



**REPORT**

**Outfall 22B IRAM Performance Monitoring**  
*2024 Annual Report*

Submitted to:

**Oregon Department of Environmental Quality**

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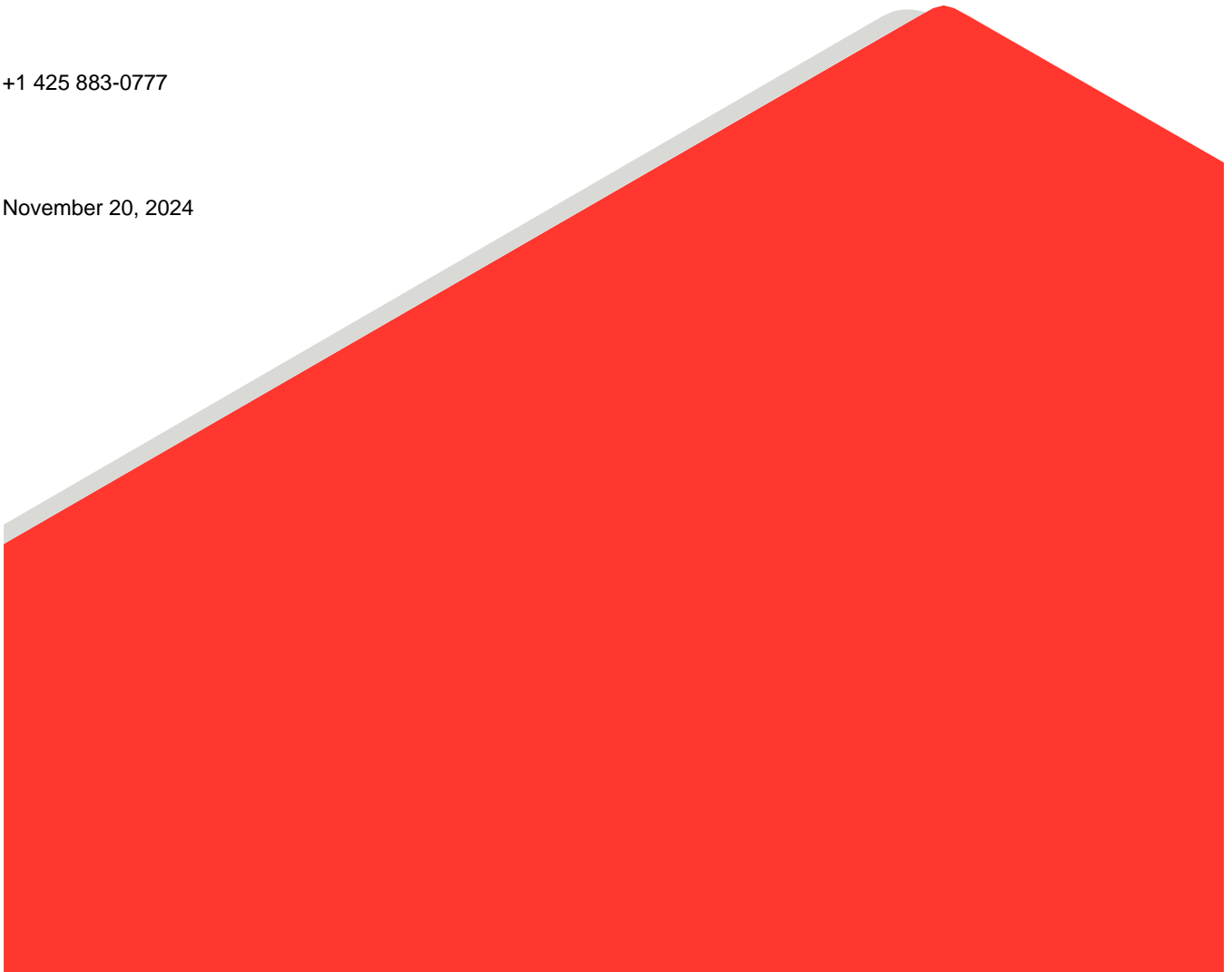
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## 1.0 INTRODUCTION

This 2024 Annual Report for the Outfall 22B storm sewer system interim remedial action measures (IRAM) was prepared for the Oregon Department of Environmental Quality (DEQ) by WSP USA Inc. (WSP) on behalf of StarLink Logistics, Inc. (StarLink). This report was prepared in accordance with applicable documents (DEQ 2015, DEQ 2017a, DEQ 2017b, DEQ 2018, DEQ 2019, and DEQ 2020).

Five quarterly monitoring reports were submitted during 2015 and 2016 followed by a two-year performance evaluation report in 2017 (Golder 2017). Seven annual monitoring reports were submitted between 2017 and 2023. This report is the eighth annual monitoring report.

This report is organized as follows:

- Section 1.0 describes the Outfall 22B storm sewer system and the objectives of the IRAM monitoring program.
- Section 2.0 describes the pre-sampling observations of precipitation and river flow.
- Section 3.0 provides sampling flow observations and measurements.
- Section 4.0 describes the Outfall 22B sampling.
- Section 5.0 describes deviations from the Sampling and Analysis Plan (SAP).
- Section 6.0 presents the analytical laboratory results, a comparison of the results to the Portland Harbor Superfund Site Surface Water Clean-up Levels (PHCLs) (EPA 2017) and groundwater to surface water screening level values (SLVs) (Golder 2018), as well as temporal data trend plots.
- Section 7.0 provides a summary of the evaluation of protectiveness and recommended actions.
- Section 8.0 lists the references used in this report.

## 1.1 Background

The Outfall 22B storm sewer system consists of a City of Portland (City) storm sewer along NW Front Avenue that discharges to the Willamette River upstream of the Burlington Northern Santa Fe (BNSF) railroad bridge (Figure 1). Private laterals connect to the Outfall 22B storm sewer from the Metro, MMGL (formerly Schnitzer/Air Liquide), and Gould properties, and were previously connected to the Arkema property. The Outfall 22B system receives run-off and associated sediments from NW Front Avenue and City right-of-way (ROW), City property, BNSF, Arkema, ESCO, Gould, MMGL, Metro, Highway 30, and potentially during very high rainfall events, the former Rhône-Poulenc property. The North Front Avenue portion of 22B also receives river water and river sediments that are deposited in the sewer during higher river stages (see Photograph 18 in Appendix A and river stage figure [Appendix E-6]). Much of the North Front Avenue portion of the sewer line was either constructed where dredged material from the river had been placed or where the 22B trench was backfilled with dredged material. The total length of the City and private Outfall 22B storm sewer system is approximately 8,000 linear feet.

StarLink began conducting Outfall 22B investigations when deterioration of the storm sewer and groundwater infiltration was identified in April 2004. Detections of constituents of interest (COIs) that could potentially impact Portland Harbor were partially attributed to activities conducted at the former Rhône-Poulenc facility and resulted in StarLink conducting the Outfall 22B IRAMs. These activities included injections of polyurethane at targeted locations and repairs of the storm sewer in 2006 and 2007. A cutoff collar of polyurethane injected foam was

installed in 2006 approximately 50 feet downstream of manhole MH-3 and approximately 290 feet upstream of the outfall to reduce the potential for seepage in the trench backfill surrounding the Outfall 22B pipe. There is no documentation of seepage through the backfill, nor was seepage observed during the quarterly (2015 and 2016) or annual (2017 through 2024) outfall monitoring events as reported in this and previous monitoring reports.

A cured-in-place pipe (CIPP) liner was installed throughout most of the City and private storm sewer system between 2010 and 2014 by Insituform Technologies Inc. (ITI). Figure 1 illustrates the location of the cutoff collar and segments of pipe and manholes that were lined, replaced, or abandoned. Beginning in 2014, intermittent repair work was completed to satisfy ITI's warranty on workmanship and materials. Final warranty CIPP repairs were completed in August 2020, the City of Portland Bureau of Environmental Services (BES) approved the work in September (BES 2020), and the first 5-year inspection video package was submitted to DEQ on November 24, 2020 (BSI 2020). BES or the respective private property owners will be notified if deterioration of IRAM linings is documented during future inspections.

Additionally, StarLink will continue to coordinate with Metro on any future repair activities or changes to the storm sewer infrastructure installed for the Metro facility stormwater treatment system. Further information regarding the Metro stormwater treatment and stormwater system may be found in Metro's stormwater pollution control plan (file# 110646).

## 1.2 Sampling and Analysis Plan Objectives

The objective of the performance monitoring is to demonstrate that the Outfall 22B storm sewer system pathway is adequately addressed and does not pose an unacceptable risk to the river. Protectiveness is assessed as follows (DEQ 2015):

- Determine if dry weather flow is present
- Determine if detected constituents exceed PHCLs and SLVs
- Evaluate if exceedances pose an unacceptable risk to the Willamette River
- Determine if additional actions are needed

## 1.3 2024 Annual Monitoring Event

The 2024 annual monitoring event was conducted on June 26 and 27, 2024. The following sections describe the monitoring activities.

## 2.0 PRE-SAMPLING OBSERVATIONS

### 2.1 Precipitation Monitoring

The SAP (DEQ 2015) specifies that sample collection must be preceded by at least 72 hours of no measurable precipitation as recorded at the NW Yeon Avenue, Portland, Oregon rain gage (USGS 2024). The 72-hour minimum dry period was met prior to the June 2024 sampling events (Table 1). It did not rain during the sampling event. Weather conditions are documented on the field sheet in Appendix B.

### 2.2 River Stage

The river stage at the Morrison Bridge, Willamette River gage was between 7.9 feet to 11.9 feet lower than the Outfall 22B invert (14.65 ft) from the beginning of the 72-hour dry period to the completion of the monitoring event (OWRD 2024).

The outfall historically has contained wood, debris, and significant amounts of sediment deposited inside the outfall pipe during periods of high flow in the Willamette River. The historical river stage measurements by USGS are provided in Figure E-6. There has been no removal of material deposited by the river within the outfall pipe since 2020. The interior of the outfall was clear of debris with no obstructions to flow during the 2024 sampling event.

### **2.3 Surface Water Inflow**

No surface water was observed entering the Outfall 22B storm sewer system during the 2024 monitoring event.

## **3.0 SAMPLING FLOW OBSERVATIONS AND MEASUREMENTS**

WSP measured the flow rate at Outfall 22B and documented flow conditions in manholes and catch basins as part of the 2024 sampling event. Field notes are provided in Appendix A and observations are summarized below.

### **3.1 Outfall Flow Measurement**

The approximate Outfall 22B flow rate on June 28 was 1.8 gallons per minute (gpm) as measured using a bucket and stopwatch.

### **3.2 Manhole and Catch Basin Observations**

Dry weather observations of manholes and catch basins occurred on City, Gould, MMGL, and Metro properties in accordance with the SAP. DEQ (2017b) noted that MH-9 was “no longer a representative observation point for assessing groundwater intrusion” and recommended using MH-8 and SWMH-5. Observations are summarized below from the field notes in Appendix A, starting from the Metro upstream property and ending at the outfall (Figure 1).

Flow velocity could not be measured at the manholes with an electronic flow meter because the depth of flow in the channels was too shallow. In addition, it is not possible to calculate a flow rate using traditional methods of discharge in a partially filled pipe because manhole channel size is inconsistent, and the channels are generally not semi-circular. Therefore, qualitative estimates of flow rate at and between manholes are provided. These qualitative estimates are provided at DEQ’s request to aid in understanding how the flow compares at different locations in the system. The following summarizes the flow observations:

- Metro Property –
  - Metro MH-8: water present, no discernible flow.
  - Metro MH-9: water present, no discernible flow.
  - MH-15: water present, trickle of flow estimated 0.5 inches deep and 2 inches wide.
  - SWMH-5: water present, no discernible flow.
- MMGL Property –
  - MH-1: did not observe, unable to locate in the field.
  - MH-17 through 21: water present, no discernible flow.
- City Property –
  - MH-10: trickle of flow coming from the direction of MH-21.

- CB set 9: catch basins were dry.
- MH-9: a trickle of flow estimated 0.5 inches deep and 6 inches wide, similar to flow at MH-10.
- CB set 8: east catch basin was wet, west was moist. No discernible flow.
- MH-8: water present, discernible flow was not observed unlike MH-9 and MH-7.
- CB set 7: east and west catch basins were both wet. No discernible flow.
- Gould Property –
  - MH-4: water present, no discernible flow.
- City Property –
  - MH-7: water flowing approximately 6 inches wide and 0.5 inches deep, similar to MH-9.
  - CB set 6: east catch basin was wet, west catch basin dry. No discernible flow.
  - MH-6: flow in MH-6 (approximately 2 inches wide and 0.5 inches deep) was slightly more than MH-7 flow.
  - CB sets 1 through 5: dry.
  - MH-5: trickle of flow approximately 18 inches wide and 0.5 inches deep, similar to MH-6.
  - MH-4 and MH-3: water present, unable to estimate flow due to bellies in the channels.

The approximate flow rate measured at Outfall 22B in June 2024 (1.8 gpm) is lower than historical measurements taken prior to completing the IRAM and is equivalent to the 2023 measurement. Water flow is anticipated to remain at a similarly low level since the IRAM has been completed.

### **3.3 Road Underdrains**

No flow was observed in road underdrains inspected during the June 2024 monitoring event.

### **3.4 Groundwater Elevation Measurements**

WSP measured groundwater levels on June 27, 2024 in shallow monitoring wells ASW-05, ASW-01A, and W-15-S on the Metro property and W-16-S, W-11-S, W-04-S, and W-03-S adjacent to NW Front Avenue (Figure 1).

Table 2 provides a comparison of groundwater elevations to pipe invert elevations. On the Metro property, groundwater elevations at most locations were below the nearby pipe invert elevations while groundwater elevations measured along NW Front Ave were above nearby Outfall 22B mainline pipe invert elevations.

### **3.5 Seepage Through Outfall Backfill**

An inspection of the soil adjacent to the outfall pipe was conducted on June 26, 2024 and no seepage was observed. No seepage has been observed from the soil surrounding Outfall 22B during any monitoring event.

## **4.0 OUTFALL 22B SAMPLING**

A primary sample, field duplicate sample, and matrix spike/matrix spike duplicate (MS/MSD) sample were collected from Outfall 22B for the 2024 sampling event. An equipment rinsate blank sample was collected for dissolved parameters requiring a 0.45-micron filter.

## 4.1 Sample Collection

Sampling was conducted in accordance with the SAP (DEQ 2015) except as discussed in Section 5.0.

## 4.2 Field Parameter Results

Table 3 presents the field parameter monitoring results. All of the results were similar to the field parameters measured during the 2023 sampling effort.

## 5.0 DEVIATIONS FROM THE SAP

There were minor deviations from the SAP which are not expected to have a negative impact on the sampling results, as outlined below.

- The SAP indicates that annual monitoring should be conducted in the spring (March through May) during high groundwater conditions. The Outfall 22B water sample was collected on June 26, when surface water entering several catch basins in the Outfall 22B drainage subsided. Though monitoring was performed outside of the targeted sampling window, the intent of the SAP was met in that the groundwater levels were high during the monitoring event.
- The 8270 Selected Ion Monitoring Polycyclic Aromatic Hydrocarbon (SIM PAH) method indicated in the SAP has been phased out by the analytical laboratory; SIM requests are analyzed using the United States Environmental Protection Agency (EPA) 8270E method. The methods, instruments, and RLs are essentially the same, but the lab reports that the 8270E method is more stable.
- In accordance with DEQ's May 2, 2024 letter, "Subject: DEQ Review "Outfall 22B IRAM Performance Monitoring 2023 Annual Report Rhone-Poulenc Portland Site ECSI No. 155", data summation methods detailed in the Program Data Management Plan (EPA 2021) were used to calculate totals values for cPAHs, dioxins/furans, DDX, total PCBs, and chlordanes. This is a change from the previous Outfall 22B IRAM Performance Monitoring Reports where the calculations were performed in accordance with the SAP. The equations used are provided in note "T" in Table 4.
- Quantification of flow rates at each manhole could not be performed as stated in the SAP given the low flow rates and geometry of the manhole channels.

## 6.0 LABORATORY RESULTS

Samples were submitted to Apex Laboratories of Tigard, Oregon on June 26, 2024. Laboratory analytical reports are provided in Appendix C. Validated analytical results are presented in Table 4. Table 5 summarizes the analytical results for compounds detected in Outfall 22B samples since 2015.

A Level II validation of the laboratory analytical results was completed in accordance with the SAP. The data validation report is provided in Appendix D. The validation concludes that the majority of data are acceptable for their intended use. The following analyte results were rejected in either the primary and/or duplicate sample:

- Results for the following analytes were rejected based on low MS/MSD or surrogate recovery:
  - 2,4-Dimethylphenol (primary and duplicate), 2,4-Dinitrophenol (primary), 2-Chlorophenol (primary), 2-Nitrophenol (primary), 3,4-Methylphenol (primary), 3,3'-Dichlorobenzidine (primary and duplicate), 4-Chloro-3-Methylphenol (primary), 4-Nitrophenol (primary), Benzoic acid (primary and duplicate), and Phenol (primary and duplicate).

The detection limits for some of the individual analytes (e.g., benzo(a)pyrene) analyzed by the methods provided in the 2015 SAP are above the PHCLs and SLVs. Therefore, although these constituents were not detected in the samples, there is uncertainty as to whether they are potentially present at concentrations above screening standards. As discussed below, most of the analytes are decreasing in concentration over time.

## 6.1 Discussion of Outfall 22B Results

### 6.1.1 Comparison to PHCLs and SLVs

Table 5 summarizes the analytical results for detected compounds since monitoring began in 2015 and indicates those compounds detected in 2024 at concentrations above their respective surface water PHCLs (EPA 2017). For compounds without PHCLs, results are compared to the site-specific groundwater to surface water SLVs (Golder 2018).

There were either no detections of the following classes of compounds, or they were not detected above their respective PHCL (or SLV if a PHCL is not available) in 2024 (Table 4):

- Petroleum hydrocarbons (including diesel-range organics and gasoline-range organics) were not detected in the 2024 annual sample (or duplicate), consistent with previous sampling events.
- No herbicides were detected in 2024 at a concentration above the PHCL or SLV, consistent with previous sampling events.
- No volatile organic compounds (VOCs) were detected in 2024 at a concentration above the PHCL or SLV, consistent with previous sampling events.

The following analytes were detected during the 2024 sampling event at a concentration above their respective PHCL or SLV if a PHCL is not available (Table 4):

- Polychlorinated dibenzo-para-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs): Octachlorodibenzodioxin (OCDD) was the only detected compound in this class and is the only compound detected at a concentration above the SLV. However, the OCDD result is “J” qualified as ‘estimated’ since it was measured below the method detection level. The resulting 2,3,7,8-TCDD Equivalents calculation using half the detection limits for all compounds exceeded the PHCL.
- Polychlorinated biphenyls (PCBs): Only PCBs 77 and 106 & 118 were detected above their respective SLVs, which occurred in both the primary and duplicate samples. Other PCB compounds were detected but do not have a PHCL or SLV. The total PCB calculated value is above the PHCL. Overall, the 2024 analytical results for PCBs are consistent with previous analytical results.
- Insecticides: 2,4'-dichlorodiphenyldichloroethane (DDD), 4,4'-DDD, 4,4'-dichlorodiphenyldichloroethylene (DDE), aldrin (duplicate sample), and total chlordanes (calculated values) were detected at concentrations above their respective PHCLs and SLVs. Total DDx, 2,4'-DDE, 4,4'-dichlorodiphenyltrichloroethane (DDT), 2,4'-DDT, and hexachlorobenzene were not detected above their respective PHCLs. Alpha-BHC, alpha-chlordane, beta-BHC, dieldrin, heptachlor epoxide, and trans-heptachlor epoxide were detected at concentrations above their respective SLVs. The 2024 analytical results are generally consistent with previous analytical results.
- Metals: total and dissolved arsenic were detected at concentrations above their PHCLs and SLVs. Total and dissolved barium, hexavalent chromium (unfiltered duplicate sample), and total and dissolved manganese

were detected at concentrations above their respective SLVs. The 2024 analytical results are generally consistent with previous analytical results.

- Semi-volatile compounds (SVOCs): Pentachlorophenol was the only SVOC detected above its PHCL. There were no other analytes detected at concentrations greater than the PHCLs or SLVs. The 2024 analytical results are generally consistent with previous analytical results.
- Total suspended solids (TSS): TSS was not detected above the 5,000 micrograms per liter ( $\mu\text{g/L}$ ) detection limit in either the primary or duplicate sample, consistent with previous results. There is neither a PHCL nor a SLV for TSS.

### 6.1.2 Temporal Trends

Temporal data plots are presented in Appendix E for major analytes and include data collected prior to 2007, as requested by DEQ (2017a). The pre-2007 data may not be representative of dry weather flow and may not have been analyzed using the same analytical techniques currently used; therefore, comparison of pre-2007 to post-2007 data may not be appropriate. The pre-2007 datasets do not contain the complete set of analytes reported in the post-2007 datasets. Significant flow was observed entering the system from the Metro property during the second quarter 2016 sampling event, as previously reported. This inflow influenced sampling results during the second quarter 2016 sampling event.

Trend lines are presented on the Appendix E graphs based on linear regression using a linear, logarithmic, or exponential trendline. The regression line shown was based on the visual fit to the data and the highest calculated  $r^2$  values for the possible trendlines. A quantitative analysis for representative analytes shown in Appendix E over time was performed using a Mann-Kendal Test in ProUCL (version 5.2). The ProUCL output also is provided in Appendix E. Most trend lines shown in the Appendix E graphs indicate stable or decreasing trends though correlation coefficients ( $r^2$  values) are generally low (i.e., generally less than 0.5), indicating a moderate fit of the data to the trend line. A visual evaluation of the dry weather data trends indicates similar or slightly decreasing analyte concentrations between 2017 and 2024. Trans-heptachlor epoxide and beta-BHC increased from the 2016 Q3 sampling through 2022 and have decreased in concentration since 2022. Key findings presented in the 2-Year Evaluation Report (Golder 2017) and updated with Mann-Kendall results provided below remain valid:

- Organochlorine insecticide (OCI) concentrations in 2024 generally are lower than 2023 (Appendix Figure E-1). Trend lines for the following representative compounds are shown in the Appendix E figure: trans-heptachlor epoxide (blue line, much lower concentration in 2024, endrin (yellow, decreasing trend), and hexachlorobenzene (gray, decreasing trend). A trend line for each analyte is not displayed due to the number of analytes shown on the graph; however, other analytes are likely to be similar to endrin and hexachlorobenzene. A Mann-Kendall test of the 4,4'-DDD, alpha-BHC, alpha-chlordane, beta-BHC, dieldrin, endrin, gamma-BHC (lindane), gamma-chlordane, and trans-heptachlor epoxide data from 2007 to 2024 indicate no significant trend at the 0.05 level (Appendix E). The Mann-Kendall test of the 4,4'-DDE and hexachlorobenzene data found a decreasing trend at the 0.05 level (Appendix E).
- Limited or no discernable trend is observed in PCDD/PCDF and PCB temporal data (Appendix Figures E-2 and E-3). A Mann-Kendall test of the OCDD data from 2007 to 2024 indicates a decreasing trend at the 0.05 level. The Mann-Kendall tests of PCB 105 and PCB 77 indicate no significant trend at the 0.05 level. The Mann-Kendall test of PCB 106 & 118 and total congeners showed a significant decreasing trend at the 0.05 level (Appendix E).

- Concentrations of di- and tri-chlorophenols and pentachlorophenol (SVOC analytes) are lower in post-IRAM monitoring results compared to fourth quarter 2007 and have been stable since 2019 (Appendix Figure E-4). A Mann-Kendall test of the 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,4-dichlorophenol, and pentachlorophenol data from 2007 to 2024 indicates a significant decreasing trend at the 0.05 level.
- Most metals concentrations have remained relatively constant since fourth quarter 2007. The Mann-Kendall tests of the unfiltered arsenic, barium, cadmium, and manganese data from 2007 to 2024 indicate no significant trend at the 0.05 level. Hexavalent chromium, which was not detected until low-level analytical methods were introduced in 2015, has decreased overall since 2007. Hexavalent chromium results for 2017 through 2019 were non-detect; concentrations similar to 2015 and 2016 (Appendix Figure E-5) were measured for the last few years.

## 6.2 Permitted Discharges Near Outfall 22B

The 2024 Outfall 22B performance monitoring results were compared to nearby permitted National Pollutant Discharge Elimination System (NPDES) discharge limits for the Arkema property (see table below) for general comparison purposes only. The comparison is not to determine if the IRAM is functioning, but to compare the magnitude of the Outfall 22B results with other potential releases into the Willamette River. Comparisons of the Outfall 22B results to the PHCLs and SLVs were provided in Section 6.1.1. Key observations compared to nearby NPDES discharge limits include:

- VOCs: The annual 2024 sampling result for benzene was less than the detection limit of 0.1 µg/L and was below the nearby permitted discharge limit.
- Chlorinated insecticides: Recent sampling results for DDT and degradants (DDx) are significantly lower than recently permitted discharge limits for DDD (0.05 µg/L), DDE (0.05 µg/L), and DDT (0.05 µg/L). Permit limits are greater than the PHCLs and SLVs.
- Filtered and unfiltered metals: Arsenic and hexavalent chromium results are below the nearby permitted discharge limits. The arsenic and hexavalent chromium permit limits are greater than the PHCL and SLV.

Arkema – Permitted Discharge Limits		
Constituent Group	Constituent	Discharge Limit (µg/L)
VOCs	Benzene	<0.7
SVOCs	2-Chlorophenol	<5
Chlorinated Insecticide	DDD	<0.05
	DDE	<0.05
	DDT	<0.05
Metals	Arsenic	<10
	Chromium VI	<16

## 7.0 SUMMARY AND EVALUATION OF PROTECTIVENESS

The SAP specifies that the objective of the Outfall 22B performance monitoring is to demonstrate that the storm sewer system pathway is adequately addressed and does not pose an unacceptable risk to the river.

Protectiveness is to be assessed as follows:

- Determine if dry weather flow is present.

- Determine if detected constituents exceed PHCLs or SLVs.
- Evaluate if exceedances pose an unacceptable risk to the Willamette River.
- Determine if additional actions are needed.

Evaluations of these four objectives are presented below.

## 7.1 Dry Weather Flow

Flow was present at Outfall 22B during the annual 2024 event and samples were collected representative of Outfall 22B discharge under dry weather flow conditions (Section 2.1). Dry weather flow was identified as a trickle flowing into City property manhole MH-10 and slightly increasing to 1.8 gpm at Outfall 22B (Section 3.2).

## 7.2 Comparison to PHCLs, SLVs, and Previous Sampling Results

Outfall 22B sampling results show limited detections of COIs at concentrations above the PHCLs and SLVs (when there are no PHCLs) as discussed in Section 6.1. The flow measured in 2024 was essentially the same as in 2023 and was consistent with the historically low measurements collected following completion of the IRAM. Flow is expected to remain at a similarly low level. Overall, measured concentrations of the analytes remain consistent with previous sampling results.

## 7.3 Risk Evaluation

Risk is qualitatively evaluated as follows:

- The short-term risk evaluation of dry weather discharge to river receptors concluded that Outfall 22B does not pose a significant risk (Golder 2017). Measured concentrations of detected analytes have not significantly changed; therefore, the conclusions of the short-term risk evaluation are still valid.
- Risk to river receptors from Outfall 22B sediment during non-stormwater flow conditions is considered low because TSS concentrations in outfall discharge were less than the reporting limit of 5 milligrams per liter (mg/L) which is well below the industrial stormwater discharge benchmark of 100 mg/L (there is no PHCL or SLV for TSS).
- The June 2024 dry weather discharge rate of 1.8 gpm is lower than the annual average of 5 gpm used for the short-term risk evaluation (Golder 2017).

## 7.4 Recommended Actions

It is recommended that performance monitoring (annual sampling) of Outfall 22B continue in accordance with the SAP and DEQ comments associated with annual performance monitoring reports as applicable.

There have been no significant changes in dry weather flow quantity or quality since the spatial evaluation in the 2017 Outfall 22B IRAM 2-year performance report (Golder 2017), therefore manhole sampling is not needed.

The next annual sampling will occur during the next qualifying dry weather period in the spring of 2025.

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## Tables



**TABLE 1  
Rainfall Data  
Outfall 22B IRAM Performance Monitoring  
Annual 2024 Report**

Date	Daily Total	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
06/20/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/21/24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
06/22/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/23/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/24/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/25/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/26/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Notes & Legend:**

Rainfall data are raw and uncorrected from the City of Portland HYDRA rainfall network Yeon Rain Gage located at 3395 NW Yeon Avenue, Portland, OR (USGS 2024)

Rainfall totals are measured in number of tips of the rain gauge bucket. One tip equals 0.01 inches of rainfall.

-  72 hour dry period leading up to sampling event
-  Sample collection

**TABLE 2**  
**Groundwater Level and Pipe Invert Elevations**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Date	Monitoring Well	DTW (ft BTOC)	Ground Surface Elevation (ft COPD)	Casing Elevation (ft COPD)	Water Level Elevation (ft COPD)	Respective Manhole	Downstream Pipe Invert Elevation (ft COPD)	Invert Elevation vs. Groundwater Elevation	Below Water Table
6/27/2024	ASW-05	8.68	42.26	41.58	32.90	Metro MH-1	37.14	4.24	no
						Metro MH-2	35.28	2.38	no
	W-15-S(14)	11.64	41.73	41.42	29.78	Metro MH-5	31.76	1.98	no
						Metro MH-6	29.87	0.09	no
						Metro MH-7	31.50	1.72	no
	ASW-01A	6.53	40.21	39.61	33.08	Metro MH-14	30.41	-2.67	yes
	W-16-S(13)	9.43	32.41	34.93	25.50	MH-9	19.97	-5.53	yes
	W-04-S(16)	5.74	32.59	34.95	29.21	MH-8	18.92	-10.29	yes
	W-03-S(17)	5.41	33.12	35.10	29.69	MH-7	17.39	-12.30	yes
W-11-S(21)	11.23	39.10	40.90	29.67	MH-6	16.79	-12.88	yes	

**Notes:**

DTW            Depth to water  
 BTOC        Below top of casing  
 COPD        City of Portland Datum

- Invert elevations of Outfall 22B piping from GIS data were provided by the City of Portland Bureau of Environmental Services, October 13, 2010; and from Metro and Schnitzer plan drawings C-6A and C-6C dated February 1990.
- Monitoring wells ASW-05, W-16-S, W-04-S, and W-03-S were resurveyed on November 21, 2016.



