Non-SDG (A2C1178-01)												
% Solids	**66.8**	---	1.00	%	1	---	64.5	---	---	3	10%	

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

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1080 - 04 04 22 2125

SAMPLE PREPARATION INFORMATION

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: 22C1092							
A2C1080-01	Soil	NWTPH-Dx	03/24/22 10:19	03/28/22 11:17	10.19g/5mL	10g/5mL	0.98
A2C1080-02	Soil	NWTPH-Dx	03/24/22 10:42	03/28/22 11:17	10.54g/5mL	10g/5mL	0.95
A2C1080-03	Soil	NWTPH-Dx	03/24/22 11:01	03/28/22 11:17	10.15g/5mL	10g/5mL	0.99
A2C1080-04	Soil	NWTPH-Dx	03/24/22 11:16	03/28/22 11:17	10.17g/5mL	10g/5mL	0.98
A2C1080-05	Soil	NWTPH-Dx	03/24/22 11:53	03/28/22 11:17	10.04g/5mL	10g/5mL	1.00
A2C1080-06	Soil	NWTPH-Dx	03/24/22 12:02	03/28/22 11:17	10.5g/5mL	10g/5mL	0.95
A2C1080-07	Soil	NWTPH-Dx	03/24/22 13:02	03/28/22 11:17	10.44g/5mL	10g/5mL	0.96

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: 22C1017							
A2C1080-02	Soil	NWTPH-Gx (MS)	03/24/22 10:42	03/24/22 10:42	3.91g/5mL	5g/5mL	1.28
A2C1080-03	Soil	NWTPH-Gx (MS)	03/24/22 11:01	03/24/22 11:01	4.52g/5mL	5g/5mL	1.11
A2C1080-04	Soil	NWTPH-Gx (MS)	03/24/22 11:16	03/24/22 11:16	6g/5mL	5g/5mL	0.83
A2C1080-05	Soil	NWTPH-Gx (MS)	03/24/22 11:53	03/24/22 11:53	4.29g/5mL	5g/5mL	1.17
A2C1080-06	Soil	NWTPH-Gx (MS)	03/24/22 12:02	03/24/22 12:02	6.02g/5mL	5g/5mL	0.83
Batch: 22C1069							
A2C1080-01RE1	Soil	NWTPH-Gx (MS)	03/24/22 10:19	03/24/22 10:19	6.16g/5mL	5g/5mL	0.81
A2C1080-07RE1	Soil	NWTPH-Gx (MS)	03/24/22 13:02	03/24/22 13:02	6.16g/5mL	5g/5mL	0.81

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: 22C1017							
A2C1080-01	Soil	5035A/8260D	03/24/22 10:19	03/24/22 10:19	6.16g/5mL	5g/5mL	0.81

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C1096							
A2C1080-01	Soil	EPA 8000D	03/24/22 10:19	03/28/22 12:15			NA
A2C1080-02	Soil	EPA 8000D	03/24/22 10:42	03/28/22 12:15			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2C1080-03	Soil	EPA 8000D	03/24/22 11:01	03/28/22 12:15			NA
A2C1080-04	Soil	EPA 8000D	03/24/22 11:16	03/28/22 12:15			NA
A2C1080-05	Soil	EPA 8000D	03/24/22 11:53	03/28/22 12:15			NA
A2C1080-06	Soil	EPA 8000D	03/24/22 12:02	03/28/22 12:15			NA
A2C1080-07	Soil	EPA 8000D	03/24/22 13:02	03/28/22 12:15			NA

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

QUALIFIER DEFINITIONS

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

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
ICV-01	Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +65%. 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 +81%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
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.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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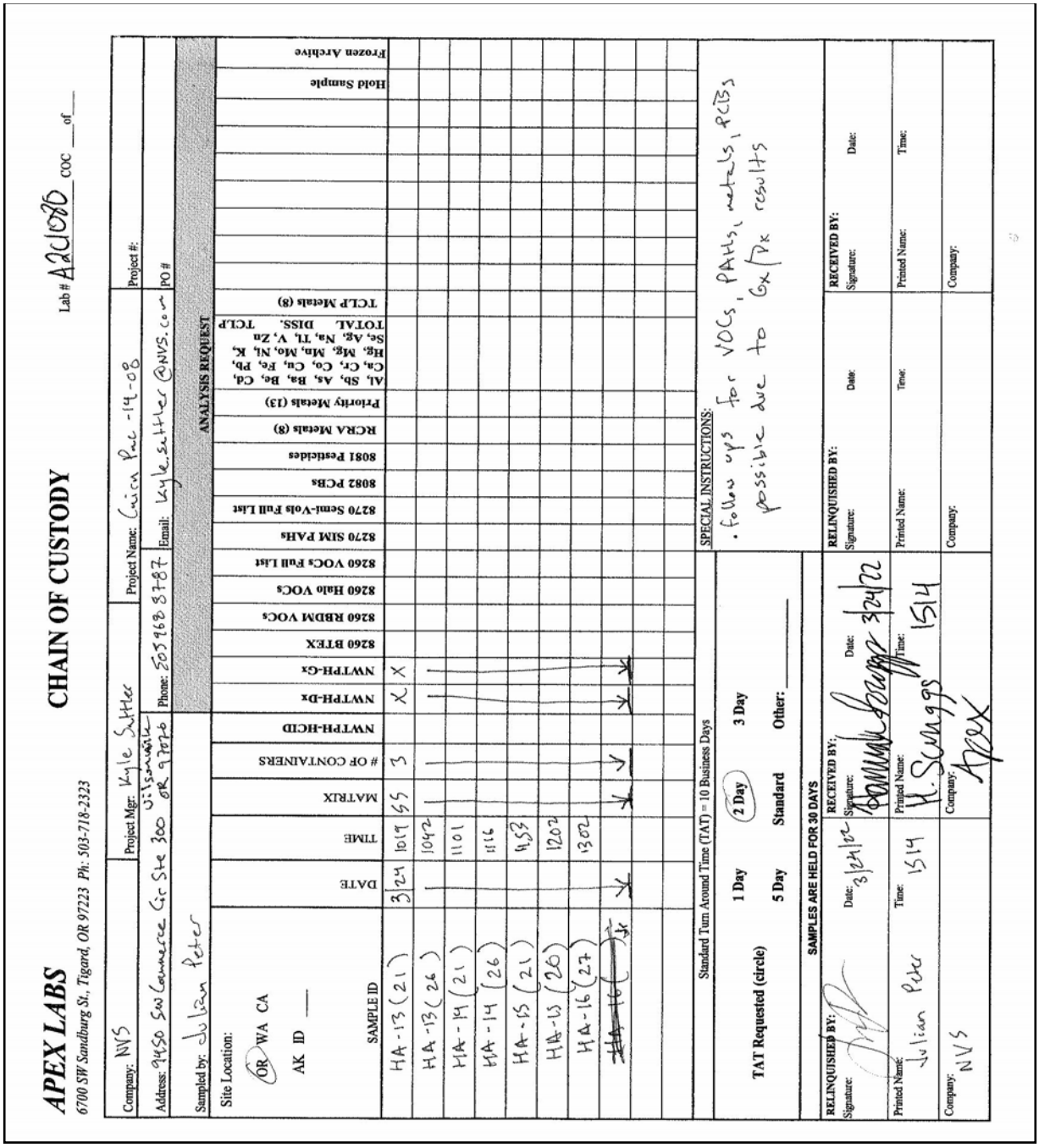
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2C1080 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: Cairn Pac -14-08 | Project #:
Address: 9450 SW Commerce Cir Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NVS.com | PO #
Sampled by: Julian Peter
Site Location: (OR) WA CA / AK ID ___

ANALYSIS REQUEST

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
HA-13 (21)	3/24	1019	GS	3		X	X														
HA-13 (26)		1042																			
HA-14 (21)		1101																			
HA-14 (26)		1116																			
HA-15 (21)		1158																			
HA-15 (26)		1202																			
HA-16 (27)		1302																			
~~HA-16 (26)~~																					

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- Follow ups for VOCs, PAHs, metals, PCBs possible due to Gx/Dx results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/24/22	Date: 3/24/22	Date:	Date:
Time: 1514	Time: 1514	Time:	Time:
Printed Name: Julian Peter	Printed Name: H. Scungos	Printed Name:	Printed Name:
Company: NV5	Company: Apex	Company:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1080 - 04 04 22 2125**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C1080

Project/Project #: Cairn Pac - 14-08

Delivery Info:
Date/time received: 3/24/22 @ 1514 By: HAS
Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other_____
Cooler Inspection Date/time inspected: 3/24/22 @ 1515 By: HAS
Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X
Signed/dated by client? Yes X No _____
Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/24/22 @ 17:12 By: KAM
All samples intact? Yes X No ___ Comments:
Bottle labels/COCs agree? Yes X No ___ Comments:
COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments:
Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments
Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X
Comments:
Additional information:
Labeled by: KAM Witness: AMK Cooler Inspected by: KAM

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1114 - CairnPac-14-08 - [none]

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 A2C1114, which was received by the laboratory on 3/25/2022 at 1:00:00PM.

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)

Cooler #1	2.1 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

Philip Nerenberg, Lab Director

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Apex Laboratories, LLC
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-17(20)	**A2C1114-01**	**Soil**	**03/25/22 11:46**	**03/25/22 13:00**

Apex Laboratories

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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
HA-17(20) (A2C1114-01)				**Matrix: Soil**		**Batch: 22C1170**		
Diesel	ND	---	25.0	mg/kg dry	1	03/30/22 22:26	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/30/22 22:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*1*	*03/30/22 22:26*	*NWTPH-Dx*	

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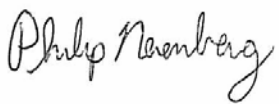

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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
HA-17(20) (A2C1114-01)				**Matrix: Soil**		**Batch: 22C1101**		
Gasoline Range Organics	ND	---	6.69	mg/kg dry	50	03/28/22 21:40	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:* *50-150 %*	*1*	*03/28/22 21:40*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*116 %*	*50-150 %*	*1*	*03/28/22 21:40*	*NWTPH-Gx (MS)*	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-17(20) (A2C1114-01)				**Matrix: Soil**		**Batch: 22C1096**		
% Solids	**80.9**	---	1.00	%	1	03/29/22 10:01	EPA 8000D	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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 22C1170 - EPA 3546 (Fuels)							**Soil**					
Blank (22C1170-BLK1)			Prepared: 03/30/22 05:51		Analyzed: 03/30/22 07:46							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22C1170-BS1)			Prepared: 03/30/22 05:51		Analyzed: 03/30/22 08:06							
NWTPH-Dx												
Diesel	119	---	20.0	mg/kg wet	1	125	---	95	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 105 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22C1170-DUP1)			Prepared: 03/30/22 05:51		Analyzed: 03/30/22 08:47							
QC Source Sample: Non-SDG (A2C1225-01)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.1	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 89 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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 22C1101 - EPA 5035A								Soil				
Blank (22C1101-BLK1)			Prepared: 03/28/22 12:00 Analyzed: 03/28/22 16:17									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*109 %*	*50-150 %*		*"*							
LCS (22C1101-BS2)			Prepared: 03/28/22 12:00 Analyzed: 03/28/22 15:50									
NWTPH-Gx (MS)												
Gasoline Range Organics	26.7	---	5.00	mg/kg wet	50	25.0	---	107	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 96 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*108 %*	*50-150 %*		*"*							
Duplicate (22C1101-DUP1)			Prepared: 03/22/22 14:37 Analyzed: 03/28/22 17:11									
QC Source Sample: Non-SDG (A2C1062-01)												
Gasoline Range Organics	ND	---	2.81	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*111 %*	*50-150 %*		*"*							
Duplicate (22C1101-DUP2)			Prepared: 03/22/22 14:55 Analyzed: 03/28/22 18:59									
QC Source Sample: Non-SDG (A2C1062-04)												
Gasoline Range Organics	ND	---	4.91	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 91 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*113 %*	*50-150 %*		*"*							
Duplicate (22C1101-DUP3)			Prepared: 03/22/22 15:00 Analyzed: 03/28/22 19:52									
QC Source Sample: Non-SDG (A2C1062-05)												
Gasoline Range Organics	ND	---	3.79	mg/kg wet	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*116 %*	*50-150 %*		*"*							

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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 22C1096 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C1096-DUP1)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-02)												
% Solids	**96.6**	---	1.00	%	1	---	96.8	---	---	0.2	10%	
Duplicate (22C1096-DUP2)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-09)												
% Solids	**96.9**	---	1.00	%	1	---	97.0	---	---	0.1	10%	
Duplicate (22C1096-DUP3)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-14)												
% Solids	**96.6**	---	1.00	%	1	---	96.7	---	---	0.2	10%	
Duplicate (22C1096-DUP4)			Prepared: 03/28/22 12:15		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-19)												
% Solids	**96.9**	---	1.00	%	1	---	97.0	---	---	0.07	10%	
Duplicate (22C1096-DUP5)			Prepared: 03/28/22 12:16		Analyzed: 03/29/22 10:01							**PRO**
QC Source Sample: Non-SDG (A2C0833-24)												
% Solids	**96.6**	---	1.00	%	1	---	96.6	---	---	0.02	10%	
Duplicate (22C1096-DUP6)			Prepared: 03/28/22 19:40		Analyzed: 03/29/22 10:01							
QC Source Sample: Non-SDG (A2C1178-01)												
% Solids	**66.8**	---	1.00	%	1	---	64.5	---	---	3	10%	

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

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

SAMPLE PREPARATION INFORMATION

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: 22C1170							
A2C1114-01	Soil	NWTPH-Dx	03/25/22 11:46	03/30/22 08:59	10.24g/5mL	10g/5mL	0.98

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: 22C1101							
A2C1114-01	Soil	NWTPH-Gx (MS)	03/25/22 11:46	03/25/22 11:46	5.6g/5mL	5g/5mL	0.89

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C1096							
A2C1114-01	Soil	EPA 8000D	03/25/22 11:46	03/28/22 12:15			NA

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

QUALIFIER DEFINITIONS

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

Apex Laboratories

PRO Sample has undergone sample processing prior to extraction and analysis.

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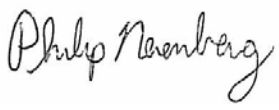

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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.

Apex Laboratories

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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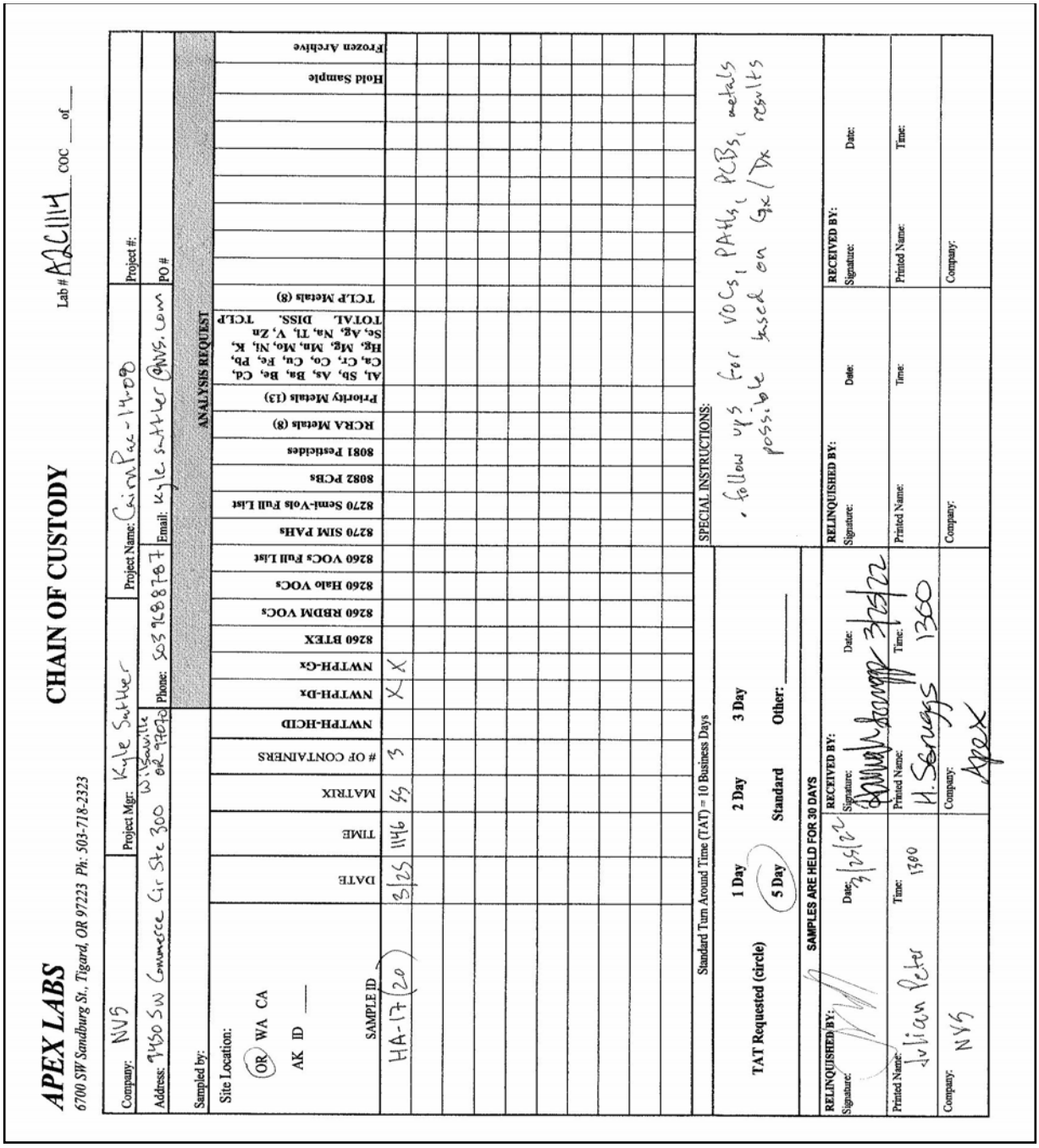
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY — Lab # A2C1114 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:
Address: 9450 SW Commerce Cir Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@nv5.com | PO #
Sampled by:

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
HA-17 (20)	3/25	1146	SS	3		X	X														

Site Location: (OR) WA CA AK ID ___

ANALYSIS REQUEST

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- follow up for VOCs, PAHs, PCBs, metals possible based on GX / DX results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date: 3/25/22	Date:	Date:	Date:
Time: 1300	Time: 1300	Time:	Time:
Printed Name: Julian Peter	Printed Name: H. Scruggs	Printed Name:	Printed Name:
Company: NV5	Company: Apex	Company:	Company:

Apex Laboratories

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1114 - 04 04 22 2129**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C1114

Project/Project #: CairnPac - 14-08

Delivery Info:
Date/time received: 3/25/22 @ 1300 By: MAS
Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other_____
Cooler Inspection Date/time inspected: 3/25/22 @ 1303 By: MAS
Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X
Signed/dated by client? Yes X No _____
Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/25/22 @ 14:55 By: KAM
All samples intact? Yes X No ___ Comments:
Bottle labels/COCs agree? Yes X No ___ Comments:
COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments:
Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments
Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X
Comments:
Additional information:
Labeled by: KAM Witness: JS Cooler Inspected by: MAS

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Monday, April 4, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1168 - CairnPac-14-08 - [none]

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 A2C1168, which was received by the laboratory on 3/28/2022 at 1:25:00PM.

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)

Cooler #1	0.3 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW-13(21)	A2C1168-01	Soil	03/28/22 08:37	03/28/22 13:25
HA-18(21)	A2C1168-02	Soil	03/28/22 11:31	03/28/22 13:25
HA-18(26)	A2C1168-03	Soil	03/28/22 12:02	03/28/22 13:25

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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
SWW-13(21) (A2C1168-01)				**Matrix: Soil**		**Batch: 22C1143**		
Diesel	ND	---	25.0	mg/kg dry	1	03/30/22 06:30	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/30/22 06:30	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 84 %*		*Limits: 50-150 %*	*1*	*03/30/22 06:30*	*NWTPH-Dx*	
HA-18(21) (A2C1168-02)				**Matrix: Soil**		**Batch: 22C1143**		
Diesel	ND	---	26.8	mg/kg dry	1	03/29/22 21:29	NWTPH-Dx	
Oil	ND	---	53.5	mg/kg dry	1	03/29/22 21:29	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 78 %*		*Limits: 50-150 %*	*1*	*03/29/22 21:29*	*NWTPH-Dx*	
HA-18(26) (A2C1168-03)				**Matrix: Soil**		**Batch: 22C1143**		
Diesel	ND	---	25.0	mg/kg dry	1	03/29/22 21:50	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	03/29/22 21:50	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*03/29/22 21:50*	*NWTPH-Dx*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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
SWW-13(21) (A2C1168-01)				**Matrix: Soil**		**Batch: 22C1117**		
Gasoline Range Organics	ND	---	6.31	mg/kg dry	50	03/29/22 12:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits: 50-150 %*	*1*	*03/29/22 12:30*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*03/29/22 12:30*	*NWTPH-Gx (MS)*	
HA-18(21) (A2C1168-02)				**Matrix: Soil**		**Batch: 22C1117**		
Gasoline Range Organics	ND	---	7.86	mg/kg dry	50	03/29/22 12:57	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits: 50-150 %*	*1*	*03/29/22 12:57*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*03/29/22 12:57*	*NWTPH-Gx (MS)*	
HA-18(26) (A2C1168-03)				**Matrix: Soil**		**Batch: 22C1117**		
Gasoline Range Organics	ND	---	6.61	mg/kg dry	50	03/29/22 13:24	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits: 50-150 %*	*1*	*03/29/22 13:24*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/29/22 13:24*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWW-13(21) (A2C1168-01)				**Matrix: Soil**		**Batch: 22C1134**		
% Solids	**86.6**	---	1.00	%	1	03/30/22 09:54	EPA 8000D	
HA-18(21) (A2C1168-02)				**Matrix: Soil**		**Batch: 22C1134**		
% Solids	**72.6**	---	1.00	%	1	03/30/22 09:54	EPA 8000D	
HA-18(26) (A2C1168-03)				**Matrix: Soil**		**Batch: 22C1134**		
% Solids	**85.3**	---	1.00	%	1	03/30/22 09:54	EPA 8000D	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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 22C1143 - EPA 3546 (Fuels)							**Soil**					
Blank (22C1143-BLK1)			Prepared: 03/29/22 11:11		Analyzed: 03/29/22 21:29							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 84 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (22C1143-BS1)			Prepared: 03/29/22 11:11		Analyzed: 03/29/22 21:50							
NWTPH-Dx												
Diesel	116	---	25.0	mg/kg wet	1	125	---	93	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Duplicate (22C1143-DUP1)			Prepared: 03/29/22 11:11		Analyzed: 03/29/22 22:30							
QC Source Sample: Non-SDG (A2C0940-04)												
Diesel	**4770**	---	542	mg/kg dry	25	---	4190	---	---	13	30%	
Oil	**2990**	---	1080	mg/kg dry	25	---	4570	---	---	**42**	**30%**	F-13, Q-05
Mineral Oil	ND	---	1080	mg/kg dry	25	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: %*		*Limits: 50-150 %*		*Dilution: 25x*					S-01
Duplicate (22C1143-DUP2)			Prepared: 03/29/22 11:19		Analyzed: 03/29/22 22:10							
QC Source Sample: HA-18(26) (A2C1168-03)												
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	44.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 80 %*		*Limits: 50-150 %*		*Dilution: 1x*					