**TABLE 3**  
**Field Parameters**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

<b>Parameter</b>	<b>Outfall 22B 06/26/2024</b>
Air Temp (°C)	21.1
Water Temp (°C)	15.0
Sample Depth (inches)	approx. 1/4 inch
pH (S.U.)	7.45
ORP (mV)	81
Conductivity (uS/cm)	394
Turbidity (NTU)	5.82
Dissolved Oxygen (mg/L)	28.47

**Notes:**

Data collected with YSI Pro Plus

**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
<b>PCDD/PCDFs, µg/L</b>									
1,2,3,4,6,7,8-HpCDD	35822-46-9	---	0.01	5.10E-08	4.46E-6 U	4.59E-6 EMPC, U			
1,2,3,4,6,7,8-HpCDF	67562-39-4	---	0.01	5.10E-08	1.03E-6 EMPC, U	1.16E-6 U			
1,2,3,4,7,8,9-HpCDF	55673-89-7	---	0.01	5.10E-08	1.67E-6 U	1.56E-6 U			
1,2,3,4,7,8-HxCDD	39227-28-6	---	0.1	5.1E-09	1.88E-6 U	2.93E-6 U			
1,2,3,4,7,8-HxCDF	70648-26-9	---	0.1	5.1E-09	1.12E-6 U	1.21E-6 U			
1,2,3,6,7,8-HxCDD	57653-85-7	---	0.1	5.1E-09	1.64E-6 U	2.38E-6 U			
1,2,3,6,7,8-HxCDF	57117-44-9	---	0.1	5.1E-09	9.84E-7 U	1.19E-6 U			
1,2,3,7,8,9-HxCDD	19408-74-3	---	0.1	5.1E-09	1.79E-6 U	3.18E-6 U			
1,2,3,7,8,9-HxCDF	72918-21-9	---	0.1	5.1E-09	1.38E-6 U	1.72E-6 U			
1,2,3,7,8-PeCDD	40321-76-4	---	1	5.1E-10	1.17E-6 U	1.34E-6 U			
1,2,3,7,8-PeCDF	57117-41-6	---	0.03	1.70E-08	1.16E-6 U	1.01E-6 U			
2,3,4,6,7,8-HxCDF	60851-34-5	---	0.1	5.10E-09	1.16E-6 U	1.32E-6 U			
2,3,4,7,8-PeCDF	57117-31-4	---	0.3	1.70E-09	1.06E-6 U	9.9E-7 U			
2,3,7,8-TCDD	1746-01-6	---	1	5.10E-10	6.74E-7 U	9.9E-7 U			
2,3,7,8-TCDF	51207-31-9	---	0.1	5.10E-09	7.29E-7 U	8.72E-7 U			
OCDD	3268-87-9	---	0.0003	1.70E-06	8.7E-6 J	1.15E-5 J			
OCDF	39001-02-0	---	0.0003	1.70E-06	2.6E-6 U	2.87E-6 U			
2,3,7,8-TCDD Equivalents <sup>1</sup>	---	5.00E-10	---	---	<b>2.06E-06 JT</b>	<b>1.67E-06 JT</b>			
<b>PCBs, µg/L</b>									
PCB 1	2051-60-7	---	---	---	1.76E-7 U	2.87E-7 U			
PCB 100	39485-83-1	---	---	---	2.83E-7 U	4.53E-7 U			
PCB 103	60145-21-3	---	---	---	2.79E-7 U	4.47E-7 U			
PCB 104	56558-16-8	---	---	---	2.44E-7 U	3.9E-7 U			
PCB 105	32598-14-4	---	---	1.70E-05	1.30E-05	1.18E-05			
PCB 11	2050-67-1	---	---	---	5.02E-6 EMPC, U	4.59E-6 EMPC, U			
PCB 110	38380-03-9	---	---	---	3.53E-05	3.38E-05			
PCB 113	68194-10-5	---	---	---	2.11E-7 U	3.71E-7 U			
PCB 114	74472-37-0	---	---	1.70E-05	1.11E-6 J	6.48E-7 U			
PCB 119	56558-17-9	---	---	---	1.93E-7 U	6.71E-7 EMPC, U			
PCB 12	2974-92-7	---	---	---	5.52E-7 U	9.75E-7 U			
PCB 120	68194-12-7	---	---	---	1.71E-7 U	2.87E-7 U			
PCB 121	56558-18-0	---	---	---	1.67E-7 U	2.83E-7 U			
PCB 122	76842-07-4	---	---	---	4.04E-7 U	7.14E-7 U			
PCB 123	65510-44-3	---	---	---	6.4E-7 EMPC, U	3.76E-7 U			
PCB 124	70424-70-3	---	---	---	1.45E-6 EMPC, U	1.76E-6 EMPC, U			
PCB 126	57465-28-8	---	---	---	7.84E-7 J	6.66E-7 EMPC, U			
PCB 127	39635-33-1	---	---	---	3.34E-7 U	6.06E-7 U			
PCB 129	55215-18-4	---	---	---	2.06E-6 J	1.66E-6 J			
PCB 130	52663-66-8	---	---	---	2.58E-6 J	1.96E-6 EMPC, U			



**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
PCB 135	52744-13-5	---	---	---	4.04E-6 J	3.61E-6 EMPC, U			
PCB 136	38411-22-2	---	---	---	3.45E-6 J	3.86E-6 J			
PCB 137	35694-06-5	---	---	---	1.94E-6 EMPC, U	1.9E-6 EMPC, U			
PCB 14	34883-41-5	---	---	---	5.34E-7 U	9.43E-7 U			
PCB 140	59291-64-4	---	---	---	2.29E-7 EMPC, U	4.15E-7 EMPC, U			
PCB 141	52712-04-6	---	---	---	7.50E-06	7.31E-06			
PCB 142	41411-61-4	---	---	---	2.74E-7 U	3.45E-7 U			
PCB 144	68194-14-9	---	---	---	1.3E-6 EMPC, U	1.13E-6 EMPC, U			
PCB 145	74472-40-5	---	---	---	9.71E-8 U	1.23E-7 U			
PCB 147	68194-13-8	---	---	---	7.27E-7 J	6.87E-7 J			
PCB 148	74472-41-6	---	---	---	1.25E-7 U	1.58E-7 U			
PCB 15	2050-68-2	---	---	---	4.66E-6 EMPC, U	6.12E-6 EMPC, U			
PCB 150	68194-08-1	---	---	---	9.83E-8 U	1.24E-7 U			
PCB 151	52663-63-5	---	---	---	7.53E-06	6.67E-06			
PCB 152	68194-09-2	---	---	---	9.12E-8 U	1.15E-7 U			
PCB 153	35065-27-1	---	---	---	3.17E-05	3.00E-05			
PCB 154	60145-22-4	---	---	---	3.26E-7 J	1.6E-7 U			
PCB 155	33979-03-2	---	---	---	1.04E-7 U	1.31E-7 U			
PCB 156	38380-08-4	---	---	1.70E-05	3.44E-6 J	3.22E-6 EMPC, U			
PCB 157	69782-90-7	---	---	1.70E-05	9.E-7 J	9.36E-7 EMPC, U			
PCB 159	39635-35-3	---	---	---	1.64E-7 U	2.03E-7 U			
PCB 166	41411-63-6	---	---	---	1.7E-7 U	2.1E-7 U			
PCB 167	52663-72-6	---	---	1.70E-05	1.86E-6 J	2.04E-6 J			
PCB 168	59291-65-5	---	---	---	1.9E-7 U	2.39E-7 U			
PCB 169	32774-16-6	---	---	---	2.01E-7 U	2.43E-7 U			
PCB 17	37680-66-3	---	---	---	9.46E-06	9.30E-06			
PCB 170	35065-30-6	---	---	---	7.01E-06	7.71E-06			
PCB 171	52663-71-5	---	---	---	2.23E-6 J	1.84E-6 EMPC, U			
PCB 172	52663-74-8	---	---	---	1.8E-6 J	2.06E-6 J			
PCB 173	68194-16-1	---	---	---	1.57E-7 U	2.5E-7 U			
PCB 174	38411-25-5	---	---	---	1.03E-05	1.00E-05			
PCB 175	40186-70-7	---	---	---	5.22E-7 J	2.47E-7 U			
PCB 176	52663-65-7	---	---	---	1.42E-6 J	1.34E-6 J			
PCB 177	52663-70-4	---	---	---	5.44E-06	4.66E-6 EMPC, U			
PCB 178	52663-67-9	---	---	---	2.66E-6 J	2.42E-6 J			
PCB 179	52663-64-6	---	---	---	3.92E-6 U	4.03E-6 U			
PCB 18	37680-65-2	---	---	---	1.9E-5 J	2.45E-5 J			
PCB 180	35065-29-3	---	---	---	2.28E-05	2.12E-05			
PCB 181	74472-47-2	---	---	---	1.35E-7 U	2.14E-7 U			
PCB 183	52663-69-1	---	---	---	6.54E-06	7.04E-06			



**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
PCB 184	74472-48-3	---	---	---	1.28E-7 U	1.97E-7 U			
PCB 185	52712-05-7	---	---	---	1.14E-6 EMPC, U	1.66E-6 J			
PCB 186	74472-49-4	---	---	---	1.11E-7 U	1.72E-7 U			
PCB 188	74487-85-7	---	---	---	1.17E-7 U	1.8E-7 U			
PCB 189	39635-31-9	---	---	1.70E-05	3.06E-7 EMPC, U	1.64E-7 U			
PCB 19	38444-73-4	---	---	---	3.2E-6 J	4.63E-6 J			
PCB 190	41411-64-7	---	---	---	1.77E-6 J	1.86E-6 J			
PCB 191	74472-50-7	---	---	---	4.28E-7 EMPC, U	1.85E-7 U			
PCB 192	74472-51-8	---	---	---	1.08E-7 U	1.71E-7 U			
PCB 193	69782-91-8	---	---	---	1.26E-6 EMPC, U	1.28E-6 EMPC, U			
PCB 194	35694-08-7	---	---	---	4.39E-6 J	3.67E-6 EMPC, U			
PCB 195	52663-78-2	---	---	---	1.8E-6 J	1.84E-6 J			
PCB 197	33091-17-7	---	---	---	6.59E-8 U	1.62E-7 U			
PCB 198	68194-17-2	---	---	---	3.75E-7 J	4.99E-7 J			
PCB 199	52663-75-9	---	---	---	6.33E-06	6.85E-06			
PCB 2	2051-61-8	---	---	---	1.72E-7 U	2.69E-7 U			
PCB 200	52663-73-7	---	---	---	9.59E-7 J	7.95E-7 EMPC, U			
PCB 201	40186-71-8	---	---	---	9.91E-7 J	8.55E-7 EMPC, U			
PCB 202	2136-99-4	---	---	---	1.09E-6 J	1.01E-6 EMPC, U			
PCB 204	74472-52-9	---	---	---	6.83E-8 U	1.68E-7 U			
PCB 205	74472-53-0	---	---	---	2.97E-7 EMPC, U	5.14E-7 J			
PCB 206	40186-72-9	---	---	---	2.19E-6 EMPC, U	2.1E-6 J			
PCB 207	52663-79-3	---	---	---	5.02E-7 J	4.28E-7 EMPC, U			
PCB 208	52663-77-1	---	---	---	6.07E-7 EMPC, U	7.43E-7 EMPC, U			
PCB 209 (Total Decachlorobiphenyl)	2051-24-3	---	---	---	9.05E-7 J	9.53E-7 J			
PCB 22	38444-85-8	---	---	---	1.81E-6 J	1.84E-6 J			
PCB 23	55720-44-0	---	---	---	3.16E-7 U	5.05E-7 U			
PCB 25	55712-37-3	---	---	---	1.05E-6 J	1.15E-6 J			
PCB 26	38444-81-4	---	---	---	2.86E-6 J	3.76E-6 J			
PCB 28	7012-37-5	---	---	---	1.08E-05	1.35E-05			
PCB 29	15862-07-4	---	---	---	3.45E-7 U	5.5E-7 U			
PCB 3	2051-62-9	---	---	---	1.69E-7 U	2.63E-7 U			
PCB 30	35693-92-6	---	---	---	2.16E-7 U	2.68E-7 U			
PCB 31	16606-02-3	---	---	---	1.35E-05	1.34E-05			
PCB 34	37680-68-5	---	---	---	3.39E-7 U	5.41E-7 U			
PCB 35	37680-69-6	---	---	---	2.85E-7 U	4.66E-7 U			
PCB 36	38444-87-0	---	---	---	2.75E-7 U	4.5E-7 U			
PCB 37	38444-90-5	---	---	---	4.29E-6 J	6.01E-06			
PCB 38	53555-66-1	---	---	---	8.36E-7 EMPC, U	4.96E-7 U			
PCB 39	38444-88-1	---	---	---	2.93E-7 U	4.79E-7 U			



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**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
PCB 40	38444-93-8	---	---	---	3.99E-6 J	4.36E-6 EMPC, U			
PCB 44	41464-39-5	---	---	---	2.03E-5 J+	2.32E-5 J+			
PCB 45	70362-45-7	---	---	---	3.26E-6 J	4.24E-6 J			
PCB 46	41464-47-5	---	---	---	1.25E-6 EMPC, U	2.21E-6 J			
PCB 47	2437-79-8	---	---	---	4.5E-5 J	1.83E-5 UJ			
PCB 50	62796-65-0	---	---	---	3.29E-7 U	4.91E-7 U			
PCB 51	68194-04-7	---	---	---	1.47E-5 J	5.36E-6 UJ			
PCB 53	41464-41-9	---	---	---	3.3E-6 U	4.34E-6 U			
PCB 54	15968-05-5	---	---	---	2.46E-7 U	3.67E-7 U			
PCB 55	74338-24-2	---	---	---	1.91E-7 U	2.86E-7 U			
PCB 57	70424-67-8	---	---	---	2.07E-7 U	3.08E-7 U			
PCB 58	41464-49-7	---	---	---	1.93E-7 U	2.87E-7 U			
PCB 6	25569-80-6	---	---	---	5.47E-7 U	9.54E-7 U			
PCB 62	54230-22-7	---	---	---	2.47E-7 U	3.45E-7 U			
PCB 63	74472-34-7	---	---	---	4.49E-7 J	3.5E-7 U			
PCB 65	33284-54-7	---	---	---	2.63E-7 U	3.67E-7 U			
PCB 67	73575-53-8	---	---	---	4.68E-7 EMPC, U	3.23E-7 U			
PCB 68	73575-52-7	---	---	---	1.36E-5 J	7.42E-6 J			
PCB 73	74338-23-1	---	---	---	2.21E-7 U	3.15E-7 U			
PCB 74	32690-93-0	---	---	---	4.19E-6 J	4.38E-6 EMPC, U			
PCB 77	32598-13-3	---	---	5.20E-07	3.43E-6 J	3.75E-6 J			
PCB 78	70362-49-1	---	---	---	2.07E-7 U	3.08E-7 U			
PCB 79	41464-48-6	---	---	---	3.66E-7 J	3.04E-7 U			
PCB 80	33284-52-5	---	---	---	1.79E-7 U	2.68E-7 U			
PCB 81	70362-50-4	---	---	---	2.22E-7 U	3.3E-7 U			
PCB 82	52663-62-4	---	---	---	3.92E-6 J	4.22E-6 EMPC, U			
PCB 83	60145-20-2	---	---	---	1.89E-7 U	3.18E-7 U			
PCB 86	55312-69-1	---	---	---	3.16E-7 U	5.31E-7 U			
PCB 88	55215-17-3	---	---	---	4.08E-6 J	4.95E-6 J			
PCB 89	73575-57-2	---	---	---	2.74E-7 U	4.81E-7 U			
PCB 93	73575-56-1	---	---	---	2.91E-7 U	4.91E-7 U			
PCB 94	73575-55-0	---	---	---	3.07E-7 U	5.19E-7 U			
PCB 96	73575-54-9	---	---	---	2.26E-7 U	3.62E-7 U			
PCB 97	41464-51-1	---	---	---	9.14E-06	9.63E-06			
PCB 99	38380-01-7	---	---	---	8.43E-6 EMPC, U	9.80E-06			
PCB004 & 010	PCB004_010	---	---	---	1.14E-05	1.51E-05			
PCB005 & 008	PCB005_008	---	---	---	5.46E-7 U	9.53E-7 U			
PCB007 & 009	PCB007_009	---	---	---	5.52E-7 U	9.63E-7 U			
PCB016 & 032	PCB016_032	---	---	---	1.38E-05	1.76E-05			
PCB020 & 021 & 033	PCB020_021_033	---	---	---	1.42E-6 J	1.51E-6 EMPC, U			



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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
PCB024 & 027	PCB024_027	---	---	---	1.79E-6 J	2.64E-6 J			
PCB041 & 064 & 071 & 072	PCB41_64_71_72	---	---	---	1.32E-5 J	1.71E-5 J			
PCB042 & 059	PCB042_059	---	---	---	5.37E-6 U	5.16E-6 EMPC, U			
PCB043 & 049	PCB043_049	---	---	---	1.28E-05	1.47E-05			
PCB048 & 075	PCB048_075	---	---	---	2.68E-6 EMPC, U	3.09E-6 EMPC, U			
PCB052 & 069	PCB052_069	---	---	---	2.08E-5 J+	2.57E-5 J+			
PCB056 & 060	PCB056_060	---	---	---	5.98E-6 J	6.92E-6 J			
PCB061 & 070	PCB061_070	---	---	---	1.50E-05	1.67E-05			
PCB066 & 076	PCB066_076	---	---	---	7.3E-6 J	8.29E-6 J			
PCB084 & 092	PCB084_092	---	---	---	1.22E-05	1.34E-05			
PCB085 & 116	PCB085_116	---	---	---	4.9E-6 J	4.84E-6 J			
PCB087 & 117 & 125	PCB087_117_125	---	---	---	1.1E-5 J	1.25E-5 J			
PCB090 & 101	PCB090_101	---	---	---	2.85E-05	3.28E-05			
PCB095 & 098 & 102	PCB095_098_102	---	---	---	2.31E-05	2.69E-05			
PCB106 & 118	PCB106_118	---	---	1.70E-05	2.90E-05	2.71E-05			
PCB107 & 109	PCB107_109	---	---	---	1.78E-6 EMPC, U	2.22E-6 EMPC, U			
PCB108 & 112	PCB108_112	---	---	---	1.28E-6 J	1.82E-6 EMPC, U			
PCB111 & 115	PCB111_115	---	---	---	4.79E-7 EMPC, U	8.79E-7 EMPC, U			
PCB128 & 162	PCB128_162	---	---	---	5.47E-6 J	5.78E-6 J			
PCB131 & 133	PCB131_133	---	---	---	8.97E-7 EMPC, U	1.18E-6 J			
PCB132 & 161	PCB132_161	---	---	---	8.39E-6 J	9.2E-6 J			
PCB134 & 143	PCB134_143	---	---	---	1.57E-6 J	1.61E-6 J			
PCB138 & 163 & 164	PCB138_163_164	---	---	---	3.64E-05	3.49E-05			
PCB139 & 149	PCB139_149	---	---	---	2.88E-05	2.60E-05			
PCB146 & 165	PCB146_165	---	---	---	4.38E-6 J	4.75E-6 J			
PCB158 & 160	PCB158_160	---	---	---	3.76E-6 EMPC, U	3.69E-6 EMPC, U			
PCB182 & 187	PCB182_187	---	---	---	1.79E-05	1.65E-05			
PCB196 & 203	PCB196_203	---	---	---	7.18E-6 J	6.98E-6 J			
Total PCBs <sup>2</sup>	1336-36-3	0.0000064	---	0.0000064	<b>7.24E-04 JT</b>	<b>7.46E-04 JT</b>			
<b>Insecticides, µg/L</b>									
2,4'-DDD	53-19-0	0.000031	---	0.000031	<b>8.91E-05</b>	<b>1.23E-04</b>			
2,4'-DDE	3424-82-6	0.000018	---	0.000022	3.31E-6 U	8.65E-6 J			
2,4'-DDT	789-02-6	0.000022	---	0.000022	1.2E-5 U	1.14E-5 U			
4,4'-DDD	72-54-8	0.000031	---	0.000031	<b>1.95E-4 J</b>	<b>2.85E-4 J</b>			
4,4'-DDE	72-55-9	0.000018	---	0.000022	<b>7.19E-5 J+</b>	<b>7.99E-5 J+</b>			
4,4'-DDT	50-29-3	0.000022	---	0.000022	3.74E-5 EMPC, U	4.28E-5 EMPC, U			
DDx	---	0.01	---	---	5.24E-04 JT	3.82E-04 JT			
Aldrin	309-00-2	0.00000077	---	0.000005	7.63E-6 EMPC, U	<b>9.31E-6 J</b>			
alpha-BHC	319-84-6	---	---	0.00049	7.07E-04	7.40E-04			
alpha-Chlordane	5103-71-9	---	---	0.000081	9.11E-05	1.19E-04			

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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
beta-BHC	319-85-7	---	---	0.0017	2.17E-03	2.18E-03			
beta-Chlordane	5103-74-2	---	---	0.000081	5.48E-05	6.73E-05			
cis-Nonachlor	5103-73-1	---	---	0.000081	1.36E-5 U	2.03E-5 J			
delta-BHC	319-86-8	---	---	0.037	8.78E-04	9.24E-04			
Dieldrin	60-57-1	---	---	0.0000054	2.77E-3 J	4.15E-3 J			
Endosulfan I	959-98-8	---	---	0.051	1.09E-5 U	1.32E-5 U			
Endosulfan II	33213-65-9	---	---	0.051	4.25E-5 U	4.67E-5 EMPC, U			
Endosulfan Sulfate	1031-07-8	---	---	0.051	1.93E-5 U	5.5E-5 J			
Endrin	72-20-8	---	---	0.0023	2.17E-04	2.54E-04			
Endrin Aldehyde	7421-93-4	---	---	0.0023	2.66E-5 U	2.35E-5 U			
Endrin Ketone	53494-70-5	---	---	0.0023	2.82E-04	3.55E-04			
gamma-BHC (Lindane)	58-89-9	---	---	0.08	1.28E-04	1.22E-04			
gamma-Chlordane	5103-74-2	---	---	0.000081	5.48E-05	6.73E-05			
Heptachlor	76-44-8	---	---	0.0000079	2.61E-6 U	3.09E-6 U			
Heptachlor Epoxide	1024-57-3	---	---	0.0000039	3.66E-5 J	5.22E-05			
Hexachlorobenzene	118-74-1	0.000029	---	0.000029	3.77E-5 U	4.05E-5 U			
Methoxychlor	72-43-5	---	---	0.019	1.95E-5 J	3.04E-5 J			
Mirex	2385-85-5	---	---	0.001	2.62E-6 U	2.71E-6 U			
Oxychlordane	27304-13-8	---	---	0.000081	1.98E-5 J	1.23E-5 U			
trans-Heptachlor Epoxide	28044-83-9	---	---	0.0000039	1.22E-4 J	3.9E-4 J			
trans-Nonachlor	39765-80-5	---	---	0.000081	3.42E-5 EMPC, U	3.28E-5 J			
Total Chlordanes <sup>3</sup>	---	0.000081	---	0.000081	<b>2.46E-04 JT</b>	<b>1.90E-04 JT</b>			
<b>Unfiltered Metals, µg/L</b>									
Arsenic	7440-38-2	0.018	---	0.014	<b>7.89</b>	<b>8.03</b>			
Barium	7440-39-3	---	---	4	23.4	23.7			
Cadmium	7440-43-9	---	---	0.09	0.1 U	0.1 U			
Calcium	7440-70-2	---	---	116000	34400	35000			
Chromium	7440-47-3	100	---	74	1 U	1 U			
Hexavalent Chromium	18540-29-9	---	---	0.043	1 U	1.05 J			
Copper	7440-50-8	2.74	---	2.7	0.1	0.11			
Iron	7439-89-6	---	---	1000	647	715			
Lead	7439-92-1	---	---	0.54	0.147 J	0.374 J			
Magnesium	7439-95-4	---	---	82000	10600	9510			
Manganese	7439-96-5	---	---	10	113	152			
Mercury	7439-97-6	---	---	0.012	0.00145	0.0015			
Nickel	7440-02-0	---	---	16	2 U	2 U			
Selenium	7782-49-2	---	---	5	0.5 U	0.5 U			
Silver	7440-22-4	---	---	0.12	0.1 U	0.1 U			
Zinc	7440-66-6	36.5	---	33	2.39 U	5.73 J			

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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
<b>Filtered Metals, µg/L</b>									
Arsenic	7440-38-2	0.018	---	0.014			5.36	5.62	
Barium	7440-39-3	---	---	4			19.6	20.2	
Cadmium	7440-43-9	---	---	0.09			0.1 U	0.1 U	
Calcium	7440-70-2	---	---	116000			34300	34100	
Chromium	7440-47-3	100	---	74			1 U	1 U	
Hexavalent Chromium	18540-29-9	---	---	0.043			1 U	1 U	
Copper	7440-50-8	2.74	---	2.7			0.12 J+	0.12 J+	
Iron	7439-89-6	---	---	1000			37.4 J	109 J	
Lead	7439-92-1	---	---	0.54			0.1 U	0.1 U	
Magnesium	7439-95-4	---	---	82000			10700	10600	
Manganese	7439-96-5	---	---	10			102	102	
Mercury	7439-97-6	---	---	0.012			0.00069	0.000899	
Nickel	7440-02-0	---	---	16			2 U	2 U	
Selenium	7782-49-2	---	---	5			0.5 U	0.5 U	
Silver	7440-22-4	---	---	0.12			0.1 U	0.1 U	
Zinc	7440-66-6	36.5	---	33			2 U	2.06 J	
<b>Herbicides, µg/L</b>									
2,4,5-T	93-76-5	---	---	4	0.087	0.091			
2,4,5-TP (Silvex)	93-72-1	---	---	5	0.08 U	0.08 U			
2,4-D	94-75-7	---	---	4	0.08 U	0.08 U			
2,4-DB	94-82-6	---	---	4	0.08 U	0.08 U			
Acifluorfen	50594-66-6	---	---	---	0.08 U	0.08 U			
Bentazon	25057-89-0	---	---	---	0.08 U	0.08 U			
Clopyralid	1702-17-6	---	---	---	0.08 U	0.08 U			
Dicamba	1918-00-9	---	---	10	0.08 U	0.08 U			
Dichlorprop	120-36-5	---	---	4	0.08 U	0.08 U			
Dinoseb	88-85-7	---	---	0.05	0.08 U	0.08 U			
MCPA	94-74-6	---	---	2.6	0.08 U	0.08 U			
MCPP	93-65-2	16	---	2.6	0.08 U	0.08 U			
Picloram	1918-02-1	---	---	---	0.08 U	0.08 U			
Quinclorac	84087-01-4	---	---	---	0.08 U	0.08 U			
Triclopyr	55335-06-3	---	---	---	0.08 U	0.08 U			
<b>VOCs, µg/L</b>									
1,1,1,2-Tetrachloroethane	630-20-6	---	---	---	0.2 U	0.2 U			
1,1,1-Trichloroethane	71-55-6	---	---	11	0.2 U	0.2 U			
1,1,2,2-Tetrachloroethane	79-34-5	---	---	0.067	0.25 U	0.25 U			
1,1,2-Trichloroethane	79-00-5	---	---	0.24	0.25 U	0.25 U			
1,1-Dichloroethane	75-34-3	---	---	2.4	0.2 U	0.2 U			
1,1-Dichloroethene	75-35-4	---	---	7	0.2 U	0.2 U			



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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	
1,1-Dichloropropene	563-58-6	---	---	0.055	0.5 U	0.5 U			
1,2,3-Trichlorobenzene	87-61-6	---	---	29	1 U	1 U			
1,2,3-Trichloropropane	96-18-4	---	---	0.00072	0.5 U	0.5 U			
1,2,4-Trichlorobenzene	120-82-1	---	---	2.3	1 U	1 U			
1,2,4-Trimethylbenzene	95-63-6	---	---	7.3	0.5 U	0.5 U			
1,2-Dibromo-3-Chloropropane	96-12-8	---	---	0.00032	2.5 U	2.5 U			
1,2-Dibromoethane	106-93-4	---	---	---	0.25 U	0.25 U			
1,2-Dichlorobenzene	95-50-1	---	---	14	0.25 U	0.25 U			
1,2-Dichloroethane	107-06-2	---	---	0.15	0.2 U	0.2 U			
1,2-Dichloropropane	78-87-5	---	---	0.39	0.25 U	0.25 U			
1,3,5-Trimethylbenzene	108-67-8	---	---	7.3	0.5 U	0.5 U			
1,3-Dichlorobenzene	541-73-1	---	---	14	0.25 U	0.25 U			
1,3-Dichloropropane	142-28-9	---	---	730	0.5 U	0.5 U			
1,4-Dichlorobenzene	106-46-7	---	---	0.43	0.25 U	0.25 U			
2,2-Dichloropropane	594-20-7	---	---	---	0.5 U	0.5 U			
2-Butanone (MEK)	78-93-3	---	---	7100	5 U	5 U			
2-Chloroethyl Vinyl Ether	110-75-8	---	---	---	5 UJ	5 UJ			
2-Chlorotoluene	95-49-8	---	---	730	0.5 U	0.5 U			
2-Hexanone	591-78-6	---	---	47	5 U	5 U			
4-Chlorotoluene	106-43-4	---	---	730	0.5 U	0.5 U			
4-Isopropyltoluene	99-87-6	---	---	7.3	0.5 U	0.5 U			
4-Methyl-2-pentanone (MIBK)	108-10-1	---	---	170	5 U	5 U			
Acetone	67-64-1	---	---	1500	10 U	10 U			
Acrylonitrile	107-13-1	---	---	---	1 U	1 U			
Benzene	71-43-2	---	---	0.41	0.1 U	0.1 U			
Bromobenzene	108-86-1	---	---	88	0.25 U	0.25 U			
Bromochloromethane	74-97-5	---	---	0.12	0.5 U	0.5 U			
Bromodichloromethane	75-27-4	---	---	0.12	0.5 U	0.5 U			
Bromoform	75-25-2	---	---	8.5	0.5 U	0.5 U			
Bromomethane	74-83-9	---	---	8.7	5 U	5 U			
Carbon Disulfide	75-15-0	---	---	---	5 U	5 U			
Carbon Tetrachloride	56-23-5	---	---	0.16	0.5 U	0.5 U			
Chlorobenzene	108-90-7	---	---	50	0.25 U	0.25 U			
Chloroethane	75-00-3	---	---	47	5 U	5 U			
Chloroform	67-66-3	---	---	0.19	0.5 U	0.5 U			
Chloromethane	74-87-3	---	---	190	2.5 U	2.5 U			
cis-1,2-Dichloroethene	156-59-2	---	---	70	0.2 U	0.2 U			
cis-1,3-Dichloropropene	10061-01-5	---	---	0.055	0.5 U	0.5 U			
Dibromochloromethane	124-48-1	---	---	0.15	0.5 U	0.5 U			
Dibromomethane	74-95-3	---	---	8.2	0.5 U	0.5 U			

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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	Result
Dichlorodifluoromethane (Freon 12)	75-71-8	---	---	390	0.5 U	0.5 U			
Ethylbenzene	100-41-4	7.3	---	1.5	0.53	0.43 J			
Hexachlorobutadiene	87-68-3	---	---	0.86	2.5 U	2.5 U			
Iodomethane	74-88-4	---	---	---	10 U	10 U			
Isopropylbenzene	98-82-8	---	---	7.3	0.5 U	0.5 U			
Methyl tert-Butyl Ether (MTBE)	1634-04-4	---	---	12	0.5 U	0.5 U			
Methylene Chloride	75-09-2	---	---	4.8	5 U	5 U			
Naphthalene	91-20-3	12	---	---	2.5 U	2.5 U			
n-Butylbenzene	104-51-8	---	---	36	0.5 U	0.5 U			
n-Propylbenzene	103-65-1	---	---	64	0.25 U	0.25 U			
o-Xylene	95-47-6	---	---	13	0.25 U	0.25 U			
sec-Butylbenzene	135-98-8	---	---	41	0.5 U	0.5 U			
Styrene	100-42-5	---	---	100	1 U	0.5 U			
tert-Butylbenzene	98-06-6	---	---	48	0.5 U	0.5 U			
Tetrachloroethene	127-18-4	---	---	0.11	0.2 U	0.2 U			
Toluene	108-88-3	---	---	9.8	0.5 U	0.5 U			
trans-1,2-Dichloroethene	156-60-5	---	---	100	0.2 U	0.2 U			
trans-1,3-Dichloropropene	10061-02-6	---	---	0.055	0.5 U	0.5 U			
Trichloroethene	79-01-6	---	---	2	0.2 U	0.2 U			
Trichlorofluoromethane (Freon 11)	75-69-4	---	---	1300	1 U	1 U			
Vinyl Chloride	75-01-4	---	---	0.016	0.1 U	0.1 U			
Xylene (Total)	1330-20-7	---	---	---	0.5 U	0.5 U			
<b>SVOCs, µg/L</b>									
1,2,4-Trichlorobenzene	120-82-1	---	---	2.3	0.0266 UJ	0.0263 UJ			
1,2-Dichlorobenzene	95-50-1	---	---	14	0.0266 UJ	0.0263 UJ			
1,2-Dinitrobenzene	528-29-0	---	---	---	0.266 UJ	0.263 UJ			
1,3-Dichlorobenzene	541-73-1	---	---	14	0.0266 UJ	0.0263 UJ			
1,3-Dinitrobenzene	99-65-0	---	---	---	0.266 UJ	0.263 UJ			
1,4-Dichlorobenzene	106-46-7	---	---	0.43	0.0266 UJ	0.0263 UJ			
1,4-Dinitrobenzene	100-25-4	---	---	---	0.266 UJ	0.263 UJ			
1-Methylnaphthalene	90-12-0	---	---	0.2	0.0213 UJ	0.0211 UJ			
2,3,4,6-Tetrachlorophenol	58-90-2	---	---	1	0.266 J	0.408 J			
2,3,5,6-Tetrachlorophenol	935-95-5	---	---	---	0.0532 R	0.0526 U			
2,4,5-Trichlorophenol	95-95-4	---	---	3.2	0.139 J	0.15			
2,4,6-Trichlorophenol	88-06-2	---	---	0.24	0.105 J	0.114			
2,4-Dichlorophenol	120-83-2	---	---	29	0.352 J-	0.438 J-			
2,4-Dimethylphenol	105-67-9	---	---	42	0.266 UR	0.263 UR			
2,4-Dinitrophenol	51-28-5	---	---	73	0.266 UR	0.263 U			
2,4-Dinitrotoluene	121-14-2	---	---	---	0.106 UJ	0.105 UJ			
2,6-Dinitrotoluene	606-20-2	---	---	---	0.106 UJ	0.211 UJ			

**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	Result
2-Chloronaphthalene	91-58-7	---	---	---	0.0106 UJ	0.0105 UJ			
2-Chlorophenol	95-57-8	---	---	15	0.0532 UR	0.0526 UJ			
2-Methylnaphthalene	91-57-6	---	---	0.2	0.0213 UJ	0.0244 J			
2-Methylphenol	95-48-7	---	---	13	0.0477 J	0.0557 J-			
2-Nitroaniline	88-74-4	---	---	---	0.213 UJ	0.211 UJ			
2-Nitrophenol	88-75-5	---	---	150	0.106 UR	0.105 UJ			
3,3'-Dichlorobenzidine	91-94-1	---	---	0.0028	0.532 R	0.526 UR			
3-Nitroaniline	99-09-2	---	---	---	0.213 UJ	0.211 UJ			
4,6-Dichloro-o-cresol	1570-65-6	---	---	---	0.266 UJ	0.263 U			
4-Bromophenyl phenyl ether	101-55-3	---	---	---	0.0266 UJ	0.0263 UJ			
4-Chloro-3-Methylphenol	59-50-7	---	---	0.32	0.106 UR	0.105 U			
4-Chloroaniline	106-47-8	---	---	---	0.0266 UJ	0.0263 UJ			
4-Chlorophenyl phenyl ether	7005-72-3	---	---	---	0.0266 UJ	0.0263 UJ			
4-Nitroaniline	100-01-6	---	---	---	0.213 UJ	0.211 UJ			
4-Nitrophenol	100-02-7	---	---	150	0.33 UR	0.105 U			
Acenaphthene	83-32-9	---	---	0.2	0.0106 UJ	0.0125 J			
Acenaphthylene	208-96-8	---	---	0.2	0.0106 UJ	0.0105 UJ			
Aniline	62-53-3	---	---	---	0.0532 UJ	0.0526 UJ			
Anthracene	120-12-7	---	---	0.2	0.0106 UJ	0.0105 UJ			
Azobenzene	103-33-3	---	---	---	0.0266 UJ	0.0263 UJ			
Benzo(a)anthracene	56-55-3	0.0012	0.1	0.0018	0.0106 UJ	0.0105 UJ			
Benzo(a)pyrene	50-32-8	0.00012	1	0.0018	0.016 UJ	0.0158 UJ			
Benzo(b)fluoranthene	205-99-2	0.0012	0.1	0.0018	0.016 UJ	0.0158 UJ			
Benzo(g,h,i)Perylene	191-24-2	---	0.01	0.2	0.0106 UJ	0.0105 UJ			
Benzo(k)Fluoranthene	207-08-9	0.0013	0.01	0.0018	0.016 UJ	0.0158 UJ			
Benzoic Acid	65-85-0	---	---	42	1.33 UR	1.32 UR			
Benzyl Alcohol	100-51-6	---	---	8.6	0.106 UJ	0.105 UJ			
bis(2-Chloroethoxy)methane	111-91-1	---	---	---	0.0266 UJ	0.0263 UJ			
bis(2-Chloroethyl)ether	111-44-4	---	---	0.012	0.0266 UJ	0.0263 UJ			
Bis(2-chloroisopropyl) Ether	108-60-1	---	---	0.32	0.0266 UJ	0.0263 UJ			
Bis(2-Ethylhexyl)adipate (Diocetyl Adipate)	103-23-1	---	---	0	0.266 UJ	0.263 UJ			
bis(2-Ethylhexyl)phthalate	117-81-7	0.2	---	0.22	0.213 UJ	0.211 UJ			
Butylbenzylphthalate	85-68-7	---	---	3	0.213 UJ	0.211 UJ			
Carbazole	86-74-8	---	---	3.4	0.016 UJ	0.0158 UJ			
Chrysene	218-01-9	0.0013	0.001	0.0018	0.0106 UJ	0.0105 UJ			
Cresol, Methylphenols, Total	1319-77-3	---	---	---	0.0266 UR	0.0526 UJ			
Dibenzo(a,h)anthracene	53-70-3	0.00012	1	0.0018	0.0106 UJ	0.0105 UJ			
Dibenzofuran	132-64-9	---	---	3.7	0.0106 UJ	0.0105 UJ			
Diethylphthalate	84-66-2	---	---	3	0.213 UJ	0.211 UJ			
Dimethylphthalate	131-11-3	---	---	3	0.213 UJ	0.211 UJ			

**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
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Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
					Result	Result	Result	Result	Result
Di-n-butylphthalate	84-74-2	---	---	3	0.213 UJ	0.211 UJ			
di-n-Octyl Phthalate	117-84-0	---	---	3	0.213 UJ	0.211 UJ			
Fluoranthene	206-44-0	---	---	0.2	0.0106 UJ	0.0105 UJ			
Fluorene	86-73-7	---	---	0.2	0.0106 UJ	0.0105 UJ			
Hexachlorobenzene	118-74-1	0.000029	---	0.000029	0.0106 UJ	0.0105 UJ			
Hexachlorobutadiene	87-68-3	---	---	0.86	0.0266 UJ	0.0263 UJ			
Hexachlorocyclopentadiene	77-47-4	---	---	---	0.0532 UJ	0.0526 UJ			
Hexachloroethane	67-72-1	---	---	---	0.0266 UJ	0.0263 UJ			
Indeno(1,2,3-cd)pyrene	193-39-5	0.0012	0.1	0.0018	0.0106 UJ	0.0105 UJ			
Isophorone	78-59-1	---	---	71	0.0266 UJ	0.0263 UJ			
Naphthalene	91-20-3	12	---	---	0.0213 U	0.0336 J			
Nitrobenzene	98-95-3	---	---	---	0.106 UJ	0.105 UJ			
N-Nitrosodimethylamine	62-75-9	---	---	0.00042	0.0266 UJ	0.0263 UJ			
N-Nitrosodi-n-propylamine	621-64-7	---	---	0	0.0266 UJ	0.0263 UJ			
N-Nitrosodiphenylamine	86-30-6	---	---	0.6	0.0266 UJ	0.0263 UJ			
Pentachlorophenol	87-86-5	0.03	---	0.3	<b>0.215 J</b>	<b>0.234 J+</b>			
Phenanthrene	85-01-8	---	---	0.2	0.0127 J	0.014 J			
Phenol	108-95-2	---	---	110	0.213 UR	0.211 UR			
Pyrene	129-00-0	---	---	0.2	0.0106 UJ	0.0105 UJ			
Pyridine	110-86-1	---	---	---	0.106 UJ	0.105 UJ			
cPAHs <sup>4</sup>	---	0.00012	---	---	0.0158 UJT	0.016 UJT			
<b>Petroleum Hydrocarbons, µg/L</b>									
Diesel-Range Organics (DRO)	68334-30-5	---	---	---	109 U	101 U			
Residual-Range Organics (RRO)	WEY-130-500	---	---	---	217 U	202 U			
Gasoline Range Hydrocarbons	86290-81-5	---	---	---	50 U	50 U			
Diesel-Range Organics (DRO)	68334-30-5	---	---	---	272 U	253 U			
Gasoline Range Organics	GRO	---	---	---	109 U	101 U			
Residual-Range Organics (RRO)	WEY-130-500	---	---	---	272 U	253 U			

**TABLE 4**  
**2024 Annual Laboratory Analytical Results - All Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

					Sample ID	Outfall 22B	Outfall 22B	Outfall 22B	Outfall 22B
					Sample Name	22B-U-S-20240626	22B-U-D-20240626	22B-F-S-20240626	22B-F-D-20240626
					Sample Date	6/26/2024	6/26/2024	6/26/2024	6/26/2024
					N=Normal, FD=Field Duplicate	N	FD	N	FD
Parameter	CAS	Portland Harbor Cleanup Level	Toxicity Equivalency Factor (TEF)	Site Specific SLV	Result	Result	Result	Result	
<b>General Chemistry, µg/L</b>									
Total Suspended Solids	TSS	---	---	---	5000 U	5000 U			

Created by: SLG 10/14/2024

Checked by: DFSC 10/14/2024

**Notes:**

Results formatted in **Bold** indicate concentration above the Portland Harbor Cleanup Level.

Results formatted in *italics* indicate concentration above the Site-Specific Screening Level Value, if there is no Portland Harbor Cleanup Level.

U: The constituent was analyzed for, but was not detected above the reported sample quantitation limit. Reported at the MDL.

UJ: The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met. Reported at the MDL.

J: The constituent was positively identified and detected; however, the concentration reported is an estimated value.

J-: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased low.

J+: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.

R: The constituent was analyzed for, but rejected during data validation.

UR: The constituent was analyzed for and not detected, but rejected during data validation.

EMPC, U: Estimated Maximum Potential Concentration, The EMPC qualifier is applied to a sample result when the signal to noise ratio is at least 2.5:1 for both quantitation ions, but the ion abundance ratio criteria are not met. The laboratory reported the constituent as not detected. Reported at the MDL.

T: Data summation methods detailed in the Program Data Management Plan (EPA 2021) were used to calculate totals for PCBs, cPAHs, dioxins/furans, DDX, and chlordanes. Equations for summing the detected constituents of PCDD/PCDFs, PCBs, and PAHs:

$$1 - TEQ_{PCDDs, PCDFs} = \sum_{i=1}^7 (PCDD_i \cdot TEF_i) + \sum_{i=1}^{10} (PCDF_i \cdot TEF_i)$$

2 - total PCBs calculated and reported by analytical lab as the sum of detected PCBs

3 - total Chlordanes calculated as sum of: alpha-chlordane, gamma-chlordane, oxychlordane, cis-nonachlor, and trans-nonachlor

$$4 - TEQ_{PAH} = \sum_{i=1}^8 (PAH_i \cdot TEF_i)$$

5 - Total DDX = sum of the six DDX isomers (2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 2,4'-DDT, 4,4'-DDT)

Errata #2 for Portland Harbor Superfund Site Record of Decision ROD Table 17, accessed in August 2021 from: <https://semsub.epa.gov/work/10/100200076.pdf>

Site-Specific SLV from Table J-1 of the RI/SCE report (Golder 2014)

TEFs are used for PCDD/PCDFs to calculate a screening level based on the toxicity of 2,3,7,8 TCDD Van den Berg et al. 2006. The 2005 World Health Organization reevaluation of human and mammalian toxic equivalency factors for dioxins and dioxin-like compounds. *Toxicological Sciences*. 2(93):223-241.

Benzo(a)pyrene equivalents from Toxic Equivalency Factors for Carcinogenic PAHs (DEQ 2010, Human Health Risk Assessment Guidance)

**TABLE 5**  
**2015 to 2024 Laboratory Analytical Results - Detected Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples												
			Outfall 22B 22B-U-S-022315 2/23/15	Outfall 22B (FD) 22B-U-D-022315 2/23/15	Outfall 22B 22B-U-S-060815 6/8/15	Outfall 22B (FD) 22B-U-D-060815 6/8/15	Outfall 22B 22B-U-S-092115 9/21/15	Outfall 22B (FD) 22B-U-D-092115 9/21/15	Outfall 22B 22B-U-S-100516 5/10/16	Outfall 22B (FD) 22B-U-D-100516 5/10/16	Outfall 22B 22B-U-S-120916 9/12/16	Outfall 22B (FD) 22B-U-D-120916 9/12/16	Outfall 22B 22B-U-S-230817 8/23/2017	Outfall 22B (FD) 22B-U-D-230817 8/23/2017	Outfall 22B 22B-U-S-250418 4/25/2018
<b>PCDD/PCDFs (µg/L)</b>															
1,2,3,4,6,7,8-HpCDD	---	0.000000051	0.00000399 J	0.00000419 J	0.00000209 U	0.00000125 U	0.0000246 U	0.0000248 U	0.00000216 EMPC, U	0.00000205 EMPC, U	0.0000252 U	0.0000256 U	0.00000368 J	0.00000377 J	0.00000978 J
Octachlorodibenzodioxin (OCDD)	---	0.0000017	0.0000371 J	0.0000294 J	0.0000133 J	0.0000126 J	0.0000202 J	0.0000262 J	0.0000179 J	0.0000306 J	0.0000143 J	0.0000146 J	0.0000491 J	0.0000390 J	0.0000803
2,3,7,8-TCDD Equivalents	0.0000000050	---	<b>0.0000005103</b>	<b>0.0000005072</b>	<b>0.00000000399</b>	<b>0.00000000378</b>	<b>0.00000000606</b>	<b>0.00000002416</b>	<b>0.00000000537</b>	<b>0.00000000918</b>	<b>0.00000000429</b>	<b>0.00000000438</b>	<b>0.00000005153</b>	<b>0.00000004940</b>	<b>0.00000012189</b>
<b>PCBs (µg/L)*</b>															
PCB 105	---	0.000017	0.0000192	<b>0.0000184</b>	0.0000152	<b>0.0000159</b>	0.0000245	<b>0.0000255</b>	0.0000162	<b>0.0000148</b>	0.0000640	0.0000616	0.0000371	0.0000375	0.0000372
PCB 114	---	0.000017	0.00000124 J	0.000000971 J	0.00000489 U	0.00000485 U	0.00000158 J	0.00000135 J	0.0000011 J	0.00000088 J	0.00000335 EMPC, U	0.00000376 J	0.00000189 J	0.00000207 J	0.00000149 U
PCB 156	---	0.000017	0.00000732	0.00000702	0.0000048 J	0.00000639	0.00000676	0.00000709	0.00000619	0.00000506	0.0000139	0.0000129	0.0000129	0.0000125	0.0000120
PCB 157	---	0.000017	0.00000246 J	0.00000206 J	0.00000184 J	0.00000241 J	0.00000153 U	0.0000018 J	0.00000154 J	0.00000154 J	0.00000371 J	0.00000392 J	0.00000346 J	0.00000346 J	0.00000369 J
PCB 189	---	0.000017	0.00000108 J	0.00000113 J	0.000000716 J	0.00000485 U	0.00000657 J	0.00000707 J	0.00000079 J	0.00000537 J	0.00000170 J	0.00000505 U	0.00000101 J	0.00000106 J	0.00000942 J
PCB 77	---	0.0000052	0.0000507 U	0.00000314 J	0.00000338 J	0.00000343 J	0.00000518	0.00000482 J	0.00000256 J	0.00000253 J	0.0000117	0.00000899	0.00000847	0.00000823	0.00000561
PCB106 & 118	---	0.000017	0.0000516	0.0000536	0.0000527	0.0000575	0.0000677	0.0000685	0.0000485	0.0000413	0.000143	0.000128	0.0000884	0.0000879	0.0000829
Total PCBs	0.0000064	0.0000064	<b>0.00171</b>	<b>0.00188</b>	<b>0.00213</b>	<b>0.00228</b>	<b>0.00239 B</b>	<b>0.00237 B</b>	<b>0.0017</b>	<b>0.00152</b>	<b>0.00366</b>	<b>0.0033</b>	<b>0.00256</b>	<b>0.00253</b>	<b>0.00252</b>
<b>Insecticides (µg/L)</b>															
2,4'-DDD	0.000031	0.000031	<b>0.000246</b>	<b>0.000255</b>	<b>0.000109 J</b>	<b>0.0008 U</b>	<b>0.0000703</b>	<b>0.0000705</b>	<b>0.000366</b>	<b>0.00036</b>	<b>0.000138</b>	<b>0.000143</b>	<b>0.000209</b>	<b>0.000207</b>	<b>0.000329</b>
2,4'-DDE	0.000018	0.000022	0.0000169 J	0.0000179 J	0.0016 U	0.0016 U	0.0000142 J	0.0000171 J	0.0000156 J	0.0000163 J	<b>0.0000204 J</b>	0.0000185 J	0.0000145	0.0000118 EMPC,U	<b>0.0000216 J</b>
2,4'-DDT	0.000022	0.000022	<b>0.0000331 J</b>	0.0000359 J	0.0016 U	0.0016 U	<b>0.0000265 J</b>	<b>0.0000257 J</b>	<b>0.000427</b>	0.000412	0.0000207 J	0.0000210 J	0.0000393 U	0.0000394 U	<b>0.0000461</b>
4,4'-DDD	0.000031	0.000031	<b>0.000501</b>	<b>0.0005</b>	0.000211 U	<b>0.000217 J</b>	<b>0.000149</b>	<b>0.000151</b>	<b>0.000794</b>	<b>0.000754</b>	<b>0.000288 J</b>	<b>0.000246 J</b>	<b>0.000643</b>	<b>0.000692</b>	<b>0.00066</b>
4,4'-DDE	0.000018	0.000022	<b>0.000259</b>	<b>0.00026</b>	<b>0.00018 J</b>	<b>0.000208 J</b>	<b>0.000153</b>	<b>0.000154</b>	<b>0.00022</b>	<b>0.000219</b>	<b>0.000176</b>	<b>0.000171</b>	<b>0.000182</b>	<b>0.000181</b>	<b>0.000317</b>
4,4'-DDT	0.000022	0.000022	<b>0.000195</b>	0.000215	0.0016 U	0.0016 U	<b>0.0000889 J+</b>	<b>0.0000946 J+</b>	<b>0.00216</b>	<b>0.00019</b>	<b>0.0000807 J</b>	0.0000943 J	0.0000207	0.0000183 J	<b>0.000188</b>
DDx	0.01	0.001	0.00125	0.00128	0.00029	0.00043	0.00050	0.00051	0.00398	0.00366	0.00072	0.00069	0.00107	0.00110	0.00156
Aldrin	0.0000077	0.000005	<b>0.0000124 J</b>	<b>0.000014 J</b>	0.0008 U	0.0008 U	0.0000398 U	0.0000395 U	<b>0.000103</b>	<b>0.000101</b>	<b>0.0000493</b>	<b>0.0000501</b>	<b>0.000026</b>	<b>0.0000269 J</b>	<b>0.0000642</b>
alpha-BHC	---	0.00049	0.000259	0.000251	0.000192 J	0.000175 J	0.0000265 J	<b>0.0000302 J</b>	0.203	<b>0.204</b>	0.000969	0.000944	0.00632	<b>0.00621</b>	0.00597
alpha-Chlordane	---	0.000081	0.00014	<b>0.000122</b>	0.0000866 U	<b>0.000139 J</b>	0.000186	0.000178	0.000678	0.00166	0.000148	0.000131	0.000326	0.000324	0.000486
beta-BHC	---	0.0017	0.000436	0.000434	0.000152 J	0.000192 J	0.0000309 J	<b>0.0000357 J</b>	0.12	<b>0.12</b>	0.00105	<b>0.00107</b>	0.00875	0.00848	0.0064
cis-Nonachlor	---	0.000081	0.0000226 U	0.000024 J	0.0000321 U	0.0008 U	0.0000335 J	0.0000509	0.0000392 U	0.0000394 U	0.0000199 J	0.0000210 J	0.0000393 U	0.0000375 EMPC,U	0.0000679
delta-BHC	---	0.037	0.0000835	0.0000878	0.0008 U	0.0008 U	0.0000102 U	0.0611	0.061	0.061	0.000378	0.00039	0.00301	0.003	0.00342
Dieldrin	---	0.0000054	0.00261	0.00243	0.000403 J	0.000431 J	0.000327	0.000333	0.157	0.179	0.00344	0.00338	0.0137	0.0141	0.0169
Endosulfan I	---	0.051	0.000847 U	0.000792 U	0.000139 U	0.000195 U	0.000797 U	0.000789 U	0.000196 U	0.000197 U	0.000196 U	0.000195 U	0.000197 U	0.000197 U	0.000135 J
Endosulfan II	---	0.051	0.000423 U	0.000396 U	0.008 U	0.008 U	0.000398 U	0.000395 U	0.000196 U	0.000197 U	0.000196 U	0.000195 U	0.000253	0.000241	0.000173 J
Endosulfan Sulfate	---	0.051	0.0001 J	0.0000773 J	0.008 U	0.008 U	0.0000788 J	0.0000842 J+	0.000196 U	0.000131 J	0.0000937 J	0.0000889 J	0.000494	0.000325 EMPC,U	0.000312
Endrin	---	0.0023	0.000173	0.000165	0.0000729 U	0.0016 U	0.0000279 J	0.0000789 U	0.0121	0.013	0.000342	0.00034	0.00114	0.00114	0.00199
Endrin Aldehyde	---	0.0023	0.0000548 J	0.000396 U	0.000559 U	0.000316 U	0.000398 U	0.000395 U	0.0203	0.000888	0.00196 U	0.000195 U	0.0002	0.000245	0.0000418 J
Endrin Ketone	---	0.0023	0.000614	0.00064	0.00032 U	0.000277 U	0.000307 J	<b>0.000395 U</b>	0.0831	<b>0.102</b>	0.000336 EMPC, U	<b>0.000684 J</b>	0.00269	<b>0.00266</b>	0.00492
gamma-BHC (Lindane)	---	0.08	0.000157	0.000148	0.000154 J	0.000178 J	0.000186	0.000196	0.306 J	0.285	0.00222	0.00226	0.00622	0.00609	0.00542
gamma-Chlordane	---	0.000081	0.000123	<b>0.000111</b>	0.000119 J	<b>0.000131 J</b>	0.000176	0.000174	0.000382	0.000393	0.000122	0.000125	0.00023	0.000234	0.000409
Heptachlor	---	0.000079	0.0000968 U	0.0000088 U	0.004 U	0.004 U	0.0000214 J	0.0000195 U	0.0000354 J	0.0000333 J	0.0000392 U	0.0000390 U	0.0000393 U	0.0000394 U	0.00000367 EMPC,U
Heptachlor Epoxide	---	0.0000039	0.000056	0.0000618	0.0008 U	0.0008 U	0.0000234 J	0.0000395 U	0.000523	0.000593	0.0000586	0.0000619	0.000322	0.000343	0.00022
Hexachlorobenzene	0.000029	---	<b>0.000164 B</b>	0.000165 B	0.0008 U	0.0008 U	<b>0.0000614 J+</b>	<b>0.0000673 J+</b>	<b>0.0000769</b>	<b>0.0000752</b>	<b>0.0000768</b>	<b>0.0000677</b>	<b>0.0000893 J+</b>	<b>0.0000921 J+</b>	<b>0.000151</b>
Methoxychlor	---	0.019	0.0000628 J	0.0000608 J	0.008 U	0.008 U	0.000172 J+	0.000151 J+	0.000334	0.000343	0.000682	0.000675	0.0000393 U	0.0000394 U	0.000151
trans-Heptachlor Epoxide	---	0.0000039	0.0105	<b>0.0124</b>	0.0008 U	<b>0.0008 U</b>	0.0000398 U	<b>0.0000395 U</b>	0.604 J	2.19 J	0.00306	0.00274	0.0393	0.0354	0.0995
trans-Nonachlor	---	0.000081	0.000059	<b>0.0000613</b>	0.0008 U	<b>0.0008 U</b>	0.0000993	0.000102	0.000133	<b>0.000141</b>	0.0000753	<b>0.0000661</b>	0.00954	0.00987	0.000236
Total Chlordanes	0.000081	0.000081	<b>0.000322</b>	<b>0.0003183</b>	<b>0.000119</b>	<b>0.00027</b>	<b>0.0004948</b>	<b>0.0005049</b>	<b>0.001193</b>	<b>0.002194</b>	<b>0.0003652</b>	<b>0.0003431</b>	<b>0.010096</b>	<b>0.010428</b>	<b>0.0011989</b>



**TABLE 5**  
**2015 to 2024 Laboratory Analytical Results - Detected Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples												
			Outfall 22B 22B-U-S-022315 2/23/15	Outfall 22B (FD) 22B-U-D-022315 2/23/15	Outfall 22B 22B-U-S-060815 6/8/15	Outfall 22B (FD) 22B-U-D-060815 6/8/15	Outfall 22B 22B-U-S-092115 9/21/15	Outfall 22B (FD) 22B-U-D-092115 9/21/15	Outfall 22B 22B-U-S-100516 5/10/16	Outfall 22B (FD) 22B-U-D-100516 5/10/16	Outfall 22B 22B-U-S-120916 9/12/16	Outfall 22B (FD) 22B-U-D-120916 9/12/16	Outfall 22B 22B-U-S-230817 8/23/2017	Outfall 22B (FD) 22B-U-D-230817 8/23/2017	Outfall 22B 22B-U-S-250418 4/25/2018
<b>Unfiltered Metals (µg/L)</b>															
Arsenic	0.018	0.014	4.37	4.41	6.4	6.31	4.8	4.94	4.16	3.92	5.67	5.56	6.99	6.84	9.87
Barium	---	4	20.5	20.2	9.67	9.48	8.73	8.76	23	23	9.29	9.18	9.47 J+	9.27 J+	25.4
Cadmium	---	0.09	0.0667 J	0.04 U	0.04 U	0.04 U	0.0556 J	0.0778 J	0.0444 J	0.0444 J	0.133 J	0.0400 U	0.0556 J	0.0400 U	0.0556 J
Calcium	---	116000	37700	37600	27000	29000	24000	23800	33800	34000	26300	26100	25200	25300	48600
Copper	2.74	2.7	2.64	2.9	1.06	0.867 J	1.03	1.06	1.21	1.17	1.22	0.844 J	1.69 J+	1.56 J+	1.67
Iron	---	1000	840	829	448	433	347	344	596	599	491	449	444 J+	431 J+	887
Lead	---	0.54	0.922	0.989	0.767	0.767	1.2	1.3	0.633	0.611	1.12	1.04	1.30 J+	1.29 J+	1.02
Magnesium	---	82000	9810	9710	3080	3120	746	755	8460	8720	1300	1310	2120	2130	11500
Manganese	---	10	201	199	62.9	63	40	40	96.6	95.9	59.6	59.1	89.3	90.1	328
Mercury	---	0.012	0.011	0.011	0.0039	0.0043	0.0059	0.0056	0.0012	0.003	0.0082	0.0079	0.0054 J+	0.0050 J+	0.011
Nickel	---	16	2.79	2.79	1.92	1.87	1.89	1.91	10.2	10.2	2.64	1.97	2.29	2.30	2.46
Zinc	36.5	33	20.4	21.5	5.66	4.47	5.73	5.71	5.94	5.8	10.1	6.91	6.56	5.70	7.51
Hexavalent Chromium	---	0.043	0.2 J+	0.2 J+	0.081	0.061	0.033	0.056	0.052 J+	0.078 J+	0.020 J+	0.022 J+	0.020 U	0.020 U	0.042
<b>Filtered Metals (µg/L) **</b>															
Arsenic	0.018	0.014	4.29	4.25	5.64	6.06	4.92	4.8	4.32	4.21	5.47	5.40	6.91	6.68	8.40
Barium	---	4	18.2	17.3	8.01	8.04	7.71	7.73	20.7	21.4	7.59	7.57	7.97	7.97	21.1
Cadmium	---	0.09	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Calcium	---	116000	37300	37200	31400	29800	24700	24800	33600	33600	26700	26600	25200	25100	42000
Copper	2.74	2.7	1.13	1.01	0.622 J	0.5 J	1.13	0.656 J	0.7 J	0.5	0.567 J	0.544 J	0.678 J	0.867 J	0.500 U
Iron	---	1000	402	343	218	212	226	221	276	273	186	185	270	265	268
Lead	---	0.54	0.167 J	0.111 J	0.289	0.289	0.667	0.667	0.156 J	0.133 J	0.411	0.444	0.633	0.633	0.100 U
Magnesium	---	82000	9160	9030	3570	3490	767	754	8200	7920	1320	1320	2120	2100	9930
Manganese	---	10	185	173	44.5	44.2	27.3	27.5	80.8	80.9	32.0	33.4	61.3	62.7	301
Mercury	---	0.012	0.005	0.0045	0.0031	0.0028	0.0052 J	0.0041 J	0.003	0.0035	0.0059 J-	0.0056 J-	0.0036 J+	0.0040 J+	0.0031
Nickel	---	16	2.77	2.58	1.61	1.52	1.98	1.8	9.84	9.81	1.73	1.77	2.07	2.27	2.11
Zinc	36.5	33	8.3	4.59	2.21 J	2.17 J	4.54	3.64 J	2	2	3.40 J	3.53 J	2.56 J	2.60 J	2.00 U
Hexavalent Chromium	---	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.058 J+
<b>Herbicides (µg/L)</b>															
2,4-D	---	4	0.73 J	0.66 J	2 U	2 U	2.7	2.8	2 U	2 U	2.0 U	2.0 U	2.0 U	2 U	0.2 J
<b>VOCs (µg/L)</b>															
Ethylbenzene	7.3	1.5	1.17	1.23	0.34 J	0.31 J	0.46 J	0.42 J	0.399 J	0.434 J	0.910	0.950	0.250 U	0.250 U	0.372 J
Styrene	---	100	0.82 J	0.87 J	0.5 U	0.5 U	0.5 U	0.5 U	1.25	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.631 J



**TABLE 5**  
**2015 to 2024 Laboratory Analytical Results - Detected Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples												
			Outfall 22B 22B-U-S-022315 2/23/15	Outfall 22B (FD) 22B-U-D-022315 2/23/15	Outfall 22B 22B-U-S-060815 6/8/15	Outfall 22B (FD) 22B-U-D-060815 6/8/15	Outfall 22B 22B-U-S-092115 9/21/15	Outfall 22B (FD) 22B-U-D-092115 9/21/15	Outfall 22B 22B-U-S-100516 5/10/16	Outfall 22B (FD) 22B-U-D-100516 5/10/16	Outfall 22B 22B-U-S-120916 9/12/16	Outfall 22B (FD) 22B-U-D-120916 9/12/16	Outfall 22B 22B-U-S-230817 8/23/2017	Outfall 22B (FD) 22B-U-D-230817 8/23/2017	Outfall 22B 22B-U-S-250418 4/25/2018
<b>SVOCs (µg/L)</b>															
2,3,4,6-Tetrachlorophenol	---	1	0.51 U	0.49 U	1.92 U	1.94 U	0.618 J	0.473 J	0.481 U	0.481 U	0.862 J	0.873 J	0.952 U	0.943 U	0.490 U
2,4,5-Trichlorophenol	---	3.2	2	1.89	5.54	4.59	7.32	6.52	1.94	2.13	7.89	7.96	6.13	5.47	1.05
2,4,6-Trichlorophenol	---	0.24	0.934 J	0.937 J	3 J	2.74 J	3.09	2.67	1	1.16	3.34	3.41	2.86	2.53	0.490 U
2,4-Dichlorophenol	---	29	6.93	7.38	22.9 J	16.5 J	26.1	29.7	8.39	8.68	34.1 J	31.8 J	12.7	11.5	4.85
2-Methylphenol	---	13	1.57	1.65	0.962 U	0.971 U	0.236 U	0.236 U	1.17	1.08	1.47 J	1.24 J	0.476 U	0.472 U	1.50
Pentachlorophenol	0.03	0.3	<b>1.09 J</b>	<b>1.03 J</b>	3.85 U	3.88 U	<b>1.82 J</b>	<b>1.59 J</b>	<b>1.01 J</b>	<b>1.03 J</b>	<b>2.58</b>	<b>2.37</b>	1.90 U	1.89 U	0.980 U

**Notes:**  
 Results formatted in **Bold** indicate concentration above the Portland Harbor Cleanup Level.  
 Results formatted in *italics* indicate concentration above the Site-specific Screening Level Value, if there is no Portland Harbor Cleanup Level.  
 \*Only PCB congeners reported in previous quarterly reports listed. See laboratory results (Table 4) for complete list.  
 \*\* Filtered metals corresponding to the detected total metals listed.  
 --- No comparison level available (see Table 4)  
 FD: Field Duplicate Sample  
 B: This compound was also detected in the method blank.  
 D: Dilution  
 U: The constituent was analyzed for, but was not detected above the sample quantitation limit.  
 UJ: The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met.  
 J -: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.  
 J+: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.  
 NA: Not analyzed  
 ND: Individual constituents were non-detect, therefore the total calculation was non-detect.  
 EMPC, U: Estimated Maximum Potential Concentration, The EMPC qualifier is applied to a sample result when the S/N ratio is at least 2.5:1 for both quantitation ions, but the ion abundance ratio criteria are not met.