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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 22C1117 - EPA 5035A							**Soil**					
Blank (22C1117-BLK1)			Prepared: 03/29/22 08:00		Analyzed: 03/29/22 10:43							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*94 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*			*"*				
LCS (22C1117-BS2)			Prepared: 03/29/22 08:00		Analyzed: 03/29/22 10:16							
NWTPH-Gx (MS)												
Gasoline Range Organics	24.4	---	5.00	mg/kg wet	50	25.0	---	98	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*94 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22C1117-DUP1)			Prepared: 03/28/22 17:32		Analyzed: 03/29/22 14:44							**V-16, V-21**
QC Source Sample: Non-SDG (A2C1122-02)												
Gasoline Range Organics	**184**	---	15.4	mg/kg dry	100	---	188	---	---	2	30%	F-09
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*116 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*94 %*		*50-150 %*			*"*				

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1168 - 04 04 22 2130

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 22C1134 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22C1134-DUP1)			Prepared: 03/29/22 10:15		Analyzed: 03/30/22 09:54							**PRO**
QC Source Sample: Non-SDG (A2C0833-40)												
% Solids	**97.1**	---	1.00	%	1	---	97.3	---	---	0.2	10%	
Duplicate (22C1134-DUP2)			Prepared: 03/29/22 10:15		Analyzed: 03/30/22 09:54							**PRO**
QC Source Sample: Non-SDG (A2C0833-42)												
% Solids	**97.4**	---	1.00	%	1	---	97.4	---	---	0.05	10%	
Duplicate (22C1134-DUP3)			Prepared: 03/29/22 10:15		Analyzed: 03/30/22 09:54							**PRO**
QC Source Sample: Non-SDG (A2C0833-44)												
% Solids	**97.7**	---	1.00	%	1	---	97.7	---	---	0.05	10%	
Duplicate (22C1134-DUP4)			Prepared: 03/29/22 10:15		Analyzed: 03/30/22 09:54							**PRO**
QC Source Sample: Non-SDG (A2C0833-46)												
% Solids	**97.4**	---	1.00	%	1	---	97.5	---	---	0.04	10%	
Duplicate (22C1134-DUP5)			Prepared: 03/29/22 20:24		Analyzed: 03/30/22 09:54							
QC Source Sample: Non-SDG (A2C1205-01)												
% Solids	**92.9**	---	1.00	%	1	---	92.5	---	---	0.4	10%	
Duplicate (22C1134-DUP6)			Prepared: 03/29/22 20:26		Analyzed: 03/30/22 09:54							
QC Source Sample: Non-SDG (A2C1226-02)												
% Solids	**75.0**	---	1.00	%	1	---	75.0	---	---	0.008	10%	

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

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

SAMPLE PREPARATION INFORMATION

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: 22C1143							
A2C1168-01	Soil	NWTPH-Dx	03/28/22 08:37	03/29/22 11:19	10.51g/5mL	10g/5mL	0.95
A2C1168-02	Soil	NWTPH-Dx	03/28/22 11:31	03/29/22 11:19	10.29g/5mL	10g/5mL	0.97
A2C1168-03	Soil	NWTPH-Dx	03/28/22 12:02	03/29/22 11:19	10.19g/5mL	10g/5mL	0.98

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: 22C1117							
A2C1168-01	Soil	NWTPH-Gx (MS)	03/28/22 08:37	03/28/22 08:37	5.22g/5mL	5g/5mL	0.96
A2C1168-02	Soil	NWTPH-Gx (MS)	03/28/22 11:31	03/28/22 11:31	5.77g/5mL	5g/5mL	0.87
A2C1168-03	Soil	NWTPH-Gx (MS)	03/28/22 12:02	03/28/22 12:02	5.1g/5mL	5g/5mL	0.98

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C1134							
A2C1168-01	Soil	EPA 8000D	03/28/22 08:37	03/29/22 10:15			NA
A2C1168-02	Soil	EPA 8000D	03/28/22 11:31	03/29/22 10:15			NA
A2C1168-03	Soil	EPA 8000D	03/28/22 12:02	03/29/22 10:15			NA

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

QUALIFIER DEFINITIONS

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

Apex Laboratories

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
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
V-16	Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.
V-21	Sample aliquot was subsampled from a sample container that had been previously opened and had sample removed for another analysis.

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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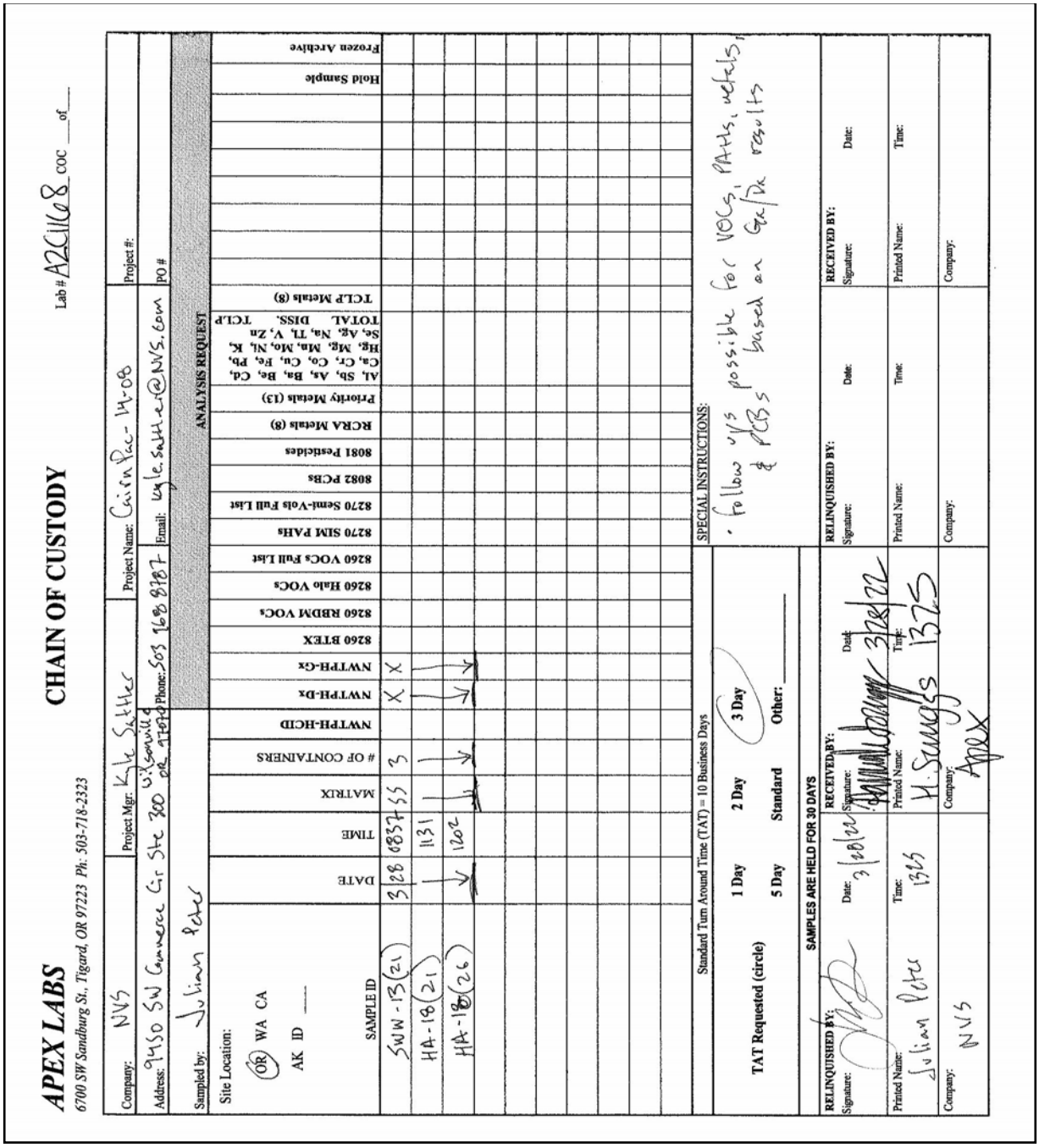
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**



APEX LABS — **CHAIN OF CUSTODY** — Lab # A2C1168 COC ___ of ___

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:

Address: 9450 SW Commerce Cir Ste 300 Wilsonville, OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #

Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWW-13(21)	3/28	0837	SS	3		X	X														
HA-19(21)		1131		1																	
HA-19(26)	↓	1202	↓	↓		↓	↓														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- Follow WS possible for VOCs, PAHs, metals & PCBs based on GA/PA results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	3/28/22		Signature:	3/28/22	
Printed Name: Julian Peter		1315	Printed Name: H. Sumgis		1315
Company: NV5			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1168 - 04 04 22 2130**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C1168

Project/Project #: CairnPac-14-08

Delivery Info:

Date/time received: 3/28/22 @ 1325 By: HAS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 3/28/22 @ 1330 By: ~~1330~~ HAS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X HAS 3/28/22

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.3						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/28/22 @ 1600 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: jars: HAS VOAS: DJS

Witness: Jars: DJS VOAS: HAS

Cooler Inspected by: HAS

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

Wednesday, April 20, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1204 - CairnPac-14-08 - [none]

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 A2C1204, which was received by the laboratory on 3/29/2022 at 3:08:00PM.

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)

Cooler #1	2.8 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

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWN-6(3)	A2C1204-01	Soil	03/29/22 09:15	03/29/22 15:08
SWN-7(3)	A2C1204-02	Soil	03/29/22 09:28	03/29/22 15:08
SWN-8(3)	A2C1204-03	Soil	03/29/22 09:51	03/29/22 15:08
SWN-9(8)	A2C1204-04	Soil	03/29/22 14:04	03/29/22 15:08
SWN-10(8)	A2C1204-05	Soil	03/29/22 14:17	03/29/22 15:08
SWN-11(8)	A2C1204-06	Soil	03/29/22 14:30	03/29/22 15:08

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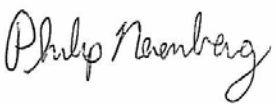

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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
SWN-6(3) (A2C1204-01)				**Matrix: Soil**		**Batch: 22D0078**		
Diesel	**1090**	---	25.0	mg/kg dry	1	04/04/22 23:39	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	04/04/22 23:39	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*04/04/22 23:39*	*NWTPH-Dx*	
SWN-7(3) (A2C1204-02)				**Matrix: Soil**		**Batch: 22D0078**		
Diesel	**479**	---	25.7	mg/kg dry	1	04/04/22 23:59	NWTPH-Dx	
Oil	ND	---	51.3	mg/kg dry	1	04/04/22 23:59	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 106 %*	*Limits: 50-150 %*		*1*	*04/04/22 23:59*	*NWTPH-Dx*	
SWN-8(3) (A2C1204-03)				**Matrix: Soil**		**Batch: 22D0078**		
Diesel	**61.4**	---	25.0	mg/kg dry	1	04/05/22 00:19	NWTPH-Dx	**F-11**
Oil	ND	---	50.0	mg/kg dry	1	04/05/22 00:19	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*1*	*04/05/22 00:19*	*NWTPH-Dx*	
SWN-9(8) (A2C1204-04)				**Matrix: Soil**		**Batch: 22D0078**		
Diesel	ND	---	26.4	mg/kg dry	1	04/05/22 00:39	NWTPH-Dx	
Oil	ND	---	52.8	mg/kg dry	1	04/05/22 00:39	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*	*Limits: 50-150 %*		*1*	*04/05/22 00:39*	*NWTPH-Dx*	
SWN-10(8) (A2C1204-05RE1)				**Matrix: Soil**		**Batch: 22D0078**		
Diesel	**152**	---	119	mg/kg dry	5	04/05/22 07:39	NWTPH-Dx	**F-11**
Oil	**303**	---	237	mg/kg dry	5	04/05/22 07:39	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*	*Limits: 50-150 %*		*5*	*04/05/22 07:39*	*NWTPH-Dx*	*S-05*
SWN-11(8) (A2C1204-06)				**Matrix: Soil**		**Batch: 22D0027**		
Diesel	ND	---	25.0	mg/kg dry	1	04/02/22 03:12	NWTPH-Dx	
Oil	**136**	---	50.0	mg/kg dry	1	04/02/22 03:12	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*1*	*04/02/22 03:12*	*NWTPH-Dx*	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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
SWN-6(3) (A2C1204-01)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	**129**	---	14.9	mg/kg dry	100	03/30/22 18:01	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 122 %*	*Limits: 50-150 %*		*1*	*03/30/22 18:01*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*03/30/22 18:01*	*NWTPH-Gx (MS)*	
SWN-7(3) (A2C1204-02)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	**106**	---	14.2	mg/kg dry	100	03/30/22 18:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 115 %*	*Limits: 50-150 %*		*1*	*03/30/22 18:28*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*03/30/22 18:28*	*NWTPH-Gx (MS)*	
SWN-8(3) (A2C1204-03)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	ND	---	8.37	mg/kg dry	50	03/30/22 15:20	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*03/30/22 15:20*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*03/30/22 15:20*	*NWTPH-Gx (MS)*	
SWN-9(8) (A2C1204-04)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	ND	---	8.35	mg/kg dry	50	03/30/22 15:46	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/30/22 15:46*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*03/30/22 15:46*	*NWTPH-Gx (MS)*	
SWN-10(8) (A2C1204-05)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	ND	---	6.82	mg/kg dry	50	03/30/22 16:13	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*1*	*03/30/22 16:13*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*03/30/22 16:13*	*NWTPH-Gx (MS)*	
SWN-11(8) (A2C1204-06)				**Matrix: Soil**		**Batch: 22C1173**		
Gasoline Range Organics	ND	---	8.01	mg/kg dry	50	03/30/22 16:40	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*03/30/22 16:40*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*03/30/22 16:40*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-6(3) (A2C1204-01)				**Matrix: Soil**		**Batch: 22C1173**		**R-04**
Benzene	ND	---	0.0298	mg/kg dry	100	03/30/22 18:01	5035A/8260D	
Toluene	ND	---	0.149	mg/kg dry	100	03/30/22 18:01	5035A/8260D	
Ethylbenzene	ND	---	0.0746	mg/kg dry	100	03/30/22 18:01	5035A/8260D	
Xylenes, total	ND	---	0.224	mg/kg dry	100	03/30/22 18:01	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits: 80-120 %*	*1*	*03/30/22 18:01*	*5035A/8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*03/30/22 18:01*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*	*1*	*03/30/22 18:01*	*5035A/8260D*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-6(3) (A2C1204-01)				**Matrix: Soil**		**Batch: 22D0281**		
Acenaphthene	ND	---	0.0289	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.0144	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	R-02
Anthracene	ND	---	0.0393	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Chrysene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Fluoranthene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Fluorene	**0.119**	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
1-Methylnaphthalene	**0.0191**	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Naphthalene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Phenanthrene	**0.0801**	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Pyrene	ND	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Dibenzofuran	**0.0268**	---	0.0131	mg/kg dry	1	04/08/22 19:11	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*82 %*	*Limits: 44-120 %*	*1*	*04/08/22 19:11*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*93 %*	*54-127 %*	*1*	*04/08/22 19:11*	*EPA 8270E SIM*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-6(3) (A2C1204-01RE1)				**Matrix: Soil**				
Batch: 22D0559								
Arsenic	**5.90**	---	1.38	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Barium	**172**	---	1.38	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Cadmium	ND	---	0.275	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Chromium	**19.6**	---	1.38	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Lead	**20.8**	---	0.275	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Mercury	ND	---	0.110	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Selenium	ND	---	1.38	mg/kg dry	10	04/16/22 02:31	EPA 6020B	
Silver	ND	---	0.275	mg/kg dry	10	04/16/22 02:31	EPA 6020B	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-6(3) (A2C1204-01)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**74.4**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	
SWN-7(3) (A2C1204-02)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**75.1**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	
SWN-8(3) (A2C1204-03)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**84.3**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	
SWN-9(8) (A2C1204-04)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**74.6**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	
SWN-10(8) (A2C1204-05)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**81.2**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	
SWN-11(8) (A2C1204-06)				**Matrix: Soil**		**Batch: 22C1212**		
% Solids	**76.4**	---	1.00	%	1	03/31/22 13:54	EPA 8000D	

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22D0027 - EPA 3546 (Fuels)							**Soil**					
Blank (22D0027-BLK1)			Prepared: 04/01/22 11:24		Analyzed: 04/02/22 00:07							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22D0027-BS1)			Prepared: 04/01/22 11:24		Analyzed: 04/02/22 00:28							
NWTPH-Dx												
Diesel	122	---	20.0	mg/kg wet	1	125	---	97	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0027-DUP1)			Prepared: 04/01/22 11:24		Analyzed: 04/02/22 01:09							**PRO**
QC Source Sample: Non-SDG (A2C1175-02)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0027-DUP2)			Prepared: 04/01/22 11:24		Analyzed: 04/02/22 02:11							
QC Source Sample: Non-SDG (A2C1286-06)												
Diesel	**28.0**	---	25.0	mg/kg dry	1	---	35.1	---	---	23	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 82 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Batch 22D0078 - EPA 3546 (Fuels)							**Soil**					
Blank (22D0078-BLK1)			Prepared: 04/04/22 11:09		Analyzed: 04/04/22 21:18							
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: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22D0078-BS1)			Prepared: 04/04/22 11:09		Analyzed: 04/04/22 21:38							
NWTPH-Dx												

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22D0078 - EPA 3546 (Fuels)							**Soil**					
LCS (22D0078-BS1)			Prepared: 04/04/22 11:09		Analyzed: 04/04/22 21:38							
Diesel	127	---	20.0	mg/kg wet	1	125	---	101	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22D0078-DUP1)			Prepared: 04/04/22 11:09		Analyzed: 04/04/22 22:18							
QC Source Sample: Non-SDG (A2C1200-01)												
Diesel	ND	---	24.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	48.0	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	48.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (22D0078-DUP2)			Prepared: 04/04/22 19:15		Analyzed: 04/05/22 01:39							
QC Source Sample: Non-SDG (A2D0093-02)												
Diesel	**23500**	---	453	mg/kg dry	20	---	21200	---	---	10	30%	
Oil	ND	---	907	mg/kg dry	20	---	ND	---	---	---	30%	
Mineral Oil	ND	---	907	mg/kg dry	20	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*			*Dilution: 20x*					S-01

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22C1173 - EPA 5035A									**Soil**			
Blank (22C1173-BLK1)			Prepared: 03/30/22 08:00		Analyzed: 03/30/22 10:24							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
LCS (22C1173-BS2)			Prepared: 03/30/22 08:00		Analyzed: 03/30/22 09:58							
NWTPH-Gx (MS)												
Gasoline Range Organics	24.1	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*95 %*	*50-150 %*		*"*							
Duplicate (22C1173-DUP1)			Prepared: 03/23/22 11:37		Analyzed: 03/30/22 13:59							**V-15**
QC Source Sample: Non-SDG (A2C0986-01)												
Gasoline Range Organics	**84.9**	---	48.3	mg/kg dry	50	---	94.2	---	---	10	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*92 %*	*50-150 %*		*"*							

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C1173 - EPA 5035A							**Soil**					
Blank (22C1173-BLK1)			Prepared: 03/30/22 08:00 Analyzed: 03/30/22 10:24									
5035A/8260D												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*79-120 %*			*"*				
LCS (22C1173-BS1)			Prepared: 03/30/22 08:00 Analyzed: 03/30/22 09:21									
5035A/8260D												
Benzene	1.00	---	0.0100	mg/kg wet	50	1.00	---	100	80-120%	---	---	
Toluene	0.950	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Ethylbenzene	0.930	---	0.0250	mg/kg wet	50	1.00	---	93	80-120%	---	---	
Xylenes, total	2.79	---	0.0750	mg/kg wet	50	3.00	---	93	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*94 %*		*79-120 %*			*"*				
Duplicate (22C1173-DUP1)			Prepared: 03/23/22 11:37 Analyzed: 03/30/22 13:59									**V-15**
QC Source Sample: Non-SDG (A2C0986-01)												
Benzene	**0.148**	---	0.0966	mg/kg dry	50	---	0.163	---	---	10	30%	
Toluene	ND	---	0.483	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.241	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.724	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*			*"*				
Matrix Spike (22C1173-MS1)			Prepared: 03/29/22 14:30 Analyzed: 03/30/22 17:07									
QC Source Sample: SWN-11(8) (A2C1204-06)												
5035A/8260D												
Benzene	1.70	---	0.0160	mg/kg dry	50	1.60	ND	106	77-121%	---	---	

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Philip Nerenberg

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C1173 - EPA 5035A							**Soil**					
Matrix Spike (22C1173-MS1)			Prepared: 03/29/22 14:30 Analyzed: 03/30/22 17:07									
QC Source Sample: SWN-11(8) (A2C1204-06)												
Toluene	1.61	---	0.0801	mg/kg dry	50	1.60	ND	101	77-121%	---	---	
Ethylbenzene	1.59	---	0.0400	mg/kg dry	50	1.60	ND	100	76-122%	---	---	
Xylenes, total	4.75	---	0.120	mg/kg dry	50	4.80	ND	99	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*94 %*		*79-120 %*			*"*				

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1204 - 04 20 22 1803

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 22D0281 - EPA 3546							Soil					
Blank (22D0281-BLK1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 13:17									
EPA 8270E SIM												
Acenaphthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 92 %*	*Limits: 44-120 %*				*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*102 %*	*54-127 %*				*"*				
LCS (22D0281-BS1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 13:42									
EPA 8270E SIM												
Acenaphthene	0.443	---	0.00267	mg/kg wet	1	0.533	---	83	40-123%	---	---	
Acenaphthylene	0.455	---	0.00267	mg/kg wet	1	0.533	---	85	32-132%	---	---	
Anthracene	0.441	---	0.00267	mg/kg wet	1	0.533	---	83	47-123%	---	---	
Benz(a)anthracene	0.434	---	0.00267	mg/kg wet	1	0.533	---	81	49-126%	---	---	
Benzo(a)pyrene	0.460	---	0.00267	mg/kg wet	1	0.533	---	86	45-129%	---	---	
Benzo(b)fluoranthene	0.470	---	0.00267	mg/kg wet	1	0.533	---	88	45-132%	---	---	
Benzo(k)fluoranthene	0.475	---	0.00267	mg/kg wet	1	0.533	---	89	47-132%	---	---	
Benzo(g,h,i)perylene	0.377	---	0.00267	mg/kg wet	1	0.533	---	71	43-134%	---	---	
Chrysene	0.425	---	0.00267	mg/kg wet	1	0.533	---	80	50-124%	---	---	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22D0281 - EPA 3546							**Soil**					
LCS (22D0281-BS1)			Prepared: 04/08/22 10:18		Analyzed: 04/08/22 13:42							
Dibenz(a,h)anthracene	0.461	---	0.00267	mg/kg wet	1	0.533	---	87	45-134%	---	---	
Fluoranthene	0.477	---	0.00267	mg/kg wet	1	0.533	---	89	50-127%	---	---	
Fluorene	0.445	---	0.00267	mg/kg wet	1	0.533	---	84	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.398	---	0.00267	mg/kg wet	1	0.533	---	75	45-133%	---	---	
1-Methylnaphthalene	0.442	---	0.00267	mg/kg wet	1	0.533	---	83	40-120%	---	---	
2-Methylnaphthalene	0.420	---	0.00267	mg/kg wet	1	0.533	---	79	38-122%	---	---	
Naphthalene	0.426	---	0.00267	mg/kg wet	1	0.533	---	80	35-123%	---	---	
Phenanthrene	0.426	---	0.00267	mg/kg wet	1	0.533	---	80	50-121%	---	---	
Pyrene	0.472	---	0.00267	mg/kg wet	1	0.533	---	88	47-127%	---	---	
Dibenzofuran	0.445	---	0.00267	mg/kg wet	1	0.533	---	83	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 44-120 %*				*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*95 %*		*54-127 %*				*"*			
Duplicate (22D0281-DUP1)			Prepared: 04/08/22 10:18		Analyzed: 04/08/22 14:58							
QC Source Sample: Non-SDG (A2C1217-01)												
Acenaphthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	0.00351	mg/kg dry	1	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22D0281 - EPA 3546							**Soil**					
Duplicate (22D0281-DUP1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 14:58									
QC Source Sample: Non-SDG (A2C1217-01)												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 51 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*47 %*	*54-127 %*			*"*					S-06
Matrix Spike (22D0281-MS1)			Prepared: 04/08/22 10:18 Analyzed: 04/08/22 15:49									
QC Source Sample: Non-SDG (A2C1217-02)												
EPA 8270E SIM												
Acenaphthene	0.499	---	0.161	mg/kg dry	40	0.805	ND	62	40-123%	---	---	
Acenaphthylene	0.550	---	0.161	mg/kg dry	40	0.805	ND	68	32-132%	---	---	
Anthracene	0.474	---	0.161	mg/kg dry	40	0.805	ND	59	47-123%	---	---	
Benz(a)anthracene	0.596	---	0.161	mg/kg dry	40	0.805	0.102	61	49-126%	---	---	
Benzo(a)pyrene	0.557	---	0.161	mg/kg dry	40	0.805	0.119	54	45-129%	---	---	
Benzo(b)fluoranthene	0.580	---	0.161	mg/kg dry	40	0.805	0.170	51	45-132%	---	---	
Benzo(k)fluoranthene	0.602	---	0.161	mg/kg dry	40	0.805	ND	75	47-132%	---	---	
Benzo(g,h,i)perylene	0.463	---	0.161	mg/kg dry	40	0.805	0.0838	47	43-134%	---	---	
Chrysene	0.593	---	0.161	mg/kg dry	40	0.805	0.200	**49**	**50-124%**	---	---	Q-01
Dibenz(a,h)anthracene	0.465	---	0.161	mg/kg dry	40	0.805	ND	58	45-134%	---	---	
Fluoranthene	0.657	---	0.161	mg/kg dry	40	0.805	0.186	58	50-127%	---	---	
Fluorene	0.531	---	0.161	mg/kg dry	40	0.805	ND	66	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.631	---	0.161	mg/kg dry	40	0.805	0.113	64	45-133%	---	---	
1-Methylnaphthalene	0.546	---	0.161	mg/kg dry	40	0.805	ND	68	40-120%	---	---	
2-Methylnaphthalene	0.461	---	0.161	mg/kg dry	40	0.805	ND	57	38-122%	---	---	
Naphthalene	0.599	---	0.161	mg/kg dry	40	0.805	ND	74	35-123%	---	---	
Phenanthrene	0.610	---	0.161	mg/kg dry	40	0.805	0.123	60	50-121%	---	---	
Pyrene	0.724	---	0.161	mg/kg dry	40	0.805	0.271	56	47-127%	---	---	
Dibenzofuran	0.518	---	0.161	mg/kg dry	40	0.805	ND	64	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 44-120 %*			*Dilution: 40x*					S-05
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*			*"*					S-05

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1204 - 04 20 22 1803

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 22D0559 - EPA 3051A							Soil					
Blank (22D0559-BLK1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:29									
EPA 6020B												
Arsenic	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.855	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.171	mg/kg wet	10	---	---	---	---	---	---	
Blank (22D0559-BLK3)			Prepared: 04/14/22 15:49 Analyzed: 04/16/22 02:01									
EPA 6020B												
Mercury	ND	---	0.0684	mg/kg wet	10	---	---	---	---	---	---	Q-16, RR-8
LCS (22D0559-BS1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:39									
EPA 6020B												
Arsenic	49.0	---	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Barium	50.3	---	1.00	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Cadmium	49.5	---	0.200	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Chromium	50.0	---	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Lead	50.8	---	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Mercury	0.954	---	0.0800	mg/kg wet	10	1.00	---	95	80-120%	---	---	
Selenium	23.0	---	1.00	mg/kg wet	10	25.0	---	92	80-120%	---	---	
Silver	25.5	---	0.200	mg/kg wet	10	25.0	---	102	80-120%	---	---	
Duplicate (22D0559-DUP1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 15:54									
QC Source Sample: Non-SDG (A2C1072-02RE1)												
Arsenic	**6.68**	---	1.00	mg/kg dry	10	---	4.52	---	---	**39**	**20%**	PRO,Q-17
Barium	**319**	---	1.00	mg/kg dry	10	---	241	---	---	**28**	**20%**	PRO,Q-17
Cadmium	**1.29**	---	0.200	mg/kg dry	10	---	0.927	---	---	**33**	**20%**	PRO,Q-05
Chromium	**28.8**	---	1.00	mg/kg dry	10	---	20.3	---	---	**34**	**20%**	PRO,Q-17
Lead	**356**	---	0.200	mg/kg dry	10	---	273	---	---	**26**	**20%**	PRO,Q-17
Mercury	**0.281**	---	0.0801	mg/kg dry	10	---	0.229	---	---	20	20%	PRO
Selenium	ND	---	1.00	mg/kg dry	10	---	ND	---	---	**---**	**20%**	PRO
Silver	**0.275**	---	0.200	mg/kg dry	10	---	0.199	---	---	**32**	**20%**	PRO,Q-05

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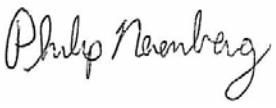

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 22D0559 - EPA 3051A							**Soil**					
Matrix Spike (22D0559-MS1)			Prepared: 04/14/22 15:49 Analyzed: 04/15/22 16:00									
QC Source Sample: Non-SDG (A2C1072-02RE1)												
EPA 6020B												
Arsenic	50.1	---	0.992	mg/kg dry	10	49.6	4.52	92	75-125%	---	---	PRO
Barium	317	---	0.992	mg/kg dry	10	49.6	241	**154**	**75-125%**	---	---	PRO
Cadmium	48.2	---	0.198	mg/kg dry	10	49.6	0.927	95	75-125%	---	---	PRO
Chromium	71.7	---	0.992	mg/kg dry	10	49.6	20.3	103	75-125%	---	---	PRO
Lead	346	---	0.198	mg/kg dry	10	49.6	273	**147**	**75-125%**	---	---	PRO
Mercury	1.12	---	0.0794	mg/kg dry	10	0.992	0.229	90	75-125%	---	---	PRO
Selenium	21.1	---	0.992	mg/kg dry	10	24.8	ND	85	75-125%	---	---	PRO
Silver	24.5	---	0.198	mg/kg dry	10	24.8	0.199	98	75-125%	---	---	PRO

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1204 - 04 20 22 1803

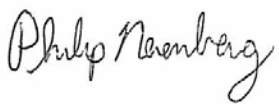
QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22C1212 - Total Solids (Dry Weight)							Soil					
Duplicate (22C1212-DUP1)			Prepared: 03/30/22 14:13		Analyzed: 03/31/22 13:54							PRO
QC Source Sample: Non-SDG (A2C1072-02)												
% Solids	**97.8**	---	1.00	%	1	---	97.9	---	---	0.07	10%	
Duplicate (22C1212-DUP2)			Prepared: 03/30/22 14:13		Analyzed: 03/31/22 13:54							PRO
QC Source Sample: Non-SDG (A2C1135-05)												
% Solids	**97.5**	---	1.00	%	1	---	97.5	---	---	0.04	10%	
Duplicate (22C1212-DUP3)			Prepared: 03/30/22 14:13		Analyzed: 03/31/22 13:54							PRO
QC Source Sample: Non-SDG (A2C1135-07)												
% Solids	**97.7**	---	1.00	%	1	---	97.7	---	---	0.02	10%	
Duplicate (22C1212-DUP4)			Prepared: 03/30/22 14:13		Analyzed: 03/31/22 13:54							PRO
QC Source Sample: Non-SDG (A2C1135-09)												
% Solids	**98.2**	---	1.00	%	1	---	98.2	---	---	0.02	10%	
Duplicate (22C1212-DUP5)			Prepared: 03/30/22 18:37		Analyzed: 03/31/22 13:54							
QC Source Sample: Non-SDG (A2C1260-01)												
% Solids	**84.5**	---	1.00	%	1	---	85.5	---	---	1	10%	
Duplicate (22C1212-DUP6)			Prepared: 03/30/22 18:37		Analyzed: 03/31/22 13:54							
QC Source Sample: Non-SDG (A2C1270-02)												
% Solids	**93.0**	---	1.00	%	1	---	89.5	---	---	4	10%	

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

Apex Laboratories



Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

SAMPLE PREPARATION INFORMATION

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: 22D0027							
A2C1204-06	Soil	NWTPH-Dx	03/29/22 14:30	04/01/22 11:24	10.61g/5mL	10g/5mL	0.94
Batch: 22D0078							
A2C1204-01	Soil	NWTPH-Dx	03/29/22 09:15	04/04/22 11:09	10.92g/5mL	10g/5mL	0.92
A2C1204-02	Soil	NWTPH-Dx	03/29/22 09:28	04/04/22 11:09	10.38g/5mL	10g/5mL	0.96
A2C1204-03	Soil	NWTPH-Dx	03/29/22 09:51	04/04/22 11:09	10.84g/5mL	10g/5mL	0.92
A2C1204-04	Soil	NWTPH-Dx	03/29/22 14:04	04/04/22 11:09	10.15g/5mL	10g/5mL	0.99
A2C1204-05RE1	Soil	NWTPH-Dx	03/29/22 14:17	04/04/22 11:09	10.38g/5mL	10g/5mL	0.96

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: 22C1173							
A2C1204-01	Soil	NWTPH-Gx (MS)	03/29/22 09:15	03/29/22 09:15	5.86g/5mL	5g/5mL	0.85
A2C1204-02	Soil	NWTPH-Gx (MS)	03/29/22 09:28	03/29/22 09:28	6.12g/5mL	5g/5mL	0.82
A2C1204-03	Soil	NWTPH-Gx (MS)	03/29/22 09:51	03/29/22 09:51	3.99g/5mL	5g/5mL	1.25
A2C1204-04	Soil	NWTPH-Gx (MS)	03/29/22 14:04	03/29/22 14:04	5.04g/5mL	5g/5mL	0.99
A2C1204-05	Soil	NWTPH-Gx (MS)	03/29/22 14:17	03/29/22 14:17	5.44g/5mL	5g/5mL	0.92
A2C1204-06	Soil	NWTPH-Gx (MS)	03/29/22 14:30	03/29/22 14:30	5.07g/5mL	5g/5mL	0.99

BTEX Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C1173							
A2C1204-01	Soil	5035A/8260D	03/29/22 09:15	03/29/22 09:15	5.86g/5mL	5g/5mL	0.85

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
Batch: 22D0281							
A2C1204-01	Soil	EPA 8270E SIM	03/29/22 09:15	04/08/22 14:03	10.25g/5mL	10g/5mL	0.98

Total Metals by EPA 6020B (ICPMS)

Apex Laboratories

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D0559							
A2C1204-01RE1	Soil	EPA 6020B	03/29/22 09:15	04/14/22 15:49	0.488g/50mL	0.5g/50mL	1.02

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22C1212							
A2C1204-01	Soil	EPA 8000D	03/29/22 09:15	03/30/22 14:13			NA
A2C1204-02	Soil	EPA 8000D	03/29/22 09:28	03/30/22 14:13			NA
A2C1204-03	Soil	EPA 8000D	03/29/22 09:51	03/30/22 14:13			NA
A2C1204-04	Soil	EPA 8000D	03/29/22 14:04	03/30/22 14:13			NA
A2C1204-05	Soil	EPA 8000D	03/29/22 14:17	03/30/22 14:13			NA
A2C1204-06	Soil	EPA 8000D	03/29/22 14:30	03/30/22 14:13			NA

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
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.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
RR-8	Not Reported. Sample was rerun to confirm original result. Original sample is reported.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
S-06	Surrogate recovery is outside of established control limits.
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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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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:

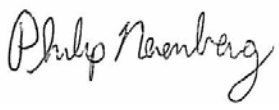
" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " 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.

Apex Laboratories



Philip Nerenberg, Lab Director

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

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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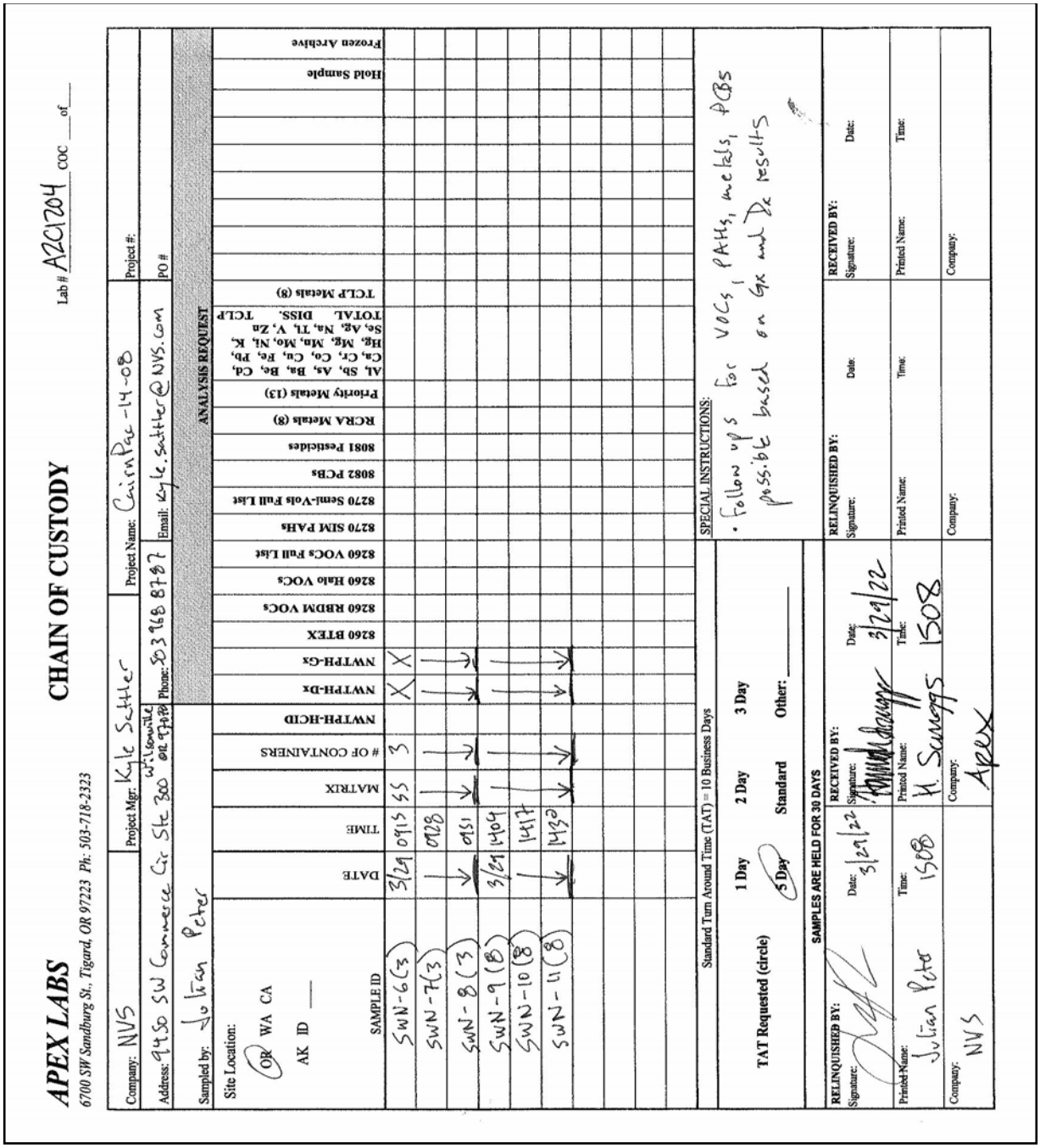
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**



APEX LABS — CHAIN OF CUSTODY — Lab # A2C1204 COC ___ of ___

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:

Address: 9450 SW Commerce Cir Ste 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #

Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWN-6(3)	3/21	0915	SS	3		X	X														
SWN-7(3)		0928		1																	
SWN-8(3)		0951																			
SWN-9(8)	3/21	1404		1																	
SWN-10(8)		1417																			
SWN-11(8)		1430																			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
- Follow up for VOCs, PAHs, metals, PCBs possible based on Gx and Dx results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:	3/21/22		Signature:	3/21/22	
Printed Name: Julian Peter		1508	Printed Name: H. Summers		1508
Company: NV5			Company: Apex		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
Signature:			Signature:		
Printed Name:			Printed Name:		
Company:			Company:		

Apex Laboratories

Philip Nerenberg

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1204 - 04 20 22 1803**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2 C1204

Project/Project #: CairnPac-14-08

Delivery Info:

Date/time received: 3/29/22 @ 1508 By: HAS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 3/29/22 @ 1511 By: HAS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.8						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 3/29/22 @ 1524 By: DJS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: SWN-11(8): 2/2 VOAs date reads 3/27/22. Time unclear on CoC - confirmed 1430 with containers

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: DJS Cooler Inspected by: DJS

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

Wednesday, April 13, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2C1303 - CairnPac-14-08 - [none]

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 A2C1303, which was received by the laboratory on 3/31/2022 at 4:36:00PM.

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)

Cooler #1	4.1 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

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-19(20)	**A2C1303-01**	**Soil**	**03/31/22 12:07**	**03/31/22 16:36**
HA-19(25)	**A2C1303-02**	**Soil**	**03/31/22 12:25**	**03/31/22 16:36**

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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
HA-19(20) (A2C1303-01)				**Matrix: Soil**		**Batch: 22D0165**		
Diesel	ND	---	25.2	mg/kg dry	1	04/07/22 07:16	NWTPH-Dx	
Oil	ND	---	50.4	mg/kg dry	1	04/07/22 07:16	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*04/07/22 07:16*	*NWTPH-Dx*	
HA-19(25) (A2C1303-02)				**Matrix: Soil**		**Batch: 22D0165**		
Diesel	ND	---	25.0	mg/kg dry	1	04/07/22 09:33	NWTPH-Dx	
Oil	ND	---	50.1	mg/kg dry	1	04/07/22 09:33	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*04/07/22 09:33*	*NWTPH-Dx*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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
HA-19(20) (A2C1303-01)				**Matrix: Soil**		**Batch: 22D0105**		
Gasoline Range Organics	ND	---	8.89	mg/kg dry	50	04/05/22 05:33	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*95 %*	*Limits: 50-150 %*	*1*	*04/05/22 05:33*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*04/05/22 05:33*	*NWTPH-Gx (MS)*	
HA-19(25) (A2C1303-02)				**Matrix: Soil**		**Batch: 22D0105**		
Gasoline Range Organics	ND	---	7.42	mg/kg dry	50	04/05/22 06:00	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*98 %*	*Limits: 50-150 %*	*1*	*04/05/22 06:00*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*04/05/22 06:00*	*NWTPH-Gx (MS)*	

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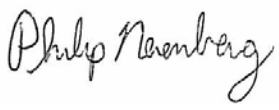

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-19(20) (A2C1303-01)				**Matrix: Soil**		**Batch: 22D0043**		
% Solids	**75.7**	---	1.00	%	1	04/04/22 10:06	EPA 8000D	
HA-19(25) (A2C1303-02)				**Matrix: Soil**		**Batch: 22D0043**		
% Solids	**78.6**	---	1.00	%	1	04/04/22 10:06	EPA 8000D	

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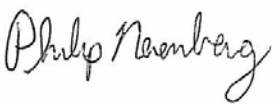

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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 22D0165 - EPA 3546 (Fuels)								Soil				
Blank (22D0165-BLK1)			Prepared: 04/06/22 05:51		Analyzed: 04/06/22 07:32							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22D0165-BS1)			Prepared: 04/06/22 05:51		Analyzed: 04/06/22 07:52							
NWTPH-Dx												
Diesel	107	---	25.0	mg/kg wet	1	125	---	86	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0165-DUP1)			Prepared: 04/06/22 05:51		Analyzed: 04/06/22 08:32							
QC Source Sample: Non-SDG (A2D0159-01)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0165-DUP2)			Prepared: 04/06/22 08:40		Analyzed: 04/06/22 22:28							
QC Source Sample: Non-SDG (A2C1108-01)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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 22D0105 - EPA 5035A							**Soil**					
Blank (22D0105-BLK1)			Prepared: 04/04/22 08:00 Analyzed: 04/05/22 01:04									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*			*"*				
LCS (22D0105-BS2)			Prepared: 04/04/22 08:00 Analyzed: 04/05/22 00:38									
NWTPH-Gx (MS)												
Gasoline Range Organics	23.6	---	5.00	mg/kg wet	50	25.0	---	95	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*98 %*		*50-150 %*			*"*				
Duplicate (22D0105-DUP1)			Prepared: 03/30/22 14:32 Analyzed: 04/05/22 03:45									
QC Source Sample: Non-SDG (A2D0028-01)												
Gasoline Range Organics	ND	---	10.2	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (22D0105-DUP2)			Prepared: 03/24/22 11:35 Analyzed: 04/05/22 09:34									
QC Source Sample: Non-SDG (A2C1098-03)												
Gasoline Range Organics	**4320**	---	57.2	mg/kg dry	500	---	4560	---	---	5	30%	E
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*146 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*			*"*				

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2C1303 - 04 13 22 1642

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 22D0043 - Total Solids (Dry Weight)							Soil					
Duplicate (22D0043-DUP1)			Prepared: 04/01/22 15:37		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2C1265-37)												
% Solids	**88.2**	---	1.00	%	1	---	88.0	---	---	0.1	10%	
Duplicate (22D0043-DUP2)			Prepared: 04/01/22 15:37		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2C1265-38)												
% Solids	**86.1**	---	1.00	%	1	---	86.4	---	---	0.4	10%	
Duplicate (22D0043-DUP3)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0031-01)												
% Solids	**91.4**	---	1.00	%	1	---	91.9	---	---	0.5	10%	
Duplicate (22D0043-DUP4)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0033-01)												
% Solids	**93.7**	---	1.00	%	1	---	94.6	---	---	0.9	10%	
Duplicate (22D0043-DUP5)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0034-01)												
% Solids	**80.7**	---	1.00	%	1	---	80.7	---	---	0.02	10%	
Duplicate (22D0043-DUP6)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0035-01)												
% Solids	**88.1**	---	1.00	%	1	---	87.1	---	---	1	10%	
Duplicate (22D0043-DUP7)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0037-01)												
% Solids	**76.7**	---	1.00	%	1	---	76.5	---	---	0.2	10%	
Duplicate (22D0043-DUP8)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0038-01)												
% Solids	**80.6**	---	1.00	%	1	---	80.6	---	---	0.01	10%	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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 22D0043 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D0043-DUP9)			Prepared: 04/01/22 19:32		Analyzed: 04/04/22 10:06							
QC Source Sample: Non-SDG (A2D0040-01)												
% Solids	**88.0**	---	1.00	%	1	---	88.5	---	---	0.5	10%	

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

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

SAMPLE PREPARATION INFORMATION

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: 22D0165							
A2C1303-01	Soil	NWTPH-Dx	03/31/22 12:07	04/06/22 08:40	10.47g/5mL	10g/5mL	0.96
A2C1303-02	Soil	NWTPH-Dx	03/31/22 12:25	04/06/22 08:40	10.16g/5mL	10g/5mL	0.98

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: 22D0105							
A2C1303-01	Soil	NWTPH-Gx (MS)	03/31/22 12:07	03/31/22 12:07	4.53g/5mL	5g/5mL	1.10
A2C1303-02	Soil	NWTPH-Gx (MS)	03/31/22 12:25	03/31/22 12:25	5.25g/5mL	5g/5mL	0.95

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D0043							
A2C1303-01	Soil	EPA 8000D	03/31/22 12:07	04/01/22 19:32			NA
A2C1303-02	Soil	EPA 8000D	03/31/22 12:25	04/01/22 19:32			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

QUALIFIER DEFINITIONS

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

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E Estimated Value. The result is above the calibration range of the instrument.