**TABLE 5**  
**2015 to 2024 Laboratory Analytical Results - Detected Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples									
			Outfall 22B 22B-U-S-200319 3/20/2019	Outfall 22B 22B-U-S-100420 4/10/2020	Outfall 22B 22B-U-S-140521 5/14/2021	Outfall 22B 22B-U-D-140521 5/14/2021	Outfall 22B 22B-U-S-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-D-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-S-20230628 6/28/2023	Outfall 22B 22B-U/F-S-20240626 6/26/2024	Outfall 22B (FD) 22B-U/F-D-20240626 6/26/2024	
<b>PCDD/PCDFs (µg/L)</b>												
1,2,3,4,6,7,8-HpCDD	---	0.00000051	0.0000299 U					0.0000213 J	0.0000301 J	0.0000113 J	0.0000446 U	0.0000459 EMPC, U
Octachlorodibenzodioxin (OCDD)	---	0.000017	0.000343 J	0.00018 J	0.0000991 U	0.000168 EMPC, U	0.000156 J	0.000188 J	0.0000679 EMPC, U	0.000087 J	0.000115 J	
2,3,7,8-TCDD Equivalents	0.0000000050	---	<b>0.000001029</b>	<b>0.0000000540</b>	ND	ND	<b>0.000000026</b>	<b>0.000000036</b>	<b>0.000000011</b>	<b>0.00000206 JT</b>	<b>0.0000167 JT</b>	
<b>PCBs (µg/L)*</b>												
PCB 105	---	0.000017	0.000208	0.000012	0.0000170 EMPC,U	0.0000169 EMPC,U	0.0000145	0.0000135	0.0000147	0.0000130	0.0000118	
PCB 114	---	0.000017	0.0000119 J	0.00000296 U	0.0000123 U	0.0000146 U	0.0000112 EMPC,U	0.00000503 U	0.00000395 U	0.0000111 J	0.00000648 U	
PCB 156	---	0.000017	0.0000609	0.0000335 J	0.0000138 EMPC,U	0.0000137 EMPC,U	0.0000404 J	0.0000126 EMPC,U	0.0000272 EMPC, U	0.0000344 J	0.0000322 EMPC, U	
PCB 157	---	0.000017	0.000019 J	0.0000112 J	0.0000104 U	0.00000801 U	0.0000139 EMPC,U	0.0000139 EMPC,U	0.0000055 EMPC, U	0.000009 J	0.00000936 EMPC, U	
PCB 189	---	0.000017	0.0000675 EMPC,U	0.00000181 U	0.00000537 U	0.00000503 U	0.0000029 U	0.0000031 U	0.00000547 J	0.00000306 EMPC, U	0.00000164 U	
PCB 77	---	0.0000052	0.0000316 J	0.00002 J	0.0000148 EMPC,U	0.0000275 J	0.0000135 EMPC,U	0.0000304 J	0.0000317 J	0.0000343 J	0.0000375 J	
PCB106 & 118	---	0.000017	0.0000501	0.000027	0.0000282 J	0.0000393 J	0.0000338	0.0000312	0.0000311	0.000029	0.0000271	
Total PCBs	0.0000064	0.0000064	<b>0.00172</b>	<b>0.00101</b>	<b>0.00058</b>	<b>0.000645</b>	<b>0.001049</b>	<b>0.0010</b>	<b>0.00121</b>	<b>0.000724 J</b>	<b>0.000746 J</b>	
<b>Insecticides (µg/L)</b>												
2,4'-DDD	0.000031	0.000031	<b>0.000207</b>	<b>0.000208</b>	<b>0.000143</b>	<b>0.000135</b>	<b>0.000197 J</b>	<b>0.000204 J</b>	<b>0.000134</b>	<b>0.0000891</b>	<b>0.000123</b>	
2,4'-DDE	0.000018	0.000022	<b>0.000135 J</b>	0.0000095 J	0.0000102 EMPC, U	0.00000761 J	0.00000862 J	0.00000851 J	0.00000817 J	0.00000331 U	0.00000865 J	
2,4'-DDT	0.000022	0.000022	<b>0.000144</b>	<b>0.000054</b>	<b>0.0000318 J</b>	<b>0.000033 J</b>	0.0000157 J	0.0000159 J	0.0000159 J	0.0000114 U	0.0000114 U	
4,4'-DDD	0.000031	0.000031	<b>0.000388</b>	<b>0.000392</b>	<b>0.000294</b>	<b>0.000274</b>	<b>0.000446 J</b>	<b>0.000428 J</b>	<b>0.000237</b>	<b>0.000195 J</b>	<b>0.000285 J</b>	
4,4'-DDE	0.000018	0.000022	<b>0.000283</b>	<b>0.000161</b>	<b>0.000118</b>	<b>0.000113</b>	<b>0.000132 J</b>	<b>0.000132 J</b>	<b>0.0000832</b>	<b>0.0000719 J+</b>	<b>0.0000799 J+</b>	
4,4'-DDT	0.000022	0.000022	<b>0.00041</b>	<b>0.000117</b>	<b>0.000129</b>	<b>0.000125</b>	<b>0.0000816 J</b>	<b>0.0000866 J</b>	<b>0.0000708 J</b>	0.0000374 EMPC, U	0.0000428 EMPC, U	
DDx	0.01	0.001	0.0014455	0.0009415	0.0007158	0.00068761	8.81E-04	0.00088	0.00055	0.000524 JT	0.000382 JT	
Aldrin	0.0000077	0.000005	<b>0.0000128 J</b>	0.00000777 EMPC,U	0.0000088 J	0.00000813 U	<b>0.000013 J</b>	<b>0.0000113 J</b>	0.0000032 U	0.00000763 EMPC, U	<b>0.00000931 J</b>	
alpha-BHC	---	0.00049	0.00782	0.00296	0.00411	0.00391	0.00525 J	0.00493 J	0.00133	0.000707	0.000740	
alpha-Chlordane	---	0.000081	0.000273	0.000632	0.000237	0.000239	0.000165 J	0.000172 J	0.000109	0.000091	0.000119	
beta-BHC	---	0.0017	0.00692 J	0.00426	0.00854	0.00834	0.00911 J	0.0089 J	0.00249	0.00217	0.00218	
cis-Nonachlor	---	0.000081	0.0000243 U	0.0000917	0.0000178 U	0.0000217 U	0.0000287 J	0.0000291 J	0.0000204 J	0.0000136 U	0.0000203 J	
delta-BHC	---	0.037	0.00461	0.00226	0.00406	0.00383	0.00395 J	0.00387 J	0.000997	0.000878	0.000924	
Dieldrin	---	0.0000054	0.0119 J	0.0103	0.00822	0.00792	0.0124 J	0.0124 J	0.006	0.00277 J	0.00415 J	
Endosulfan I	---	0.051	0.00005 J	<b>0.0000259 U</b>	<b>0.0000462 EMPC, U</b>	0.000124 J	0.000025 UR	0.0000274 UR	0.0000407 EMPC, U	0.0000109 U	0.0000132 U	
Endosulfan II	---	0.051	0.000104 J	0.0000562 J	0.00019 J	0.000199 J	0.0000433 UR	0.0000223 UR	0.0000649 J	0.0000425 U	0.0000467 EMPC, U	
Endosulfan Sulfate	---	0.051	0.000027 U	0.0000265 EMPC,U	0.00045 J	0.00121 J	0.0000868 J	0.0000811 J	0.0000938 J	0.0000193 U	0.000055 J	
Endrin	---	0.0023	0.00121	0.000955	0.000585	0.000729	0.000935 J	0.000929 J	0.000445	0.000217	0.000254	
Endrin Aldehyde	---	0.0023	0.0000277 U	0.0000572 EMPC,U	0.0000196 U	0.0000333 U	0.0000532 UR	0.000069 J	0.0000833 J	0.0000266 U	0.0000235 U	
Endrin Ketone	---	0.0023	0.00628	0.00337	0.0026	0.00269 J	0.0028 J	0.0028 J	0.000723	0.000282	0.000355	
gamma-BHC (Lindane)	---	0.08	0.00809 J	0.00175 J	0.00169	0.00167	0.00229 J	0.00193 J	0.000395	0.000128	0.000122	
gamma-Chlordane	---	0.000081	0.000114	0.000532	0.0000216 U	0.00018	0.000168 J	0.000159 J	0.0000934 EMPC, U	0.0000548	0.0000673	
Heptachlor	---	0.0000079	0.0000457 U	0.0000982	0.00000148 U	0.00000395 U	0.00000237 UR	0.00000209 UR	0.00000465 U	0.00000261 U	0.00000309 U	
Heptachlor Epoxide	---	0.0000039	0.000113	0.000193	0.0000764	0.0000811	0.0000889 J	0.0000931 J	0.0000593	0.0000366 J	0.0000522	
Hexachlorobenzene	0.000029	---	<b>0.0000957</b>	<b>0.000089</b>	<b>0.0000180 UJ</b>	<b>0.0000178 UJ</b>	<b>0.0000638 J</b>	<b>0.0000641 J</b>	<b>0.0000578</b>	0.0000377 U	0.0000405 U	
Methoxychlor	---	0.019	0.000158	0.000574	0.00000841 U	0.0000648 J	0.000097 J	0.0000967 J	0.0000628 J+	0.0000195 J	0.0000304 J	
trans-Heptachlor Epoxide	---	0.0000039	0.00306 J	0.0647	0.143	0.139	0.509 J	0.513 J	0.0502	0.000122 J	0.00039 J	
trans-Nonachlor	---	0.000081	0.0000675	0.000337	0.0000222 U	0.000115	0.0000885 J	0.0000165 UR	0.0000556	0.0000342 EMPC, U	0.0000328 J	
Total Chlordanes	0.000081	0.000081	<b>0.0004545</b>	<b>0.0015927</b>	<b>0.000237</b>	<b>0.000534</b>	5.48E-01	<b>0.55</b>	<b>0.000185</b>	<b>0.000246 JT</b>	<b>0.00019 JT</b>	

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**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples								
			Outfall 22B 22B-U-S-200319 3/20/2019	Outfall 22B 22B-U-S-100420 4/10/2020	Outfall 22B 22B-U-S-140521 5/14/2021	Outfall 22B 22B-U-D-140521 5/14/2021	Outfall 22B 22B-U-S-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-D-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-S-20230628 6/28/2023	Outfall 22B 22B-U/F-S-20240626 6/26/2024	Outfall 22B (FD) 22B-U/F-D-20240626 6/26/2024
<b>Unfiltered Metals (µg/L)</b>											
Arsenic	0.018	0.014	9.71	9.03	8.07	8.15	8.9	8.79	8.74	7.89	8.03
Barium	---	4	41.7	28.4	17.5	17.1	25.2	24.8	22.4	23.4	23.7
Cadmium	---	0.09	0.0519 J	0.19 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Calcium	---	116000	40900	40000	37600	37200	40500	40400	38900	34400	35000
Copper	2.74	2.7	1.24	1.44 J	1.62 J	1.59 J	1.21 J	1.22 J	1.75 J	1 U	1.05 J
Iron	---	1000	537	387	291	295	406	409	413 J	647	715
Lead	---	0.54	0.559	0.372	0.173 J	0.168 J	0.353	0.356	0.174 J	0.147 J	0.374 J
Magnesium	---	82000	9980	9850	10200	10300	11400	11500	10800	10600	9510
Manganese	---	10	361	266	124	122	171	168	275	113	152
Mercury	---	0.012	0.0095	0.0028	0.00217	0.00233	0.00295	0.00289		0.00145	0.0015
Nickel	---	16	2.22	1.74 J	1.68 J	1.75 J	1.96 J	1.74 J	2.94	2 U	2 U
Zinc	36.5	33	4.7	2.96 J	2.99 J	2.53 J	3.59 J	4.63	3.08 J	0.1 U	0.1 U
Hexavalent Chromium	---	0.043	0.037 J	0.02	0.20 J	0.20 J	0.14 J+	0.15 J+		0.1	0.11
<b>Filtered Metals (µg/L) **</b>											
Arsenic	0.018	0.014	9.06	7.86	7.19	7.04	7.1	7.26	7.29	5.36	5.62
Barium	---	4	38.6	27	16.0	15.7	20.2	20.6	18.9	19.6	20.2
Cadmium	---	0.09	0.1 U	0.185 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Calcium	---	116000	41100	36000	38300	37200	37500	37700	38500	34300	34100
Copper	2.74	2.7	0.5 U	2 U	1.58 J	1 U	1 U	1 U	1 U	1 U	1 U
Iron	---	1000	32.9 J	26.8 J	25 U	25 U	25 U	25 U	25 U	37.4 J	109 J
Lead	---	0.54	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Magnesium	---	82000	10000	9010	10400	10200	10400	10500	11000	10700	10600
Manganese	---	10	350	217	114	114	150	150	222	102	102
Mercury	---	0.012	0.0028 J+	0.00078	0.000878 J	0.000795 J	0.00096 J	0.00104	0.000792 J	0.00069	0.000899
Nickel	---	16	2.16	2 J	1.29 J	1.37 J	1.33 J	1.34 J	1.45 J	2 U	2 U
Zinc	36.5	33	2.0 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.06 J
Hexavalent Chromium	---	0.043	0.037	0.023 J+	0.20 J+	0.18 J+	0.13 J	0.02 UJ	0.027 J+	0.12 J+	0.12 J+
<b>Herbicides (µg/L)</b>											
2,4-D	---	4	0.52	0.08 U	0.08 U	0.08	0.1	0.12	0.08 U	0.08 U	0.08 U
<b>VOCs (µg/L)</b>											
Ethylbenzene	7.3	1.5	0.63	0.705	0.678	0.424 J	0.5 U	0.93	0.68	0.53	0.43 J
Styrene	---	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.61 J	0.5 U	1 U	0.5 U

**TABLE 5**  
**2015 to 2024 Laboratory Analytical Results - Detected Compounds**  
**Outfall 22B IRAM Performance Monitoring**  
**Annual 2024 Report**

Constituent	Portland Harbor Cleanup Level	Site Specific SLV	Outfall Samples								
			Outfall 22B 22B-U-S-200319 3/20/2019	Outfall 22B 22B-U-S-100420 4/10/2020	Outfall 22B 22B-U-S-140521 5/14/2021	Outfall 22B 22B-U-D-140521 5/14/2021	Outfall 22B 22B-U-S-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-D-071322 7/13/2022 & 7/19/2024	Outfall 22B 22B-U-S-20230628 6/28/2023	Outfall 22B 22B-U/F-S-20240626 6/26/2024	Outfall 22B (FD) 22B-U/F-D-20240626 6/26/2024
<b>SVOCs (µg/L)</b>											
2,3,4,6-Tetrachlorophenol	---	1	0.0481 U	0.0498 J	0.0589 J	0.0557 J	0.19 U	0.19 U	0.0481 U	0.266 J	0.408 J
2,4,5-Trichlorophenol	---	3.2	0.0805 J	0.1	0.143	0.158	0.19 U	0.19 U	0.161	0.139 J	0.15
2,4,6-Trichlorophenol	---	0.24	0.104	0.0851 J	0.108	0.121	0.19 U	0.19 U	0.124	0.105 J	0.114
2,4-Dichlorophenol	---	29	0.404 J	0.378	0.446	0.514	0.443	0.617	0.519	0.352 J-	0.438 J-
2-Methylphenol	---	13	0.0752 J	0.068	0.0315 J	0.0341 J	0.0952 U	0.0952 U	0.0908	0.0477 J	0.0557 J-
Pentachlorophenol	0.03	0.3	<b>0.22</b>	<b>0.173 J</b>	<b>0.176 J</b>	<b>0.17 J</b>	0.381 U	0.381 U	<b>0.119 J</b>	<b>0.215 J</b>	<b>0.234 J+</b>

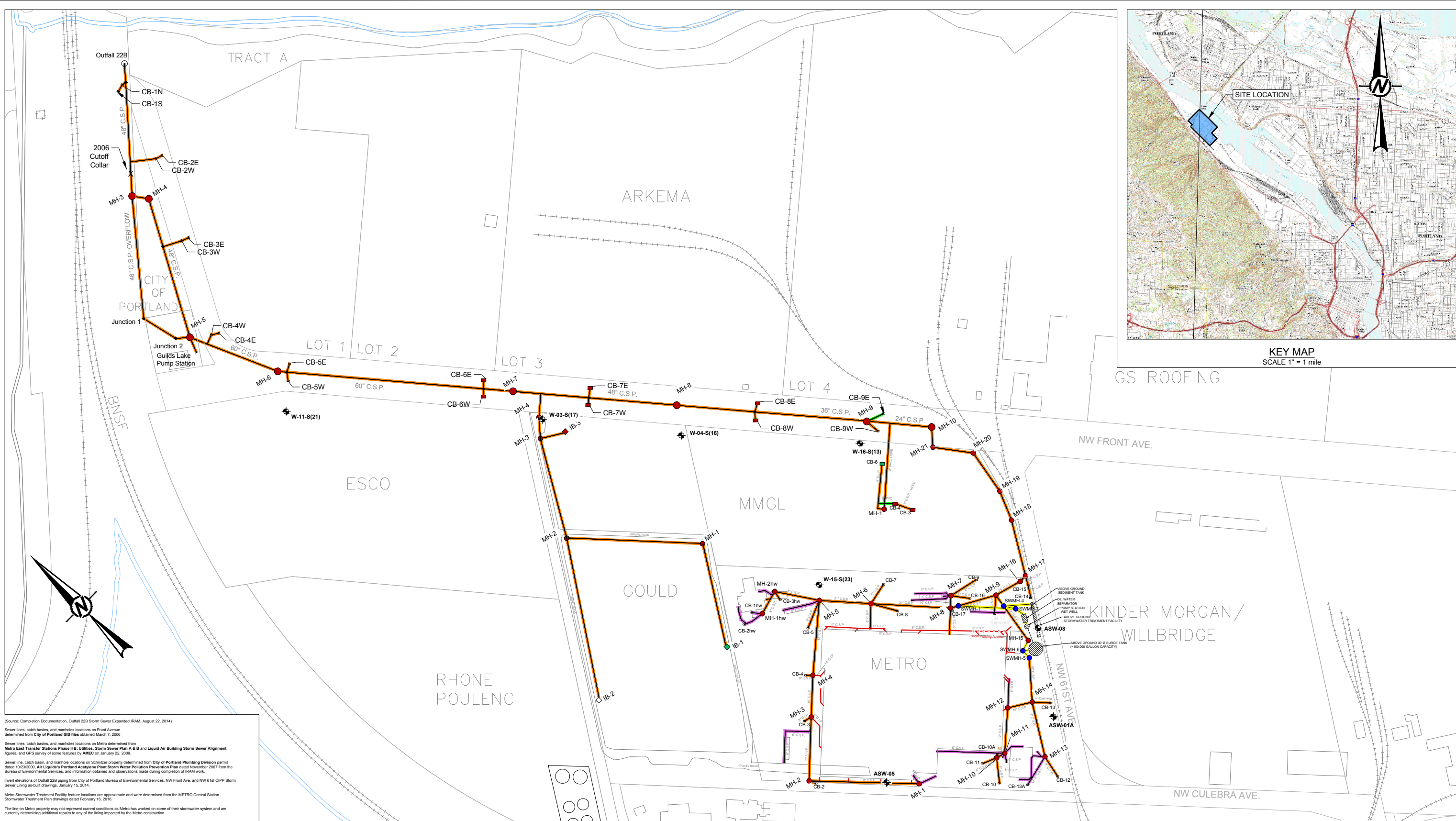
**Notes:**

Results formatted in **Bold** indicate concentration above the Portland Harbor Cleanup Level.  
 Results formatted in *italics* indicate concentration above the Site-specific Screening Level Value, if there is no Portland Harbor Cleanup Level.  
 \*Only PCB congeners reported in previous quarterly reports listed. See laboratory results (Table 4) for complete list.  
 \*\* Filtered metals corresponding to the detected total metals listed.  
 --- No comparison level available (see Table 4)  
 FD: Field Duplicate Sample  
 B: This compound was also detected in the method blank.  
 D: Dilution  
 U: The constituent was analyzed for, but was not detected above the sample quantitation limit.  
 UJ: The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met.  
 J -: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.  
 J+: The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.  
 NA: Not analyzed  
 ND: Individual constituents were non-detect, therefore the total calculation was non-detect.  
 EMPC, U: Estimated Maximum Potential Concentration, The EMPC qualifier is applied to a sample result when the S/N ratio is at least 2.5:1 for both quantitation ions, but the ion abundance ratio criteria are not met.

Created by: SLG 10/11/2024  
 Checked by: JMC 11/13/2024



Figure



(Source: Completion Documentation, Outfall 22B Storm Sewer Expanded IRAM, August 22, 2014)

Sewer lines, catch basins, and manholes locations on Front Avenue determined from City of Portland GIS files obtained March 7, 2006

Sewer lines, catch basins, and manholes locations on Metro determined from Metro East Transfer Station Phase II B: Utilities, Storm Sewer Plan A & B and Liquid Air Building Storm Sewer Alignment figures, and GPS survey of some features by AMEC on January 22, 2009.

Sewer line, catch basin, and manhole locations on Schvitzer property determined from City of Portland Plumbing Division permit dated 10/23/2000, Air Liquide's Portland Acetylene Plant Storm Water Pollution Prevention Plan dated November 2007 from the Bureau of Environmental Services, and information obtained and observations made during completion of IRAM work.

Invert elevations of Outfall 22B piping from City of Portland Bureau of Environmental Services, NW Front Ave. and NW 61st CIPP Storm Sewer Lining as-built drawings, January 15, 2014.

Metro Stormwater Treatment Facility feature locations are approximate and were determined from the METRO Central Station Stormwater Treatment Plan drawings dated February 16, 2016.

The line on Metro property may not represent current conditions as Metro has worked on some of their stormwater system and are currently determining additional repairs to any of the lining impacted by the Metro construction.

**LEGEND**

	Tax Lot Boundary & Existing Features		IRAM Interim Remedial Action Measure
	Surface Water Features		City of Portland Datum
	Railroad Tracks		14.79' Lined Outfall 22B System Piping and Invert Elevations (feet, COPD)
	Outfall 22B Storm Sewer Line		Replaced
	Catch Basin		Not Lined - Limited or No Access
	Outfall		New PVC Pipe Installed For Metro Stormwater Treatment Facility Completed September 2016
	Concrete Sewer Pipe		Not Lined - Roof Drain
	Ductile Iron Pipe		Lined and/or Sealed Manhole
	Cure-In-Place Pipe		Lined and/or Sealed Catch Basin
	Polyvinyl Chloride		Replaced Vault or Catch Basin
	High Density Polyethylene		

ASW-01A Groundwater Well

SWMH-6 Manhole installed for Metro stormwater treatment facility completed September 2016.



CLIENT  
CONFIDENTIAL



CONSULTANT	YYYY-MM-DD	2024-11-20
DESIGNED	JC	
PREPARED	REDMOND	
REVIEWED	JC	
APPROVED	TN	

PROJECT  
PERFORMANCE MONITORING 2024 ANNUAL REPORT

TITLE  
**OUTFALL 22B MONITORING LOCATIONS**

PROJECT NO.  
US0025871.2251

REV.  
A

FIGURE  
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3S-D

**APPENDIX A**

## Field Notes and Photographs

# WATER QUALITY SAMPLING INSTRUMENT CALIBRATION FORM



Project Name: Outfall 22B

Project Number: \_\_\_\_\_

Installation: \_\_\_\_\_

Date: \_\_\_\_\_

Sample Technician(s): Grant Busse

Calibration Start Time: 0650

Calibration End Time: 0720

### Readings Before Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
06/26/24	0650	20.0	7.21	19.9	1.226	12.24		228.5		
			4.15	101						
			9.78	866						

### Readings After Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
06/26/24	0710	20.0	7.02	19.9	1.413	12.25		238.2		
			4.02	101						
			10.00	800						

**Calibration Materials Record:**

pH Calibration Standards			Specific Electrical Conductance, Salinity, Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) Calibration Standards			Turbidity Standards		
Standard	Cal. Standard Lot #	Expiration Date	Standard	Cal. Standard Lot #	Expiration Date	Standard	Cal. Standard Lot #	Expiration Date
pH (4)	46A0631	01/2026	Spec. Conductance	46D0283	04/2026	10		
pH (7)	46B1040	02/2026	Salinity			20	A3198	10/2024
pH (10)	46B0798	02/2026	D.O.	236100162	07/12/2028	100	A3198	10/2024
			ORP			800	A3198	10/2024

**Instruments (Manufacturer, Model, and Serial No.):**

Water Quality Meter: YSI Pro Plus SEA0289  
 Turbidity Meter: Hach 2000  
 Calibrated Within Acceptance Criteria (Y/N): Y

**Notes:**

Signature:

*Grant Busse*

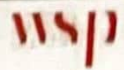
Name (print):

Grant Busse

QA/QC'd by:

QA/QC Date:

Catch Basin Inspection Form



Project Name: OF22B

Date: 6/27/2024

Project Number:

Personnel: GB/CT

	East Side Wet/Dry	West Side Wet/Dry	Time	Recorded By	Notes
1/2 CB-1	Dry	Dry	1102	CT	
3/4 CB-2	Dry	Dry	1104		some brush west side
5/6 CB-3	Dry	Dry	1111		
7/8 CB-4	Dry	Dry	1113		
9/10 CB-5	Dry	Dry	1119		
11/12 CB-6	<del>Dry</del> Wet	Dry	1122		
13/14 CB-7	Wet	Wet	1126		West side has sediment catch
15/16 CB-8	Wet	moist	1133		west side has sediment catcher
17/18 CB-9	Dry	Dry	1137	✓	East side has veg West side has sed catcher



WSP  
15862 SW 72nd Ave Suite 150  
Portland, OR 97224  
(503) 639-3400

SHIP TO:  
Apex Laboratories  
6700 SW Sandburg St  
Tigard, OR 97223  
Atten: Philip Nerenberg  
Lab Phone# (503) 718-2323

### CHAIN OF CUSTODY

DATE: 6/26/2024

COC #: OF22B240626

PAGE: 1 OF 1

<b>Project Name:</b> Lockheed Martin	<b>Project Contact:</b> Ted Norton	<b>Bill To:</b> ted.norton@wsp.com	<b>Disposal Instructions:</b> LAB
<b>Project Number:</b> US0025871.2251.410	<b>Phone Number:</b> 425-833-0777	<b>PO Number:</b>	<b>Shipment Method:</b> WSP
<b>Project Manager:</b> Ted Norton	<b>Project Phase:</b> Outfall 22B Dry Weather Sampling	<b>Reports to:</b> ted.norton@wsp.com, grant.busse@wsp.com, carter.thomas@wsp.com	<b>Waybill Number:</b> N/A

Sample Information							Methods for Analysis													RUSH									
No.	Sample ID	Date & Time Sampled	Sampler's Initials	Matrix	Sample Type	MS/MSD	Dioxins by EPA 1613B	Herbicides by EPA 8151A	OC Pesticides by EPA 1699	PCBs by EPA 1668	SVOCs by EPA 82700/AH by EPA 8270E	TSS	VOCs by EPA 8260/NWTPH-6x	Total Cr-6 by EPA 7195/7196A	Total Cr-6 by EPA 7195/7196A	Dissolved Cr-6 by EPA 7195/7196A	Total Metals by EPA 200.7/200.8	Dissolved Metals by EPA 200.7/200.8	Dissolved Metals by EPA 200.7/200.8	NWTPH-Dx/NWTPH-HCID	Total Hg by EPA 1631E	Dissolved Hg by EPA 1631E	24 Hour	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses	
1	22B-F-D-20240626	06/26/24	CT/GB	W	FD	N											X	X										3	
2	22B-F-S-20240626	06/26/24	CT/GB	W	N	Y											X	X										3	
3	22B-U-D-20240626	06/26/24	CT/GB	W	FD	N	X	X	X	X	X	X	X	X	X	X	X	X										21	
4	22B-U-S-20240626	06/26/24	CT/GB	W	N	Y	X	X	X	X	X	X	X	X	X	X	X	X										39	
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

<b>Sampler's Signature:</b> Grant Busse	<b>Date:</b> 6/26/2024	<b>Time:</b> 14:55	<b>For Lab Use</b> Does COC match samples: Y or N Broken Container: Y or N COC seal intact: Y or N Other problems: Y or N WSDOT contacted: Y or N Date contacted: _____ Cooler Temperature at receipt: _____ °C	<b>Comments:</b> MS/MSD = 22B-F-S-20240626 22B-U-S-20240626 Metals: As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, Se, Zn, Ag
<b>Relinquished By/Affiliation:</b> Grant Busse WSP	<b>Date:</b> 6/26/2024	<b>Time:</b> 14:55		
<b>Received By:</b> WSP Kshemal	<b>Date:</b> 6/26/24	<b>Time:</b> 14:55		
<b>Relinquished By/Affiliation:</b>	<b>Date:</b>	<b>Time:</b>		
<b>Received By:</b>	<b>Date:</b>	<b>Time:</b>		
<b>Relinquished By/Affiliation:</b>	<b>Date:</b>	<b>Time:</b>	<b>Number of Coolers Sent:</b> 5	
<b>Received By (LAB):</b>	<b>Date:</b>	<b>Time:</b>		

OF

22B

6/26/24

0800

GB/CT on-site

0815

Tailgate / stage equip

0900

Sample 22B-U-S-20240626

1228

1238

1317

1325

Parameter readings post sampling

Air temp: 70

Water temp: 15.0

pH: 7.45

ORP: 81.4

Conductivity: 394.4

Turb: 5.82

DO: 28.47

1335

OF 22B flow measurement

6.8 LPM

= 1.8 GPM

Flow channel

10" x 0.25"

1430

GB/CT offsite. Headed to deliver samples to lab

22

Manhole Inspection Form

1154

Project Name: 0722B Date: 6/27/2024

Project Number: Personnel: GB/CT

Well ID	Property Owner	Dry/Wet	Flow? Y/N	Flow Width/Depth	Measurement Time	Recorded By	Notes	
11	MH-3	City of Portland	Wet	N	N/A	1107	CT	6" x 1/4" very small ponded water
12	MH-4	City of Portland	Wet	N	N/A	1109		6" x 1/4" ponded water
10	MH-5	City of Portland	<del>Wet</del> Y	18" x 1/2"	1057			Trickle flow MH between tree + stump
13	MH-6	City of Portland	Wet	Y	2' x 1/2"	1117		steady flow at bottom of channel
14	MH-7	City of Portland	Wet	Y	6" x 1/2"	1125		steady flow
15	MH-8	City of Portland	Wet	N	N/A	1130		1' x 1" standing water
16	MH-9	City of Portland	Wet	Y	6" x 1/2"	1135		trickle flow
17	MH-10	City of Portland	Wet	Y	Pipe	1140		Steady trickle out of inlet pipe
9	MH-4	Gould	Wet	N	N/A	1017		standing water in bottom 6" deep
	MH-1	MMGL						unable to locate, possibly w/in brambles
4	MH-17	MMGL	Wet	N	N/A	0907		18" x 1/2" standing water
5	MH-18	MMGL	Wet	N	N/A	0909		2' x 1/2" standing water
6	MH-19	MMGL	Wet	N	N/A	0912		2' x 1" standing water Full of eggs
7	MH-20	MMGL	Wet	N	N/A	0915		2' x 1/2" standing water
8	MH-21	MMGL	Wet	N	N/A	0918		bottom submerged / 4' deep
3	MH-8	Metro	Wet	N	N/A	0832		2.5' x 1" no flow
2	MH-9	Metro	Wet	N	N/A	0829		3' x 1/2" no flow
1	MH-15	Metro	Wet	Y	2' 1/8"	0826		trickle of flow
4	SWMH-5	Metro	Wet	N	N/A	0859	✓	4' x 2" standing water
		Metro						

blown  
8/7  
away  
post  
flow toward  
lot

## Water Level Form



Project Name: OF22B Date: 6/27/2024  
 Project Number: \_\_\_\_\_ Personnel: GB/CT

Well ID	Property Owner	Depth to Water (ft BTOC)	Measurement Time	Recorded By	Notes
ASW-01	Metro	6.53	0856	CT	
ASW-05	Metro	8.68	0851	↓	
ASW-08					
W-03-S(17)	Gould	5.41	1009		
W-04-S(16)	Gould	5.74	1014		
W-11-S(21)	ESCO	11.23	1032	↓	Beware wasps
W-15-S <sup>14</sup> ( <del>23</del> )	Metro	11.64	0839	GB	
W-16-S(13)	MMG	9.43	0928	CT	Master lock 2126 key
? ASW-08	Metro	9.15	0845	CT	<del>unknown well, possibly</del> ASW-08. Marked on map

**PHOTOGRAPH 1**

SWMH-5 at Metro. Inlet at left, outlet to SWMH-6 at right.



**PHOTOGRAPH 2**

MH-15 at Metro. Inlet from SWMH-6 on bottom, outlet to MH-9 on left.



**PHOTOGRAPH 3**

MH-9 at Metro. Inlets on left and top. Outlet to MH-16 at bottom (gate)



**PHOTOGRAPH 4**

MH-8 on Metro. Inlet on left, outlet to MH-9 on right.



**PHOTOGRAPH 5**

MH-17 at MMGL. Inlet at left, outlet at right.



**PHOTOGRAPH 6**

MH -18 at MMGL. Inlet at left, outlet to MH-19 at right.



**PHOTOGRAPH 7**

MH-19 at MMGL. Inlet at left, outlet to MH-20 at top.



**PHOTOGRAPH 8**

MH-20 at MMGL. Inlet on top, outlet to MH-21 at bottom left.



**PHOTOGRAPH 9**

MH-21 (downstream) at MMGL, outlet at bottom left.



**PHOTOGRAPH 10**

MH-9 near Front Ave.  
Inlets at right, outlet to MH-8 at left.



**PHOTOGRAPH 11**

MH-8 on Front Ave. Inlet at bottom, outlet to MH 7 at top.



**PHOTOGRAPH 12**

MH-7 on Front Ave. Inlet on right, outlet to MH-6 at left.



**PHOTOGRAPH 13**

MH-4 at Gould. Inlet at right, outlet at left.



**PHOTOGRAPH 14**

MH-6 on Front Ave. Inlet at right, outlet to MH-5 at left.



**PHOTOGRAPH 15**

MH-5 at Guild Lake Pump station. Inlet at bottom.



**PHOTOGRAPH 16**

MH-4 near Front Ave. Inlet at top, outlet to MH-3 at bottom.



**PHOTOGRAPH 17**

MH-3 near Front Ave.  
Inlets at bottom and right,  
outlet to Outfall 22B at top.



**PHOTOGRAPH 18**

Outfall 22B facing  
southwest. Willamete  
River behind.



**APPENDIX B**

# Outfall Sampling Worksheet

OUTFALL 22B PERFORMANCE MONITORING  
SURFACE WATER AND OUTFALL SAMPLING WORKSHEET

SAMPLE LOCATION: OF22B      DATE: 6/26/2024      START TIME: 0850  
 PERSONNEL: GB CT      WEATHER: cloudy

MEASUREMENT TYPE	VALUE/UNITS	INSTRUMENT	COMMENTS
AIR TEMP (°C)	<u>17</u>		
WATER TEMPERATURE (°C)	<u>14.5</u>	<u>YSI</u>	
SAMPLE DEPTH (TWC)			
pH	<u>7.15</u>		
ORP	<u>74.6mV</u>		
CONDUCTIVITY	<u>349.5µS/cm</u>		
TURBIDITY	<u>2.34 NTU</u>	<u>Hach</u>	
FERROUS IRON	<u>NA</u>		
DISSOLVED OXYGEN	<u>27.6mg/L</u>	<u>YSI</u>	
OBSERVATIONS	<u>clear</u>	<u>YSI</u>	

ADDITIONAL COMMENTS/OBSERVATION

Sample Collection

Sample Number: \_\_\_\_\_ QA/QC SAMPLE NO.: \_\_\_\_\_ SAMPLE TIME: \_\_\_\_\_  
 SAMPLE COMMENTS: \_\_\_\_\_

LABORATORY: \_\_\_\_\_ COC # \_\_\_\_\_

PARAMETERS	PRESERVATION/ SIZE	Number/ Volume	LABORATORY #	ICED (Y/N)	COMMENTS
Total/Dissolved Metals EPA 200.7 or EPA 200.8	250ml poly HNO3	<u>4/250 mL</u>	<u>APEX</u>	<u>Y</u>	<u>2 Filtered</u>
Total/Dissolved Mercury EPA 1631E	250mL glass HCl	<u>4/250 mL</u>			<u>2 Filtered</u>
Total/Dissolved Hexavalent Chromium EPA 7195 or EPA	250ml poly NH4OH	<u>4/250 mL</u>			<u>2 Filtered</u>
Volatile Organic Compounds (VOCs) EPA 8260C/Gx	3-40mL VOA HCl, 2-40ml Unpres, cool 4°C	<u>14 VOA's</u>			<u>Primary 5 VOA's Dup 5 VOA's MS/MSD 4 VOA's</u>
Semivolatile Organic Compounds (SVOCs) EPA 8270D	2 1L Amber Glass, cool 4°C	<u>6-1L</u>			<u>Primary 3-1L Dup 3-1L MS/MSD 2-1L</u>
Polychlorinated Biphenyls EPA 1668A	2 1L Amber Glass, cool 4°C	<u>7-1L</u>			<u>Primary 2-1L Dup 2-1L MS/MSD 3-1L</u>
Organochlorine Pesticides EPA 1699	2 1L Amber Glass, cool 4°C	<u>7-1L</u>			
Chlorinated Herbicides EPA 8151A	2 1L Amber Glass, cool 4°C	<u>7-1L</u>			
PCDDs/PCDFs EPA 1613B (Dioxins)	2 1L Amber Glass, cool 4°C	<u>7-1L</u>			
Petroleum Hydrocarbon Identification NWTPH-41010	2 1-L glass HCl, cool 4°C	<u>4-1L</u>			<u>Primary 2-1L Dup 2-1L</u>
Total Suspended Solids (TSS)	250mL poly unpreserved	<u>2-250 mL</u>			<u>Primary 1-250mL Dup 1-250mL</u>

SOP-3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO: \_\_\_\_\_ SAMPLE METHOD USED: \_\_\_\_\_

QA/QC SAMPLE COLL/DESCRIBE: Yes Dup & MS/MSD      SAMPLE TYPE (GRAB, SPLIT, ETC.): Grab

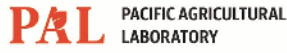
CHAIN OF CUSTODY COMPLETED? YES/NO: Y      INSTRUMENT CALIBRATION (DATE/TIME): 0650

WASTE DISPOSAL METHOD: N/A      CALIBRATION STANDARD: \_\_\_\_\_

ADDITIONAL COMMENTS: \_\_\_\_\_

**APPENDIX C**

## Laboratory Data Reports



Apex Laboratories  
6700 SW Sandburg St  
Tigard, OR 97223

Report Number: P241097  
Report Date: July 15, 2024  
Client Project ID: A4F1545

## Analytical Report

Client Sample ID: 22B-U-D-20240626  
Matrix: water

PAL Sample ID: P241097-01  
Sample Date: 6/26/24  
Received Date: 6/27/24

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
<b>Method:</b> Modified EPA 8151A (GC-MS/MS)					
7/03/24	7/10/24	2,4,5-T	0.091 ug/L	0.080 ug/L	
7/03/24	7/10/24	2,4,5-TP	ND	0.080 ug/L	
7/03/24	7/10/24	2,4-D	ND	0.080 ug/L	
7/03/24	7/10/24	2,4-DB	ND	0.080 ug/L	
7/03/24	7/10/24	Acifluorfen	ND	0.080 ug/L	
7/03/24	7/10/24	Bentazon	ND	0.080 ug/L	
7/03/24	7/10/24	Clopyralid	ND	0.080 ug/L	
7/03/24	7/10/24	Dicamba	ND	0.080 ug/L	
7/03/24	7/10/24	Dichlorprop	ND	0.080 ug/L	
7/03/24	7/10/24	Dinoseb	ND	0.080 ug/L	
7/03/24	7/10/24	MCPA	ND	0.080 ug/L	
7/03/24	7/10/24	MCPP	ND	0.080 ug/L	
7/03/24	7/10/24	Picloram	ND	0.080 ug/L	
7/03/24	7/10/24	Quinclorac	ND	0.080 ug/L	
7/03/24	7/10/24	Triclopyr	ND	0.080 ug/L	

Surrogate Recovery: 89 %  
Surrogate Recovery Range: 25-130  
(DCPAA used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017  
Quality Standard.