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9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
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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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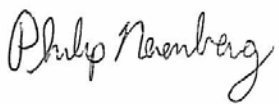

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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.

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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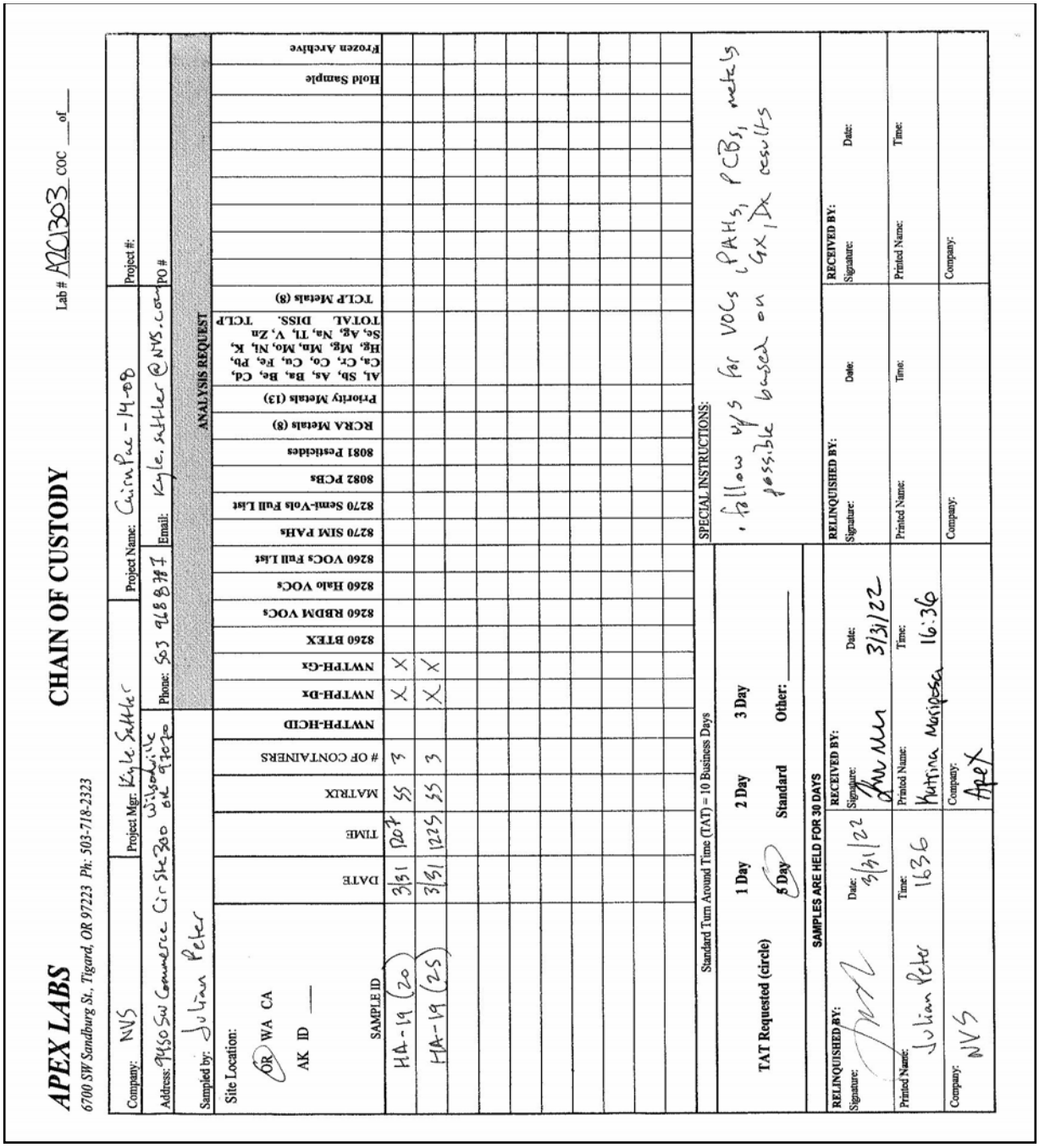
Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**



APEX LABS — **CHAIN OF CUSTODY** — Lab # A2C1303 COC __ of __

6700 SW Sandburg St. Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac - 14-08 | Project #:

Address: 9450 SW Commerce Circle Suite 300 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #

Sampled by: Julian Peter

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
HA-19 (20)	3/31	1207	SS	3		X	X														
HA-19 (25)	3/31	1225	SS	3		X	X														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
- Follow up for VOCs, PAHs, PCBs, metals possible based on GX/DX results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:	3/31/22	Signature:	3/31/22
Printed Name:	Time: 1636	Printed Name: Katrina Mariscal	Time: 16:36
Company: NV5		Company: Apex	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:		Signature:	
Printed Name:	Time:	Printed Name:	Time:
Company:		Company:	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2C1303 - 04 13 22 1642**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2C1303

Project/Project #: Cairn Pac-14-08

Delivery Info:

Date/time received: 3/31/22 @ 16:36 By: JKAM

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 3/31/22 @ 16:42 By: JKAM

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

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: 3/31/22 @ 1805 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: JKAM Cooler Inspected by: HAS

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ANALYTICAL REPORT

Friday, April 15, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2D0301 - CairnPac-14-08 - [none]

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 A2D0301, which was received by the laboratory on 4/7/2022 at 6:09:00PM.

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)

Cooler #1	4.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWN-12(17)	**A2D0301-01**	**Soil**	**04/07/22 07:15**	**04/07/22 18:09**

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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
SWN-12(17) (A2D0301-01)				**Matrix: Soil**		**Batch: 22D0535**		
Diesel	ND	---	26.6	mg/kg dry	1	04/15/22 00:47	NWTPH-Dx	
Oil	ND	---	53.2	mg/kg dry	1	04/15/22 00:47	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 79 %*		*Limits: 50-150 %*	*1*	*04/15/22 00:47*	*NWTPH-Dx*	

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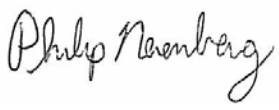

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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
SWN-12(17) (A2D0301-01)				**Matrix: Soil**		**Batch: 22D0264**		
Gasoline Range Organics	ND	---	9.66	mg/kg dry	50	04/08/22 16:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits: 50-150 %*	*1*	*04/08/22 16:28*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*04/08/22 16:28*	*NWTPH-Gx (MS)*	

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SWN-12(17) (A2D0301-01)				**Matrix: Soil**		**Batch: 22D0327**		
% Solids	**71.3**	---	1.00	%	1	04/12/22 10:41	EPA 8000D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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 22D0535 - EPA 3546 (Fuels)							**Soil**					
Blank (22D0535-BLK1)			Prepared: 04/14/22 10:07		Analyzed: 04/14/22 23:46							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22D0535-BS1)			Prepared: 04/14/22 10:07		Analyzed: 04/15/22 00:06							
NWTPH-Dx												
Diesel	107	---	25.0	mg/kg wet	1	125	---	85	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0535-DUP1)			Prepared: 04/14/22 10:07		Analyzed: 04/15/22 01:07							
QC Source Sample: SWN-12(17) (A2D0301-01)												
NWTPH-Dx												
Diesel	ND	---	27.6	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	55.1	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	55.1	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0535-DUP2)			Prepared: 04/14/22 10:07		Analyzed: 04/15/22 01:48							
QC Source Sample: Non-SDG (A2D0495-04)												
Diesel	**258**	---	48.1	mg/kg dry	1	---	215	---	---	18	30%	
Oil	**166**	---	96.2	mg/kg dry	1	---	125	---	---	28	30%	F-03
Mineral Oil	ND	---	96.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 74 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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 22D0264 - EPA 5035A							**Soil**					
Blank (22D0264-BLK1)			Prepared: 04/08/22 08:00 Analyzed: 04/08/22 10:12									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*			*"*					
LCS (22D0264-BS2)			Prepared: 04/08/22 08:00 Analyzed: 04/08/22 09:45									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.6	---	5.00	mg/kg wet	50	25.0	---	102	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*			*"*					
Duplicate (22D0264-DUP1)			Prepared: 03/31/22 17:05 Analyzed: 04/08/22 12:26									
QC Source Sample: Non-SDG (A2D0163-01)												
Gasoline Range Organics	ND	---	6.24	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*			*"*					
Duplicate (22D0264-DUP2)			Prepared: 04/06/22 11:55 Analyzed: 04/08/22 14:14									
QC Source Sample: Non-SDG (A2D0180-71)												
Gasoline Range Organics	ND	---	5.16	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*			*"*					

Apex Laboratories

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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 22D0327 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D0327-DUP1)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-01)												
% Solids	**90.5**	---	1.00	%	1	---	90.7	---	---	0.2	10%	
Duplicate (22D0327-DUP2)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-02)												
% Solids	**81.3**	---	1.00	%	1	---	81.3	---	---	0.03	10%	
Duplicate (22D0327-DUP3)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-03)												
% Solids	**93.2**	---	1.00	%	1	---	92.7	---	---	0.5	10%	
Duplicate (22D0327-DUP4)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0006-01)												
% Solids	**5.48**	---	1.00	%	1	---	5.40	---	---	1	10%	
Duplicate (22D0327-DUP5)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-01)												
% Solids	**64.6**	---	1.00	%	1	---	62.4	---	---	3	10%	
Duplicate (22D0327-DUP6)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-02)												
% Solids	**61.5**	---	1.00	%	1	---	69.6	---	---	**12**	**10%**	Q-17
Duplicate (22D0327-DUP7)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-03)												
% Solids	**92.5**	---	1.00	%	1	---	92.6	---	---	0.08	10%	
Duplicate (22D0327-DUP8)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0025-01)												
% Solids	**66.4**	---	1.00	%	1	---	68.5	---	---	3	10%	

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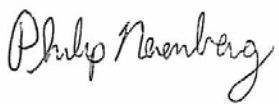

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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 22D0327 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D0327-DUP9)			Prepared: 04/11/22 19:33		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0373-01)												
% Solids	**75.9**	---	1.00	%	1	---	75.4	---	---	0.7	10%	
Duplicate (22D0327-DUPA)			Prepared: 04/11/22 19:33		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0389-01)												
% Solids	**74.7**	---	1.00	%	1	---	74.9	---	---	0.3	10%	

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

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

SAMPLE PREPARATION INFORMATION

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: 22D0535							
A2D0301-01	Soil	NWTPH-Dx	04/07/22 07:15	04/14/22 10:07	10.54g/5mL	10g/5mL	0.95

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: 22D0264							
A2D0301-01	Soil	NWTPH-Gx (MS)	04/07/22 07:15	04/07/22 07:15	4.58g/5mL	5g/5mL	1.09

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D0327							
A2D0301-01	Soil	EPA 8000D	04/07/22 07:15	04/11/22 09:38			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-03 The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

Q-17 RPD between original and duplicate sample is outside of established control limits.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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:

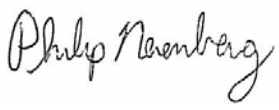
" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " 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.

Apex Laboratories



Philip Nerenberg, Lab Director

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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.

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

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.

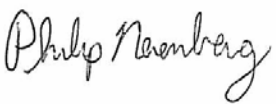
Subcontract Laboratory Accreditations

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



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ANALYTICAL REPORT

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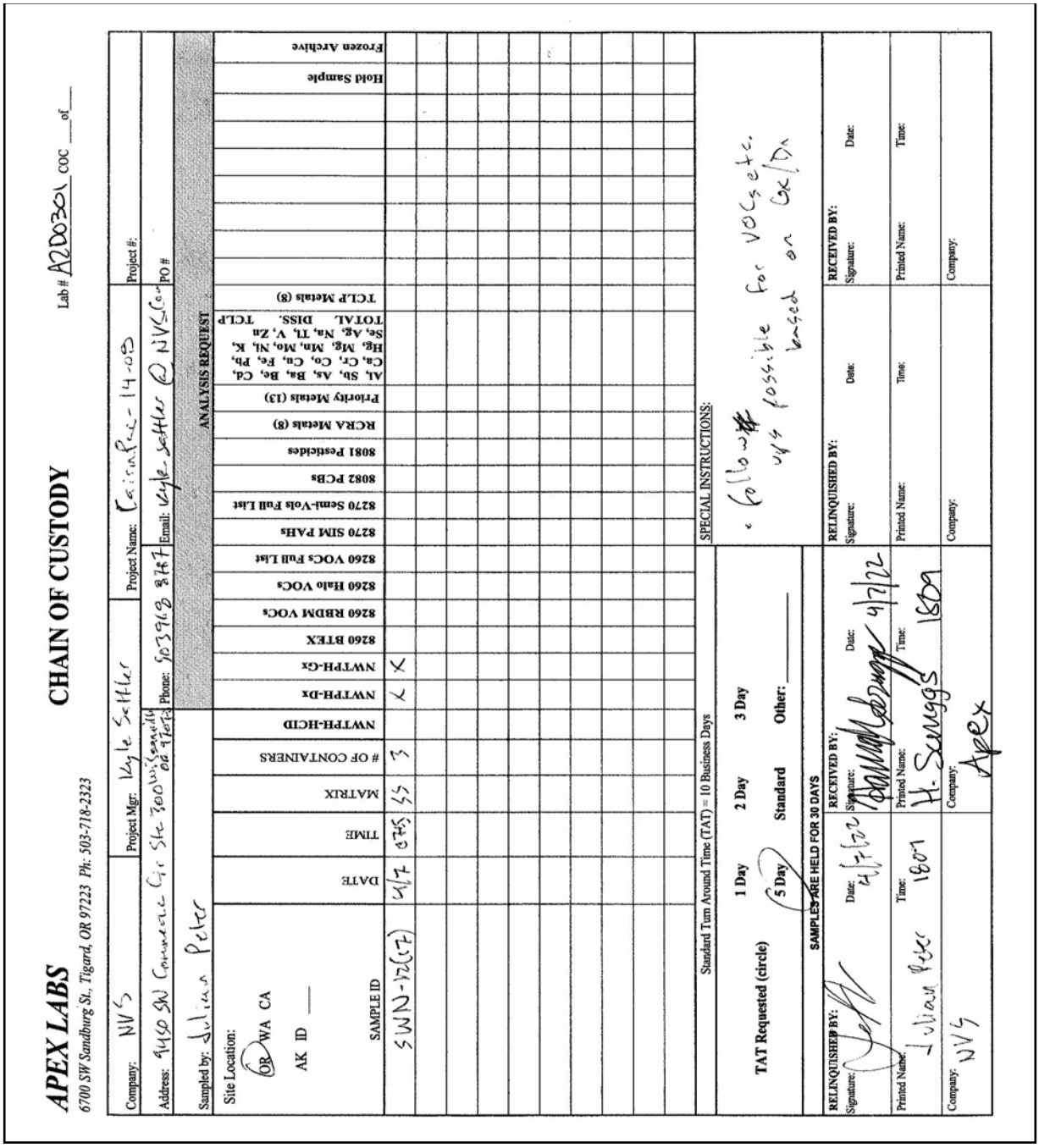
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**



APEX LABS — **CHAIN OF CUSTODY** — Lab # A2D0301 COC ___ of ___

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac-14-08 | Project #:

Address: 9450 SW Commerce Cir Ste 180 Wilsonville OR 97070 | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #

Sampled by: Julian Peter

Site Location: OR WA CA AK ID ___

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SWN-12(17)	4/7	0745	SS	3		X	X														

ANALYSIS REQUEST

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ___

SPECIAL INSTRUCTIONS:
- Collect for VOCs etc. w/ possible for VOCs based on Ck/Dx

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature:	Date: 4/7/22	RECEIVED BY: Signature:	Date:	RELINQUISHED BY: Signature:	Date:
Printed Name: Julian Peter	Time: 1807	Printed Name: H. Scruggs	Time: 1807	Printed Name:	Time:
Company: NV5		Company: Apex		Company:	

RECEIVED BY: Signature: | Date: | Printed Name: | Time: | Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0301 - 04 15 22 1430**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2 D0301

Project/Project #: CairnPac - 14-08

Delivery Info:

Date/time received: 4/7/22 @ 1809 By: HAS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 4/7/22 @ 1810 By: HAS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.4						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

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: 4/7/22 @ 1858 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: AM Cooler Inspected by: KAM

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Wednesday, April 13, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2D0321 - CairnPac-14-08 - [none]

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 A2D0321, which was received by the laboratory on 4/8/2022 at 1:19:00PM.

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)

Cooler #1	2.3 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

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-20(18)	**A2D0321-01**	**Soil**	**04/08/22 07:30**	**04/08/22 13:19**

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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
HA-20(18) (A2D0321-01)				**Matrix: Soil**		**Batch: 22D0314**		
Diesel	ND	---	25.7	mg/kg dry	1	04/11/22 16:53	NWTPH-Dx	
Oil	ND	---	51.5	mg/kg dry	1	04/11/22 16:53	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*04/11/22 16:53*	*NWTPH-Dx*	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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
HA-20(18) (A2D0321-01)				**Matrix: Soil**		**Batch: 22D0321**		
Gasoline Range Organics	ND	---	7.52	mg/kg dry	50	04/11/22 19:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits: 50-150 %*	*1*	*04/11/22 19:48*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*04/11/22 19:48*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
HA-20(18) (A2D0321-01)				**Matrix: Soil**		**Batch: 22D0327**		
% Solids	**76.8**	---	1.00	%	1	04/12/22 10:41	EPA 8000D	

Apex Laboratories

Philip Nerenberg

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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 22D0314 - EPA 3546 (Fuels)							**Soil**					
Blank (22D0314-BLK1)			Prepared: 04/11/22 06:32		Analyzed: 04/11/22 12:00							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 78 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22D0314-BS1)			Prepared: 04/11/22 06:32		Analyzed: 04/11/22 12:22							
NWTPH-Dx												
Diesel	106	---	20.0	mg/kg wet	1	125	---	85	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 84 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0314-DUP1)			Prepared: 04/11/22 06:32		Analyzed: 04/11/22 13:07							
QC Source Sample: Non-SDG (A2D0156-01)												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	**30%**	Q-05
Surr: o-Terphenyl (Surr)		*Recovery: 71 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22D0314-DUP2)			Prepared: 04/11/22 06:32		Analyzed: 04/11/22 15:22							
QC Source Sample: Non-SDG (A2D0351-02)												
Diesel	**282**	---	24.7	mg/kg dry	1	---	314	---	---	11	30%	F-20
Oil	ND	---	49.5	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 93 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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 22D0321 - EPA 5035A							**Soil**					
Blank (22D0321-BLK1)			Prepared: 04/11/22 08:00 Analyzed: 04/11/22 10:51									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 96 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*92 %*	*50-150 %*		*"*							
LCS (22D0321-BS2)			Prepared: 04/11/22 08:00 Analyzed: 04/11/22 10:24									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.6	---	5.00	mg/kg wet	50	25.0	---	102	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (22D0321-DUP1)			Prepared: 04/07/22 10:47 Analyzed: 04/11/22 11:44									
QC Source Sample: Non-SDG (A2D0180-CC)												
Gasoline Range Organics	ND	---	8.15	mg/kg dry	50	---	6.66	---	---	***	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
Duplicate (22D0321-DUP2)			Prepared: 04/07/22 14:22 Analyzed: 04/11/22 19:21									
QC Source Sample: Non-SDG (A2D0308-01)												
Gasoline Range Organics	ND	---	5.94	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

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9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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 22D0327 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D0327-DUP1)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-01)												
% Solids	**90.5**	---	1.00	%	1	---	90.7	---	---	0.2	10%	
Duplicate (22D0327-DUP2)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-02)												
% Solids	**81.3**	---	1.00	%	1	---	81.3	---	---	0.03	10%	
Duplicate (22D0327-DUP3)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0005-03)												
% Solids	**93.2**	---	1.00	%	1	---	92.7	---	---	0.5	10%	
Duplicate (22D0327-DUP4)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0006-01)												
% Solids	**5.48**	---	1.00	%	1	---	5.40	---	---	1	10%	
Duplicate (22D0327-DUP5)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-01)												
% Solids	**64.6**	---	1.00	%	1	---	62.4	---	---	3	10%	
Duplicate (22D0327-DUP6)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-02)												
% Solids	**61.5**	---	1.00	%	1	---	69.6	---	---	**12**	**10%**	Q-17
Duplicate (22D0327-DUP7)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0007-03)												
% Solids	**92.5**	---	1.00	%	1	---	92.6	---	---	0.08	10%	
Duplicate (22D0327-DUP8)			Prepared: 04/11/22 09:38		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0025-01)												
% Solids	**66.4**	---	1.00	%	1	---	68.5	---	---	3	10%	