Kara Greer, Project Manager



Apex Laboratories  
6700 SW Sandburg St  
Tigard, OR 97223

Report Number: P241097  
Report Date: July 15, 2024  
Client Project ID: A4F1545

## Analytical Report

Client Sample ID: 22B-U-S-20240626  
Matrix: water

PAL Sample ID: P241097-02  
Sample Date: 6/26/24  
Received Date: 6/27/24

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
<b>Method:</b> Modified EPA 8151A (GC-MS/MS)					
7/03/24	7/10/24	2,4,5-T	0.087 ug/L	0.080 ug/L	
7/03/24	7/10/24	2,4,5-TP	ND	0.080 ug/L	
7/03/24	7/10/24	2,4-D	ND	0.080 ug/L	
7/03/24	7/10/24	2,4-DB	ND	0.080 ug/L	
7/03/24	7/10/24	Acifluorfen	ND	0.080 ug/L	
7/03/24	7/10/24	Bentazon	ND	0.080 ug/L	
7/03/24	7/10/24	Clopyralid	ND	0.080 ug/L	
7/03/24	7/10/24	Dicamba	ND	0.080 ug/L	
7/03/24	7/10/24	Dichlorprop	ND	0.080 ug/L	
7/03/24	7/10/24	Dinoseb	ND	0.080 ug/L	
7/03/24	7/10/24	MCPA	ND	0.080 ug/L	
7/03/24	7/10/24	MCPP	ND	0.080 ug/L	
7/03/24	7/10/24	Picloram	ND	0.080 ug/L	
7/03/24	7/10/24	Quinclorac	ND	0.080 ug/L	
7/03/24	7/10/24	Triclopyr	ND	0.080 ug/L	

Surrogate Recovery: 83 %  
Surrogate Recovery Range: 25-130  
(DCPAA used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017  
Quality Standard.

Kara Greer, Project Manager

Apex Laboratories  
6700 SW Sandburg St  
Tigard, OR 97223

Report Number: P241097  
Report Date: July 15, 2024  
Client Project ID: A4F1545

## Quality Assurance

### Method Blank Data Matrix: water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
7/3/24	7/10/24	24G0301-BLK1	2,4,5-T	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	2,4,5-TP	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	2,4-D	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	2,4-DB	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Acifluorfen	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Bentazon	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Clopyralid	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Dicamba	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Dichlorprop	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Dinoseb	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	MCPA	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	MCPP	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Picloram	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Quinclorac	Not Detected	< 0.080 ug/L	
7/3/24	7/10/24	24G0301-BLK1	Triclopyr	Not Detected	< 0.080 ug/L	

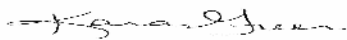
### Blank Spike Data Matrix: water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
7/3/24	7/10/24	24G0301-BS1	2,4-D	98	51-141	
7/3/24	7/10/24	24G0301-BSD1	2,4-D	88	51-141	
7/3/24	7/10/24	24G0301-BS1	Dicamba	88	40-122	
7/3/24	7/10/24	24G0301-BSD1	Dicamba	90	40-122	
7/3/24	7/10/24	24G0301-BS1	Triclopyr	99	53-127	
7/3/24	7/10/24	24G0301-BSD1	Triclopyr	91	53-127	

### Matrix Spike Data Matrix: water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
7/3/24	7/10/24	24G0301-MS1	2,4-D	95	60-140	
7/3/24	7/10/24	24G0301-MSD1	2,4-D	88	60-140	
7/3/24	7/10/24	24G0301-MS1	Dicamba	90	60-140	
7/3/24	7/10/24	24G0301-MSD1	Dicamba	85	60-140	
7/3/24	7/10/24	24G0301-MS1	Triclopyr	96	60-140	
7/3/24	7/10/24	24G0301-MSD1	Triclopyr	89	60-140	

*This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.*





**PACAGLAB.COM**

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21830 S.W. Alexander Ln  
Sherwood, OR 97140

Apex Laboratories  
6700 SW Sandburg St  
Tigard, OR 97223

**Report Number:** P241097  
**Report Date:** July 15, 2024  
**Client Project ID:** A4F1545

A handwritten signature in black ink, appearing to read "Kara Greer", is positioned above a horizontal line.

Kara Greer, Project Manager

*This analytical report complies with the ISO/IEC 17025:2017  
Quality Standard.*



August 30, 2024

**Enthalpy Analytical - El Dorado Hills  
Work Order No. 2406214**

Mr. Philip Nerenberg  
Apex Laboratories  
6700 S.W. Sandburg Street  
Tigard, OR 97223

Dear Mr. Nerenberg,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on June 28, 2024 under your Project Name 'A4F1545 / RP Portland Harbor'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [kathy.zipp@enthalpy.com](mailto:kathy.zipp@enthalpy.com).

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

A handwritten signature in blue ink that reads 'Kathy Zipp'.

Kathy Zipp  
Project Manager

*Enthalpy Analytical - EDH certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Enthalpy Analytical - EDH.*

## **Enthalpy Analytical - EDH Work Order No. 2406214**

### **Case Narrative**

#### **Sample Condition on Receipt:**

Two water samples were received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The samples were received in good condition and within the method temperature requirements.

#### **Analytical Notes:**

##### **EPA Method 1613B**

The samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613B using a ZB-DIOXIN GC column.

##### Holding Times

The samples were extracted and analyzed within the method hold times.

##### Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected above the sample quantitation limit in the Method Blank. The OPR recoveries were within the method acceptance criteria.

As requested, an MS/MSD was performed on sample "22B-U-S-20240626". The MS/MSD recoveries and RPDs were within acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

##### **EPA Method 1668C**

The samples were extracted and analyzed for 209 PCB congeners by EPA Method 1668C using a ZB-1 GC column.

##### Holding Times

The samples were extracted and analyzed within the method hold times.

##### Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the

preparation batch. No analytes were detected above the sample quantitation limits in the Method Blank. The OPR recoveries were within the method acceptance criteria.

As requested, an MS/MSD was performed on sample "22B-U-S-20240626". The MS/MSD recoveries and RPDs were within acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

### **EPA Method 1699**

The samples were extracted and analyzed for chlorinated pesticides by EPA Method 1699 using a ZB-50 GC column.

### **Holding Times**

The samples were extracted and analyzed within the method hold times.

### **Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected above the sample quantitation limits in the Method Blank. The OPR recoveries were within the method acceptance criteria.

As requested, an MS/MSD was performed on sample "22B-U-S-20240626". The MS/MSD recoveries were within acceptance criteria. The RPD for trans-Heptachlor Epoxide was outside the acceptance criteria. All other RPDs were within acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

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# Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2406214-01	22B-U-D-20240626	26-Jun-24 12:38	28-Jun-24 11:32	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L
2406214-02	22B-U-S-20240626	26-Jun-24 09:00	28-Jun-24 11:32	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L

## **ANALYTICAL RESULTS**

**Sample ID: Method Blank**
**EPA Method 1613B**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H176-BLK1	Date Extracted:	19-Aug-24
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H176	Column:	ZB-DIOXIN
Matrix:	Aqueous	Sample Size:	1.00 L		

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	0.606	3.92			23-Aug-24 21:14	1
1,2,3,7,8-PeCDD	ND	1.36	8.32			23-Aug-24 21:14	1
1,2,3,4,7,8-HxCDD	ND	2.00	6.58			23-Aug-24 21:14	1
1,2,3,6,7,8-HxCDD	ND	1.64	5.81			23-Aug-24 21:14	1
1,2,3,7,8,9-HxCDD	ND	2.11	5.99			23-Aug-24 21:14	1
1,2,3,4,6,7,8-HpCDD	3.10		5.53		J	23-Aug-24 21:14	1
OCDD	ND	2.40	16.3			23-Aug-24 21:14	1
2,3,7,8-TCDF	ND	0.678	1.74			23-Aug-24 21:14	1
1,2,3,7,8-PeCDF	ND	0.717	6.71			23-Aug-24 21:14	1
2,3,4,7,8-PeCDF	ND	0.676	7.55			23-Aug-24 21:14	1
1,2,3,4,7,8-HxCDF	ND	1.05	6.81			23-Aug-24 21:14	1
1,2,3,6,7,8-HxCDF	ND	0.997	6.11			23-Aug-24 21:14	1
2,3,4,6,7,8-HxCDF	ND	1.22	5.93			23-Aug-24 21:14	1
1,2,3,7,8,9-HxCDF	ND	1.41	6.34			23-Aug-24 21:14	1
1,2,3,4,6,7,8-HpCDF	ND	1.07	6.28			23-Aug-24 21:14	1
1,2,3,4,7,8,9-HpCDF	ND	1.44	7.33			23-Aug-24 21:14	1
OCDF	ND	1.92	13.6			23-Aug-24 21:14	1

**Toxic Equivalent**

TEQMinWHO2005Dioxin	0.0310
---------------------	--------

**Totals**

Total TCDD	11.2			19.6			
Total PeCDD	20.2			21.0	J		
Total HxCDD	12.4				J		
Total HpCDD	7.72				J		
Total TCDF	ND			2.01			
Total PeCDF	ND	0.717					
Total HxCDF	ND	1.41					
Total HpCDF	ND	1.44					

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	91.2	25 - 164		23-Aug-24 21:14	1
13C-1,2,3,7,8-PeCDD	IS	92.1	25 - 181		23-Aug-24 21:14	1
13C-1,2,3,4,7,8-HxCDD	IS	68.5	32 - 141		23-Aug-24 21:14	1
13C-1,2,3,6,7,8-HxCDD	IS	81.2	28 - 130		23-Aug-24 21:14	1
13C-1,2,3,7,8,9-HxCDD	IS	70.5	32 - 141		23-Aug-24 21:14	1
13C-1,2,3,4,6,7,8-HpCDD	IS	89.0	23 - 140		23-Aug-24 21:14	1
13C-OCDD	IS	77.9	17 - 157		23-Aug-24 21:14	1
13C-2,3,7,8-TCDF	IS	92.0	24 - 169		23-Aug-24 21:14	1
13C-1,2,3,7,8-PeCDF	IS	98.0	24 - 185		23-Aug-24 21:14	1
13C-2,3,4,7,8-PeCDF	IS	93.0	21 - 178		23-Aug-24 21:14	1
13C-1,2,3,4,7,8-HxCDF	IS	74.6	26 - 152		23-Aug-24 21:14	1
13C-1,2,3,6,7,8-HxCDF	IS	72.9	26 - 123		23-Aug-24 21:14	1
13C-2,3,4,6,7,8-HxCDF	IS	71.6	28 - 136		23-Aug-24 21:14	1
13C-1,2,3,7,8,9-HxCDF	IS	76.2	29 - 147		23-Aug-24 21:14	1
13C-1,2,3,4,6,7,8-HpCDF	IS	91.5	28 - 143		23-Aug-24 21:14	1
13C-1,2,3,4,7,8,9-HpCDF	IS	100	26 - 138		23-Aug-24 21:14	1
13C-OCDF	IS	108	17 - 157		23-Aug-24 21:14	1
37Cl-2,3,7,8-TCDD	CRS	97.0	35 - 197		23-Aug-24 21:14	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

**Sample ID: OPR**
**EPA Method 1613B**

Client Data		Laboratory Data				
Name:	Apex Laboratories	Lab Sample:	B24H176-BS1		Date Extracted:	19-Aug-24 11:21
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H176		Column:	ZB-DIOXIN
Matrix:	Aqueous	Sample Size:	1.00 L			

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	198	200	99.2	67-158		23-Aug-24 18:54	1
1,2,3,7,8-PeCDD	1110	1000	111	70-142		23-Aug-24 18:54	1
1,2,3,4,7,8-HxCDD	1110	1000	111	70-164		23-Aug-24 18:54	1
1,2,3,6,7,8-HxCDD	1120	1000	112	76-134		23-Aug-24 18:54	1
1,2,3,7,8,9-HxCDD	1080	1000	108	64-162		23-Aug-24 18:54	1
1,2,3,4,6,7,8-HpCDD	1160	1000	116	70-140	B	23-Aug-24 18:54	1
OCDD	2250	2000	112	78-144		23-Aug-24 18:54	1
2,3,7,8-TCDF	203	200	101	75-158		23-Aug-24 18:54	1
1,2,3,7,8-PeCDF	1070	1000	107	80-134		23-Aug-24 18:54	1
2,3,4,7,8-PeCDF	1120	1000	112	68-160		23-Aug-24 18:54	1
1,2,3,4,7,8-HxCDF	1110	1000	111	72-134		23-Aug-24 18:54	1
1,2,3,6,7,8-HxCDF	1130	1000	113	84-130		23-Aug-24 18:54	1
2,3,4,6,7,8-HxCDF	1130	1000	113	70-156		23-Aug-24 18:54	1
1,2,3,7,8,9-HxCDF	1110	1000	111	78-130		23-Aug-24 18:54	1
1,2,3,4,6,7,8-HpCDF	1140	1000	114	82-122		23-Aug-24 18:54	1
1,2,3,4,7,8,9-HpCDF	1150	1000	115	78-138		23-Aug-24 18:54	1
OCDF	2400	2000	120	63-170		23-Aug-24 18:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	99.2	20-175		23-Aug-24 18:54	1
13C-1,2,3,7,8-PeCDD	IS	102	21-227		23-Aug-24 18:54	1
13C-1,2,3,4,7,8-HxCDD	IS	65.1	21-193		23-Aug-24 18:54	1
13C-1,2,3,6,7,8-HxCDD	IS	75.8	25-163		23-Aug-24 18:54	1
13C-1,2,3,7,8,9-HxCDD	IS	66.0	21-193		23-Aug-24 18:54	1
13C-1,2,3,4,6,7,8-HpCDD	IS	81.1	26-166		23-Aug-24 18:54	1
13C-OCDD	IS	71.7	13-199		23-Aug-24 18:54	1
13C-2,3,7,8-TCDF	IS	96.1	22-152		23-Aug-24 18:54	1
13C-1,2,3,7,8-PeCDF	IS	110	21-192		23-Aug-24 18:54	1
13C-2,3,4,7,8-PeCDF	IS	108	13-328		23-Aug-24 18:54	1
13C-1,2,3,4,7,8-HxCDF	IS	69.7	19-202		23-Aug-24 18:54	1
13C-1,2,3,6,7,8-HxCDF	IS	67.7	21-159		23-Aug-24 18:54	1
13C-2,3,4,6,7,8-HxCDF	IS	68.8	22-176		23-Aug-24 18:54	1
13C-1,2,3,7,8,9-HxCDF	IS	69.4	17-205		23-Aug-24 18:54	1
13C-1,2,3,4,6,7,8-HpCDF	IS	82.1	21-158		23-Aug-24 18:54	1
13C-1,2,3,4,7,8,9-HpCDF	IS	90.8	20-186		23-Aug-24 18:54	1
13C-OCDF	IS	87.4	13-199		23-Aug-24 18:54	1
37Cl-2,3,7,8-TCDD	CRS	107	31-191		23-Aug-24 18:54	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1613B**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H176	Date Extracted:	19-Aug-24
Matrix:	Water	Sample Size:	0.906 L	Column:	ZB-DIOXIN
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	0.900	4.33			23-Aug-24 22:01	1
1,2,3,7,8-PeCDD	ND	1.34	9.18			23-Aug-24 22:01	1
1,2,3,4,7,8-HxCDD	ND	2.93	7.26			23-Aug-24 22:01	1
1,2,3,6,7,8-HxCDD	ND	2.38	6.41			23-Aug-24 22:01	1
1,2,3,7,8,9-HxCDD	ND	3.18	6.61			23-Aug-24 22:01	1
1,2,3,4,6,7,8-HpCDD	ND		6.10	4.59		23-Aug-24 22:01	1
OCDD	11.5		18.0		J	23-Aug-24 22:01	1
2,3,7,8-TCDF	ND	0.872	1.92			23-Aug-24 22:01	1
1,2,3,7,8-PeCDF	ND	1.01	7.41			23-Aug-24 22:01	1
2,3,4,7,8-PeCDF	ND	0.990	8.33			23-Aug-24 22:01	1
1,2,3,4,7,8-HxCDF	ND	1.21	7.52			23-Aug-24 22:01	1
1,2,3,6,7,8-HxCDF	ND	1.19	6.74			23-Aug-24 22:01	1
2,3,4,6,7,8-HxCDF	ND	1.32	6.54			23-Aug-24 22:01	1
1,2,3,7,8,9-HxCDF	ND	1.72	7.00			23-Aug-24 22:01	1
1,2,3,4,6,7,8-HpCDF	ND	1.16	6.93			23-Aug-24 22:01	1
1,2,3,4,7,8,9-HpCDF	ND	1.56	8.09			23-Aug-24 22:01	1
OCDF	ND	2.87	15.0			23-Aug-24 22:01	1

**Toxic Equivalent**

TEQMinWHO2005Dioxin	0.00345
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**Totals**

Total TCDD	21.0			23.4		B
Total PeCDD	23.3			27.2		J, B
Total HxCDD	8.18			15.6		J, B
Total HpCDD	6.34			10.9		J, B
Total TCDF	3.30			4.30		J
Total PeCDF	ND	1.01				
Total HxCDF	ND	1.72				
Total HpCDF	ND	1.56				

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	92.5	25 - 164		23-Aug-24 22:01	1
13C-1,2,3,7,8-PeCDD	IS	92.6	25 - 181		23-Aug-24 22:01	1
13C-1,2,3,4,7,8-HxCDD	IS	52.9	32 - 141		23-Aug-24 22:01	1
13C-1,2,3,6,7,8-HxCDD	IS	63.2	28 - 130		23-Aug-24 22:01	1
13C-1,2,3,7,8,9-HxCDD	IS	52.6	32 - 141		23-Aug-24 22:01	1
13C-1,2,3,4,6,7,8-HpCDD	IS	68.8	23 - 140		23-Aug-24 22:01	1
13C-OCDD	IS	65.9	17 - 157		23-Aug-24 22:01	1
13C-2,3,7,8-TCDF	IS	87.5	24 - 169		23-Aug-24 22:01	1
13C-1,2,3,7,8-PeCDF	IS	99.3	24 - 185		23-Aug-24 22:01	1
13C-2,3,4,7,8-PeCDF	IS	93.8	21 - 178		23-Aug-24 22:01	1
13C-1,2,3,4,7,8-HxCDF	IS	57.0	26 - 152		23-Aug-24 22:01	1
13C-1,2,3,6,7,8-HxCDF	IS	58.1	26 - 123		23-Aug-24 22:01	1
13C-2,3,4,6,7,8-HxCDF	IS	58.0	28 - 136		23-Aug-24 22:01	1
13C-1,2,3,7,8,9-HxCDF	IS	56.7	29 - 147		23-Aug-24 22:01	1
13C-1,2,3,4,6,7,8-HpCDF	IS	71.4	28 - 143		23-Aug-24 22:01	1
13C-1,2,3,4,7,8,9-HpCDF	IS	80.8	26 - 138		23-Aug-24 22:01	1
13C-OCDF	IS	70.8	17 - 157		23-Aug-24 22:01	1
37Cl-2,3,7,8-TCDD	CRS	95.2	35 - 197		23-Aug-24 22:01	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

Sample ID: 22B-U-S-20240626

EPA Method 1613B

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	2u-3Zn-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H176	Date Extracted:	19-AZg-24
Matrix:	J ater	Sample Size:	0.94u L	ColZmn:	1 B-DXWON
Date Collected:	26-3Zn-24 09:00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,v,7,u-TCDD	ND	0.674	4.1v			2v-AZg-24 22:47	1
1,2,v,7,u-PeCDD	ND	1.17	u.77			2v-AZg-24 22:47	1
1,2,v,4,7,u-HxCDD	ND	1.uu	6.94			2v-AZg-24 22:47	1
1,2,v,6,7,u-HxCDD	ND	1.64	6.1v			2v-AZg-24 22:47	1
1,2,v,7,u,9-HxCDD	ND	1.79	6.v2			2v-AZg-24 22:47	1
1,2,v,4,6,7,u-HpCDD	4.46		5.uv		3, B	2v-AZg-24 22:47	1
XCDD	u.70		17.2		3	2v-AZg-24 22:47	1
2,v,7,u-TCDF	ND	0.729	1.uv			2v-AZg-24 22:47	1
1,2,v,7,u-PeCDF	ND	1.16	7.0u			2v-AZg-24 22:47	1
2,v,4,7,u-PeCDF	ND	1.06	7.96			2v-AZg-24 22:47	1
1,2,v,4,7,u-HxCDF	ND	1.12	7.1u			2v-AZg-24 22:47	1
1,2,v,6,7,u-HxCDF	ND	0.9u4	6.44			2v-AZg-24 22:47	1
2,v,4,6,7,u-HxCDF	ND	1.16	6.25			2v-AZg-24 22:47	1
1,2,v,7,u,9-HxCDF	ND	1.vu	6.69			2v-AZg-24 22:47	1
1,2,v,4,6,7,u-HpCDF	ND		6.62	1.0v		2v-AZg-24 22:47	1
1,2,v,4,7,u,9-HpCDF	ND	1.67	7.7v			2v-AZg-24 22:47	1
XCDF	ND	2.60	14.v			2v-AZg-24 22:47	1

Toxic Equivalent	
TEQMinJ HX2005Dioxin	0.0472

Totals			
Total TCDD	10.7	27.9	B
Total PeCDD	29.2	vv.0	B
Total HxCDD	15.0	2v.1	3, B
Total HpCDD	12.2		3, B
Total TCDF	4.42	5.41	3
Total PeCDF	ND	1.14	
Total HxCDF	0.5v9		3
Total HpCDF	ND	1.0v	

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1vC-2,v,7,u-TCDD	☒	102	25 - 164		2v-AZg-24 22:47	1
1vC-1,2,v,7,u-PeCDD	☒	97.u	25 - 1u1		2v-AZg-24 22:47	1
1vC-1,2,v,4,7,u-HxCDD	☒	60.7	v2 - 141		2v-AZg-24 22:47	1
1vC-1,2,v,6,7,u-HxCDD	☒	65.0	2u - 1v0		2v-AZg-24 22:47	1
1vC-1,2,v,7,u,9-HxCDD	☒	64.7	v2 - 141		2v-AZg-24 22:47	1
1vC-1,2,v,4,6,7,u-HpCDD	☒	70.v	2v - 140		2v-AZg-24 22:47	1
1vC-XCDD	☒	69.6	17 - 157		2v-AZg-24 22:47	1
1vC-2,v,7,u-TCDF	☒	u9.5	24 - 169		2v-AZg-24 22:47	1
1vC-1,2,v,7,u-PeCDF	☒	99.0	24 - 1u5		2v-AZg-24 22:47	1
1vC-2,v,4,7,u-PeCDF	☒	95.9	21 - 17u		2v-AZg-24 22:47	1
1vC-1,2,v,4,7,u-HxCDF	☒	6v.2	26 - 152		2v-AZg-24 22:47	1
1vC-1,2,v,6,7,u-HxCDF	☒	71.v	26 - 12v		2v-AZg-24 22:47	1
1vC-2,v,4,6,7,u-HxCDF	☒	71.v	2u - 1v6		2v-AZg-24 22:47	1
1vC-1,2,v,7,u,9-HxCDF	☒	75.4	29 - 147		2v-AZg-24 22:47	1
1vC-1,2,v,4,6,7,u-HpCDF	☒	u1.7	2u - 14v		2v-AZg-24 22:47	1
1vC-1,2,v,4,7,u,9-HpCDF	☒	uu.7	26 - 1vu		2v-AZg-24 22:47	1
1vC-XCDF	☒	67.0	17 - 157		2v-AZg-24 22:47	1
v7Cl-2,v,7,u-TCDD	CRS	104	v5 - 197		2v-AZg-24 22:47	1

EDL - Sample specific estimated detection limit  
EMPC - Estimated maximum possible concentration  
MDL - Method Detection Limit

**Sample ID: 22B-U-S-20240626**

**EPA Method 1613B**

Name:	Apex Laboratories	Lab Sample:	B24H176-MSD1	Source Lab Sample:	2406214-02
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H176	Date Extracted:	19-Aug-24
Matrix:	Aqueous	Samp Size:	0.920/0.934 L	Column:	ZB-DIOXIN
Date Analyzed:	24-Aug-24 01:07 24-Aug-24 00:21				

Analyte	Sample (pg/L)	MS (pg/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (pg/L)	MSD Spike Amt	MSD % Rec	MSD RPD	MSD Quals	%Rec Limits	RPD Limits
2,3,7,8-TCDD	ND	226	217	104		225	214	105	0.957		50-150	25
1,2,3,7,8-PeCDD	ND	1250	1090	114		1240	1070	116	1.74		50-150	25
1,2,3,4,7,8-HxCDD	ND	1250	1090	114		1230	1070	115	0.873		50-150	25
1,2,3,6,7,8-HxCDD	ND	1320	1090	121		1300	1070	121	0		50-150	25
1,2,3,7,8,9-HxCDD	ND	1290	1090	118		1260	1070	118	0		50-150	25
1,2,3,4,6,7,8-HpCDD	4.46	1300	1090	119		1360	1070	127	6.5		50-150	25
OCDD	8.70	2610	2170	120		2620	2140	122	1.65		50-150	25
2,3,7,8-TCDF	ND	232	217	107		222	214	104	2.84		50-150	25
1,2,3,7,8-PeCDF	ND	1240	1090	113		1210	1070	113	0		50-150	25
2,3,4,7,8-PeCDF	ND	1280	1090	118		1260	1070	117	0.851		50-150	25
1,2,3,4,7,8-HxCDF	ND	1270	1090	117		1260	1070	118	0.851		50-150	25
1,2,3,6,7,8-HxCDF	ND	1270	1090	116		1290	1070	120	3.39		50-150	25
2,3,4,6,7,8-HxCDF	ND	1280	1090	117		1270	1070	118	0.851		50-150	25
1,2,3,7,8,9-HxCDF	ND	1280	1090	117		1270	1070	118	0.851		50-150	25
1,2,3,4,6,7,8-HpCDF	ND	1300	1090	120		1290	1070	120	0		50-150	25
1,2,3,4,7,8,9-HpCDF	ND	1290	1090	118		1280	1070	120	1.68		50-150	25
OCDF	ND	2590	2170	119		2670	2140	125	4.92		50-150	25

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits
13C-2,3,7,8-TCDD	IS	96.0		94.4		25 - 164
13C-1,2,3,7,8-PeCDD	IS	96.3		93.1		25 - 181
13C-1,2,3,4,7,8-HxCDD	IS	63.4		60.0		32 - 141
13C-1,2,3,6,7,8-HxCDD	IS	65.1		63.3		28 - 130
13C-1,2,3,7,8,9-HxCDD	IS	61.2		57.1		32 - 141
13C-1,2,3,4,6,7,8-HpCDD	IS	74.5		68.4		23 - 140
13C-OCDD	IS	70.2		66.7		17 - 157
13C-2,3,7,8-TCDF	IS	88.5		86.9		24 - 169
13C-1,2,3,7,8-PeCDF	IS	98.6		96.9		24 - 185
13C-2,3,4,7,8-PeCDF	IS	97.0		96.3		21 - 178
13C-1,2,3,4,7,8-HxCDF	IS	64.7		62.1		26 - 152
13C-1,2,3,6,7,8-HxCDF	IS	68.1		64.2		26 - 123
13C-2,3,4,6,7,8-HxCDF	IS	70.5		66.4		28 - 136
13C-1,2,3,7,8,9-HxCDF	IS	70.8		61.8		29 - 147
13C-1,2,3,4,6,7,8-HpCDF	IS	82.0		75.9		28 - 143
13C-1,2,3,4,7,8,9-HpCDF	IS	91.9		88.1		26 - 138
13C-OCDF	IS	65.4		66.2		17 - 157
37Cl-2,3,7,8-TCDD	CRS	105		101		35 - 197

**Sample ID: Method Blank**
**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H111-BLK1		
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Sample Size:	1.00 L	Column:	ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	ND	0.531	1.89			21-Aug-24 21:05	1
PCB-2	ND	0.469	2.37			21-Aug-24 21:05	1
PCB-3	ND	0.459	3.08			21-Aug-24 21:05	1
PCB-4/10	ND	1.57	2.46			21-Aug-24 21:05	1
PCB-5/8	ND	1.20	3.62			21-Aug-24 21:05	1
PCB-6	ND	1.20	1.89			21-Aug-24 21:05	1
PCB-7/9	ND	1.21	2.22			21-Aug-24 21:05	1
PCB-11	ND		5.18	9.37		21-Aug-24 21:05	1
PCB-12/13	ND	1.16	3.29			21-Aug-24 21:05	1
PCB-14	ND	1.12	1.42			21-Aug-24 21:05	1
PCB-15	ND	1.09	1.98			21-Aug-24 21:05	1
PCB-16/32	1.99		1.65		J	21-Aug-24 21:05	1
PCB-17	ND	0.441	1.44			21-Aug-24 21:05	1
PCB-18	1.84		1.94		J	21-Aug-24 21:05	1
PCB-19	ND	0.483	0.851			21-Aug-24 21:05	1
PCB-20/21/33	ND		4.47	1.79		21-Aug-24 21:05	1
PCB-22	ND	0.579	2.06			21-Aug-24 21:05	1
PCB-23	ND	0.562	2.07			21-Aug-24 21:05	1
PCB-24/27	ND	0.329	1.67			21-Aug-24 21:05	1
PCB-25	ND	0.564	1.63			21-Aug-24 21:05	1
PCB-26	ND	0.568	1.85			21-Aug-24 21:05	1
PCB-28	ND		6.43	1.74		21-Aug-24 21:05	1
PCB-29	ND	0.613	1.62			21-Aug-24 21:05	1
PCB-30	ND	0.319	1.12			21-Aug-24 21:05	1
PCB-31	ND		5.75	2.60		21-Aug-24 21:05	1
PCB-34	ND	0.602	1.48			21-Aug-24 21:05	1
PCB-35	ND	0.487	1.67			21-Aug-24 21:05	1
PCB-36	ND	0.471	1.44			21-Aug-24 21:05	1
PCB-37	ND	0.484	1.22			21-Aug-24 21:05	1
PCB-38	ND	0.518	1.73			21-Aug-24 21:05	1
PCB-39	ND	0.501	1.60			21-Aug-24 21:05	1
PCB-40	ND	0.915	2.26			21-Aug-24 21:05	1
PCB-41/64/71/72	ND		4.25	2.97		21-Aug-24 21:05	1
PCB-42/59	1.10		2.02		J	21-Aug-24 21:05	1
PCB-43/49	4.12		3.88		J	21-Aug-24 21:05	1
PCB-44	6.73		13.2			21-Aug-24 21:05	1
PCB-45	ND	0.636	1.61			21-Aug-24 21:05	1
PCB-46	ND	0.684	1.58			21-Aug-24 21:05	1
PCB-47	2.91		3.22		J	21-Aug-24 21:05	1
PCB-48/75	ND	0.506	2.81			21-Aug-24 21:05	1
PCB-50	ND	0.621	1.90			21-Aug-24 21:05	1
PCB-51	ND		1.15	0.449		21-Aug-24 21:05	1
PCB-52/69	5.46		15.5		J	21-Aug-24 21:05	1
PCB-53	1.36		1.58		J	21-Aug-24 21:05	1
PCB-54	ND	0.465	1.31			21-Aug-24 21:05	1
PCB-55	ND	0.379	1.24			21-Aug-24 21:05	1
PCB-56/60	ND		4.70	2.01		21-Aug-24 21:05	1
PCB-57	ND	0.383	1.09			21-Aug-24 21:05	1
PCB-58	ND	0.358	1.33			21-Aug-24 21:05	1
PCB-61/70	4.11		3.10		J	21-Aug-24 21:05	1
PCB-62	ND	0.466	1.32			21-Aug-24 21:05	1
PCB-63	ND	0.436	1.11			21-Aug-24 21:05	1

**Sample ID: Method Blank**
**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H111-BLK1		
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Sample Size:	1.00 L	Column:	ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	0.497	1.40			21-Aug-24 21:05	1
PCB-66/76	ND		2.66	2.08		21-Aug-24 21:05	1
PCB-67	ND	0.402	1.20			21-Aug-24 21:05	1
PCB-68	ND	0.450	1.94			21-Aug-24 21:05	1
PCB-73	ND	0.415	1.44			21-Aug-24 21:05	1
PCB-74	ND		1.39	1.28		21-Aug-24 21:05	1
PCB-77	ND	0.407	1.91			21-Aug-24 21:05	1
PCB-78	ND	0.380	1.22			21-Aug-24 21:05	1
PCB-79	ND	0.403	1.30			21-Aug-24 21:05	1
PCB-80	ND	0.355	0.807			21-Aug-24 21:05	1
PCB-81	ND	0.407	1.14			21-Aug-24 21:05	1
PCB-82	ND	0.717	1.85			21-Aug-24 21:05	1
PCB-83	ND	0.462	1.23			21-Aug-24 21:05	1
PCB-84/92	ND	0.701	1.75			21-Aug-24 21:05	1
PCB-85/116	ND	0.596	2.13			21-Aug-24 21:05	1
PCB-86	ND	0.771	2.05			21-Aug-24 21:05	1
PCB-87/117/125	ND	0.488	2.99			21-Aug-24 21:05	1
PCB-88/91	ND		2.32	0.651		21-Aug-24 21:05	1
PCB-89	ND	0.694	1.10			21-Aug-24 21:05	1
PCB-90/101	ND	0.677	2.23			21-Aug-24 21:05	1
PCB-93	ND	0.753	2.80			21-Aug-24 21:05	1
PCB-94	ND	0.796	1.79			21-Aug-24 21:05	1
PCB-95/98/102	2.82		2.16		J	21-Aug-24 21:05	1
PCB-96	ND	0.599	1.40			21-Aug-24 21:05	1
PCB-97	ND	0.690	1.01			21-Aug-24 21:05	1
PCB-99	ND	0.576	1.97			21-Aug-24 21:05	1
PCB-100	ND	0.749	1.49			21-Aug-24 21:05	1
PCB-103	ND	0.739	1.27			21-Aug-24 21:05	1
PCB-104	ND	0.645	1.09			21-Aug-24 21:05	1
PCB-105	ND	0.659	1.64			21-Aug-24 21:05	1
PCB-106/118	ND	0.467	3.03			21-Aug-24 21:05	1
PCB-107/109	ND	0.434	1.89			21-Aug-24 21:05	1
PCB-108/112	ND	0.574	2.94			21-Aug-24 21:05	1
PCB-110	ND		2.79	1.55		21-Aug-24 21:05	1
PCB-111/115	ND	0.464	2.31			21-Aug-24 21:05	1
PCB-113	ND	0.535	1.00			21-Aug-24 21:05	1
PCB-114	ND	0.692	0.980			21-Aug-24 21:05	1
PCB-119	ND	0.470	0.983			21-Aug-24 21:05	1
PCB-120	ND	0.417	1.46			21-Aug-24 21:05	1
PCB-121	ND	0.434	1.73			21-Aug-24 21:05	1
PCB-122	ND	0.763	1.77			21-Aug-24 21:05	1
PCB-123	ND	0.517	1.45			21-Aug-24 21:05	1
PCB-124	ND	0.449	1.22			21-Aug-24 21:05	1
PCB-126	ND	0.698	1.68			21-Aug-24 21:05	1
PCB-127	ND	0.643	1.53			21-Aug-24 21:05	1
PCB-128/162	ND	0.319	1.74			21-Aug-24 21:05	1
PCB-129	ND	0.469	1.88			21-Aug-24 21:05	1
PCB-130	ND	0.428	2.25			21-Aug-24 21:05	1
PCB-131/133	ND	0.425	2.63			21-Aug-24 21:05	1
PCB-132/161	ND	0.367	2.43			21-Aug-24 21:05	1
PCB-134/143	ND	0.435	1.76			21-Aug-24 21:05	1
PCB-135	ND	0.287	2.40			21-Aug-24 21:05	1

**Sample ID: Method Blank**
**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H111-BLK1		
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Sample Size:	1.00 L	Column:	ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	ND	0.219	1.62			21-Aug-24 21:05	1
PCB-137	ND	0.407	1.47			21-Aug-24 21:05	1
PCB-138/163/164	1.33		2.54		J	21-Aug-24 21:05	1
PCB-139/149	2.41		3.61		J	21-Aug-24 21:05	1
PCB-140	ND	0.280	1.71			21-Aug-24 21:05	1
PCB-141	ND	0.397	1.16			21-Aug-24 21:05	1
PCB-142	ND	0.450	1.64			21-Aug-24 21:05	1
PCB-144	ND	0.267	1.75			21-Aug-24 21:05	1
PCB-145	ND	0.199	1.86			21-Aug-24 21:05	1
PCB-146/165	ND	0.345	2.67			21-Aug-24 21:05	1
PCB-147	ND	0.270	1.61			21-Aug-24 21:05	1
PCB-148	ND	0.258	1.80			21-Aug-24 21:05	1
PCB-150	ND	0.202	1.44			21-Aug-24 21:05	1
PCB-151	ND		2.18	0.922		21-Aug-24 21:05	1
PCB-152	ND	0.187	1.07			21-Aug-24 21:05	1
PCB-153	1.85		2.20		J	21-Aug-24 21:05	1
PCB-154	ND	0.260	1.38			21-Aug-24 21:05	1
PCB-155	ND	0.213	1.27			21-Aug-24 21:05	1
PCB-156	ND	0.295	1.64			21-Aug-24 21:05	1
PCB-157	ND	0.299	1.22			21-Aug-24 21:05	1
PCB-158/160	ND	0.302	2.40			21-Aug-24 21:05	1
PCB-159	ND	0.254	1.32			21-Aug-24 21:05	1
PCB-166	ND	0.263	1.18			21-Aug-24 21:05	1
PCB-167	ND	0.287	0.889			21-Aug-24 21:05	1
PCB-168	ND	0.312	0.893			21-Aug-24 21:05	1
PCB-169	ND	0.295	1.45			21-Aug-24 21:05	1
PCB-170	ND	0.229	1.52			21-Aug-24 21:05	1
PCB-171	ND	0.225	1.26			21-Aug-24 21:05	1
PCB-172	ND	0.244	1.68			21-Aug-24 21:05	1
PCB-173	ND	0.250	1.42			21-Aug-24 21:05	1
PCB-174	ND	0.229	1.54			21-Aug-24 21:05	1
PCB-175	ND	0.291	1.13			21-Aug-24 21:05	1
PCB-176	ND	0.235	0.816			21-Aug-24 21:05	1
PCB-177	ND	0.239	1.58			21-Aug-24 21:05	1
PCB-178	ND	0.305	1.61			21-Aug-24 21:05	1
PCB-179	0.459		1.06		J	21-Aug-24 21:05	1
PCB-180	ND	0.216	1.78			21-Aug-24 21:05	1
PCB-181	ND	0.215	1.15			21-Aug-24 21:05	1
PCB-182/187	1.02		2.33		J	21-Aug-24 21:05	1
PCB-183	ND	0.277	1.49			21-Aug-24 21:05	1
PCB-184	ND	0.233	0.951			21-Aug-24 21:05	1
PCB-185	ND	0.237	1.28			21-Aug-24 21:05	1
PCB-186	ND	0.203	0.985			21-Aug-24 21:05	1
PCB-188	ND	0.212	1.06			21-Aug-24 21:05	1
PCB-189	ND	0.170	1.26			21-Aug-24 21:05	1
PCB-190	ND	0.178	1.44			21-Aug-24 21:05	1
PCB-191	ND	0.185	1.85			21-Aug-24 21:05	1
PCB-192	ND	0.171	1.70			21-Aug-24 21:05	1
PCB-193	ND	0.179	1.81			21-Aug-24 21:05	1
PCB-194	ND		2.10	0.597		21-Aug-24 21:05	1
PCB-195	ND	0.230	1.54			21-Aug-24 21:05	1
PCB-196/203	ND		2.34	0.474		21-Aug-24 21:05	1

**Sample ID: Method Blank**

**EPA Method 1668C**

Client Data		Laboratory Data				
Name:	Apex Laboratories	Lab Sample:	B24H111-BLK1		Date Extracted:	13-Aug-24
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111		Column:	ZB-1
Matrix:	Aqueous	Sample Size:	1.00 L			

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND	0.143	1.45			21-Aug-24 21:05	1
PCB-198	ND	0.192	2.07			21-Aug-24 21:05	1
PCB-199	ND	0.193	1.48			21-Aug-24 21:05	1
PCB-200	ND	0.154	0.890			21-Aug-24 21:05	1
PCB-201	ND	0.159	1.33			21-Aug-24 21:05	1
PCB-202	ND	0.143	1.24			21-Aug-24 21:05	1
PCB-204	ND	0.148	1.06			21-Aug-24 21:05	1
PCB-205	ND	0.172	1.56			21-Aug-24 21:05	1
PCB-206	ND	0.176	1.62			21-Aug-24 21:05	1
PCB-207	ND	0.132	1.56			21-Aug-24 21:05	1
PCB-208	ND	0.131	1.53			21-Aug-24 21:05	1
PCB-209	ND	0.119	1.93			21-Aug-24 21:05	1

Totals							
Total monoCB	ND	0.531					
Total diCB	ND			9.37			
Total triCB	3.83			9.96			
Total tetraCB	25.8			34.6			
Total pentaCB	2.82			5.01			
Total hexaCB	5.59			6.51			
Total heptaCB	1.48						
Total octaCB	ND			1.07			
Total nonaCB	ND	0.230					
DecaCB	ND	0.119					
Total PCB	39.5						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	51.6	5 - 145		21-Aug-24 21:05	1
13C-PCB-3	IS	56.5	5 - 145		21-Aug-24 21:05	1
13C-PCB-4	IS	59.0	5 - 145		21-Aug-24 21:05	1
13C-PCB-9	IS	58.6	5 - 145		21-Aug-24 21:05	1
13C-PCB-11	IS	66.7	5 - 145		21-Aug-24 21:05	1
13C-PCB-19	IS	57.4	5 - 145		21-Aug-24 21:05	1
13C-PCB-28	IS	60.9	5 - 145		21-Aug-24 21:05	1
13C-PCB-32	IS	60.2	5 - 145		21-Aug-24 21:05	1
13C-PCB-37	IS	73.9	5 - 145		21-Aug-24 21:05	1
13C-PCB-47	IS	62.0	5 - 145		21-Aug-24 21:05	1
13C-PCB-52	IS	65.6	5 - 145		21-Aug-24 21:05	1
13C-PCB-54	IS	58.4	5 - 145		21-Aug-24 21:05	1
13C-PCB-70	IS	73.4	5 - 145		21-Aug-24 21:05	1
13C-PCB-77	IS	80.6	10 - 145		21-Aug-24 21:05	1
13C-PCB-80	IS	71.1	10 - 145		21-Aug-24 21:05	1
13C-PCB-81	IS	79.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-95	IS	64.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-97	IS	74.3	10 - 145		21-Aug-24 21:05	1
13C-PCB-101	IS	68.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-104	IS	56.3	10 - 145		21-Aug-24 21:05	1
13C-PCB-105	IS	83.8	10 - 145		21-Aug-24 21:05	1
13C-PCB-114	IS	83.5	10 - 145		21-Aug-24 21:05	1
13C-PCB-118	IS	77.1	10 - 145		21-Aug-24 21:05	1
13C-PCB-123	IS	81.3	10 - 145		21-Aug-24 21:05	1

**Sample ID: Method Blank**

**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H111-BLK1		
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Sample Size:	1.00 L	Column:	ZB-1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-126	IS	85.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-127	IS	86.5	10 - 145		21-Aug-24 21:05	1
13C-PCB-138	IS	80.8	10 - 145		21-Aug-24 21:05	1
13C-PCB-141	IS	79.3	10 - 145		21-Aug-24 21:05	1
13C-PCB-153	IS	75.8	10 - 145		21-Aug-24 21:05	1
13C-PCB-155	IS	57.4	10 - 145		21-Aug-24 21:05	1
13C-PCB-156	IS	82.6	10 - 145		21-Aug-24 21:05	1
13C-PCB-157	IS	83.5	10 - 145		21-Aug-24 21:05	1
13C-PCB-159	IS	82.1	10 - 145		21-Aug-24 21:05	1
13C-PCB-167	IS	84.1	10 - 145		21-Aug-24 21:05	1
13C-PCB-169	IS	84.7	10 - 145		21-Aug-24 21:05	1
13C-PCB-170	IS	89.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-180	IS	88.4	10 - 145		21-Aug-24 21:05	1
13C-PCB-188	IS	67.9	10 - 145		21-Aug-24 21:05	1
13C-PCB-189	IS	89.5	10 - 145		21-Aug-24 21:05	1
13C-PCB-194	IS	85.7	10 - 145		21-Aug-24 21:05	1
13C-PCB-202	IS	84.1	10 - 145		21-Aug-24 21:05	1
13C-PCB-206	IS	76.3	10 - 145		21-Aug-24 21:05	1
13C-PCB-208	IS	78.7	10 - 145		21-Aug-24 21:05	1
13C-PCB-209	IS	74.0	10 - 145		21-Aug-24 21:05	1
13C-PCB-79	CRS	94.0	10 - 145		21-Aug-24 21:05	1
13C-PCB-178	CRS	94.7	10 - 145		21-Aug-24 21:05	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

**Sample ID: OPR**
**EPA Method 1668C**

Client Data		Laboratory Data				
Name:	Apex Laboratories	Lab Sample:	B24H111-BS1		Date Extracted:	13-Aug-24 07:04
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111		Column:	ZB-1
Matrix:	Aqueous	Sample Size:	1.00 L			

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
PCB-1	1010	996	101	60-135		20-Aug-24 19:10	1
PCB-3	982	1000	98.2	60-135		20-Aug-24 19:10	1
PCB-4/10	2030	2020	101	60-135		20-Aug-24 19:10	1
PCB-15	1010	1000	101	60-135		20-Aug-24 19:10	1
PCB-19	918	1010	90.9	60-135		20-Aug-24 19:10	1
PCB-37	948	1010	93.9	60-135		20-Aug-24 19:10	1
PCB-54	992	1010	98.2	60-135		20-Aug-24 19:10	1
PCB-77	928	1000	92.8	60-135		20-Aug-24 19:10	1
PCB-81	951	1000	95.1	60-135		20-Aug-24 19:10	1
PCB-104	938	996	94.2	60-135		20-Aug-24 19:10	1
PCB-105	934	1010	92.4	60-135		20-Aug-24 19:10	1
PCB-106/118	1910	1990	96.0	60-135		20-Aug-24 19:10	1
PCB-114	917	1000	91.7	60-135		20-Aug-24 19:10	1
PCB-123	948	1000	94.8	60-135		20-Aug-24 19:10	1
PCB-126	926	1010	91.7	60-135		20-Aug-24 19:10	1
PCB-155	959	992	96.6	60-135		20-Aug-24 19:10	1
PCB-156	956	1010	94.7	60-135		20-Aug-24 19:10	1
PCB-157	938	1000	93.8	60-135		20-Aug-24 19:10	1
PCB-167	944	1000	94.4	60-135		20-Aug-24 19:10	1
PCB-169	954	1000	95.4	60-135		20-Aug-24 19:10	1
PCB-188	997	990	101	60-135		20-Aug-24 19:10	1
PCB-189	986	1000	98.6	60-135		20-Aug-24 19:10	1
PCB-202	925	992	93.2	60-135		20-Aug-24 19:10	1
PCB-205	1070	1000	107	60-135		20-Aug-24 19:10	1
PCB-206	965	1010	95.5	60-135		20-Aug-24 19:10	1
PCB-208	931	1000	93.1	60-135		20-Aug-24 19:10	1
PCB-209	925	992	93.2	60-135		20-Aug-24 19:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	42.0	15-145		20-Aug-24 19:10	1
13C-PCB-3	IS	43.1	15-145		20-Aug-24 19:10	1
13C-PCB-4	IS	41.6	15-145		20-Aug-24 19:10	1
13C-PCB-9	IS	42.6	15-145		20-Aug-24 19:10	1
13C-PCB-11	IS	46.4	15-145		20-Aug-24 19:10	1
13C-PCB-19	IS	43.4	15-145		20-Aug-24 19:10	1
13C-PCB-28	IS	41.4	15-145		20-Aug-24 19:10	1
13C-PCB-32	IS	44.6	15-145		20-Aug-24 19:10	1
13C-PCB-37	IS	47.9	15-145		20-Aug-24 19:10	1
13C-PCB-47	IS	45.2	15-145		20-Aug-24 19:10	1
13C-PCB-52	IS	47.5	15-145		20-Aug-24 19:10	1
13C-PCB-54	IS	44.7	15-145		20-Aug-24 19:10	1
13C-PCB-70	IS	52.3	15-145		20-Aug-24 19:10	1
13C-PCB-77	IS	56.4	40-145		20-Aug-24 19:10	1
13C-PCB-80	IS	51.1	40-145		20-Aug-24 19:10	1
13C-PCB-81	IS	54.5	40-145		20-Aug-24 19:10	1

**Sample ID: OPR**
**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24H111-BS1	Date Extracted:	13-Aug-24 07:04
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Column:	ZB-1
Matrix:	Aqueous	Sample Size:	1.00 L		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-95	IS	47.7	40 -145		20-Aug-24 19:10	1
13C-PCB-97	IS	51.6	40 -145		20-Aug-24 19:10	1
13C-PCB-101	IS	50.6	40 -145		20-Aug-24 19:10	1
13C-PCB-104	IS	44.4	40 -145		20-Aug-24 19:10	1
13C-PCB-105	IS	51.9	40 -145		20-Aug-24 19:10	1
13C-PCB-114	IS	52.3	40 -145		20-Aug-24 19:10	1
13C-PCB-118	IS	56.3	40 -145		20-Aug-24 19:10	1
13C-PCB-123	IS	60.4	40 -145		20-Aug-24 19:10	1
13C-PCB-126	IS	54.9	40 -145		20-Aug-24 19:10	1
13C-PCB-127	IS	53.0	40 -145		20-Aug-24 19:10	1
13C-PCB-138	IS	55.5	40 -145		20-Aug-24 19:10	1
13C-PCB-141	IS	53.0	40 -145		20-Aug-24 19:10	1
13C-PCB-153	IS	53.5	40 -145		20-Aug-24 19:10	1
13C-PCB-155	IS	47.4	40 -145		20-Aug-24 19:10	1
13C-PCB-156	IS	57.7	40 -145		20-Aug-24 19:10	1
13C-PCB-157	IS	55.8	40 -145		20-Aug-24 19:10	1
13C-PCB-159	IS	58.8	40 -145		20-Aug-24 19:10	1
13C-PCB-167	IS	55.6	40 -145		20-Aug-24 19:10	1
13C-PCB-169	IS	58.2	40 -145		20-Aug-24 19:10	1
13C-PCB-170	IS	58.8	40 -145		20-Aug-24 19:10	1
13C-PCB-180	IS	58.0	40 -145		20-Aug-24 19:10	1
13C-PCB-188	IS	51.0	40 -145		20-Aug-24 19:10	1
13C-PCB-189	IS	56.1	40 -145		20-Aug-24 19:10	1
13C-PCB-194	IS	51.7	40 -145		20-Aug-24 19:10	1
13C-PCB-202	IS	56.0	40 -145		20-Aug-24 19:10	1
13C-PCB-206	IS	48.8	40 -145		20-Aug-24 19:10	1
13C-PCB-208	IS	53.5	40 -145		20-Aug-24 19:10	1
13C-PCB-209	IS	49.8	40 -145		20-Aug-24 19:10	1
13C-PCB-79	CRS	70.0	40 -145		20-Aug-24 19:10	1
13C-PCB-178	CRS	70.0	40 -145		20-Aug-24 19:10	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Water	Sample Size:	0.933 L	Column:	ZB-1
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	ND	0.287	2.03			22-Aug-24 11:44	1
PCB-2	ND	0.269	2.54			22-Aug-24 11:44	1
PCB-3	ND	0.263	3.30			22-Aug-24 11:44	1
PCB-4/10	15.1		2.64			22-Aug-24 11:44	1
PCB-5/8	ND	0.953	3.88			22-Aug-24 11:44	1
PCB-6	ND	0.954	2.03			22-Aug-24 11:44	1
PCB-7/9	ND	0.963	2.38			22-Aug-24 11:44	1
PCB-11	ND		5.55	4.59		22-Aug-24 11:44	1
PCB-12/13	ND	0.975	3.53			22-Aug-24 11:44	1
PCB-14	ND	0.943	1.52			22-Aug-24 11:44	1
PCB-15	ND		2.12	6.12		22-Aug-24 11:44	1
PCB-16/32	17.6		1.77		B	22-Aug-24 11:44	1
PCB-17	9.30		1.54			22-Aug-24 11:44	1
PCB-18	24.5		2.08		B	22-Aug-24 11:44	1
PCB-19	4.63		0.912		J	22-Aug-24 11:44	1
PCB-20/21/33	ND		4.79	1.51		22-Aug-24 11:44	1
PCB-22	1.84		2.21		J	22-Aug-24 11:44	1
PCB-23	ND	0.505	2.22			22-Aug-24 11:44	1
PCB-24/27	2.64		1.79		J	22-Aug-24 11:44	1
PCB-25	1.15		1.75		J	22-Aug-24 11:44	1
PCB-26	3.76		1.98		J	22-Aug-24 11:44	1
PCB-28	13.5		6.89			22-Aug-24 11:44	1
PCB-29	ND	0.550	1.74			22-Aug-24 11:44	1
PCB-30	ND	0.268	1.20			22-Aug-24 11:44	1
PCB-31	13.4		6.16			22-Aug-24 11:44	1
PCB-34	ND	0.541	1.59			22-Aug-24 11:44	1
PCB-35	ND	0.466	1.79			22-Aug-24 11:44	1
PCB-36	ND	0.450	1.54			22-Aug-24 11:44	1
PCB-37	6.01		1.31			22-Aug-24 11:44	1
PCB-38	ND	0.496	1.85			22-Aug-24 11:44	1
PCB-39	ND	0.479	1.71			22-Aug-24 11:44	1
PCB-40	ND		2.42	4.36		22-Aug-24 11:44	1
PCB-41/64/71/72	17.1		4.56		J	22-Aug-24 11:44	1
PCB-42/59	ND		2.17	5.16		22-Aug-24 11:44	1
PCB-43/49	14.7		4.16		B	22-Aug-24 11:44	1
PCB-44	23.2		14.1		B	22-Aug-24 11:44	1
PCB-45	4.24		1.73		J	22-Aug-24 11:44	1
PCB-46	2.21		1.69		J	22-Aug-24 11:44	1
PCB-47	18.3		3.45		B	22-Aug-24 11:44	1
PCB-48/75	ND		3.01	3.09		22-Aug-24 11:44	1
PCB-50	ND	0.491	2.04			22-Aug-24 11:44	1
PCB-51	ND		1.23	5.36		22-Aug-24 11:44	1
PCB-52/69	25.7		16.6		B	22-Aug-24 11:44	1
PCB-53	4.34		1.69		J, B	22-Aug-24 11:44	1
PCB-54	ND	0.367	1.40			22-Aug-24 11:44	1
PCB-55	ND	0.286	1.33			22-Aug-24 11:44	1
PCB-56/60	6.92		5.04		J	22-Aug-24 11:44	1
PCB-57	ND	0.308	1.17			22-Aug-24 11:44	1
PCB-58	ND	0.287	1.43			22-Aug-24 11:44	1
PCB-61/70	16.7		3.32		B	22-Aug-24 11:44	1
PCB-62	ND	0.345	1.41			22-Aug-24 11:44	1
PCB-63	ND	0.350	1.19			22-Aug-24 11:44	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Water	Sample Size:	0.933 L	Column:	ZB-1
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	0.367	1.50			22-Aug-24 11:44	1
PCB-66/76	8.29		2.85		J	22-Aug-24 11:44	1
PCB-67	ND	0.323	1.29			22-Aug-24 11:44	1
PCB-68	7.42		2.08			22-Aug-24 11:44	1
PCB-73	ND	0.315	1.54			22-Aug-24 11:44	1
PCB-74	ND		1.49	4.38		22-Aug-24 11:44	1
PCB-77	3.75		2.05		J	22-Aug-24 11:44	1
PCB-78	ND	0.308	1.31			22-Aug-24 11:44	1
PCB-79	ND	0.304	1.39			22-Aug-24 11:44	1
PCB-80	ND	0.268	0.865			22-Aug-24 11:44	1
PCB-81	ND	0.330	1.22			22-Aug-24 11:44	1
PCB-82	ND		1.98	4.22		22-Aug-24 11:44	1
PCB-83	ND	0.318	1.32			22-Aug-24 11:44	1
PCB-84/92	13.4		1.88			22-Aug-24 11:44	1
PCB-85/116	4.84		2.28		J	22-Aug-24 11:44	1
PCB-86	ND	0.531	2.20			22-Aug-24 11:44	1
PCB-87/117/125	12.5		3.20		J	22-Aug-24 11:44	1
PCB-88/91	4.95		2.49		J	22-Aug-24 11:44	1
PCB-89	ND	0.481	1.18			22-Aug-24 11:44	1
PCB-90/101	32.8		2.39			22-Aug-24 11:44	1
PCB-93	ND	0.491	3.00			22-Aug-24 11:44	1
PCB-94	ND	0.519	1.92			22-Aug-24 11:44	1
PCB-95/98/102	26.9		2.32		B	22-Aug-24 11:44	1
PCB-96	ND	0.362	1.50			22-Aug-24 11:44	1
PCB-97	9.63		1.08			22-Aug-24 11:44	1
PCB-99	9.80		2.11			22-Aug-24 11:44	1
PCB-100	ND	0.453	1.60			22-Aug-24 11:44	1
PCB-103	ND	0.447	1.36			22-Aug-24 11:44	1
PCB-104	ND	0.390	1.17			22-Aug-24 11:44	1
PCB-105	11.8		1.76			22-Aug-24 11:44	1
PCB-106/118	27.1		3.25			22-Aug-24 11:44	1
PCB-107/109	ND		2.03	2.22		22-Aug-24 11:44	1
PCB-108/112	ND		3.15	1.82		22-Aug-24 11:44	1
PCB-110	33.8		2.99			22-Aug-24 11:44	1
PCB-111/115	ND		2.48	0.879		22-Aug-24 11:44	1
PCB-113	ND	0.371	1.07			22-Aug-24 11:44	1
PCB-114	ND	0.648	1.05			22-Aug-24 11:44	1
PCB-119	ND		1.05	0.671		22-Aug-24 11:44	1
PCB-120	ND	0.287	1.56			22-Aug-24 11:44	1
PCB-121	ND	0.283	1.85			22-Aug-24 11:44	1
PCB-122	ND	0.714	1.90			22-Aug-24 11:44	1
PCB-123	ND	0.376	1.55			22-Aug-24 11:44	1
PCB-124	ND		1.31	1.76		22-Aug-24 11:44	1
PCB-126	ND		1.80	0.666		22-Aug-24 11:44	1
PCB-127	ND	0.606	1.64			22-Aug-24 11:44	1
PCB-128/162	5.78		1.87		J	22-Aug-24 11:44	1
PCB-129	1.66		2.02		J	22-Aug-24 11:44	1
PCB-130	ND		2.41	1.96		22-Aug-24 11:44	1
PCB-131/133	1.18		2.82		J	22-Aug-24 11:44	1
PCB-132/161	9.20		2.60		J	22-Aug-24 11:44	1
PCB-134/143	1.61		1.89		J	22-Aug-24 11:44	1
PCB-135	ND		2.57	3.61		22-Aug-24 11:44	1

Sample ID: 22B-U-D-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Water	Sample Size:	0.933 L	Column:	ZB-1
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	3.86		1.74		J	22-Aug-24 11:44	1
PCB-137	ND		1.58	1.90		22-Aug-24 11:44	1
PCB-138/163/164	34.9		2.72		B	22-Aug-24 11:44	1
PCB-139/149	26.0		3.87		B	22-Aug-24 11:44	1
PCB-140	ND		1.83	0.415		22-Aug-24 11:44	1
PCB-141	7.31		1.24			22-Aug-24 11:44	1
PCB-142	ND	0.345	1.76			22-Aug-24 11:44	1
PCB-144	ND		1.88	1.13		22-Aug-24 11:44	1
PCB-145	ND	0.123	1.99			22-Aug-24 11:44	1
PCB-146/165	4.75		2.86		J	22-Aug-24 11:44	1
PCB-147	0.687		1.73		J	22-Aug-24 11:44	1
PCB-148	ND	0.158	1.93			22-Aug-24 11:44	1
PCB-150	ND	0.124	1.54			22-Aug-24 11:44	1
PCB-151	6.67		2.34			22-Aug-24 11:44	1
PCB-152	ND	0.115	1.15			22-Aug-24 11:44	1
PCB-153	30.0		2.36		B	22-Aug-24 11:44	1
PCB-154	ND	0.160	1.48			22-Aug-24 11:44	1
PCB-155	ND	0.131	1.36			22-Aug-24 11:44	1
PCB-156	ND		1.76	3.22		22-Aug-24 11:44	1
PCB-157	ND		1.31	0.936		22-Aug-24 11:44	1
PCB-158/160	ND		2.57	3.69		22-Aug-24 11:44	1
PCB-159	ND	0.203	1.41			22-Aug-24 11:44	1
PCB-166	ND	0.210	1.26			22-Aug-24 11:44	1
PCB-167	2.04		0.953		J	22-Aug-24 11:44	1
PCB-168	ND	0.239	0.957			22-Aug-24 11:44	1
PCB-169	ND	0.243	1.55			22-Aug-24 11:44	1
PCB-170	7.71		1.63			22-Aug-24 11:44	1
PCB-171	ND		1.35	1.84		22-Aug-24 11:44	1
PCB-172	2.06		1.80		J	22-Aug-24 11:44	1
PCB-173	ND	0.250	1.52			22-Aug-24 11:44	1
PCB-174	10.0		1.65			22-Aug-24 11:44	1
PCB-175	ND	0.247	1.21			22-Aug-24 11:44	1
PCB-176	1.34		0.875		J	22-Aug-24 11:44	1
PCB-177	ND		1.69	4.66		22-Aug-24 11:44	1
PCB-178	2.42		1.73		J	22-Aug-24 11:44	1
PCB-179	4.03		1.14		J, B	22-Aug-24 11:44	1
PCB-180	21.2		1.91			22-Aug-24 11:44	1
PCB-181	ND	0.214	1.23			22-Aug-24 11:44	1
PCB-182/187	16.5		2.50		B	22-Aug-24 11:44	1
PCB-183	7.04		1.60			22-Aug-24 11:44	1
PCB-184	ND	0.197	1.02			22-Aug-24 11:44	1
PCB-185	1.66		1.37		J	22-Aug-24 11:44	1
PCB-186	ND	0.172	1.06			22-Aug-24 11:44	1
PCB-188	ND	0.180	1.14			22-Aug-24 11:44	1
PCB-189	ND	0.164	1.35			22-Aug-24 11:44	1
PCB-190	1.86		1.54		J	22-Aug-24 11:44	1
PCB-191	ND	0.185	1.98			22-Aug-24 11:44	1
PCB-192	ND	0.171	1.82			22-Aug-24 11:44	1
PCB-193	ND		1.94	1.28		22-Aug-24 11:44	1
PCB-194	ND		2.25	3.67		22-Aug-24 11:44	1
PCB-195	1.84		1.65		J	22-Aug-24 11:44	1
PCB-196/203	6.98		2.51		J	22-Aug-24 11:44	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Water	Sample Size:	0.933 L	Column:	ZB-1
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND	0.162	1.55			22-Aug-24 11:44	1
PCB-198	0.499		2.22		J	22-Aug-24 11:44	1
PCB-199	6.85		1.59			22-Aug-24 11:44	1
PCB-200	ND		0.954	0.795		22-Aug-24 11:44	1
PCB-201	ND		1.43	0.855		22-Aug-24 11:44	1
PCB-202	ND		1.33	1.01		22-Aug-24 11:44	1
PCB-204	ND	0.168	1.14			22-Aug-24 11:44	1
PCB-205	0.514		1.67		J	22-Aug-24 11:44	1
PCB-206	2.10		1.74		J	22-Aug-24 11:44	1
PCB-207	ND		1.67	0.428		22-Aug-24 11:44	1
PCB-208	ND		1.64	0.743		22-Aug-24 11:44	1
PCB-209	0.953		2.07		J	22-Aug-24 11:44	1