Apex Laboratories

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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 22D0327 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D0327-DUP9)			Prepared: 04/11/22 19:33		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0373-01)												
% Solids	**75.9**	---	1.00	%	1	---	75.4	---	---	0.7	10%	
Duplicate (22D0327-DUPA)			Prepared: 04/11/22 19:33		Analyzed: 04/12/22 10:41							
QC Source Sample: Non-SDG (A2D0389-01)												
% Solids	**74.7**	---	1.00	%	1	---	74.9	---	---	0.3	10%	

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

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: [none]	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0321 - 04 13 22 2336

SAMPLE PREPARATION INFORMATION

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: 22D0314							
A2D0321-01	Soil	NWTPH-Dx	04/08/22 07:30	04/11/22 10:05	10.11g/5mL	10g/5mL	0.99

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: 22D0321							
A2D0321-01	Soil	NWTPH-Gx (MS)	04/08/22 07:30	04/08/22 07:30	5.41g/5mL	5g/5mL	0.92

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D0327							
A2D0321-01	Soil	EPA 8000D	04/08/22 07:30	04/11/22 09:38			NA

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-20	Result for Diesel is Estimated due to overlap from Gasoline Range Organics or other VOCs.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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

Philip Nerenberg, Lab Director

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

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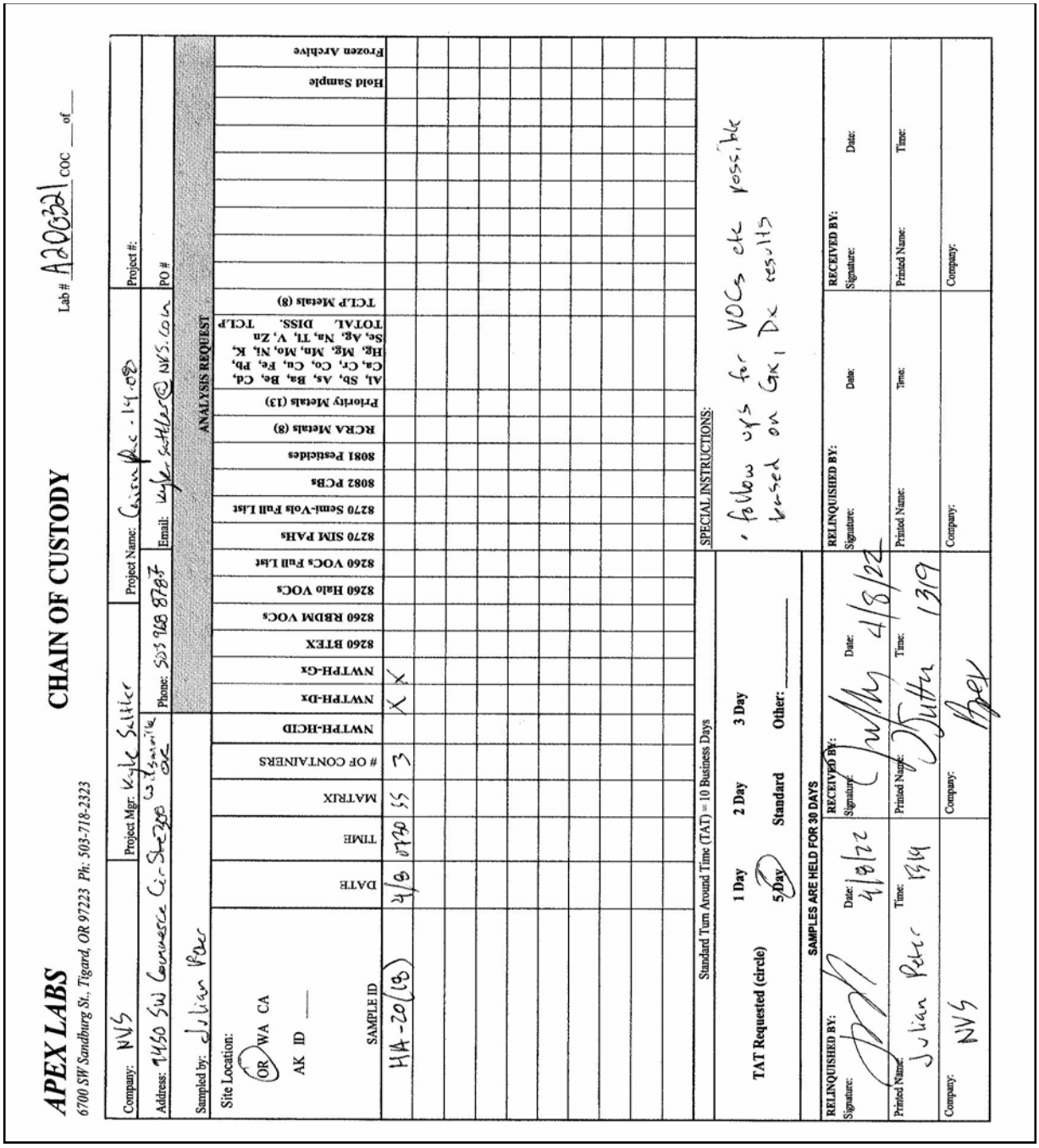
ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2D0321 COC ___ of ___

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: CairnPac - 14-08 | Project #:
Address: 9450 SW Commerce Cir Ste 200 Wilsonville OR | Phone: 503 968 8787 | Email: kyle.sattler@NV5.com | PO #
Sampled by: Julian Perez

Site Location: (OR) WA CA AK ID ____

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	PO #	Hold Sample	Frozen Archive
HA-20(13)	4/8	0730	SS	3		X	X															

ANALYSIS REQUEST

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS:
- Follow ups for VOCs etc possible based on GX, Dx results

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature:		Signature:		Signature:		Signature:	
Date: 4/8/22		Date: 4/8/22		Date:		Date:	
Time: 1914		Time: 1914		Time:		Time:	
Printed Name: Julian Perez		Printed Name: Julian Perez		Printed Name:		Printed Name:	
Company: NV5		Company: NV5		Company:		Company:	

Apex Laboratories

Philip Nerenberg

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **[none]**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0321 - 04 13 22 2336**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2D0321

Project/Project #: CairnPac - 14-08

Delivery Info:

Date/time received: 4/8/22 @ 1319 By: JS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 4/8/22 @ 1320 By: JS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.3						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

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: 4/8/22 @ 13:30 By: KAM

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: KAM Witness: DJS Cooler Inspected by: KAM

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

ANALYTICAL REPORT

Tuesday, May 10, 2022

Kyle Sattler
NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

RE: A2D0971 - CairnPac-14-08 - Freewell Block 291E

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 A2D0971, which was received by the laboratory on 4/25/2022 at 11:04:00AM.

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)

Cooler #1	2.6 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

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DW-1	A2D0971-01	Soil	04/25/22 09:55	04/25/22 11:04
DW-2	A2D0971-02	Soil	04/25/22 10:00	04/25/22 11:04

Apex Laboratories

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22E0127**		
Diesel	**1260**	---	26.4	mg/kg dry	1	05/05/22 01:04	NWTPH-Dx	
Oil	ND	---	52.8	mg/kg dry	1	05/05/22 01:04	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*05/05/22 01:04*	*NWTPH-Dx*	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22E0127**		
Diesel	ND	---	25.0	mg/kg dry	1	05/05/22 01:45	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	05/05/22 01:45	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*05/05/22 01:45*	*NWTPH-Dx*	

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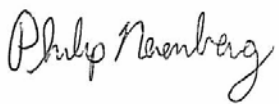

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D0979**		
Gasoline Range Organics	ND	---	7.58	mg/kg dry	50	04/26/22 14:00	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 105 %*		*Limits: 50-150 %*	*1*	*04/26/22 14:00*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*04/26/22 14:00*	*NWTPH-Gx (MS)*	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D0979**		
Gasoline Range Organics	ND	---	7.75	mg/kg dry	50	04/26/22 14:27	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 109 %*		*Limits: 50-150 %*	*1*	*04/26/22 14:27*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*04/26/22 14:27*	*NWTPH-Gx (MS)*	

Apex Laboratories

Philip Nerenberg

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D0979**		
Acetone	ND	---	1.52	mg/kg dry	50	04/26/22 14:00	5035A/8260D	ICV-02
Acrylonitrile	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Benzene	ND	---	0.0152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Bromobenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Bromochloromethane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Bromodichloromethane	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Bromoform	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Bromomethane	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
2-Butanone (MEK)	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
n-Butylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
sec-Butylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
tert-Butylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Carbon disulfide	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Carbon tetrachloride	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Chlorobenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Chloroethane	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Chloroform	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Chloromethane	ND	---	0.379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
2-Chlorotoluene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
4-Chlorotoluene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Dibromochloromethane	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	0.379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Dibromomethane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2-Dichlorobenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1-Dichloroethane	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1-Dichloroethene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D0979**		
1,2-Dichloropropane	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,3-Dichloropropane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
2,2-Dichloropropane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1-Dichloropropene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Ethylbenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Hexachlorobutadiene	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
2-Hexanone	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Isopropylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
4-Isopropyltoluene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Methylene chloride	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	0.758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Naphthalene	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
n-Propylbenzene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Styrene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Toluene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	0.379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	0.379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,1,2-Trichloroethane	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Trichlorofluoromethane	ND	---	0.152	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2,3-Trichloropropane	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,2,4-Trimethylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
1,3,5-Trimethylbenzene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
Vinyl chloride	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
m,p-Xylene	ND	---	0.0758	mg/kg dry	50	04/26/22 14:00	5035A/8260D	
o-Xylene	ND	---	0.0379	mg/kg dry	50	04/26/22 14:00	5035A/8260D	

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D0979**		
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*04/26/22 14:00*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*04/26/22 14:00*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*04/26/22 14:00*	*5035A/8260D*	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D0979**		
Acetone	ND	---	1.55	mg/kg dry	50	04/26/22 14:27	5035A/8260D	ICV-02
Acrylonitrile	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Benzene	ND	---	0.0155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Bromobenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Bromochloromethane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Bromodichloromethane	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Bromoform	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Bromomethane	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
2-Butanone (MEK)	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
n-Butylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
sec-Butylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
tert-Butylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Carbon disulfide	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Carbon tetrachloride	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Chlorobenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Chloroethane	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Chloroform	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Chloromethane	ND	---	0.387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
2-Chlorotoluene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
4-Chlorotoluene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Dibromochloromethane	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	---	0.387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Dibromomethane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,3-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,4-Dichlorobenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Dichlorodifluoromethane	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1-Dichloroethane	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	

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Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

Project: CairnPac-14-08
Project Number: Freewell Block 291E
Project Manager: Kyle Sattler

Report ID:
A2D0971 - 05 10 22 1502

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D0979**		
1,2-Dichloroethane (EDC)	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1-Dichloroethene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
cis-1,2-Dichloroethene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
trans-1,2-Dichloroethene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2-Dichloropropane	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,3-Dichloropropane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
2,2-Dichloropropane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1-Dichloropropene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
cis-1,3-Dichloropropene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
trans-1,3-Dichloropropene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Ethylbenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Hexachlorobutadiene	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
2-Hexanone	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Isopropylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
4-Isopropyltoluene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Methylene chloride	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	0.775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Naphthalene	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
n-Propylbenzene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Styrene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Tetrachloroethene (PCE)	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Toluene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2,3-Trichlorobenzene	ND	---	0.387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2,4-Trichlorobenzene	ND	---	0.387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1,1-Trichloroethane	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,1,2-Trichloroethane	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Trichloroethene (TCE)	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Trichlorofluoromethane	ND	---	0.155	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2,3-Trichloropropane	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
1,2,4-Trimethylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D0979**		
1,3,5-Trimethylbenzene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Vinyl chloride	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
m,p-Xylene	ND	---	0.0775	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
o-Xylene	ND	---	0.0387	mg/kg dry	50	04/26/22 14:27	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*04/26/22 14:27*	*5035A/8260D*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*04/26/22 14:27*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*04/26/22 14:27*	*5035A/8260D*	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D1069**		**C-07**
Aroclor 1016	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1221	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1232	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1242	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1248	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1254	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Aroclor 1260	ND	---	0.0133	mg/kg dry	1	05/02/22 10:01	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 108 %*		*Limits: 60-125 %*	*1*	*05/02/22 10:01*	*EPA 8082A*	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D1025**		**C-07**
Aroclor 1016	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1221	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1232	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1242	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1248	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1254	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Aroclor 1260	ND	---	0.0120	mg/kg dry	1	04/28/22 09:39	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 100 %*		*Limits: 60-125 %*	*1*	*04/28/22 09:39*	*EPA 8082A*	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5
9450 SW Commerce Circle
Wilsonville, OR 97070

Project: CairnPac-14-08
Project Number: Freewell Block 291E
Project Manager: Kyle Sattler

Report ID:
A2D0971 - 05 10 22 1502

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22E0113**		
Acenaphthene	ND	---	0.0972	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.0246	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
Anthracene	ND	---	0.105	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0311	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
Benzo(a)pyrene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Chrysene	ND	---	0.0220	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
Dibenz(a,h)anthracene	ND	---	0.0311	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Fluoranthene	**0.0312**	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Fluorene	**0.242**	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0246	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	R-02
2-Methylnaphthalene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Naphthalene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Phenanthrene	ND	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Pyrene	**0.146**	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Dibenzofuran	**0.0695**	---	0.0130	mg/kg dry	1	05/04/22 18:58	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*91 %*	*Limits: 44-120 %*	*1*	*05/04/22 18:58*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*1*	*05/04/22 18:58*	*EPA 8270E SIM*	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22E0113**		
Acenaphthene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Anthracene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Chrysene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	

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Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22E0113**		
Fluoranthene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Fluorene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Naphthalene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Phenanthrene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Pyrene	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0118	mg/kg dry	1	05/04/22 19:23	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*84 %*	*Limits: 44-120 %*	*1*	*05/04/22 19:23*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*99 %*	*54-127 %*	*1*	*05/04/22 19:23*	*EPA 8270E SIM*	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**				
Batch: 22E0167								
Arsenic	**9.20**	---	1.41	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Barium	**221**	---	1.41	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Cadmium	ND	---	0.282	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Chromium	**24.8**	---	1.41	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Lead	**18.0**	---	0.282	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Mercury	ND	---	0.113	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Selenium	ND	---	1.41	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
Silver	ND	---	0.282	mg/kg dry	10	05/05/22 23:32	EPA 6020B	
DW-2 (A2D0971-02)				**Matrix: Soil**				
Batch: 22E0167								
Arsenic	**3.91**	---	1.19	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Barium	**95.0**	---	1.19	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Cadmium	ND	---	0.238	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Chromium	**10.7**	---	1.19	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Lead	**7.06**	---	0.238	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Mercury	ND	---	0.0951	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Selenium	ND	---	1.19	mg/kg dry	10	05/05/22 23:37	EPA 6020B	
Silver	ND	---	0.238	mg/kg dry	10	05/05/22 23:37	EPA 6020B	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DW-1 (A2D0971-01)				**Matrix: Soil**		**Batch: 22D1035**		
% Solids	**73.9**	---	1.00	%	1	04/28/22 10:27	EPA 8000D	
DW-2 (A2D0971-02)				**Matrix: Soil**		**Batch: 22D1035**		
% Solids	**81.8**	---	1.00	%	1	04/28/22 10:27	EPA 8000D	

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22E0127 - EPA 3546 (Fuels)							**Soil**					
Blank (22E0127-BLK1)			Prepared: 05/04/22 09:27		Analyzed: 05/05/22 00:23							
NWTPH-Dx												
Diesel	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 88 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (22E0127-BS1)			Prepared: 05/04/22 09:27		Analyzed: 05/05/22 00:43							
NWTPH-Dx												
Diesel	108	---	20.0	mg/kg wet	1	125	---	87	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 102 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22E0127-DUP1)			Prepared: 05/04/22 09:27		Analyzed: 05/05/22 01:25							
QC Source Sample: DW-1 (A2D0971-01)												
NWTPH-Dx												
Diesel	**1190**	---	24.9	mg/kg dry	1	---	1260	---	---	6	30%	
Oil	ND	---	49.9	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	49.9	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (22E0127-DUP2)			Prepared: 05/04/22 09:27		Analyzed: 05/05/22 11:02							
QC Source Sample: Non-SDG (A2E0089-02)												
Diesel	ND	---	22.1	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	44.2	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	44.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							Soil					
Blank (22D0979-BLK1)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 11:18									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 104 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*95 %*	*50-150 %*		*"*							
LCS (22D0979-BS2)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 10:24									
NWTPH-Gx (MS)												
Gasoline Range Organics	24.1	---	5.00	mg/kg wet	50	25.0	---	96	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 105 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*95 %*	*50-150 %*		*"*							
Duplicate (22D0979-DUP1)			Prepared: 04/25/22 17:37 Analyzed: 04/26/22 15:47									
QC Source Sample: Non-SDG (A2D0990-01)												
Gasoline Range Organics	**80.5**	---	4.48	mg/kg wet	50	---	76.3	---	---	5	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 112 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*95 %*	*50-150 %*		*"*							
Duplicate (22D0979-DUP2)			Prepared: 04/22/22 11:50 Analyzed: 04/26/22 17:08									
QC Source Sample: Non-SDG (A2D0975-01)												
Gasoline Range Organics	**16200**	---	801	mg/kg dry	5000	---	16800	---	---	3	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 108 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*96 %*	*50-150 %*		*"*							

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Blank (22D0979-BLK1)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 11:18									
5035A/8260D												
Acetone	ND	---	0.667	mg/kg wet	50	---	---	---	---	---	---	ICV-02
Acrylonitrile	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Blank (22D0979-BLK1)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 11:18									
1,2-Dichloropropane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	0.333	mg/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Styrene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.167	mg/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	0.0667	mg/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 102 %* *Limits: 80-120 %* *Dilution: 1x*

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Blank (22D0979-BLK1)				Prepared: 04/26/22 08:00 Analyzed: 04/26/22 11:18								
Surr: Toluene-d8 (Surr)			*Recovery: 95 %*	*Limits: 80-120 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*102 %*	*79-120 %*			*"*					
LCS (22D0979-BS1)				Prepared: 04/26/22 08:00 Analyzed: 04/26/22 09:52								
5035A/8260D												
Acetone	1.71	---	1.00	mg/kg wet	50	2.00	---	86	80-120%	---	---	ICV-02
Acrylonitrile	0.890	---	0.100	mg/kg wet	50	1.00	---	89	80-120%	---	---	
Benzene	0.956	---	0.0100	mg/kg wet	50	1.00	---	96	80-120%	---	---	
Bromobenzene	0.973	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Bromochloromethane	0.939	---	0.0500	mg/kg wet	50	1.00	---	94	80-120%	---	---	
Bromodichloromethane	0.976	---	0.100	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Bromoform	1.03	---	0.100	mg/kg wet	50	1.00	---	103	80-120%	---	---	
Bromomethane	1.12	---	0.500	mg/kg wet	50	1.00	---	112	80-120%	---	---	
2-Butanone (MEK)	1.87	---	0.500	mg/kg wet	50	2.00	---	93	80-120%	---	---	
n-Butylbenzene	0.981	---	0.0500	mg/kg wet	50	1.00	---	98	80-120%	---	---	
sec-Butylbenzene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
tert-Butylbenzene	0.940	---	0.0500	mg/kg wet	50	1.00	---	94	80-120%	---	---	
Carbon disulfide	0.997	---	0.500	mg/kg wet	50	1.00	---	100	80-120%	---	---	
Carbon tetrachloride	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Chlorobenzene	0.951	---	0.0250	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Chloroethane	0.882	---	0.500	mg/kg wet	50	1.00	---	88	80-120%	---	---	
Chloroform	1.00	---	0.0500	mg/kg wet	50	1.00	---	100	80-120%	---	---	
Chloromethane	0.790	---	0.250	mg/kg wet	50	1.00	---	**79**	**80-120%**	---	---	Q-55
2-Chlorotoluene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
4-Chlorotoluene	0.962	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
Dibromochloromethane	1.01	---	0.100	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,2-Dibromo-3-chloropropane	0.999	---	0.250	mg/kg wet	50	1.00	---	100	80-120%	---	---	
1,2-Dibromoethane (EDB)	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
Dibromomethane	1.02	---	0.0500	mg/kg wet	50	1.00	---	102	80-120%	---	---	
1,2-Dichlorobenzene	0.948	---	0.0250	mg/kg wet	50	1.00	---	95	80-120%	---	---	
1,3-Dichlorobenzene	0.978	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
1,4-Dichlorobenzene	0.954	---	0.0250	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Dichlorodifluoromethane	0.810	---	0.100	mg/kg wet	50	1.00	---	81	80-120%	---	---	
1,1-Dichloroethane	0.956	---	0.0250	mg/kg wet	50	1.00	---	96	80-120%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22D0979 - EPA 5035A							Soil					
LCS (22D0979-BS1)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 09:52									
1,2-Dichloroethane (EDC)	0.899	---	0.0250	mg/kg wet	50	1.00	---	90	80-120%	---	---	
1,1-Dichloroethene	0.960	---	0.0250	mg/kg wet	50	1.00	---	96	80-120%	---	---	
cis-1,2-Dichloroethene	0.968	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	0.980	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
1,2-Dichloropropane	0.938	---	0.0250	mg/kg wet	50	1.00	---	94	80-120%	---	---	
1,3-Dichloropropane	0.875	---	0.0500	mg/kg wet	50	1.00	---	88	80-120%	---	---	
2,2-Dichloropropane	1.17	---	0.0500	mg/kg wet	50	1.00	---	117	80-120%	---	---	
1,1-Dichloropropene	1.03	---	0.0500	mg/kg wet	50	1.00	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	0.957	---	0.0500	mg/kg wet	50	1.00	---	96	80-120%	---	---	
trans-1,3-Dichloropropene	0.931	---	0.0500	mg/kg wet	50	1.00	---	93	80-120%	---	---	
Ethylbenzene	0.920	---	0.0250	mg/kg wet	50	1.00	---	92	80-120%	---	---	
Hexachlorobutadiene	1.02	---	0.100	mg/kg wet	50	1.00	---	102	80-120%	---	---	
2-Hexanone	1.59	---	0.500	mg/kg wet	50	2.00	---	80	80-120%	---	---	
Isopropylbenzene	1.06	---	0.0500	mg/kg wet	50	1.00	---	106	80-120%	---	---	
4-Isopropyltoluene	1.04	---	0.0500	mg/kg wet	50	1.00	---	104	80-120%	---	---	
Methylene chloride	0.922	---	0.500	mg/kg wet	50	1.00	---	92	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1.62	---	0.500	mg/kg wet	50	2.00	---	81	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	0.972	---	0.0500	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Naphthalene	0.909	---	0.100	mg/kg wet	50	1.00	---	91	80-120%	---	---	
n-Propylbenzene	0.950	---	0.0250	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Styrene	0.969	---	0.0500	mg/kg wet	50	1.00	---	97	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1.00	---	0.0250	mg/kg wet	50	1.00	---	100	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.07	---	0.0500	mg/kg wet	50	1.00	---	107	80-120%	---	---	
Tetrachloroethene (PCE)	0.988	---	0.0250	mg/kg wet	50	1.00	---	99	80-120%	---	---	
Toluene	0.923	---	0.0500	mg/kg wet	50	1.00	---	92	80-120%	---	---	
1,2,3-Trichlorobenzene	0.970	---	0.250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
1,2,4-Trichlorobenzene	0.947	---	0.250	mg/kg wet	50	1.00	---	95	80-120%	---	---	
1,1,1-Trichloroethane	1.06	---	0.0250	mg/kg wet	50	1.00	---	106	80-120%	---	---	
1,1,2-Trichloroethane	0.940	---	0.0250	mg/kg wet	50	1.00	---	94	80-120%	---	---	
Trichloroethene (TCE)	0.928	---	0.0250	mg/kg wet	50	1.00	---	93	80-120%	---	---	
Trichlorofluoromethane	0.924	---	0.100	mg/kg wet	50	1.00	---	92	80-120%	---	---	
1,2,3-Trichloropropane	0.887	---	0.0500	mg/kg wet	50	1.00	---	89	80-120%	---	---	
1,2,4-Trimethylbenzene	1.01	---	0.0500	mg/kg wet	50	1.00	---	101	80-120%	---	---	
1,3,5-Trimethylbenzene	0.988	---	0.0500	mg/kg wet	50	1.00	---	99	80-120%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
LCS (22D0979-BS1)			Prepared: 04/26/22 08:00 Analyzed: 04/26/22 09:52									
Vinyl chloride	0.866	---	0.0250	mg/kg wet	50	1.00	---	87	80-120%	---	---	
m,p-Xylene	1.91	---	0.0500	mg/kg wet	50	2.00	---	95	80-120%	---	---	
o-Xylene	0.977	---	0.0250	mg/kg wet	50	1.00	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*79-120 %*			*"*				
Duplicate (22D0979-DUP1)			Prepared: 04/25/22 17:37 Analyzed: 04/26/22 15:47									
QC Source Sample: Non-SDG (A2D0990-01)												
Acetone	ND	---	0.896	mg/kg wet	50	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
Benzene	**0.0963**	---	0.00896	mg/kg wet	50	---	0.0932	---	---	3	30%	
Bromobenzene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
Bromoform	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
n-Butylbenzene	**0.105**	---	0.0448	mg/kg wet	50	---	0.0945	---	---	11	30%	M-02
sec-Butylbenzene	ND	---	0.0448	mg/kg wet	50	---	0.0336	---	---	***	30%	
tert-Butylbenzene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
Chloroform	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.224	mg/kg wet	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.224	mg/kg wet	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0224	mg/kg wet	50	---	0.0139	---	---	***	30%	