Totals							
Total monoCB	ND	0.287					
Total diCB	15.1			25.8			
Total triCB	98.3						
Total tetraCB	153			1750			
Total pentaCB	187			200			
Total hexaCB	136			153			
Total heptaCB	75.8			83.6			
Total octaCB	16.7			23.0			
Total nonaCB	2.10			3.27			
DecaCB	0.953						
Total PCB	685						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	70.5	5 - 145		22-Aug-24 11:44	1
13C-PCB-3	IS	74.4	5 - 145		22-Aug-24 11:44	1
13C-PCB-4	IS	71.5	5 - 145		22-Aug-24 11:44	1
13C-PCB-9	IS	73.1	5 - 145		22-Aug-24 11:44	1
13C-PCB-11	IS	78.5	5 - 145		22-Aug-24 11:44	1
13C-PCB-19	IS	73.2	5 - 145		22-Aug-24 11:44	1
13C-PCB-28	IS	83.3	5 - 145		22-Aug-24 11:44	1
13C-PCB-32	IS	74.3	5 - 145		22-Aug-24 11:44	1
13C-PCB-37	IS	89.3	5 - 145		22-Aug-24 11:44	1
13C-PCB-47	IS	75.2	5 - 145		22-Aug-24 11:44	1
13C-PCB-52	IS	76.8	5 - 145		22-Aug-24 11:44	1
13C-PCB-54	IS	68.6	5 - 145		22-Aug-24 11:44	1
13C-PCB-70	IS	84.6	5 - 145		22-Aug-24 11:44	1
13C-PCB-77	IS	88.7	10 - 145		22-Aug-24 11:44	1
13C-PCB-80	IS	83.3	10 - 145		22-Aug-24 11:44	1
13C-PCB-81	IS	88.3	10 - 145		22-Aug-24 11:44	1
13C-PCB-95	IS	76.8	10 - 145		22-Aug-24 11:44	1
13C-PCB-97	IS	85.0	10 - 145		22-Aug-24 11:44	1
13C-PCB-101	IS	81.8	10 - 145		22-Aug-24 11:44	1
13C-PCB-104	IS	74.6	10 - 145		22-Aug-24 11:44	1
13C-PCB-105	IS	83.4	10 - 145		22-Aug-24 11:44	1
13C-PCB-114	IS	83.8	10 - 145		22-Aug-24 11:44	1
13C-PCB-118	IS	87.6	10 - 145		22-Aug-24 11:44	1
13C-PCB-123	IS	89.2	10 - 145		22-Aug-24 11:44	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1668C**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Water	Sample Size:	0.933 L	Column:	ZB-1
Date Collected:	26-Jun-24 12:38				

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-126	IS	85.0	10 - 145		22-Aug-24 11:44	1
13C-PCB-127	IS	85.5	10 - 145		22-Aug-24 11:44	1
13C-PCB-138	IS	85.5	10 - 145		22-Aug-24 11:44	1
13C-PCB-141	IS	87.1	10 - 145		22-Aug-24 11:44	1
13C-PCB-153	IS	84.2	10 - 145		22-Aug-24 11:44	1
13C-PCB-155	IS	79.9	10 - 145		22-Aug-24 11:44	1
13C-PCB-156	IS	90.2	10 - 145		22-Aug-24 11:44	1
13C-PCB-157	IS	89.3	10 - 145		22-Aug-24 11:44	1
13C-PCB-159	IS	88.8	10 - 145		22-Aug-24 11:44	1
13C-PCB-167	IS	88.0	10 - 145		22-Aug-24 11:44	1
13C-PCB-169	IS	92.1	10 - 145		22-Aug-24 11:44	1
13C-PCB-170	IS	98.9	10 - 145		22-Aug-24 11:44	1
13C-PCB-180	IS	97.7	10 - 145		22-Aug-24 11:44	1
13C-PCB-188	IS	81.3	10 - 145		22-Aug-24 11:44	1
13C-PCB-189	IS	99.2	10 - 145		22-Aug-24 11:44	1
13C-PCB-194	IS	90.5	10 - 145		22-Aug-24 11:44	1
13C-PCB-202	IS	92.9	10 - 145		22-Aug-24 11:44	1
13C-PCB-206	IS	87.0	10 - 145		22-Aug-24 11:44	1
13C-PCB-208	IS	89.7	10 - 145		22-Aug-24 11:44	1
13C-PCB-209	IS	87.4	10 - 145		22-Aug-24 11:44	1
13C-PCB-79	CRS	100	10 - 145		22-Aug-24 11:44	1
13C-PCB-178	CRS	98.6	10 - 145		22-Aug-24 11:44	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

Sample ID: 22B-U-S-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-09-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	1v-A9g-24
Matrix:	water	Sample Size:	1.04 L	Column:	3B-1
Date Collected:	26-09-24 0W00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	ND	0.176	1.81			22-A9g-24 12:45	1
PCB-2	ND	0.172	2.27			22-A9g-24 12:45	1
PCB-v	ND	0.16W	2.0			22-A9g-24 12:45	1
PCB-4/10	11.4		2.0			22-A9g-24 12:45	1
PCB-5/8	ND	0.546	0.47			22-A9g-24 12:45	1
PCB-6	ND	0.547	1.81			22-A9g-24 12:45	1
PCB-7/W	ND	0.552	2.1			22-A9g-24 12:45	1
PCB-11	ND		4.0	5.02		22-A9g-24 12:45	1
PCB-12/1v	ND	0.552	0.15			22-A9g-24 12:45	1
PCB-14	ND	0.5v4	1.0			22-A9g-24 12:45	1
PCB-15	ND		1.0	4.66		22-A9g-24 12:45	1
PCB-16/v2	1v.8		1.58		B	22-A9g-24 12:45	1
PCB-17	0.46		1.0			22-A9g-24 12:45	1
PCB-18	1.0		1.86		B	22-A9g-24 12:45	1
PCB-1W	0.20		0.815		Z	22-A9g-24 12:45	1
PCB-20/21/vv	1.42		4.28		Z	22-A9g-24 12:45	1
PCB-22	1.81		1.0		Z	22-A9g-24 12:45	1
PCB-2v	ND	0.016	1.0			22-A9g-24 12:45	1
PCB-24/27	1.7W		1.60		Z	22-A9g-24 12:45	1
PCB-25	1.05		1.56		Z	22-A9g-24 12:45	1
PCB-26	2.86		1.77		Z	22-A9g-24 12:45	1
PCB-28	10.8		6.15			22-A9g-24 12:45	1
PCB-2W	ND	0.045	1.55			22-A9g-24 12:45	1
PCB-v0	ND	0.216	1.07			22-A9g-24 12:45	1
PCB-v1	1v.5		5.50			22-A9g-24 12:45	1
PCB-v4	ND	0.0vW	1.42			22-A9g-24 12:45	1
PCB-v5	ND	0.285	1.60			22-A9g-24 12:45	1
PCB-v6	ND	0.275	1.0			22-A9g-24 12:45	1
PCB-v7	4.2W		1.17		Z	22-A9g-24 12:45	1
PCB-v8	ND		1.66	0.8v6		22-A9g-24 12:45	1
PCB-vW	ND	0.20	1.5			22-A9g-24 12:45	1
PCB-40	0.0vW		2.16		Z	22-A9g-24 12:45	1
PCB-41/64/71/72	1v.2		4.07		Z	22-A9g-24 12:45	1
PCB-42/5W	5.0		1.0		Z, B	22-A9g-24 12:45	1
PCB-4v/4W	12.8		0.71		B	22-A9g-24 12:45	1
PCB-44	20.0		12.6		B	22-A9g-24 12:45	1
PCB-45	0.26		1.54		Z	22-A9g-24 12:45	1
PCB-46	ND		1.51	1.25		22-A9g-24 12:45	1
PCB-47	45.0		0.08		B	22-A9g-24 12:45	1
PCB-48/75	ND		2.6W	2.68		22-A9g-24 12:45	1
PCB-50	ND	0.02W	1.82			22-A9g-24 12:45	1
PCB-51	14.7		1.10			22-A9g-24 12:45	1
PCB-52/6W	20.8		14.8		B	22-A9g-24 12:45	1
PCB-5v	0.0		1.51		Z, B	22-A9g-24 12:45	1
PCB-54	ND	0.246	1.25			22-A9g-24 12:45	1
PCB-55	ND	0.10	1.1W			22-A9g-24 12:45	1
PCB-56/60	5.0		4.50		Z	22-A9g-24 12:45	1
PCB-57	ND	0.207	1.04			22-A9g-24 12:45	1
PCB-58	ND	0.10	1.27			22-A9g-24 12:45	1
PCB-61/70	15.0		2.0		B	22-A9g-24 12:45	1
PCB-62	ND	0.247	1.26			22-A9g-24 12:45	1
PCB-6v	0.44W		1.06		Z	22-A9g-24 12:45	1

Sample ID: 22B-U-S-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-09-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	1v-A9g-24
Matrix:	water	Sample Size:	1.04 L	Column:	3B-1
Date Collected:	26-09-24 0W00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	0.26v	1.v4			22-A9g-24 12:45	1
PCB-66/76	7.v0		2.55		Z	22-A9g-24 12:45	1
PCB-67	ND		1.15	0.468		22-A9g-24 12:45	1
PCB-68	1v.6		1.86			22-A9g-24 12:45	1
PCB-7v	ND	0.221	1.v8			22-A9g-24 12:45	1
PCB-74	4.1W		1.vv		Z	22-A9g-24 12:45	1
PCB-77	v.4v		1.8v		Z	22-A9g-24 12:45	1
PCB-78	ND	0.207	1.17			22-A9g-24 12:45	1
PCB-7W	0.v66		1.24		Z	22-A9g-24 12:45	1
PCB-80	ND	0.17W	0.772			22-A9g-24 12:45	1
PCB-81	ND	0.222	1.0W			22-A9g-24 12:45	1
PCB-82	v.v		1.77		Z	22-A9g-24 12:45	1
PCB-8v	ND	0.18W	1.18			22-A9g-24 12:45	1
PCB-84/v	12.2		1.68			22-A9g-24 12:45	1
PCB-85/116	4.W		2.04		Z	22-A9g-24 12:45	1
PCB-86	ND	0.v16	1.W			22-A9g-24 12:45	1
PCB-87/117/125	11.0		2.86		Z	22-A9g-24 12:45	1
PCB-88/W	4.08		2.22		Z	22-A9g-24 12:45	1
PCB-8W	ND	0.274	1.05			22-A9g-24 12:45	1
PCB-W/101	28.5		2.1v			22-A9g-24 12:45	1
PCB-W	ND	0.2W	2.68			22-A9g-24 12:45	1
PCB-W	ND	0.v07	1.71			22-A9g-24 12:45	1
PCB-W/v/102	2v.1		2.07		B	22-A9g-24 12:45	1
PCB-W	ND	0.226	1.v4			22-A9g-24 12:45	1
PCB-W	W14		0.v67			22-A9g-24 12:45	1
PCB-WW	ND		1.8W	8.4v		22-A9g-24 12:45	1
PCB-100	ND	0.28v	1.4v			22-A9g-24 12:45	1
PCB-10v	ND	0.27W	1.22			22-A9g-24 12:45	1
PCB-104	ND	0.244	1.04			22-A9g-24 12:45	1
PCB-105	1v.0		1.57			22-A9g-24 12:45	1
PCB-106/118	2W0		2.W			22-A9g-24 12:45	1
PCB-107/10W	ND		1.81	1.78		22-A9g-24 12:45	1
PCB-108/112	1.28		2.81		Z	22-A9g-24 12:45	1
PCB-110	v5.v		2.67			22-A9g-24 12:45	1
PCB-111/115	ND		2.21	0.47W		22-A9g-24 12:45	1
PCB-11v	ND	0.211	0.v			22-A9g-24 12:45	1
PCB-114	1.11		0.W8		Z	22-A9g-24 12:45	1
PCB-11W	ND	0.1W	0.W1			22-A9g-24 12:45	1
PCB-120	ND	0.171	1.40			22-A9g-24 12:45	1
PCB-121	ND	0.167	1.66			22-A9g-24 12:45	1
PCB-122	ND	0.404	1.6W			22-A9g-24 12:45	1
PCB-12v	ND		1.vW	0.640		22-A9g-24 12:45	1
PCB-124	ND		1.17	1.45		22-A9g-24 12:45	1
PCB-126	0.784		1.61		Z	22-A9g-24 12:45	1
PCB-127	ND	0.vv4	1.46			22-A9g-24 12:45	1
PCB-128/162	5.47		1.67		Z	22-A9g-24 12:45	1
PCB-12W	2.06		1.80		Z	22-A9g-24 12:45	1
PCB-1v0	2.58		2.15		Z	22-A9g-24 12:45	1
PCB-1v1/1vv	ND		2.52	0.8W		22-A9g-24 12:45	1
PCB-1v2/161	8.vW		2.vv		Z	22-A9g-24 12:45	1
PCB-1v4/14v	1.57		1.68		Z	22-A9g-24 12:45	1
PCB-1v5	4.04		2.v0		Z	22-A9g-24 12:45	1

Sample ID: 22B-U-S-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-09-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	1v-A9g-24
Matrix:	water	Sample Size:	1.04 L	Column:	3B-1
Date Collected:	26-09-24 0W00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1v6	v.45		1.55		Z	22-A9g-24 12:45	1
PCB-1v7	ND		1.41	1.W		22-A9g-24 12:45	1
PCB-1v8/16v/164	v6.4		2.4v		B	22-A9g-24 12:45	1
PCB-1vW14W	28.8		v.46		B	22-A9g-24 12:45	1
PCB-140	ND		1.64	0.22W		22-A9g-24 12:45	1
PCB-141	7.50		1.11			22-A9g-24 12:45	1
PCB-142	ND	0.274	1.57			22-A9g-24 12:45	1
PCB-144	ND		1.68	1.v0		22-A9g-24 12:45	1
PCB-145	ND	0.0W1	1.78			22-A9g-24 12:45	1
PCB-146/165	4.v8		2.56		Z	22-A9g-24 12:45	1
PCB-147	0.727		1.54		Z	22-A9g-24 12:45	1
PCB-148	ND	0.125	1.72			22-A9g-24 12:45	1
PCB-150	ND	0.0W8v	1.v8			22-A9g-24 12:45	1
PCB-151	7.5v		2.0W			22-A9g-24 12:45	1
PCB-152	ND	0.0W2	1.02			22-A9g-24 12:45	1
PCB-15v	v1.7		2.11		B	22-A9g-24 12:45	1
PCB-154	0.v26		1.v2		Z	22-A9g-24 12:45	1
PCB-155	ND	0.104	1.22			22-A9g-24 12:45	1
PCB-156	v.44		1.57		Z	22-A9g-24 12:45	1
PCB-157	0.W00		1.17		Z	22-A9g-24 12:45	1
PCB-158/160	ND		2.v0	v.76		22-A9g-24 12:45	1
PCB-15W	ND	0.164	1.26			22-A9g-24 12:45	1
PCB-166	ND	0.170	1.1v			22-A9g-24 12:45	1
PCB-167	1.86		0.851		Z	22-A9g-24 12:45	1
PCB-168	ND	0.1W0	0.855			22-A9g-24 12:45	1
PCB-16W	ND	0.201	1.vW			22-A9g-24 12:45	1
PCB-170	7.01		1.45			22-A9g-24 12:45	1
PCB-171	2.2v		1.21		Z	22-A9g-24 12:45	1
PCB-172	1.80		1.61		Z	22-A9g-24 12:45	1
PCB-17v	ND	0.157	1.v6			22-A9g-24 12:45	1
PCB-174	10.v		1.47			22-A9g-24 12:45	1
PCB-175	0.522		1.08		Z	22-A9g-24 12:45	1
PCB-176	1.42		0.781		Z	22-A9g-24 12:45	1
PCB-177	5.44		1.51			22-A9g-24 12:45	1
PCB-178	2.66		1.54		Z	22-A9g-24 12:45	1
PCB-17W	v.W		1.01		Z, B	22-A9g-24 12:45	1
PCB-180	22.8		1.70			22-A9g-24 12:45	1
PCB-181	ND	0.1v5	1.10			22-A9g-24 12:45	1
PCB-182/187	17.W		2.2v		B	22-A9g-24 12:45	1
PCB-18v	6.54		1.4v			22-A9g-24 12:45	1
PCB-184	ND	0.128	0.W0			22-A9g-24 12:45	1
PCB-185	ND		1.2v	1.14		22-A9g-24 12:45	1
PCB-186	ND	0.111	0.Wv			22-A9g-24 12:45	1
PCB-188	ND	0.117	1.01			22-A9g-24 12:45	1
PCB-18W	ND		1.21	0.v06		22-A9g-24 12:45	1
PCB-1W0	1.77		1.v8		Z	22-A9g-24 12:45	1
PCB-1W	ND		1.77	0.428		22-A9g-24 12:45	1
PCB-1W	ND	0.108	1.6v			22-A9g-24 12:45	1
PCB-1W	ND		1.7v	1.26		22-A9g-24 12:45	1
PCB-1W	4.vW		2.01		Z	22-A9g-24 12:45	1
PCB-1W	1.80		1.47		Z	22-A9g-24 12:45	1
PCB-1W/20v	7.18		2.24		Z	22-A9g-24 12:45	1

Sample ID: 22B-U-S-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-09-24 11:2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	1v-A9g-24
Matrix:	water	Sample Size:	1.04 L	Column:	3B-1
Date Collected:	26-09-24 0W00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1W	ND	0.065W	1.vW			22-A9g-24 12:45	1
PCB-1W8	0.v75		1.W8		Z	22-A9g-24 12:45	1
PCB-1WW	6.vv		1.42			22-A9g-24 12:45	1
PCB-200	0.W8W		0.852		Z	22-A9g-24 12:45	1
PCB-201	0.WW		1.27		Z	22-A9g-24 12:45	1
PCB-202	1.0W		1.1W		Z	22-A9g-24 12:45	1
PCB-204	ND	0.068v	1.01			22-A9g-24 12:45	1
PCB-205	ND		1.4W	0.2W		22-A9g-24 12:45	1
PCB-206	ND		1.55	2.1W		22-A9g-24 12:45	1
PCB-207	0.502		1.4W		Z	22-A9g-24 12:45	1
PCB-208	ND		1.46	0.607		22-A9g-24 12:45	1
PCB-20W	0.W85		1.85		Z	22-A9g-24 12:45	1

Totals							
Total monoCB	ND	0.176					
Total diCB	11.4			21.1			
Total triCB	8v.0						
Total tetraCB	1W			1W			
Total pentaCB	177			1W8			
Total hexaCB	151			15W			
Total heptaCB	84.v			87.5			
Total octaCB	2v.1						
Total nonaCB	0.502			v.v0			
DecaCB	0.W85						
Total PCB	725						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1vC-PCB-1	IS	6v.5	5 - 145		22-A9g-24 12:45	1
1vC-PCB-v	IS	66.6	5 - 145		22-A9g-24 12:45	1
1vC-PCB-4	IS	65.0	5 - 145		22-A9g-24 12:45	1
1vC-PCB-W	IS	66.7	5 - 145		22-A9g-24 12:45	1
1vC-PCB-11	IS	74.4	5 - 145		22-A9g-24 12:45	1
1vC-PCB-1W	IS	68.5	5 - 145		22-A9g-24 12:45	1
1vC-PCB-28	IS	67.6	5 - 145		22-A9g-24 12:45	1
1vC-PCB-v2	IS	72.0	5 - 145		22-A9g-24 12:45	1
1vC-PCB-v7	IS	81.6	5 - 145		22-A9g-24 12:45	1
1vC-PCB-47	IS	6W1	5 - 145		22-A9g-24 12:45	1
1vC-PCB-52	IS	71.v	5 - 145		22-A9g-24 12:45	1
1vC-PCB-54	IS	6v.0	5 - 145		22-A9g-24 12:45	1
1vC-PCB-70	IS	7W2	5 - 145		22-A9g-24 12:45	1
1vC-PCB-77	IS	85.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-80	IS	80.0	10 - 145		22-A9g-24 12:45	1
1vC-PCB-81	IS	8v.8	10 - 145		22-A9g-24 12:45	1
1vC-PCB-W8	IS	7v.5	10 - 145		22-A9g-24 12:45	1
1vC-PCB-W	IS	81.4	10 - 145		22-A9g-24 12:45	1
1vC-PCB-101	IS	78.0	10 - 145		22-A9g-24 12:45	1
1vC-PCB-104	IS	68.1	10 - 145		22-A9g-24 12:45	1
1vC-PCB-105	IS	8v.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-114	IS	8v.8	10 - 145		22-A9g-24 12:45	1
1vC-PCB-118	IS	84.8	10 - 145		22-A9g-24 12:45	1
1vC-PCB-12v	IS	87.W	10 - 145		22-A9g-24 12:45	1

Sample ID: 22B-U-S-20240626

EPA Method 1668C

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-09-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	1v-A9g-24
Matrix:	water	Sample Size:	1.04 L	Column:	3B-1
Date Collected:	26-09-24 0W00				

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1vC-PCB-126	IS	85.5	10 - 145		22-A9g-24 12:45	1
1vC-PCB-127	IS	86.6	10 - 145		22-A9g-24 12:45	1
1vC-PCB-1v8	IS	88.7	10 - 145		22-A9g-24 12:45	1
1vC-PCB-141	IS	86.8	10 - 145		22-A9g-24 12:45	1
1vC-PCB-15v	IS	85.v	10 - 145		22-A9g-24 12:45	1
1vC-PCB-155	IS	75.0	10 - 145		22-A9g-24 12:45	1
1vC-PCB-156	IS	87.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-157	IS	88.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-15W	IS	88.v	10 - 145		22-A9g-24 12:45	1
1vC-PCB-167	IS	88.1	10 - 145		22-A9g-24 12:45	1
1vC-PCB-16W	IS	8W5	10 - 145		22-A9g-24 12:45	1
1vC-PCB-170	IS	W.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-180	IS	W.7	10 - 145		22-A9g-24 12:45	1
1vC-PCB-188	IS	81.1	10 - 145		22-A9g-24 12:45	1
1vC-PCB-18W	IS	W.0	10 - 145		22-A9g-24 12:45	1
1vC-PCB-1W	IS	W.1	10 - 145		22-A9g-24 12:45	1
1vC-PCB-202	IS	8W7	10 - 145		22-A9g-24 12:45	1
1vC-PCB-206	IS	W.8	10 - 145		22-A9g-24 12:45	1
1vC-PCB-208	IS	W.7	10 - 145		22-A9g-24 12:45	1
1vC-PCB-20W	IS	W.W	10 - 145		22-A9g-24 12:45	1
1vC-PCB-7W	CRS	W.v	10 - 145		22-A9g-24 12:45	1
1vC-PCB-178	CRS	W.6	10 - 145		22-A9g-24 12:45	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

**Sample ID: 22B-U-S-20240626**

**EPA Method 1668C**

Name:	Apex Laboratories	Lab Sample:	B24H111-MSD1	Source Lab Sample:	2406214-02
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Samp Size:	0.921/0.862 L	Column:	ZB-1
Date Analyzed:	23-Aug-24 09:03				
	23-Aug-24 08:03				

Analyte	Sample (pg/L)	MS (pg/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (pg/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits
PCB-1	ND	1080	1080	100		1140	1150	99.1	0.904		50-150	50
PCB-3	ND	1070	1090	97.8		1140	1160	98.3	0.51		50-150	50
PCB-4/10	11.4	2300	2190	104		2430	2340	103	0.966		50-150	50
PCB-15	ND	1140	1090	105		1140	1160	98.7	6.19		50-150	50
PCB-19	3.20	1060	1100	96.4		1130	1170	95.9	0.52		50-150	50
PCB-37	4.29	1150	1100	104		1250	1170	106	1.9		50-150	50
PCB-54	ND	1060	1100	96.2		1140	1170	97.2	1.03		50-150	50
PCB-77	3.43	1000	1090	91.7		1080	1160	93.1	1.52		50-150	50
PCB-81	ND	1000	1090	91.8		1060	1160	91.6	0.218		50-150	50
PCB-104	ND	1040	1080	96.5		1130	1150	97.9	1.44		50-150	50
PCB-105	13.0	1060	1100	94.9		1180	1170	100	5.23		50-150	50
PCB-106/118	29.0	2100	2160	95.8		2280	2310	97.6	1.86		50-150	50
PCB-114	1.11	1080	1090	98.7		1180	1160	101	2.3		50-150	50
PCB-123	ND	1040	1090	95.2		1140	1160	97.9	2.8		50-150	50
PCB-126	0.784	1060	1100	96.3		1140	1170	97.8	1.55		50-150	50
PCB-155	ND	1100	1080	102		1180	1150	103	0.976		50-150	50
PCB-156	3.44	1020	1100	92.1		1120	1170	95.5	3.62		50-150	50
PCB-157	0.900	1030	1090	94.8		1130	1160	97.2	2.5		50-150	50
PCB-167	1.86	994	1090	91.0		1120	1160	96.3	5.66		50-150	50
PCB-169	ND	1040	1090	95.0		1130	1160	97.7	2.8		50-150	50
PCB-188	ND	1100	1080	102		1190	1150	104	1.94		50-150	50
PCB-189	ND	1030	1090	94.9		1150	1160	98.8	4.03		50-150	50
PCB-202	1.09	1040	1080	96.6		1140	1150	98.8	2.25		50-150	50
PCB-205	ND	1050	1090	96.0		1100	1160	94.7	1.36		50-150	50
PCB-206	ND	1040	1100	94.5		1140	1170	97.6	3.23		50-150	50
PCB-208	ND	1010	1090	92.7		1110	1160	95.5	2.98		50-150	50
PCB-209	0.905	1040	1080	95.9		1140	1150	98.7	2.88		50-150	50

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits
13C-PCB-1	IS	65.7		69.2		5 - 145
13C-PCB-3	IS	69.5		75.3		5 - 145
13C-PCB-4	IS	63.3		67.2		5 - 145
13C-PCB-9	IS	65.3		69.4		5 - 145
13C-PCB-11	IS	74.1		76.7		5 - 145
13C-PCB-19	IS	70.9		74.1		5 - 145
13C-PCB-28	IS	79.8		78.2		5 - 145
13C-PCB-32	IS	76.4		77.5		5 - 145
13C-PCB-37	IS	87.0		86.4		5 - 145
13C-PCB-47	IS	77.1		73.0		5 - 145
13C-PCB-52	IS	76.5		75.0		5 - 145
13C-PCB-54	IS	69.4		65.4		5 - 145
13C-PCB-70	IS	85.6		82.8		5 - 145
13C-PCB-77	IS	88.1		89.3		10 - 145
13C-PCB-80	IS	81.2		81.5		10 - 145
13C-PCB-81	IS	86.6		88.2		10 - 145
13C-PCB-95	IS	78.4		76.5		10 - 145
13C-PCB-97	IS	84.7		83.6		10 - 145
13C-PCB-101	IS	83.6		80.2		10 - 145
13C-PCB-104	IS	76.7		73.5		10 - 145

**Sample ID: 22B-U-S-20240626**

**EPA Method 1668C**

Name:	Apex Laboratories	Lab Sample:	B24H111-MSD1	Source Lab Sample:	2406214-02
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24H111	Date Extracted:	13-Aug-24
Matrix:	Aqueous	Samp Size:	0.921/0.862 L	Column:	ZB-1
Date Analyzed:	23-Aug-24 09:03 23-Aug-24 08:03				

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits
13C-PCB-105	IS	79.2		77.4		10 - 145
13C-PCB-114	IS	75.1		74.1		10 - 145
13C-PCB-118	IS	87.5		88.2		10 - 145
13C-PCB-123	IS	92.2		90.9		10 - 145
13C-PCB-126	IS	77.9		80.0		10 - 145
13C-PCB-127	IS	79.5		80.7		10 - 145
13C-PCB-138	IS	87.7		86.5		10 - 145
13C-PCB-141	IS	86.9		88.3		10 - 145
13C-PCB-153	IS	84.2		84.5		10 - 145
13C-PCB-155	IS	75.4		73.9		10 - 145
13C-PCB-156	IS	90.6		90.7		10 - 145
13C-PCB-157	IS	89.9		88.9		10 - 145
13C-PCB-159	IS	87.8		87.8		10 - 145
13C-PCB-167	IS	89.1		88.8		10 - 145
13C-PCB-169	IS	95.7		91.4		10 - 145
13C-PCB-170	IS	103		100		10 - 145
13C-PCB-180	IS	98.7		98.7		10 - 145
13C-PCB-188	IS	82.7		83.5		10 - 145
13C-PCB-189	IS	101		98.1		10 - 145
13C-PCB-194	IS	92.3		94.4		10 - 145
13C-PCB-202	IS	91.3		90.7		10 - 145
13C-PCB-206	IS	95.5		94.6		10 - 145
13C-PCB-208	IS	98.0		99.2		10 - 145
13C-PCB-209	IS	97.9		97.2		10 - 145
13C-PCB-79	CRS	101		97.5		10 - 145
13C-PCB-178	CRS	93.1		95.5		10 - 145

**Sample ID: Method Blank**
**EPA Method 1699**

Client Data		Laboratory Data				
Name:	Apex Laboratories	Lab Sample:	B24G010-BLK1		Date Extracted:	01-Jul-24
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010		Column:	ZB-50
Matrix:	Aqueous	Sample Size:	1.00 L			

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
Hexachlorobenzene	9.41		17.5		J	07-Aug-24 18:12	1
alpha-BHC	ND	4.70	6.59			07-Aug-24 18:12	1
Lindane (gamma-BHC)	ND	6.46	8.45			07-Aug-24 18:12	1
beta-BHC	ND	6.95	8.68			07-Aug-24 18:12	1
delta-BHC	ND	5.17	8.50			07-Aug-24 18:12	1
Heptachlor	ND	1.11	24.0			07-Aug-24 18:12	1
Aldrin	ND	2.14	9.55			07-Aug-24 18:12	1
Oxychlordane	ND	5.56	10.1			07-Aug-24 18:12	1
cis-Heptachlor Epoxide	ND	4.10	12.7			07-Aug-24 18:12	1
trans-Heptachlor Epoxide	ND	13.8	22.4			07-Aug-24 18:12	1
trans-Chlordane (gamma)	ND	5.21	14.2			07-Aug-24 18:12	1
trans-Nonachlor	ND	4.59	11.8			07-Aug-24 18:12	1
cis-Chlordane (alpha)	ND	4.22	28.0			07-Aug-24 18:12	1
Endosulfan I (alpha)	ND	6.34	94.8			07-Aug-24 18:12	1
2,4'-DDE	ND	3.24	8.57			07-Aug-24 18:12	1
4,4'-DDE	30.8		14.6		J	07-Aug-24 18:12	1
Dieldrin	12.8		18.8		J	07-Aug-24 18:12	1
Endrin	ND	4.90	14.9			07-Aug-24 18:12	1
cis-Nonachlor	ND	5.42	11.4			07-Aug-24 18:12	1
Endosulfan II (beta)	ND	17.0	65.1			07-Aug-24 18:12	1
2,4'-DDD	ND	8.24	9.77			07-Aug-24 18:12	1
2,4'-DDT	ND	11.2	11.7			07-Aug-24 18:12	1
4,4'-DDD	ND		9.23	63.9		07-Aug-24 18:12	1
4,4'-DDT	ND	13.1	11.3			07-Aug-24 18:12	1
Endosulfan Sulfate	ND	9.96	36.6			07-Aug-24 18:12	1
4,4'-Methoxychlor	ND	2.24	26.6			07-Aug-24 18:12	1
Mirex	ND	2.40	7.97			07-Aug-24 18:12	1
Endrin Aldehyde	ND	11.3	54.7			07-Aug-24 18:12	1
Endrin Ketone	ND	6.17	50.5			07-Aug-24 18:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C6-Hexachlorobenzene	IS	27.6	5 - 120		07-Aug-24 18:12	1
13C6-alpha-BHC	IS	40.8	32 - 130		07-Aug-24 18:12	1
13C6-Lindane (gamma-BHC)	IS	41.7	11 - 120		07-Aug-24 18:12	1
13C6-beta-BHC	IS	41.1	32 - 130		07-Aug-24 18:12	1
13C6-delta-BHC	IS	39.7	36 - 137		07-Aug-24 18:12	1
13C10-Heptachlor	IS	41.8	5 - 120		07-Aug-24 18:12	1
13C12-Aldrin	IS	27.8	5 - 120		07-Aug-24 18:12	1
13C10-Oxychlordane	IS	41.9	23 - 135		07-Aug-24 18:12	1
13C10-cis-Heptachlor Epoxide	IS	46.3	27 - 137		07-Aug-24 18:12	1
13C10-trans-Chlordane (gamma)	IS	38.2	21 - 132		07-Aug-24 18:12	1
13C10-trans-Nonachlor	IS	38.5	14 - 136		07-Aug-24 18:12	1
13C9-Endosulfan I (alpha)	IS	44.5	15 - 148		07-Aug-24 18:12	1
13C12-2,4'-DDE	IS	47.1	47 - 160		07-Aug-24 18:12	1
13C12-4,4'-DDE	IS	44.3	47 - 160	H	07-Aug-24 18:12	1
13C12-Dieldrin	IS	43.8	40 - 151		07-Aug-24 18:12	1
13C12-Endrin	IS	51.0	35 - 155		07-Aug-24 18:12	1
13C10-cis-Nonachlor	IS	40.4	36 - 139		07-Aug-24 18:12	1
13C9-Endosulfan II (beta)	IS	38.8	5 - 122		07-Aug-24 18:12	1
13C12-2,4'-DDD	IS	46.0	5 - 199		07-Aug-24 18:12	1
13C12-2,4'-DDT	IS	44.8	5 - 199		07-Aug-24 18:12	1
13C12-4,4'-DDD	IS	46.5	5 - 120		07-Aug-24 18:12	1

**Sample ID: Method Blank**

**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	B24G010-BLK1		
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Date Extracted:	01-Jul-24
Matrix:	Aqueous	Sample Size:	1.00 L	Column:	ZB-50