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Duplicate (22D0979-DUP1)			Prepared: 04/25/22 17:37 Analyzed: 04/26/22 15:47									
QC Source Sample: Non-SDG (A2D0990-01)												
1,3-Dichlorobenzene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	**0.259**	---	0.0224	mg/kg wet	50	---	0.247	---	---	5	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	**7.82**	---	0.0224	mg/kg wet	50	---	7.42	---	---	5	30%	
trans-1,2-Dichloroethene	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Ethylbenzene	**1.64**	---	0.0224	mg/kg wet	50	---	1.52	---	---	8	30%	
Hexachlorobutadiene	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
Isopropylbenzene	**0.0627**	---	0.0448	mg/kg wet	50	---	0.0569	---	---	10	30%	
4-Isopropyltoluene	**0.0627**	---	0.0448	mg/kg wet	50	---	0.0618	---	---	1	30%	M-02
Methylene chloride	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	0.448	mg/kg wet	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Naphthalene	**1.16**	---	0.0896	mg/kg wet	50	---	1.06	---	---	9	30%	
n-Propylbenzene	**0.192**	---	0.0224	mg/kg wet	50	---	0.181	---	---	6	30%	
Styrene	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.0224	mg/kg wet	50	---	0.0125	---	---	***	30%	
Toluene	**3.90**	---	0.0448	mg/kg wet	50	---	3.61	---	---	8	30%	
1,2,3-Trichlorobenzene	ND	---	0.224	mg/kg wet	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.224	mg/kg wet	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Duplicate (22D0979-DUP1)			Prepared: 04/25/22 17:37 Analyzed: 04/26/22 15:47									
QC Source Sample: Non-SDG (A2D0990-01)												
Trichloroethene (TCE)	ND	---	0.0224	mg/kg wet	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.0896	mg/kg wet	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.0448	mg/kg wet	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**1.49**	---	0.0448	mg/kg wet	50	---	1.36	---	---	9	30%	
1,3,5-Trimethylbenzene	**0.373**	---	0.0448	mg/kg wet	50	---	0.345	---	---	8	30%	
Vinyl chloride	ND	---	0.0224	mg/kg wet	50	---	0.0139	---	---	***	30%	
m,p-Xylene	**7.16**	---	0.0448	mg/kg wet	50	---	6.57	---	---	9	30%	
o-Xylene	**2.61**	---	0.0224	mg/kg wet	50	---	2.41	---	---	8	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*93 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*			*"*					
Duplicate (22D0979-DUP2)			Prepared: 04/22/22 11:50 Analyzed: 04/26/22 17:08									
QC Source Sample: Non-SDG (A2D0975-01)												
Acetone	ND	---	160	mg/kg dry	5000	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
Benzene	**1310**	---	1.60	mg/kg dry	5000	---	1370	---	---	4	30%	
Bromobenzene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
Bromoform	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
Bromomethane	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
sec-Butylbenzene	**21.6**	---	8.01	mg/kg dry	5000	---	22.0	---	---	2	30%	
tert-Butylbenzene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Chloroethane	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
Chloroform	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Chloromethane	ND	---	40.1	mg/kg dry	5000	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Duplicate (22D0979-DUP2)			Prepared: 04/22/22 11:50 Analyzed: 04/26/22 17:08									
QC Source Sample: Non-SDG (A2D0975-01)												
4-Chlorotoluene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	40.1	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Dibromomethane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Ethylbenzene	**50.4**	---	4.01	mg/kg dry	5000	---	52.7	---	---	5	30%	
Hexachlorobutadiene	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
2-Hexanone	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
Isopropylbenzene	**14.3**	---	8.01	mg/kg dry	5000	---	14.9	---	---	4	30%	
4-Isopropyltoluene	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Methylene chloride	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	80.1	mg/kg dry	5000	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Naphthalene	**2550**	---	16.0	mg/kg dry	5000	---	2590	---	---	1	30%	E
n-Propylbenzene	ND	---	4.01	mg/kg dry	5000	---	3.12	---	---	***	30%	
Styrene	**14.6**	---	8.01	mg/kg dry	5000	---	15.5	---	---	6	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22D0979 - EPA 5035A							Soil					
Duplicate (22D0979-DUP2)			Prepared: 04/22/22 11:50 Analyzed: 04/26/22 17:08									
QC Source Sample: Non-SDG (A2D0975-01)												
Tetrachloroethene (PCE)	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Toluene	**315**	---	8.01	mg/kg dry	5000	---	331	---	---	5	30%	
1,2,3-Trichlorobenzene	ND	---	40.1	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	40.1	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	16.0	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	8.01	mg/kg dry	5000	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**54.2**	---	8.01	mg/kg dry	5000	---	55.5	---	---	2	30%	
1,3,5-Trimethylbenzene	**21.9**	---	8.01	mg/kg dry	5000	---	22.0	---	---	0.7	30%	
Vinyl chloride	ND	---	4.01	mg/kg dry	5000	---	ND	---	---	---	30%	
m,p-Xylene	**167**	---	8.01	mg/kg dry	5000	---	176	---	---	5	30%	
o-Xylene	**68.2**	---	4.01	mg/kg dry	5000	---	70.3	---	---	3	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*79-120 %*			*"*				
Matrix Spike (22D0979-MS1)			Prepared: 04/26/22 13:55 Analyzed: 04/26/22 20:17									
QC Source Sample: Non-SDG (A2D1010-02)												
5035A/8260D												
Acetone	2.16	---	1.52	mg/kg dry	50	3.05	ND	71	36-164%	---	---	ICV-02
Acrylonitrile	1.54	---	0.152	mg/kg dry	50	1.52	ND	101	65-134%	---	---	
Benzene	1.63	---	0.0152	mg/kg dry	50	1.52	ND	107	77-121%	---	---	
Bromobenzene	1.63	---	0.0381	mg/kg dry	50	1.52	ND	107	78-121%	---	---	
Bromochloromethane	1.62	---	0.0761	mg/kg dry	50	1.52	ND	106	78-125%	---	---	
Bromodichloromethane	1.58	---	0.152	mg/kg dry	50	1.52	ND	104	75-127%	---	---	
Bromoform	1.67	---	0.152	mg/kg dry	50	1.52	ND	110	67-132%	---	---	
Bromomethane	1.98	---	0.761	mg/kg dry	50	1.52	ND	130	53-143%	---	---	
2-Butanone (MEK)	2.63	---	0.761	mg/kg dry	50	3.05	ND	86	51-148%	---	---	
n-Butylbenzene	1.65	---	0.0761	mg/kg dry	50	1.52	ND	108	70-128%	---	---	
sec-Butylbenzene	1.67	---	0.0761	mg/kg dry	50	1.52	ND	110	73-126%	---	---	
tert-Butylbenzene	1.58	---	0.0761	mg/kg dry	50	1.52	ND	103	73-125%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Matrix Spike (22D0979-MS1)			Prepared: 04/26/22 13:55 Analyzed: 04/26/22 20:17									
QC Source Sample: Non-SDG (A2D1010-02)												
Carbon disulfide	1.70	---	0.761	mg/kg dry	50	1.52	ND	112	63-132%	---	---	
Carbon tetrachloride	1.72	---	0.0761	mg/kg dry	50	1.52	ND	113	70-135%	---	---	
Chlorobenzene	1.60	---	0.0381	mg/kg dry	50	1.52	ND	105	79-120%	---	---	
Chloroethane	1.85	---	0.761	mg/kg dry	50	1.52	ND	122	59-139%	---	---	
Chloroform	1.71	---	0.0761	mg/kg dry	50	1.52	ND	112	78-123%	---	---	
Chloromethane	1.35	---	0.381	mg/kg dry	50	1.52	ND	89	50-136%	---	---	Q-54
2-Chlorotoluene	1.69	---	0.0761	mg/kg dry	50	1.52	ND	111	75-122%	---	---	
4-Chlorotoluene	1.62	---	0.0761	mg/kg dry	50	1.52	ND	106	72-124%	---	---	
Dibromochloromethane	1.62	---	0.152	mg/kg dry	50	1.52	ND	106	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1.49	---	0.381	mg/kg dry	50	1.52	ND	98	61-132%	---	---	
1,2-Dibromoethane (EDB)	1.71	---	0.0761	mg/kg dry	50	1.52	ND	112	78-122%	---	---	
Dibromomethane	1.69	---	0.0761	mg/kg dry	50	1.52	ND	111	78-125%	---	---	
1,2-Dichlorobenzene	1.56	---	0.0381	mg/kg dry	50	1.52	ND	102	78-121%	---	---	
1,3-Dichlorobenzene	1.65	---	0.0381	mg/kg dry	50	1.52	ND	108	77-121%	---	---	
1,4-Dichlorobenzene	1.58	---	0.0381	mg/kg dry	50	1.52	ND	104	75-120%	---	---	
Dichlorodifluoromethane	1.48	---	0.152	mg/kg dry	50	1.52	ND	97	29-149%	---	---	
1,1-Dichloroethane	1.62	---	0.0381	mg/kg dry	50	1.52	ND	107	76-125%	---	---	
1,2-Dichloroethane (EDC)	1.51	---	0.0381	mg/kg dry	50	1.52	ND	99	73-128%	---	---	
1,1-Dichloroethene	1.65	---	0.0381	mg/kg dry	50	1.52	ND	108	70-131%	---	---	
cis-1,2-Dichloroethene	1.64	---	0.0381	mg/kg dry	50	1.52	ND	108	77-123%	---	---	
trans-1,2-Dichloroethene	1.68	---	0.0381	mg/kg dry	50	1.52	ND	110	74-125%	---	---	
1,2-Dichloropropane	1.58	---	0.0381	mg/kg dry	50	1.52	ND	104	76-123%	---	---	
1,3-Dichloropropane	1.49	---	0.0761	mg/kg dry	50	1.52	ND	98	77-121%	---	---	
2,2-Dichloropropane	1.86	---	0.0761	mg/kg dry	50	1.52	ND	122	67-133%	---	---	
1,1-Dichloropropene	1.76	---	0.0761	mg/kg dry	50	1.52	ND	116	76-125%	---	---	
cis-1,3-Dichloropropene	1.57	---	0.0761	mg/kg dry	50	1.52	ND	103	74-126%	---	---	
trans-1,3-Dichloropropene	1.54	---	0.0761	mg/kg dry	50	1.52	ND	101	71-130%	---	---	
Ethylbenzene	1.56	---	0.0381	mg/kg dry	50	1.52	ND	103	76-122%	---	---	
Hexachlorobutadiene	1.65	---	0.152	mg/kg dry	50	1.52	ND	109	61-135%	---	---	
2-Hexanone	2.37	---	0.761	mg/kg dry	50	3.05	ND	78	53-145%	---	---	
Isopropylbenzene	1.79	---	0.0761	mg/kg dry	50	1.52	ND	118	68-134%	---	---	
4-Isopropyltoluene	1.76	---	0.0761	mg/kg dry	50	1.52	ND	116	73-127%	---	---	
Methylene chloride	1.55	---	0.761	mg/kg dry	50	1.52	ND	102	70-128%	---	---	

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D0979 - EPA 5035A							**Soil**					
Matrix Spike (22D0979-MS1)			Prepared: 04/26/22 13:55 Analyzed: 04/26/22 20:17									
QC Source Sample: Non-SDG (A2D1010-02)												
4-Methyl-2-pentanone (MiBK)	2.86	---	0.761	mg/kg dry	50	3.05	ND	94	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1.61	---	0.0761	mg/kg dry	50	1.52	ND	106	73-125%	---	---	
Naphthalene	1.45	---	0.152	mg/kg dry	50	1.52	ND	95	62-129%	---	---	
n-Propylbenzene	1.58	---	0.0381	mg/kg dry	50	1.52	ND	104	73-125%	---	---	
Styrene	1.61	---	0.0761	mg/kg dry	50	1.52	ND	106	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1.64	---	0.0381	mg/kg dry	50	1.52	ND	108	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1.77	---	0.0761	mg/kg dry	50	1.52	ND	116	70-124%	---	---	
Tetrachloroethene (PCE)	1.66	---	0.0381	mg/kg dry	50	1.52	ND	109	73-128%	---	---	
Toluene	1.58	---	0.0761	mg/kg dry	50	1.52	ND	104	77-121%	---	---	
1,2,3-Trichlorobenzene	1.55	---	0.381	mg/kg dry	50	1.52	ND	102	66-130%	---	---	
1,2,4-Trichlorobenzene	1.51	---	0.381	mg/kg dry	50	1.52	ND	99	67-129%	---	---	
1,1,1-Trichloroethane	1.81	---	0.0381	mg/kg dry	50	1.52	ND	119	73-130%	---	---	
1,1,2-Trichloroethane	1.61	---	0.0381	mg/kg dry	50	1.52	ND	106	78-121%	---	---	
Trichloroethene (TCE)	1.52	---	0.0381	mg/kg dry	50	1.52	ND	100	77-123%	---	---	
Trichlorofluoromethane	1.85	---	0.152	mg/kg dry	50	1.52	ND	122	62-140%	---	---	
1,2,3-Trichloropropane	1.47	---	0.0761	mg/kg dry	50	1.52	ND	97	73-125%	---	---	
1,2,4-Trimethylbenzene	1.70	---	0.0761	mg/kg dry	50	1.52	ND	112	75-123%	---	---	
1,3,5-Trimethylbenzene	1.65	---	0.0761	mg/kg dry	50	1.52	ND	109	73-124%	---	---	
Vinyl chloride	1.59	---	0.0381	mg/kg dry	50	1.52	ND	104	56-135%	---	---	
m,p-Xylene	3.25	---	0.0761	mg/kg dry	50	3.05	ND	107	77-124%	---	---	
o-Xylene	1.67	---	0.0381	mg/kg dry	50	1.52	ND	110	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*79-120 %*			*"*				

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503-718-2323
ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D1025 - EPA 3546							**Soil**					
Blank (22D1025-BLK1)			Prepared: 04/27/22 07:19		Analyzed: 04/28/22 08:28							**C-07**
EPA 8082A												
Aroclor 1016	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 120 %*		*Limits: 60-125 %*			*Dilution: 1x*					
LCS (22D1025-BS1)			Prepared: 04/27/22 07:19		Analyzed: 04/28/22 08:46							**C-07**
EPA 8082A												
Aroclor 1016	0.219	---	0.0100	mg/kg wet	1	0.250	---	88	47-134%	---	---	
Aroclor 1260	0.259	---	0.0100	mg/kg wet	1	0.250	---	104	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 132 %*		*Limits: 60-125 %*			*Dilution: 1x*					S-06
Duplicate (22D1025-DUP1)			Prepared: 04/27/22 07:19		Analyzed: 04/28/22 09:39							**C-07**
QC Source Sample: Non-SDG (A2D0585-03)												
Aroclor 1016	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	0.0116	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 124 %*		*Limits: 60-125 %*			*Dilution: 1x*					
Matrix Spike (22D1025-MS1)			Prepared: 04/27/22 07:19		Analyzed: 04/28/22 10:14							**C-07**
QC Source Sample: DW-2 (A2D0971-02)												
EPA 8082A												
Aroclor 1016	0.168	---	0.0118	mg/kg dry	1	0.295	ND	57	47-134%	---	---	
Aroclor 1260	0.247	---	0.0118	mg/kg dry	1	0.295	ND	84	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 105 %*		*Limits: 60-125 %*			*Dilution: 1x*					

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22D1025 - EPA 3546							**Soil**					

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ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22D1069 - EPA 3546							Soil					
Blank (22D1069-BLK1)			Prepared: 04/28/22 07:31	Analyzed: 04/29/22 08:07								C-07
EPA 8082A												
Aroclor 1016	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 116 %*	*Limits: 60-125 %*		*Dilution: 1x*							
LCS (22D1069-BS1)			Prepared: 04/28/22 07:31	Analyzed: 04/29/22 08:25								C-07
EPA 8082A												
Aroclor 1016	0.213	---	0.0100	mg/kg wet	1	0.250	---	85	47-134%	---	---	
Aroclor 1260	0.243	---	0.0100	mg/kg wet	1	0.250	---	97	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 119 %*	*Limits: 60-125 %*		*Dilution: 1x*							
Duplicate (22D1069-DUP1)			Prepared: 04/28/22 07:31	Analyzed: 04/29/22 09:18								C-07
QC Source Sample: Non-SDG (A2D1053-01)												
Aroclor 1016	ND	---	0.0117	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	0.0117	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	0.0117	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	0.0117	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	0.0117	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	**0.0222**	---	0.0117	mg/kg dry	1	---	0.0327	---	---	**38**	**30%**	P-12, Q-05
Aroclor 1260	**0.0380**	---	0.0117	mg/kg dry	1	---	0.0566	---	---	**39**	**30%**	P-12, Q-05
Surr: Decachlorobiphenyl (Surr)		*Recovery: 108 %*	*Limits: 60-125 %*		*Dilution: 1x*							
Matrix Spike (22D1069-MS1)			Prepared: 04/28/22 07:31	Analyzed: 04/29/22 09:54								C-07
QC Source Sample: Non-SDG (A2D1053-01)												
EPA 8082A												
Aroclor 1016	0.221	---	0.0114	mg/kg dry	1	0.284	ND	78	47-134%	---	---	
Aroclor 1260	0.277	---	0.0114	mg/kg dry	1	0.284	0.0566	78	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 100 %*	*Limits: 60-125 %*		*Dilution: 1x*							

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D1069 - EPA 3546							**Soil**					

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ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22E0113 - EPA 3546							Soil					
Blank (22E0113-BLK1)			Prepared: 05/04/22 07:04		Analyzed: 05/04/22 10:31							
EPA 8270E SIM												
Acenaphthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	B-02
Naphthalene	**0.0285**	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	B
Phenanthrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 98 %*		*Limits: 44-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*108 %*		*54-127 %*			*"*				
LCS (22E0113-BS1)			Prepared: 05/04/22 07:04		Analyzed: 05/04/22 10:56							
EPA 8270E SIM												
Acenaphthene	0.721	---	0.0100	mg/kg wet	1	0.800	---	90	40-123%	---	---	
Acenaphthylene	0.736	---	0.0100	mg/kg wet	1	0.800	---	92	32-132%	---	---	
Anthracene	0.700	---	0.0100	mg/kg wet	1	0.800	---	88	47-123%	---	---	
Benz(a)anthracene	0.691	---	0.0100	mg/kg wet	1	0.800	---	86	49-126%	---	---	
Benzo(a)pyrene	0.732	---	0.0100	mg/kg wet	1	0.800	---	92	45-129%	---	---	
Benzo(b)fluoranthene	0.744	---	0.0100	mg/kg wet	1	0.800	---	93	45-132%	---	---	
Benzo(k)fluoranthene	0.763	---	0.0100	mg/kg wet	1	0.800	---	95	47-132%	---	---	
Benzo(g,h,i)perylene	0.695	---	0.0100	mg/kg wet	1	0.800	---	87	43-134%	---	---	
Chrysene	0.691	---	0.0100	mg/kg wet	1	0.800	---	86	50-124%	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22E0113 - EPA 3546							Soil					
LCS (22E0113-BS1)			Prepared: 05/04/22 07:04		Analyzed: 05/04/22 10:56							
Dibenz(a,h)anthracene	0.728	---	0.0100	mg/kg wet	1	0.800	---	91	45-134%	---	---	
Fluoranthene	0.733	---	0.0100	mg/kg wet	1	0.800	---	92	50-127%	---	---	
Fluorene	0.706	---	0.0100	mg/kg wet	1	0.800	---	88	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.660	---	0.0100	mg/kg wet	1	0.800	---	82	45-133%	---	---	
1-Methylnaphthalene	0.739	---	0.0100	mg/kg wet	1	0.800	---	92	40-120%	---	---	
2-Methylnaphthalene	0.686	---	0.0100	mg/kg wet	1	0.800	---	86	38-122%	---	---	B-02
Naphthalene	0.768	---	0.0100	mg/kg wet	1	0.800	---	96	35-123%	---	---	B
Phenanthrene	0.697	---	0.0100	mg/kg wet	1	0.800	---	87	50-121%	---	---	
Pyrene	0.718	---	0.0100	mg/kg wet	1	0.800	---	90	47-127%	---	---	
Dibenzofuran	0.722	---	0.0100	mg/kg wet	1	0.800	---	90	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery:*	*103 %*	*Limits:*	*44-120 %*		*Dilution:*	*1x*				
p-Terphenyl-d14 (Surr)			*112 %*		*54-127 %*			*"*				
Duplicate (22E0113-DUP1)			Prepared: 05/04/22 07:04		Analyzed: 05/04/22 11:47							
QC Source Sample: Non-SDG (A2D0942-04)												
Acenaphthene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	0.0104	mg/kg dry	1	---	ND	---	---	---	30%	

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ORELAP ID: OR100062

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22E0113 - EPA 3546							Soil					
Duplicate (22E0113-DUP1)			Prepared: 05/04/22 07:04 Analyzed: 05/04/22 11:47									
QC Source Sample: Non-SDG (A2D0942-04)												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 95 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*108 %*	*54-127 %*			*"*					
Matrix Spike (22E0113-MS1)			Prepared: 05/04/22 07:04 Analyzed: 05/04/22 12:38									
QC Source Sample: Non-SDG (A2D0946-11)												
EPA 8270E SIM												
Acenaphthene	0.818	---	0.0123	mg/kg dry	1	0.980	ND	83	40-123%	---	---	
Acenaphthylene	0.844	---	0.0123	mg/kg dry	1	0.980	ND	86	32-132%	---	---	
Anthracene	0.813	---	0.0123	mg/kg dry	1	0.980	ND	83	47-123%	---	---	
Benz(a)anthracene	0.769	---	0.0123	mg/kg dry	1	0.980	ND	78	49-126%	---	---	
Benzo(a)pyrene	0.793	---	0.0123	mg/kg dry	1	0.980	ND	81	45-129%	---	---	
Benzo(b)fluoranthene	0.765	---	0.0123	mg/kg dry	1	0.980	ND	78	45-132%	---	---	
Benzo(k)fluoranthene	0.845	---	0.0123	mg/kg dry	1	0.980	ND	86	47-132%	---	---	
Benzo(g,h,i)perylene	0.809	---	0.0123	mg/kg dry	1	0.980	ND	83	43-134%	---	---	
Chrysene	0.763	---	0.0123	mg/kg dry	1	0.980	ND	78	50-124%	---	---	
Dibenz(a,h)anthracene	0.846	---	0.0123	mg/kg dry	1	0.980	ND	86	45-134%	---	---	
Fluoranthene	0.843	---	0.0123	mg/kg dry	1	0.980	ND	86	50-127%	---	---	
Fluorene	0.784	---	0.0123	mg/kg dry	1	0.980	ND	80	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.739	---	0.0123	mg/kg dry	1	0.980	ND	75	45-133%	---	---	
1-Methylnaphthalene	0.848	---	0.0123	mg/kg dry	1	0.980	ND	87	40-120%	---	---	
2-Methylnaphthalene	0.781	---	0.0123	mg/kg dry	1	0.980	ND	80	38-122%	---	---	B-02
Naphthalene	0.882	---	0.0123	mg/kg dry	1	0.980	ND	90	35-123%	---	---	B
Phenanthrene	0.808	---	0.0123	mg/kg dry	1	0.980	ND	82	50-121%	---	---	
Pyrene	0.839	---	0.0123	mg/kg dry	1	0.980	ND	86	47-127%	---	---	
Dibenzofuran	0.817	---	0.0123	mg/kg dry	1	0.980	ND	83	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 98 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*105 %*	*54-127 %*			*"*					

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22E0167 - EPA 3051A							Soil					
Blank (22E0167-BLK1)			Prepared: 05/05/22 12:46 Analyzed: 05/05/22 22:58									
EPA 6020B												
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
LCS (22E0167-BS1)			Prepared: 05/05/22 12:46 Analyzed: 05/05/22 23:08									
EPA 6020B												
Arsenic	49.8	---	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Barium	49.7	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Cadmium	48.3	---	0.200	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Chromium	49.3	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Lead	50.3	---	0.200	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Mercury	0.918	---	0.0800	mg/kg wet	10	1.00	---	92	80-120%	---	---	
Selenium	22.3	---	1.00	mg/kg wet	10	25.0	---	89	80-120%	---	---	
Silver	24.6	---	0.200	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Duplicate (22E0167-DUP1)			Prepared: 05/05/22 12:46 Analyzed: 05/05/22 23:56									
QC Source Sample: Non-SDG (A2D0975-01)												
Arsenic	**2.60**	---	1.48	mg/kg dry	10	---	2.07	---	---	**23**	**20%**	Q-05
Barium	**117**	---	1.48	mg/kg dry	10	---	114	---	---	3	20%	
Cadmium	ND	---	0.296	mg/kg dry	10	---	ND	---	---	---	20%	
Chromium	**25.6**	---	1.48	mg/kg dry	10	---	23.7	---	---	8	20%	
Lead	**7.26**	---	0.296	mg/kg dry	10	---	6.74	---	---	7	20%	
Mercury	ND	---	0.118	mg/kg dry	10	---	ND	---	---	---	20%	
Selenium	ND	---	1.48	mg/kg dry	10	---	ND	---	---	---	20%	
Silver	ND	---	0.296	mg/kg dry	10	---	ND	---	---	---	20%	
Matrix Spike (22E0167-MS1)			Prepared: 05/05/22 12:46 Analyzed: 05/06/22 00:01									

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Philip Nerenberg, Lab Director

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ORELAP ID: **OR100062**

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22E0167 - EPA 3051A							**Soil**					
Matrix Spike (22E0167-MS1)			Prepared: 05/05/22 12:46		Analyzed: 05/06/22 00:01							
QC Source Sample: Non-SDG (A2D0975-01)												
EPA 6020B												
Arsenic	74.4	---	1.49	mg/kg dry	10	74.6	2.07	97	75-125%	---	---	
Barium	164	---	1.49	mg/kg dry	10	74.6	114	**67**	**75-125%**	---	---	Q-04
Cadmium	72.1	---	0.299	mg/kg dry	10	74.6	ND	97	75-125%	---	---	
Chromium	96.7	---	1.49	mg/kg dry	10	74.6	23.7	98	75-125%	---	---	
Lead	77.8	---	0.299	mg/kg dry	10	74.6	6.74	95	75-125%	---	---	
Mercury	1.39	---	0.119	mg/kg dry	10	1.49	ND	93	75-125%	---	---	
Selenium	32.5	---	1.49	mg/kg dry	10	37.3	ND	87	75-125%	---	---	
Silver	36.2	---	0.299	mg/kg dry	10	37.3	ND	97	75-125%	---	---	
Matrix Spike Dup (22E0167-MSD1)			Prepared: 05/05/22 12:46		Analyzed: 05/06/22 00:06							
QC Source Sample: Non-SDG (A2D0975-01)												
Arsenic	71.9	---	1.39	mg/kg dry	10	69.6	2.07	100	75-125%	3	20%	
Barium	148	---	1.39	mg/kg dry	10	69.6	114	**49**	**75-125%**	10	20%	Q-04
Cadmium	67.6	---	0.278	mg/kg dry	10	69.6	ND	97	75-125%	6	20%	
Chromium	91.2	---	1.39	mg/kg dry	10	69.6	23.7	97	75-125%	6	20%	
Lead	72.8	---	0.278	mg/kg dry	10	69.6	6.74	95	75-125%	7	20%	
Mercury	1.27	---	0.111	mg/kg dry	10	1.39	ND	92	75-125%	9	20%	
Selenium	31.4	---	1.39	mg/kg dry	10	34.8	ND	90	75-125%	4	20%	
Silver	33.9	---	0.278	mg/kg dry	10	34.8	ND	98	75-125%	7	20%	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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

ANALYTICAL REPORT

NV5	Project: CairnPac-14-08	
9450 SW Commerce Circle	Project Number: Freewell Block 291E	Report ID:
Wilsonville, OR 97070	Project Manager: Kyle Sattler	A2D0971 - 05 10 22 1502

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 22D1035 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D1035-DUP1)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0243-13)												
% Solids	**78.3**	---	1.00	%	1	---	77.6	---	---	0.8	10%	
Duplicate (22D1035-DUP2)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0243-14)												
% Solids	**80.1**	---	1.00	%	1	---	81.4	---	---	2	10%	
Duplicate (22D1035-DUP3)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0243-15)												
% Solids	**80.0**	---	1.00	%	1	---	79.9	---	---	0.1	10%	
Duplicate (22D1035-DUP4)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0243-16)												
% Solids	**80.6**	---	1.00	%	1	---	80.9	---	---	0.4	10%	
Duplicate (22D1035-DUP5)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0373-13)												
% Solids	**86.2**	---	1.00	%	1	---	85.9	---	---	0.4	10%	
Duplicate (22D1035-DUP6)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0373-14)												
% Solids	**82.6**	---	1.00	%	1	---	82.0	---	---	0.7	10%	
Duplicate (22D1035-DUP7)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0373-15)												
% Solids	**78.3**	---	1.00	%	1	---	78.5	---	---	0.3	10%	
Duplicate (22D1035-DUP8)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0373-16)												
% Solids	**83.8**	---	1.00	%	1	---	83.7	---	---	0.1	10%	

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 22D1035 - Total Solids (Dry Weight)							**Soil**					
Duplicate (22D1035-DUP9)			Prepared: 04/27/22 10:41		Analyzed: 04/28/22 10:27							**H-01**
QC Source Sample: Non-SDG (A2C0373-17)												
% Solids	**83.9**	---	1.00	%	1	---	83.0	---	---	1	10%	
Duplicate (22D1035-DUPA)			Prepared: 04/27/22 20:21		Analyzed: 04/28/22 10:27							
QC Source Sample: Non-SDG (A2D1073-01)												
% Solids	**92.0**	---	1.00	%	1	---	90.7	---	---	1	10%	

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

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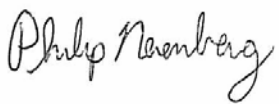

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

SAMPLE PREPARATION INFORMATION

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: 22E0127							
A2D0971-01	Soil	NWTPH-Dx	04/25/22 09:55	05/04/22 09:27	10.25g/5mL	10g/5mL	0.98
A2D0971-02	Soil	NWTPH-Dx	04/25/22 10:00	05/04/22 09:27	10.52g/5mL	10g/5mL	0.95

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: 22D0979							
A2D0971-01	Soil	NWTPH-Gx (MS)	04/25/22 09:55	04/25/22 09:55	5.81g/5mL	5g/5mL	0.86
A2D0971-02	Soil	NWTPH-Gx (MS)	04/25/22 10:00	04/25/22 10:00	4.6g/5mL	5g/5mL	1.09

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: 22D0979							
A2D0971-01	Soil	5035A/8260D	04/25/22 09:55	04/25/22 09:55	5.81g/5mL	5g/5mL	0.86
A2D0971-02	Soil	5035A/8260D	04/25/22 10:00	04/25/22 10:00	4.6g/5mL	5g/5mL	1.09

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D1025							
A2D0971-02	Soil	EPA 8082A	04/25/22 10:00	04/27/22 07:19	10.18g/5mL	10g/5mL	0.98
Batch: 22D1069							
A2D0971-01	Soil	EPA 8082A	04/25/22 09:55	04/28/22 10:47	10.14g/5mL	10g/5mL	0.99

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
Batch: 22E0113							
A2D0971-01	Soil	EPA 8270E SIM	04/25/22 09:55	05/04/22 09:30	10.44g/5mL	10g/5mL	0.96
A2D0971-02	Soil	EPA 8270E SIM	04/25/22 10:00	05/04/22 09:30	10.37g/5mL	10g/5mL	0.96

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22E0167							
A2D0971-01	Soil	EPA 6020B	04/25/22 09:55	05/05/22 12:46	0.479g/50mL	0.5g/50mL	1.04
A2D0971-02	Soil	EPA 6020B	04/25/22 10:00	05/05/22 12:46	0.514g/50mL	0.5g/50mL	0.97

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D1035							
A2D0971-01	Soil	EPA 8000D	04/25/22 09:55	04/27/22 10:41			NA
A2D0971-02	Soil	EPA 8000D	04/25/22 10:00	04/27/22 10:41			NA

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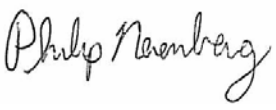

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ANALYTICAL REPORT

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9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

QUALIFIER DEFINITIONS

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

Apex Laboratories

B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
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.
E	Estimated Value. The result is above the calibration range of the instrument.
H-01	This sample was analyzed outside the recommended holding time.
ICV-02	Estimated Result. Initial Calibration Verification (ICV) failed low.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
P-12	Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
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-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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.

Apex Laboratories

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Philip Nerenberg, Lab Director

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NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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.

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ANALYTICAL REPORT

NV5	Project: **CairnPac-14-08**	
9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Philip Nerenberg, Lab Director

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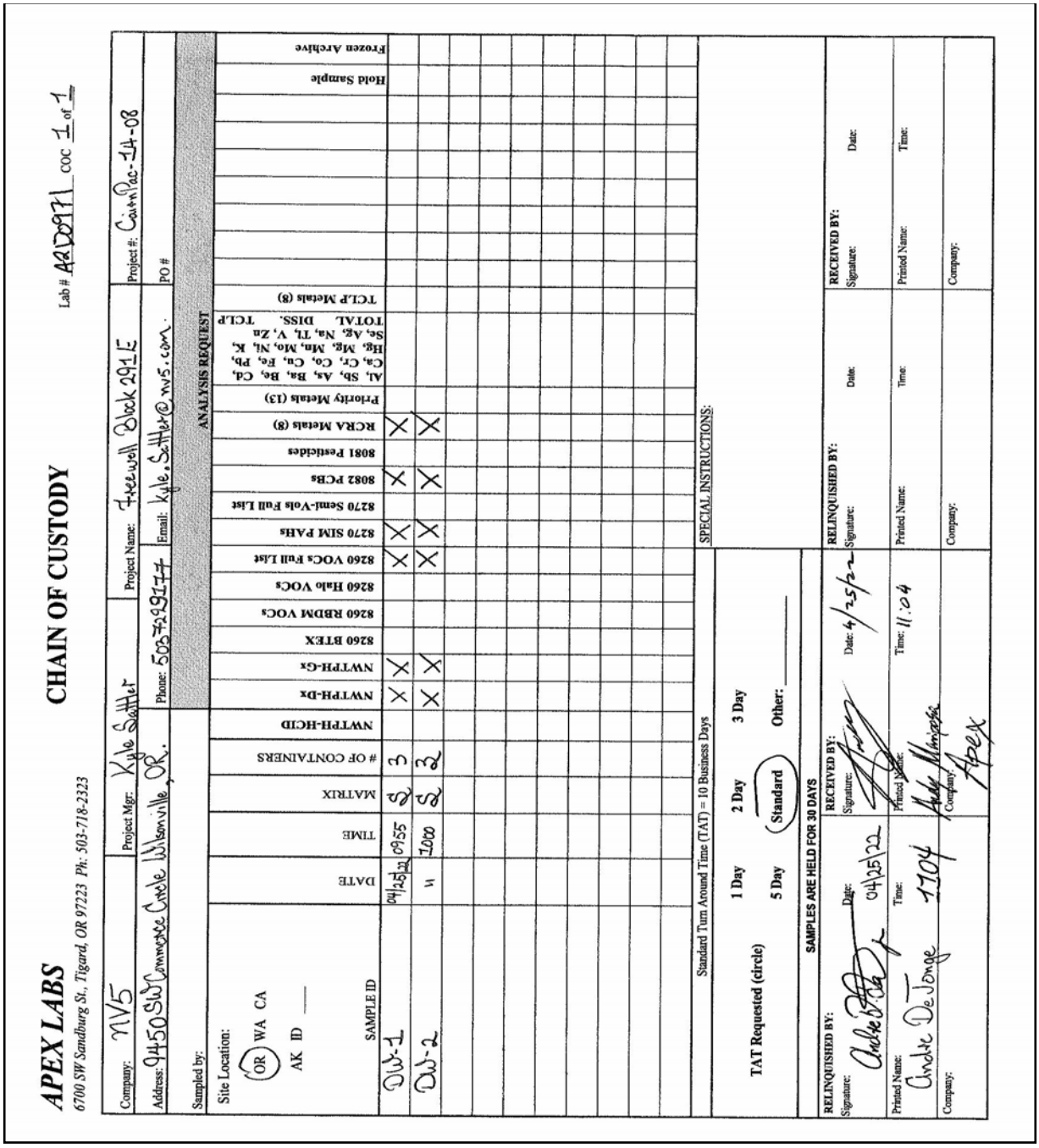

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2D0971 COC 1 of 1

Company: NV5 | Project Mgr: Kyle Sattler | Project Name: Freewell Block 291E | Project #: CairnPac-14-08
Address: 9450 SW Commerce Circle Wilsonville, OR. | Phone: 5037299177 | Email: kyle.sattler@nv5.com | PO #
Sampled by:

Site Location: (OR) WA CA AK ID ___

ANALYSIS REQUEST

SAMPLE ID	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, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
DW-1	04/25/22	0955	SL	3		X	X				X	X		X		X					
DW-2	11	1000	SL	2		X	X				X	X		X		X					

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | (Standard) | Other: ____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name: Andrée DeJonge	Printed Name:	Printed Name:	Printed Name:
Company:	Company: Apex	Company:	Company:
Date: 04/25/22	Date: 4/25/22	Date:	Date:
Time: 1704	Time: 11:04	Time:	Time:

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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9450 SW Commerce Circle	Project Number: **Freewell Block 291E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Kyle Sattler**	**A2D0971 - 05 10 22 1502**

APEX LABS COOLER RECEIPT FORM

Client: NV5 Element WO#: A2D0971

Project/Project #: Freewell Block 291 E / CairnPac-14-08

Delivery Info:

Date/time received: 4/25/22 @ 11:04 By: AM

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 4/25/22 @ 11:05 By: AM

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.6						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real Ice						
Condition:	Good						

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: 4/25/22 @ 11:18 By: [illegible]

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ✓ No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: KAM Witness: [illegible] Cooler Inspected by: KAM

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

ANALYTICAL REPORT

March 23, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

NV5 - Wilsonville, OR

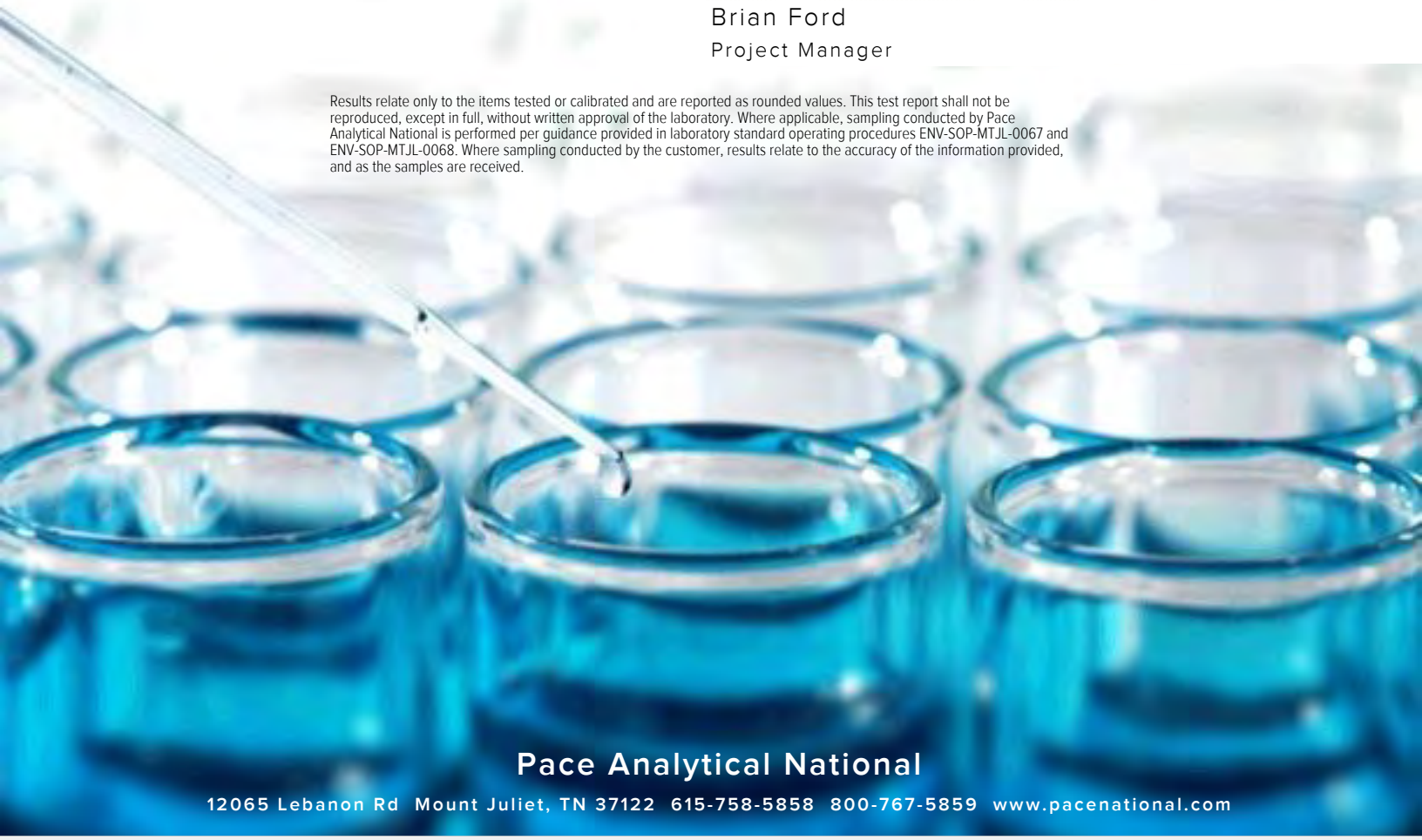
Sample Delivery Group:	L1473345
Samples Received:	03/19/2022
Project Number:	CairnPac-14-08
Description:	

Report To: Julian Peter
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY

SG-2(21.5) L1473345-01 Air

Collected by: Julian Peter
Collected date/time: 03/18/22 10:27
Received date/time: 03/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1836237	80	03/22/22 19:21	03/22/22 19:21	CEP	Mt. Juliet, TN

SG-3(21.5) L1473345-02 Air

Collected by: Julian Peter
Collected date/time: 03/18/22 12:46
Received date/time: 03/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1836237	2000	03/22/22 19:47	03/22/22 19:47	CEP	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	100	238	336	798		80	WG1836237
Allyl chloride	107-05-1	76.53	16.0	50.1	ND	ND		80	WG1836237
Benzene	71-43-2	78.10	16.0	51.1	ND	ND		80	WG1836237
Benzyl Chloride	100-44-7	127	16.0	83.1	ND	ND		80	WG1836237
Bromodichloromethane	75-27-4	164	16.0	107	ND	ND		80	WG1836237
Bromoform	75-25-2	253	48.0	497	ND	ND		80	WG1836237
Bromomethane	74-83-9	94.90	16.0	62.1	ND	ND		80	WG1836237
1,3-Butadiene	106-99-0	54.10	160	354	ND	ND		80	WG1836237
Carbon disulfide	75-15-0	76.10	16.0	49.8	ND	ND		80	WG1836237
Carbon tetrachloride	56-23-5	154	16.0	101	ND	ND		80	WG1836237
Chlorobenzene	108-90-7	113	16.0	73.9	ND	ND		80	WG1836237
Chloroethane	75-00-3	64.50	16.0	42.2	ND	ND		80	WG1836237
Chloroform	67-66-3	119	16.0	77.9	ND	ND		80	WG1836237
Chloromethane	74-87-3	50.50	16.0	33.0	ND	ND		80	WG1836237
2-Chlorotoluene	95-49-8	126	16.0	82.5	ND	ND		80	WG1836237
Cyclohexane	110-82-7	84.20	16.0	55.1	1500	5170		80	WG1836237
Dibromochloromethane	124-48-1	208	16.0	136	ND	ND		80	WG1836237
1,2-Dibromoethane	106-93-4	188	16.0	123	ND	ND		80	WG1836237
1,2-Dichlorobenzene	95-50-1	147	16.0	96.2	ND	ND		80	WG1836237
1,3-Dichlorobenzene	541-73-1	147	16.0	96.2	ND	ND		80	WG1836237
1,4-Dichlorobenzene	106-46-7	147	16.0	96.2	ND	ND		80	WG1836237
1,2-Dichloroethane	107-06-2	99	16.0	64.8	ND	ND		80	WG1836237
1,1-Dichloroethane	75-34-3	98	16.0	64.1	ND	ND		80	WG1836237
1,1-Dichloroethene	75-35-4	96.90	16.0	63.4	ND	ND		80	WG1836237
cis-1,2-Dichloroethene	156-59-2	96.90	16.0	63.4	ND	ND		80	WG1836237
trans-1,2-Dichloroethene	156-60-5	96.90	16.0	63.4	ND	ND		80	WG1836237
1,2-Dichloropropane	78-87-5	113	16.0	73.9	ND	ND		80	WG1836237
cis-1,3-Dichloropropene	10061-01-5	111	16.0	72.6	ND	ND		80	WG1836237
trans-1,3-Dichloropropene	10061-02-6	111	16.0	72.6	ND	ND		80	WG1836237
1,4-Dioxane	123-91-1	88.10	16.0	57.7	ND	ND		80	WG1836237
Ethanol	64-17-5	46.10	100	189	211	398		80	WG1836237
Ethylbenzene	100-41-4	106	16.0	69.4	ND	ND		80	WG1836237
4-Ethyltoluene	622-96-8	120	16.0	78.5	ND	ND		80	WG1836237
Trichlorofluoromethane	75-69-4	137.40	16.0	89.9	ND	ND		80	WG1836237
Dichlorodifluoromethane	75-71-8	120.92	16.0	79.1	ND	ND		80	WG1836237
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	16.0	123	ND	ND		80	WG1836237
1,2-Dichlorotetrafluoroethane	76-14-2	171	16.0	112	ND	ND		80	WG1836237
Heptane	142-82-5	100	16.0	65.4	259	1060		80	WG1836237
Hexachloro-1,3-butadiene	87-68-3	261	50.4	538	ND	ND		80	WG1836237
n-Hexane	110-54-3	86.20	50.4	178	701	2470		80	WG1836237
Isopropylbenzene	98-82-8	120.20	16.0	78.7	ND	ND		80	WG1836237
Methylene Chloride	75-09-2	84.90	16.0	55.6	ND	ND		80	WG1836237
Methyl Butyl Ketone	591-78-6	100	100	409	ND	ND		80	WG1836237
2-Butanone (MEK)	78-93-3	72.10	100	295	ND	ND		80	WG1836237
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	100	409	ND	ND		80	WG1836237
Methyl methacrylate	80-62-6	100.12	16.0	65.5	ND	ND		80	WG1836237
MTBE	1634-04-4	88.10	16.0	57.7	ND	ND		80	WG1836237
Naphthalene	91-20-3	128	50.4	264	ND	ND		80	WG1836237
2-Propanol	67-63-0	60.10	100	246	1930	4740		80	WG1836237
Propene	115-07-1	42.10	100	172	ND	ND		80	WG1836237
Styrene	100-42-5	104	16.0	68.1	ND	ND		80	WG1836237
1,1,2,2-Tetrachloroethane	79-34-5	168	16.0	110	ND	ND		80	WG1836237
Tetrachloroethylene	127-18-4	166	16.0	109	17.5	119		80	WG1836237
Tetrahydrofuran	109-99-9	72.10	16.0	47.2	ND	ND		80	WG1836237
Toluene	108-88-3	92.10	40.0	151	ND	ND		80	WG1836237
1,2,4-Trichlorobenzene	120-82-1	181	50.4	373	ND	ND		80	WG1836237

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	16.0	87.0	ND	ND		80	WG1836237
1,1,2-Trichloroethane	79-00-5	133	16.0	87.0	ND	ND		80	WG1836237
Trichloroethylene	79-01-6	131	16.0	85.7	ND	ND		80	WG1836237
1,2,4-Trimethylbenzene	95-63-6	120	16.0	78.5	ND	ND		80	WG1836237
1,3,5-Trimethylbenzene	108-67-8	120	16.0	78.5	103	506		80	WG1836237
2,2,4-Trimethylpentane	540-84-1	114.22	16.0	74.7	ND	ND		80	WG1836237
Vinyl chloride	75-01-4	62.50	16.0	40.9	ND	ND		80	WG1836237
Vinyl Bromide	593-60-2	106.95	16.0	70.0	ND	ND		80	WG1836237
Vinyl acetate	108-05-4	86.10	16.0	56.3	ND	ND		80	WG1836237
m&p-Xylene	1330-20-7	106	32.0	139	ND	ND		80	WG1836237
o-Xylene	95-47-6	106	16.0	69.4	ND	ND		80	WG1836237
TPH (GC/MS) Low Fraction	8006-61-9	101	16000	66100	222000	917000		80	WG1836237
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*170*		J1		WG1836237

Sample Narrative:

L1473345-01 WG1836237: Surrogate failure due to matrix interference. Non-target compounds too high to run at lower dilution

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2500	5940	ND	ND		2000	WG1836237
Allyl chloride	107-05-1	76.53	400	1250	ND	ND		2000	WG1836237
Benzene	71-43-2	78.10	400	1280	ND	ND		2000	WG1836237
Benzyl Chloride	100-44-7	127	400	2080	ND	ND		2000	WG1836237
Bromodichloromethane	75-27-4	164	400	2680	ND	ND		2000	WG1836237
Bromoform	75-25-2	253	1200	12400	ND	ND		2000	WG1836237
Bromomethane	74-83-9	94.90	400	1550	ND	ND		2000	WG1836237
1,3-Butadiene	106-99-0	54.10	4000	8850	ND	ND		2000	WG1836237
Carbon disulfide	75-15-0	76.10	400	1240	ND	ND		2000	WG1836237
Carbon tetrachloride	56-23-5	154	400	2520	ND	ND		2000	WG1836237
Chlorobenzene	108-90-7	113	400	1850	ND	ND		2000	WG1836237
Chloroethane	75-00-3	64.50	400	1060	ND	ND		2000	WG1836237
Chloroform	67-66-3	119	400	1950	ND	ND		2000	WG1836237
Chloromethane	74-87-3	50.50	400	826	ND	ND		2000	WG1836237
2-Chlorotoluene	95-49-8	126	400	2060	ND	ND		2000	WG1836237
Cyclohexane	110-82-7	84.20	400	1380	38000	131000		2000	WG1836237
Dibromochloromethane	124-48-1	208	400	3400	ND	ND		2000	WG1836237
1,2-Dibromoethane	106-93-4	188	400	3080	ND	ND		2000	WG1836237
1,2-Dichlorobenzene	95-50-1	147	400	2400	ND	ND		2000	WG1836237
1,3-Dichlorobenzene	541-73-1	147	400	2400	ND	ND		2000	WG1836237
1,4-Dichlorobenzene	106-46-7	147	400	2400	ND	ND		2000	WG1836237
1,2-Dichloroethane	107-06-2	99	400	1620	ND	ND		2000	WG1836237
1,1-Dichloroethane	75-34-3	98	400	1600	ND	ND		2000	WG1836237
1,1-Dichloroethene	75-35-4	96.90	400	1590	ND	ND		2000	WG1836237
cis-1,2-Dichloroethene	156-59-2	96.90	400	1590	ND	ND		2000	WG1836237
trans-1,2-Dichloroethene	156-60-5	96.90	400	1590	ND	ND		2000	WG1836237
1,2-Dichloropropane	78-87-5	113	400	1850	ND	ND		2000	WG1836237
cis-1,3-Dichloropropene	10061-01-5	111	400	1820	ND	ND		2000	WG1836237
trans-1,3-Dichloropropene	10061-02-6	111	400	1820	ND	ND		2000	WG1836237
1,4-Dioxane	123-91-1	88.10	400	1440	ND	ND		2000	WG1836237
Ethanol	64-17-5	46.10	2500	4710	ND	ND		2000	WG1836237
Ethylbenzene	100-41-4	106	400	1730	7790	33800		2000	WG1836237
4-Ethyltoluene	622-96-8	120	400	1960	2930	14400		2000	WG1836237
Trichlorofluoromethane	75-69-4	137.40	400	2250	ND	ND		2000	WG1836237
Dichlorodifluoromethane	75-71-8	120.92	400	1980	ND	ND		2000	WG1836237
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	400	3070	ND	ND		2000	WG1836237
1,2-Dichlorotetrafluoroethane	76-14-2	171	400	2800	ND	ND		2000	WG1836237
Heptane	142-82-5	100	400	1640	99200	406000		2000	WG1836237
Hexachloro-1,3-butadiene	87-68-3	261	1260	13500	ND	ND		2000	WG1836237
n-Hexane	110-54-3	86.20	1260	4440	17300	61000		2000	WG1836237
Isopropylbenzene	98-82-8	120.20	400	1970	2410	11800		2000	WG1836237
Methylene Chloride	75-09-2	84.90	400	1390	ND	ND		2000	WG1836237
Methyl Butyl Ketone	591-78-6	100	2500	10200	ND	ND		2000	WG1836237
2-Butanone (MEK)	78-93-3	72.10	2500	7370	ND	ND		2000	WG1836237
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2500	10200	ND	ND		2000	WG1836237
Methyl methacrylate	80-62-6	100.12	400	1640	ND	ND		2000	WG1836237
MTBE	1634-04-4	88.10	400	1440	ND	ND		2000	WG1836237
Naphthalene	91-20-3	128	1260	6600	ND	ND		2000	WG1836237
2-Propanol	67-63-0	60.10	2500	6150	ND	ND		2000	WG1836237
Propene	115-07-1	42.10	2500	4300	ND	ND		2000	WG1836237
Styrene	100-42-5	104	400	1700	ND	ND		2000	WG1836237
1,1,2,2-Tetrachloroethane	79-34-5	168	400	2750	ND	ND		2000	WG1836237
Tetrachloroethylene	127-18-4	166	400	2720	ND	ND		2000	WG1836237
Tetrahydrofuran	109-99-9	72.10	400	1180	ND	ND		2000	WG1836237
Toluene	108-88-3	92.10	1000	3770	ND	ND		2000	WG1836237
1,2,4-Trichlorobenzene	120-82-1	181	1260	9330	ND	ND		2000	WG1836237

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	400	2180	ND	ND		2000	WG1836237
1,1,2-Trichloroethane	79-00-5	133	400	2180	ND	ND		2000	WG1836237
Trichloroethylene	79-01-6	131	400	2140	ND	ND		2000	WG1836237
1,2,4-Trimethylbenzene	95-63-6	120	400	1960	6800	33400		2000	WG1836237
1,3,5-Trimethylbenzene	108-67-8	120	400	1960	2820	13800		2000	WG1836237
2,2,4-Trimethylpentane	540-84-1	114.22	400	1870	ND	ND		2000	WG1836237
Vinyl chloride	75-01-4	62.50	400	1020	ND	ND		2000	WG1836237
Vinyl Bromide	593-60-2	106.95	400	1750	ND	ND		2000	WG1836237
Vinyl acetate	108-05-4	86.10	400	1410	ND	ND		2000	WG1836237
m&p-Xylene	1330-20-7	106	800	3470	15600	67600		2000	WG1836237
o-Xylene	95-47-6	106	400	1730	5420	23500		2000	WG1836237
TPH (GC/MS) Low Fraction	8006-61-9	101	400000	1650000	3090000	12800000		2000	WG1836237
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*119*				WG1836237

Sample Narrative:

L1473345-02 WG1836237: Non-target compounds too high to run at a lower dilution.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3772932-3 03/22/22 09:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethanol	U		0.265	1.25
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630

Method Blank (MB)

(MB) R3772932-3 03/22/22 09:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Isopropylbenzene	U		0.0777	0.200
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	U		0.0932	1.25
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
TPH (GC/MS) Low Fraction	52.5	J	39.7	200
(S) 1,4-Bromofluorobenzene	*95.6*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3772932-1 03/22/22 08:07 • (LCSD) R3772932-2 03/22/22 08:38

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	2.87	2.94	76.5	78.4	70.0-130			2.41	25
Allyl Chloride	3.75	3.34	3.34	89.1	89.1	70.0-130			0.000	25
Benzene	3.75	3.57	3.58	95.2	95.5	70.0-130			0.280	25
Benzyl Chloride	3.75	3.63	3.50	96.8	93.3	70.0-152			3.65	25

QUALITY CONTROL SUMMARY

L1473345-01,02

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3772932-1 03/22/22 08:07 • (LCSD) R3772932-2 03/22/22 08:38

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromodichloromethane	3.75	3.63	3.65	96.8	97.3	70.0-130			0.549	25
Bromoform	3.75	3.91	3.87	104	103	70.0-130			1.03	25
Bromomethane	3.75	3.47	3.52	92.5	93.9	70.0-130			1.43	25
1,3-Butadiene	3.75	2.73	3.46	72.8	92.3	70.0-130			23.6	25
Carbon disulfide	3.75	3.48	3.55	92.8	94.7	70.0-130			1.99	25
Carbon tetrachloride	3.75	3.62	3.68	96.5	98.1	70.0-130			1.64	25
Chlorobenzene	3.75	3.69	3.73	98.4	99.5	70.0-130			1.08	25
Chloroethane	3.75	3.34	3.39	89.1	90.4	70.0-130			1.49	25
Chloroform	3.75	3.58	3.65	95.5	97.3	70.0-130			1.94	25
Chloromethane	3.75	3.23	3.28	86.1	87.5	70.0-130			1.54	25
2-Chlorotoluene	3.75	3.68	3.71	98.1	98.9	70.0-130			0.812	25
Cyclohexane	3.75	3.49	3.49	93.1	93.1	70.0-130			0.000	25
Dibromochloromethane	3.75	3.84	3.85	102	103	70.0-130			0.260	25
1,2-Dibromoethane	3.75	3.81	3.85	102	103	70.0-130			1.04	25
1,2-Dichlorobenzene	3.75	3.79	3.81	101	102	70.0-130			0.526	25
1,3-Dichlorobenzene	3.75	3.87	3.89	103	104	70.0-130			0.515	25
1,4-Dichlorobenzene	3.75	3.92	3.88	105	103	70.0-130			1.03	25
1,2-Dichloroethane	3.75	3.55	3.60	94.7	96.0	70.0-130			1.40	25
1,1-Dichloroethane	3.75	3.41	3.47	90.9	92.5	70.0-130			1.74	25
1,1-Dichloroethene	3.75	3.48	3.51	92.8	93.6	70.0-130			0.858	25
cis-1,2-Dichloroethene	3.75	3.40	3.47	90.7	92.5	70.0-130			2.04	25
trans-1,2-Dichloroethene	3.75	3.51	3.53	93.6	94.1	70.0-130			0.568	25
1,2-Dichloropropane	3.75	3.40	3.40	90.7	90.7	70.0-130			0.000	25
cis-1,3-Dichloropropene	3.75	3.59	3.52	95.7	93.9	70.0-130			1.97	25
trans-1,3-Dichloropropene	3.75	3.53	3.52	94.1	93.9	70.0-130			0.284	25
1,4-Dioxane	3.75	3.64	3.60	97.1	96.0	70.0-140			1.10	25
Ethanol	3.75	3.02	3.12	80.5	83.2	55.0-148			3.26	25
Ethylbenzene	3.75	3.74	3.70	99.7	98.7	70.0-130			1.08	25
4-Ethyltoluene	3.75	3.86	3.85	103	103	70.0-130			0.259	25
Trichlorofluoromethane	3.75	3.60	3.68	96.0	98.1	70.0-130			2.20	25
Dichlorodifluoromethane	3.75	3.58	3.63	95.5	96.8	64.0-139			1.39	25
1,1,2-Trichlorotrifluoroethane	3.75	3.63	3.73	96.8	99.5	70.0-130			2.72	25
1,2-Dichlorotetrafluoroethane	3.75	3.56	3.60	94.9	96.0	70.0-130			1.12	25
Heptane	3.75	3.36	3.30	89.6	88.0	70.0-130			1.80	25
Hexachloro-1,3-butadiene	3.75	3.90	3.94	104	105	70.0-151			1.02	25
n-Hexane	3.75	3.37	3.43	89.9	91.5	70.0-130			1.76	25
Isopropylbenzene	3.75	3.78	3.76	101	100	70.0-130			0.531	25
Methylene Chloride	3.75	3.31	3.41	88.3	90.9	70.0-130			2.98	25
Methyl Butyl Ketone	3.75	3.47	3.51	92.5	93.6	70.0-149			1.15	25
Methyl Ethyl Ketone	3.75	3.44	3.53	91.7	94.1	70.0-130			2.58	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3772932-1 03/22/22 08:07 • (LCSD) R3772932-2 03/22/22 08:38

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	3.75	3.47	3.44	92.5	91.7	70.0-139			0.868	25
Methyl Methacrylate	3.75	3.57	3.58	95.2	95.5	70.0-130			0.280	25
MTBE	3.75	3.47	3.48	92.5	92.8	70.0-130			0.288	25
Naphthalene	3.75	4.10	4.10	109	109	70.0-159			0.000	25
2-Propanol	3.75	3.19	3.20	85.1	85.3	70.0-139			0.313	25
Propene	3.75	3.27	3.19	87.2	85.1	64.0-144			2.48	25
Styrene	3.75	3.75	3.73	100	99.5	70.0-130			0.535	25
1,1,2,2-Tetrachloroethane	3.75	3.71	3.69	98.9	98.4	70.0-130			0.541	25
Tetrachloroethylene	3.75	3.83	3.90	102	104	70.0-130			1.81	25
Tetrahydrofuran	3.75	3.21	3.33	85.6	88.8	70.0-137			3.67	25
Toluene	3.75	3.71	3.72	98.9	99.2	70.0-130			0.269	25
1,2,4-Trichlorobenzene	3.75	3.85	3.85	103	103	70.0-160			0.000	25
1,1,1-Trichloroethane	3.75	3.57	3.61	95.2	96.3	70.0-130			1.11	25
1,1,2-Trichloroethane	3.75	3.68	3.68	98.1	98.1	70.0-130			0.000	25
Trichloroethylene	3.75	3.66	3.65	97.6	97.3	70.0-130			0.274	25
1,2,4-Trimethylbenzene	3.75	3.84	3.84	102	102	70.0-130			0.000	25
1,3,5-Trimethylbenzene	3.75	3.82	3.86	102	103	70.0-130			1.04	25
2,2,4-Trimethylpentane	3.75	3.35	3.39	89.3	90.4	70.0-130			1.19	25
Vinyl chloride	3.75	3.37	3.42	89.9	91.2	70.0-130			1.47	25
Vinyl Bromide	3.75	3.58	3.56	95.5	94.9	70.0-130			0.560	25
Vinyl acetate	3.75	3.29	3.33	87.7	88.8	70.0-130			1.21	25
m&p-Xylene	7.50	7.63	7.61	102	101	70.0-130			0.262	25
o-Xylene	3.75	3.74	3.75	99.7	100	70.0-130			0.267	25
TPH (GC/MS) Low Fraction	203	212	209	104	103	70.0-130			1.43	25
(S) 1,4-Bromofluorobenzene				*98.3*	*98.0*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle

Ste. 300

Billing Information:
Accounts Payable
9450 SW Commerce Circle

Ste. 300
Wilsonville, OR 97070

Report To:
Julian Peter

Email To:
Julian.Peter@nv5.com;Kyle.Sattler@nv5.com

Project Description:

City/State Collected: Portland, OR

Please Circle: (PT) MT CT ET

Phone:
503-968-8787

Client Project #
CairnPac-14-08

Lab Project #
GEODESPOR-CAIRN1408

Collected by (print):
Julian Peter

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day X Three Day
___ Next Day ___ Five Day
___ Two Day

Date Results Needed

Sample ID	Can #	Flow Cont. #	Collection Date	Collection Time	Canister Pressure/Vacuum Initial	Canister Pressure/Vacuum Final	Analysis: VOCs TO-15 Summa	Rem./Contaminant	Sample # (lab only)
SG-2 (21.5)	8831	11924	3/18	1027	>30	6.0	X		-01
SG-3 (21.5)	6152	10359	3/18	1246	>30	7.0	X		-02

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE
MT JULIET, TN
12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1473345
D091

Acctnum: **GEODESPOR**
Template: **T203990**
Prelogin: **P905580**
PM: 110 - Brian Ford
PB: CSG 02/21/22
Shipped Via: **FedEX Saver**

Remarks: 2+2 empty

Samples returned via: __ UPS __ FedEx __ Courier __ _____
Tracking # 5349 7820 3307

Hold #

	Date:	Time:			
Relinquished by : (Signature)	3/18/22	1525	Received by: (Signature)	Date:	Time:
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) D. Ramsey	Date: 3-19-22	Time: 930

Condition: (lab use only)

COC Seal Intact: ___ Y ___ N ___ NA

NCF:

NV5

Delivering Solutions
Improving Lives