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C12-4,4'-DDT	IS	49.3	5 - 120		07-Aug-24 18:12	1
13C9-Endosulfan Sulfate	IS	44.5	15 - 148		07-Aug-24 18:12	1
13C12-Methoxychlor	IS	48.2	5 - 120		07-Aug-24 18:12	1
13C10-Mirex	IS	32.9	5 - 120		07-Aug-24 18:12	1
13C12-Endrin Aldehyde	IS	30.8	15 - 148		07-Aug-24 18:12	1
13C12-Endrin Ketone	IS	40.4	15 - 148		07-Aug-24 18:12	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

Sample ID: OPR

EPA Method 1699

Client Data		Laboratory Data				
Name:	Apex LaboratorieK	Lab Sample:	B24G010-BS1		Date Extracted:	01-q 1-24 1J:21
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010		Col. mn:	uB-50
Matrix:	AZ eo. K	Sample Size:	1s00 L			

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
Hexachlorobenzene	7J9	1000	7J9	50-120	B	09-A. g-24 18:J8	1
alpha-BHC	711	1000	71s1	50-120		09-A. g-24 18:J8	1
Lindane (gamma-BHC(	)2	1000	)2	50-120		09-A. g-24 18:J8	1
beta-BHC	1000	1000	100	50-120		09-A. g-24 18:J8	1
delta-BHC	)2	1000	)2	50-120		09-A. g-24 18:J8	1
Heptachlor	72J	1000	72sJ	50-120		09-A. g-24 18:J8	1
Aldrin	)1	1000	)1s1	50-120		09-A. g-24 18:J8	1
Oxychlordane	)91	1000	)9s1	50-120		09-A. g-24 18:J8	1
ciKHeptachlor Epoxide	)55	1000	)5s5	50-120		09-A. g-24 18:J8	1
tranKHeptachlor Epoxide	)59	1000	)5s9	50-120		09-A. g-24 18:J8	1
tranKChlordane (gamma(	7J4	1000	7J4	50-120		09-A. g-24 18:J8	1
tranKNonachlor	718	1000	71s8	50-120		09-A. g-24 18:J8	1
ciKChlordane (alpha(	780	1000	78s0	50-120		09-A. g-24 18:J8	1
EndoK l3an f (alpha(	729	1000	72s9	50-120		09-A. g-24 18:J8	1
2I4,-DDE	704	1000	70s4	24-12J		09-A. g-24 18:J8	1
4I4,-DDE	)7)	1000	)7s)	50-120	B	09-A. g-24 18:J8	1
Dieldrin	74J	1000	74sJ	50-120	B	09-A. g-24 18:J8	1
Endrin	)95	1000	)9s5	50-120		09-A. g-24 18:J8	1
ciKNonachlor	7J7	1000	7J7s	50-120		09-A. g-24 18:J8	1
EndoK l3an ff (beta(	)12	1000	)1s2	5-200		09-A. g-24 18:J8	1
2I4,-DDD	748	1000	74s8	50-120		09-A. g-24 18:J8	1
2I4,-DD'	7J0	1000	7J0s	50-120		09-A. g-24 18:J8	1
4I4,-DDD	74)	1000	74s)	42-120		09-A. g-24 18:J8	1
4I4,-DD'	740	1000	74s0	50-120		09-A. g-24 18:J8	1
EndoK l3an S. l3ate	744	1000	74s4	50-120		09-A. g-24 18:J8	1
4I4,-Methoxychlor	700	1000	70s0	50-120		09-A. g-24 18:J8	1
Mirex	)74	1000	)7s4	50-120		09-A. g-24 18:J8	1
Endrin Aldehyde	1010	1000	101	50-1J4		09-A. g-24 18:J8	1
Endrin Tetone	)29	770	)2s9	50-1J4		09-A. g-24 18:J8	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1JC8-Hexachlorobenzene	fS	29s2	5-120		09-A. g-24 18:J8	1
1JC8-alpha-BHC	fS	J8s8	19-141		09-A. g-24 18:J8	1
1JC8-Lindane (gamma-BHC(	fS	J9s8	5-124		09-A. g-24 18:J8	1
1JC8-beta-BHC	fS	J7s)	19-141		09-A. g-24 18:J8	1
1JC8-delta-BHC	fS	J7s5	18-150		09-A. g-24 18:J8	1
1JC10-Heptachlor	fS	J8s2	5-12)		09-A. g-24 18:J8	1
1JC12-Aldrin	fS	28s5	5-128		09-A. g-24 18:J8	1
1JC10-Oxychlordane	fS	40sJ	5-144		09-A. g-24 18:J8	1
1JC10-ciKHeptachlor Epoxide	fS	44s2	) -148		09-A. g-24 18:J8	1
1JC10-tranKChlordane (gamma(	fS	J7sJ	15-144		09-A. g-24 18:J8	1
1JC10-tranKNonachlor	fS	40s1	1J-147		09-A. g-24 18:J8	1
1JC7-EndoK l3an f (alpha(	fS	45s4	5-144		09-A. g-24 18:J8	1
1JC12-2I4,-DDE	fS	4)sJ	28-187		09-A. g-24 18:J8	1
1JC12-4I4,-DDE	fS	49s1	28-187		09-A. g-24 18:J8	1

**Sample ID: OPR**
**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex LaboratorieK	Lab Sample:	B24G010-BS1	Date Extracted:	01-q 1-24 1J:21
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Col. mn:	uB-50
Matrix:	AZ eo. K	Sample Size:	1s00 L		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1JC12-Dieldrin	fS	44s7	17 -181		09-A. g-24 18:J8	1
1JC12-Endrin	fS	51s5	20 -159		09-A. g-24 18:J8	1
1JC10-ciKNonachlor	fS	40s4	19 -154		09-A. g-24 18:J8	1
1JC7-EndoK l3an ff 6beta(	fS	42s4	5 -120		09-A. g-24 18:J8	1
1JC12-2I4,-DDD	fS	49s9	14 -200		09-A. g-24 18:J8	1
1JC12-2I4,-DD'	fS	49sl	14 -200		09-A. g-24 18:J8	1
1JC12-4I4,-DDD	fS	47s0	14 -200		09-A. g-24 18:J8	1
1JC12-4I4,-DD'	fS	50s5	1J -200		09-A. g-24 18:J8	1
1JC7-EndoK l3an S. l3ate	fS	44s9	5 -144		09-A. g-24 18:J8	1
1JC12-Methoxychlor	fS	47s5	) -200		09-A. g-24 18:J8	1
1JC10-Mirex	fS	J8sl	5 -1J)		09-A. g-24 18:J8	1
1JC12-Endrin Aldehyde	fS	JJsl	5 -144		09-A. g-24 18:J8	1
1JC12-Endrin Tetone	fS	42s9	5 -144		09-A. g-24 18:J8	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Date Extracted:	01-Jul-24
Matrix:	Water	Sample Size:	0.944 L	Column:	ZB-50
Date Collected:	26-Jun-24 12:38				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
Hexachlorobenzene	40.5		18.5		J, B	07-Aug-24 19:48	1
alpha-BHC	740		6.98			07-Aug-24 19:48	1
Lindane (gamma-BHC)	122		8.95			07-Aug-24 19:48	1
beta-BHC	2180		9.20			07-Aug-24 19:48	1
delta-BHC	924		9.01			07-Aug-24 19:48	1
Heptachlor	ND	3.09	25.4			07-Aug-24 19:48	1
Aldrin	9.31		10.1		J	07-Aug-24 19:48	1
Oxychlordane	ND	12.3	10.7			07-Aug-24 19:48	1
cis-Heptachlor Epoxide	52.2		13.5			07-Aug-24 19:48	1
trans-Heptachlor Epoxide	390		23.7			07-Aug-24 19:48	1
trans-Chlordane (gamma)	67.3		15.0			07-Aug-24 19:48	1
trans-Nonachlor	32.8		12.5		J	07-Aug-24 19:48	1
cis-Chlordane (alpha)	119		29.7			07-Aug-24 19:48	1
Endosulfan I (alpha)	ND	13.2	100			07-Aug-24 19:48	1
2,4'-DDE	8.65		9.08		J	07-Aug-24 19:48	1
4,4'-DDE	79.9		15.5		B	07-Aug-24 19:48	1
Dieldrin	4150		19.9		B	07-Aug-24 19:48	1
Endrin	254		15.8			07-Aug-24 19:48	1
cis-Nonachlor	20.3		12.1		J	07-Aug-24 19:48	1
Endosulfan II (beta)	ND		69.0	46.7		07-Aug-24 19:48	1
2,4'-DDD	123		10.4			07-Aug-24 19:48	1
2,4'-DDT	ND	11.4	12.4			07-Aug-24 19:48	1
4,4'-DDD	285		9.78			07-Aug-24 19:48	1
4,4'-DDT	ND		12.0	42.8		07-Aug-24 19:48	1
Endosulfan Sulfate	55.0		38.8		J	07-Aug-24 19:48	1
4,4'-Methoxychlor	30.4		28.2		J	07-Aug-24 19:48	1
Mirex	ND	2.71	8.45			07-Aug-24 19:48	1
Endrin Aldehyde	ND	23.5	58.0			07-Aug-24 19:48	1
Endrin Ketone	355		53.5			07-Aug-24 19:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C6-Hexachlorobenzene	IS	37.2	5 - 120		07-Aug-24 19:48	1
13C6-alpha-BHC	IS	57.0	32 - 130		07-Aug-24 19:48	1
13C6-Lindane (gamma-BHC)	IS	56.7	11 - 120		07-Aug-24 19:48	1
13C6-beta-BHC	IS	58.9	32 - 130		07-Aug-24 19:48	1
13C6-delta-BHC	IS	58.5	36 - 137		07-Aug-24 19:48	1
13C10-Heptachlor	IS	54.5	5 - 120		07-Aug-24 19:48	1
13C12-Aldrin	IS	38.1	5 - 120		07-Aug-24 19:48	1
13C10-Oxychlordane	IS	60.9	23 - 135		07-Aug-24 19:48	1
13C10-cis-Heptachlor Epoxide	IS	68.9	27 - 137		07-Aug-24 19:48	1
13C10-trans-Chlordane (gamma)	IS	56.6	21 - 132		07-Aug-24 19:48	1
13C10-trans-Nonachlor	IS	54.8	14 - 136		07-Aug-24 19:48	1
13C9-Endosulfan I (alpha)	IS	62.7	15 - 148		07-Aug-24 19:48	1
13C12-2,4'-DDE	IS	62.0	47 - 160		07-Aug-24 19:48	1
13C12-4,4'-DDE	IS	63.6	47 - 160		07-Aug-24 19:48	1
13C12-Dieldrin	IS	58.6	40 - 151		07-Aug-24 19:48	1
13C12-Endrin	IS	73.6	35 - 155		07-Aug-24 19:48	1
13C10-cis-Nonachlor	IS	54.9	36 - 139		07-Aug-24 19:48	1
13C9-Endosulfan II (beta)	IS	57.8	5 - 122		07-Aug-24 19:48	1
13C12-2,4'-DDD	IS	68.0	5 - 199		07-Aug-24 19:48	1
13C12-2,4'-DDT	IS	59.0	5 - 199		07-Aug-24 19:48	1
13C12-4,4'-DDD	IS	68.4	5 - 120		07-Aug-24 19:48	1

**Sample ID: 22B-U-D-20240626**

**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-01	Date Received:	28-Jun-24 11:32
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Date Extracted:	01-Jul-24
Matrix:	Water	Sample Size:	0.944 L	Column:	ZB-50
Date Collected:	26-Jun-24 12:38				

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C12-4,4'-DDT	IS	62.6	5 - 120		07-Aug-24 19:48	1
13C9-Endosulfan Sulfate	IS	56.0	15 - 148		07-Aug-24 19:48	1
13C12-Methoxychlor	IS	66.0	5 - 120		07-Aug-24 19:48	1
13C10-Mirex	IS	40.1	5 - 120		07-Aug-24 19:48	1
13C12-Endrin Aldehyde	IS	31.8	15 - 148		07-Aug-24 19:48	1
13C12-Endrin Ketone	IS	56.0	15 - 148		07-Aug-24 19:48	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

**Sample ID: 22B-U-S-20240626**

**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-Jun-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Date Extracted:	01-Jul-24
Matrix:	Water	Sample Size:	0.921 L	Column:	ZB-50
Date Collected:	26-Jun-24 09:00				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
Hexachlorobenzene	v, .,		19.0		J7B	0, -Aug-24 20:v6	1
alpha-BHC	, 0,		, .16			0, -Aug-24 20:v6	1
Lindane (gamma-BHC)	128		9.18			0, -Aug-24 20:v6	1
beta-BHC	21, 0		9.42			0, -Aug-24 20:v6	1
delta-BHC	8, 8		9.2v			0, -Aug-24 20:v6	1
Heptachlor	ND	2.61	26.1			0, -Aug-24 20:v6	1
Aldrin	ND		10.4	, .6v		0, -Aug-24 20:v6	1
Oxychlordane	19.8		11.0		J	0, -Aug-24 20:v6	1
cis-Heptachlor Epoxide	v6.6		1v.8		J	0, -Aug-24 20:v6	1
trans-Heptachlor Epoxide	122		24.v			0, -Aug-24 20:v6	1
trans-Chlordane (gamma)	54.8		15.4			0, -Aug-24 20:v6	1
trans-Nonachlor	ND		12.8	v4.2		0, -Aug-24 20:v6	1
cis-Chlordane (alpha)	91.1		v0.4			0, -Aug-24 20:v6	1
Endosulfan I (alpha)	ND	10.9	10v			0, -Aug-24 20:v6	1
27'-DDE	ND	v.v1	9.v1			0, -Aug-24 20:v6	1
47'-DDE	, 1.9		15.9		B	0, -Aug-24 20:v6	1
Dieldrin	2, , 0		20.4		B	0, -Aug-24 20:v6	1
Endrin	21,		16.2			0, -Aug-24 20:v6	1
cis-Nonachlor	ND	1v.6	12.4			0, -Aug-24 20:v6	1
Endosulfan II (beta)	ND	42.5	, 0.,			0, -Aug-24 20:v6	1
27'-DDD	89.1		10.6			0, -Aug-24 20:v6	1
27'-DDT	ND	12.0	12.,			0, -Aug-24 20:v6	1
47'-DDD	195		10.0			0, -Aug-24 20:v6	1
47'-DDT	ND		12.v	v, .4		0, -Aug-24 20:v6	1
Endosulfan Sulfate	ND	19.v	v9.,			0, -Aug-24 20:v6	1
47'-Methoxychlor	19.5		28.9		J	0, -Aug-24 20:v6	1
Mirex	ND	2.62	8.65			0, -Aug-24 20:v6	1
Endrin Aldehyde	ND	26.6	59.4			0, -Aug-24 20:v6	1
Endrin Ketone	282		54.8			0, -Aug-24 20:v6	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1vC6-Hexachlorobenzene	IS	42.v	5 - 120		0, -Aug-24 20:v6	1
1vC6-alpha-BHC	IS	62.5	v2 - 1v0		0, -Aug-24 20:v6	1
1vC6-Lindane (gamma-BHC)	IS	62.8	11 - 120		0, -Aug-24 20:v6	1
1vC6-beta-BHC	IS	65.,	v2 - 1v0		0, -Aug-24 20:v6	1
1vC6-delta-BHC	IS	65.4	v6 - 1v,		0, -Aug-24 20:v6	1
1vC10-Heptachlor	IS	61.9	5 - 120		0, -Aug-24 20:v6	1
1vC12-Aldrin	IS	40.1	5 - 120		0, -Aug-24 20:v6	1
1vC10-Oxychlordane	IS	6, .5	2v - 1v5		0, -Aug-24 20:v6	1
1vC10-cis-Heptachlor Epoxide	IS	, , .0	2, - 1v,		0, -Aug-24 20:v6	1
1vC10-trans-Chlordane (gamma)	IS	66.9	21 - 1v2		0, -Aug-24 20:v6	1
1vC10-trans-Nonachlor	IS	6v.6	14 - 1v6		0, -Aug-24 20:v6	1
1vC9-Endosulfan I (alpha)	IS	, 4.1	15 - 148		0, -Aug-24 20:v6	1
1vC12-27'-DDE	IS	68.,	4, - 160		0, -Aug-24 20:v6	1
1vC12-47'-DDE	IS	69.4	4, - 160		0, -Aug-24 20:v6	1
1vC12-Dieldrin	IS	68.2	40 - 151		0, -Aug-24 20:v6	1
1vC12-Endrin	IS	80.1	v5 - 155		0, -Aug-24 20:v6	1
1vC10-cis-Nonachlor	IS	62.6	v6 - 1v9		0, -Aug-24 20:v6	1
1vC9-Endosulfan II (beta)	IS	6, .v	5 - 122		0, -Aug-24 20:v6	1
1vC12-27'-DDD	IS	, , ,	5 - 199		0, -Aug-24 20:v6	1
1vC12-27'-DDT	IS	, 0.v	5 - 199		0, -Aug-24 20:v6	1
1vC12-47'-DDD	IS	, 9.9	5 - 120		0, -Aug-24 20:v6	1

**Sample ID: 22B-U-S-20240626**

**EPA Method 1699**

Client Data		Laboratory Data			
Name:	Apex Laboratories	Lab Sample:	2406214-02	Date Received:	28-Jun-24 11:v2
Project:	A4F1545 / RP Portland Harbor	QC Batch:	B24G010	Date Extracted:	01-Jul-24
Matrix:	Water	Sample Size:	0.921 L	Column:	ZB-50
Date Collected:	26-Jun-24 09:00				

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
1vC12-47'-DDT	IS	, 5.5	5 - 120		0, -Aug-24 20:v6	1
1vC9-Endosulfan Sulfate	IS	66.2	15 - 148		0, -Aug-24 20:v6	1
1vC12-Methoxychlor	IS	, , .2	5 - 120		0, -Aug-24 20:v6	1
1vC10-Mirex	IS	46.9	5 - 120		0, -Aug-24 20:v6	1
1vC12-Endrin Aldehyde	IS	42.,	15 - 148		0, -Aug-24 20:v6	1
1vC12-Endrin Ketone	IS	64.4	15 - 148		0, -Aug-24 20:v6	1

EDL - Sample specific estimated detection limit  
 EMPC - Estimated maximum possible concentration  
 MDL - Method Detection Limit

**Sample ID: 22B-U-S-20240626**

**EPA Method 1699**

Name:	Azex Saboratorie-	Sab pamzle:	B24G010EMph 1	poKrece Sab pamzle:	240u214E02
Project:	A4F1545 / RP Portland Harbor	L Q BateC:	B24G010	h ate Dtracted:	01EgKIE24
Matrix:	A. KeoK-	pamz piqe:	0869/08 1u S	QolKmn:	s BE50
h ate AnalZqed:	0J EAK7E24 22:19 0J EAK7E24 21:24				

Analyte	Sample (pg/L)	MS (pg/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (pg/L)	MSD Spike Amt	MSD % Rec	MSD RPD	MSD Quals	%Rec Limits	RPD Limits
HexacClorobenqene	9J8	1190	1190	(u8	B	11J0	10(0	104	J8J	B	50E150	25
alzCaBHQ	J0J	16u0	1190	102		1(00	10(0	10(	u8u4		50E150	25
Sindane )7ammaBHQO	126	1190	1190	668		1220	10(0	101	198		50E150	25
betaBHQ	21J0	9490	1190	112		9520	10(0	124	108		50E150	25
deltaBHQ	6J6	1((0	1190	(68		20(0	10(0	111	118		50E150	25
HeztacClor	Nh	1090	1190	(18		1050	10(0	(u8	582		50E150	25
Aldrin	Nh	1020	1190	(08		1010	10(0	(28	285		50E150	25
y xZcClordane	1(8	10u0	1190	(28		1190	10(0	102	(86		50E150	25
ci-HeztacClor Dzoxide	9u8u	1040	1190	668u		10(0	10(0	(u8	685		50E150	25
tran-HeztacClor Dzoxide	122	1010	1190	J68		J51	10(0	5J8	908	H	50E150	25
tran-EClordane )7ammaO	548	10(0	1190	(18		11J0	10(0	102	108		50E150	25
tran-ENonacClor	Nh	10u0	1190	(48		1040	10(0	(58	18J		50E150	25
ci-EClordane )alzCaO	(18	11J0	1190	(58		1150	10(0	(J8u	28u6		50E150	25
Dndo-Kl3an f )alzCaO	Nh	1090	1190	(08		((6	10(0	(18u	086J		50E150	25
2I4,H h D	Nh	1010	1190	6(8u		1050	10(0	(u8	J		50E150	25
4I4,H h D	J18	10(0	1190	(08	B	1140	10(0	(J8	J8J	B	50E150	25
h ieldrin	2JJ0	4120	1190	11(	B	49u0	10(0	145	1(8	B	50E150	25
Dndrin	21J	1900	1190	(58u		1920	10(0	101	58(		50E150	25
ci-ENonacClor	Nh	1090	1190	(08		1050	10(0	(u8	58u		50E150	25
Dndo-Kl3an ff )betaO	Nh	1020	1190	(08		1010	10(0	(28	18u		5E150	25
2I4,H h h	6(8	11J0	1190	(58		1200	10(0	102	u8u(		50E150	25
2I4,H h h'	Nh	1040	1190	(28		10(0	10(0	((8u	J8u1		50E150	25
4I4,H h h	1(5	12u0	1190	(98		12(0	10(0	101	J8(		50E150	25
4I4,H h h'	Nh	10(0	1190	(u8		1110	10(0	102	585		50E150	25
Dndo-Kl3an pKl3ate	Nh	1010	1190	6(8		1140	10(0	105	1u8		50E150	25
4I4,EMetCoxZcClor	1(8	10J0	1190	(98		1060	10(0	(J8	48		50E150	25
Mirex	Nh	10u0	1190	(48		10J0	10(0	(68u	48u		50E150	25
Dndrin AldecZde	Nh	1100	1190	(J8		1120	10(0	102	482		50E150	25
Dndrin Tetone	262	1950	1120	(58		1410	1060	104	68u9		50E150	25

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits
19QuHHexacClorobenqene	fp	918		1(8		5 E120
19QuEalzCaBHQ	fp	598		9(8		92 E190
19QuESindane )7ammaBHQO	fp	5u8u		418		11 E120
19QuEbetaBHQ	fp	568		458		92 E190
19QuEdeltaBHQ	fp	5J8		458u		9u E19J
19Q10HHeztacClor	fp	4(8		998		5 E120
19Q12EAldrin	fp	918		168		5 E120
19Q10EyxZcClordane	fp	5J8		418		29 E195
19Q10Eci-HeztacClor Dzoxide	fp	u28		468		2J E19J
19Q10Efran-EClordane )7amma(	fp	518		968		21 E192
19Q10Efran-ENonacClor	fp	508		9(8		14 E19u
19Q(EDndo-Kl3an f )alzCaO	fp	u18		508		15 E146
19Q12E2I4,H h D	fp	558u		408u	H	4J E1u0
19Q12E4I4,H h D	fp	558		428	H	4J E1u0
19Q12Eh ieldrin	fp	5J8		448u		40 E151
19Q12EDndrin	fp	u48		4u8		95 E155
19Q10Eci-ENonacClor	fp	528		408		9u E19(
19Q(EDndo-Kl3an ff )betaO	fp	5u8		458		5 E122

**Sample ID: 22B-U-S-20240626**
**EPA Method 1699**

Name:	Azex Saboratorie-	Sab pamzle:	B24G010EMph 1	poKrcce Sab pamzle:	240u214E02
Project:	A4F1545 / RP Portland Harbor	L Q BateC:	B24G010	h ate Dxtracted:	01EgkIE24
Matrix:	A. KeoK-	pamz piqe:	0869/08 1u S	QolKmn:	s BE50
h ate AnalZqed:	0JEAK7E24 22:19 0JEAK7E24 21:24				

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits
19Q12E2I4, Eh h h	fp	u48		528		5 E1((
19Q12E2I4, Eh h '	fp	568		458		5 E1((
19Q12E4I4, Eh h h	fp	uu8		528		5 E120
19Q12E4I4, Eh h '	fp	u28		528		5 E120
19Q( E Dndo- Kl3an p Kl3ate	fp	528		408		15 E146
19Q12EMetCoxZcClor	fp	5(8		458		5 E120
19Q10EMirex	fp	948		248		5 E120
19Q12E Dndrin AldeCZde	fp	998		2(8		15 E146
19Q12E Dndrin Tetone	fp	598		9(8		15 E146

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

### Enthalpy Analytical - EDH Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
Nevada Division of Environmental Protection	CA00413
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

*Current certificates and lists of licensed parameters can be found at [Enthalpy.com/Resources/Accreditations](http://Enthalpy.com/Resources/Accreditations).*

2406214 1.3°C, 0.8°C, 3.3°C

SUBCONTRACT ORDER

Apex Laboratories

A4F1545

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Enthalpy Analytical- CA  
1104 Windfield Way  
El Dorado Hills, CA 95762  
Phone : (916) 673-1520  
Fax: -

AP 6/27/24

Standard TAT

Sample Name: 22B-U-D-20240626

Water

3/5 VOAs have no T  
Sampled: 06/26/24 12:38

(A4F1545-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	07/10/24 17:00	06/26/25 12:38	sub to Enthalpy CA, MDL
1668C PCB Congeners (SUB)	07/10/24 17:00	06/26/25 12:38	sub to Enthalpy CA, MDL
1699 Insecticides/Pesticides (SUB)	07/10/24 17:00	07/03/24 12:38	sub to Enthalpy CA, MDL

Containers Supplied:  
 (L) 1 L Amber Glass - Non Preserved  
 (M) 1 L Amber Glass - Non Preserved  
 (N) 1 L Amber Glass - Non Preserved  
 (O) 1 L Amber Glass - Non Preserved  
 (P) 1 L Amber Glass - Non Preserved  
 (Q) 1 L Amber Glass - Non Preserved

Sample Name: 22B-U-S-20240626

Water

Sampled: 06/26/24 09:00

(A4F1545-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	07/10/24 17:00	06/26/25 09:00	sub to Enthalpy CA, MDL MS/MSD
1668C PCB Congeners (SUB)	07/10/24 17:00	06/26/25 09:00	sub to Enthalpy CA, MDL MS/MSD
1699 Insecticides/Pesticides (SUB)	07/10/24 17:00	07/03/24 09:00	sub to Enthalpy CA, MDL MS/MSB

Containers Supplied:  
 (AA) 1 L Amber Glass - Non Preserved  
 (P) 1 L Amber Glass - Non Preserved  
 (Q) 1 L Amber Glass - Non Preserved  
 (R) 1 L Amber Glass - Non Preserved  
 (S) 1 L Amber Glass - Non Preserved  
 (T) 1 L Amber Glass - Non Preserved  
 (U) 1 L Amber Glass - Non Preserved  
 (V) 1 L Amber Glass - Non Preserved  
 (W) 1 L Amber Glass - Non Preserved  
 (X) 1 L Amber Glass - Non Preserved  
 (Y) 1 L Amber Glass - Non Preserved  
 (Z) 1 L Amber Glass - Non Preserved

FedEx

6/27/24

LPS (Shipper)

Released By LPS (Shipper)

Date

Received By

Date

06/28/24 11:32

Released By

Date

Received By

Date

2406214

SUBCONTRACT ORDER

Apex Laboratories

A4F1545

Standard TAT

Released By	<i>[Signature]</i>	Date	06/27/24	Received By	<i>[Signature]</i>	Date	06/28/24
	FedEx <i>[Signature]</i>				FedEx <i>[Signature]</i>		11:32
	UPS (Shipper)				UPS (Shipper)		
Released By		Date		Received By		Date	

# Sample Log-In Checklist

Page # 1 of 3

Work Order #: 2406214

TAT Std

Samples Arrival:	Date/Time <u>06/28/24</u> <u>11:32</u>	Initials: <u>XAE</u>	Location: <u>WR-1</u>				
Delivered By:	FedEx	<u>UPS</u>	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	<u>Ice</u>	Blue Ice	Techni Ice	Dry Ice	None		
Temp °C: <u>1.3</u> (uncorrected)	Probe used: Y <u>N</u>		Thermometer ID: <u>JR-7</u>				
Temp °C: <u>1.3</u> (corrected)							

	YES	NO	NA		
Shipping Container(s) Intact?	<u>Y</u>				
Shipping Custody Seals Intact?			<u>Y</u>		
Airbill <u>—</u> Trk # <u>12 CIB 065 01 0837 3230</u>	<u>Y</u>				
Shipping Documentation Present?	<u>Y</u>				
Shipping Container	Enthalpy	<u>Client</u>	Retain	<u>Return</u>	Dispose
Chain of Custody / Sample Documentation Present?					<u>Y</u>
Chain of Custody / Sample Documentation Complete?					<u>Y</u>
Holding Time Acceptable?					<u>Y</u>
Logged In:	Date/Time <u>06/28/24 1248</u>	Initials: <u>JT</u>	Location: <u>WR-2</u>		
			Shelf/Rack: <u>B-0, C4</u>		
COC Anomaly/Sample Acceptance Form completed?			<u>Y</u>		

Comments: (A) COC In Cooler 1

# Sample Log-In Checklist

JT 06/28/24

Page # 2 of 3

Work Order #: 2406214

TAT Std

Samples Arrival:	Date/Time <u>06/28/24</u> <u>11:32</u>	Initials: <u>XAO</u>	Location: <u>WR-1</u>
			Shelf/Rack: <u>N/A</u>
Delivered By:	FedEx	<u>UPS</u>	On Trac
			GLS
			DHL
			Hand Delivered
			Other
Preservation:	<u>Ice</u>	Blue Ice	Techni Ice
			Dry Ice
			None
Temp °C: <u>0.8</u> (uncorrected)	Probe used: Y / <u>N</u>		Thermometer ID: <u>IR-4</u>
Temp °C: <u>0.8</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?			<input checked="" type="checkbox"/>
Airbill <u>—</u> Trk # <u>1Z CIB 065 01 0401 3046</u>	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Shipping Container	<u>Enthalpy</u>	Client	<u>Retain</u>
	Return	Dispose	
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
Chain of Custody / Sample Documentation Complete?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Logged In:	Date/Time <u>06/28/24 1248</u>	Initials: <u>JT</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>B-0, C-4</u>
COC Anomaly/Sample Acceptance Form completed?			<input checked="" type="checkbox"/>

Comments:

# Sample Log-In Checklist

Page # 3 of 3

Work Order #: 2406214

TAT Std

Samples Arrival:	Date/Time <u>06/28/24</u> <u>11:32</u>	Initials: <u>XAO</u>	Location: <u>WP-1</u>
			Shelf/Rack: <u>N/A</u>
Delivered By:	FedEx <input type="checkbox"/> <input checked="" type="checkbox"/> UPS	On Trac <input type="checkbox"/>	GLS <input type="checkbox"/>
		DHL <input type="checkbox"/>	Hand Delivered <input type="checkbox"/>
Other <input type="checkbox"/>			
Preservation:	<input checked="" type="checkbox"/> Ice	Blue Ice <input type="checkbox"/>	Techni Ice <input type="checkbox"/>
		Dry Ice <input type="checkbox"/>	None <input type="checkbox"/>
Temp °C: <u>3.3</u> (uncorrected)	Probe used: Y <input checked="" type="checkbox"/> N		Thermometer ID: <u>TR4</u>
Temp °C: <u>3.3</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Custody Seals Intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Airbill <u>—</u> Trk # <u>1Z C1B 065 01 1785 K5G</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Documentation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Container	Enthalpy <input type="checkbox"/>	<input checked="" type="checkbox"/> Client	Retain <input type="checkbox"/>
			<input checked="" type="checkbox"/> Return
			Dispose <input type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Holding Time Acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Logged In:	Date/Time <u>06/28/24 1248</u>	Initials: <u>JT</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>B-0, C-4</u>
COC Anomaly/Sample Acceptance Form completed?			<input checked="" type="checkbox"/>

Comments:

Ⓐ COC in cooler 1

# CoC/Label Reconciliation Report WO# 2406214

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2406214-01	A 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-01	B 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-01	C 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-01	D 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-01	E 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-01	F 22B-U-D-20240626	(A4F1545-03)	26-Jun-24 12:38	Amber Glass NM Bottle, 1L	Aqueous	
2406214-02	A 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	B 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	C 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	D 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	E 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	F 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	G 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	H 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	I 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	J 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	K 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD
2406214-02	L 22B-U-S-20240626	(A4F1545-04)	26-Jun-24 09:00	Amber Glass NM Bottle, 1L	Aqueous	MS/MSD



Checkmarks indicate that information on the COC reconciled with the sample label.  
Any discrepancies are noted in the following columns.

	Yes	No	NA	Comments:
Sample Container Intact?	✓			
Sample Custody Seals Intact?			✓	
Adequate Sample Volume?	✓			
Container Type Appropriate for Analysis(es)	✓			

C1: cooler 1  
 C2: cooler 2  
 C3: cooler 3

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None Other

Verified by/Date: JT 06/28/24  
WAS 06/28/24



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

Friday, September 13, 2024

Ted Norton  
WSP USA Environment & Infrastructure Inc.  
15862 SW 72nd Ave. Suite 150  
Portland, OR 97224

RE: A4F1545 - Starlink Uplands Support - OF22B Dry Weather Month

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 A4F1545, which was received by the laboratory on 6/26/2024 at 2:55:00PM.

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](mailto: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			
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>			
(See Cooler Receipt Form for details)			
Cooler #1	3.8	degC	
Cooler #2	4.2	degC	
Cooler #3	0.5	degC	
Cooler #4	4.8	degC	
Cooler #5	0.5	degC	

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

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



Apex Laboratories

Philip Nerenberg, Lab Director

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**ANALYTICAL REPORT**

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL REPORT FOR SAMPLES**

**SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
22B-F-D-20240626	A4F1545-01	Water	06/26/24 13:17	06/26/24 14:55
22B-F-S-20240626	A4F1545-02	Water	06/26/24 12:28	06/26/24 14:55
22B-U-D-20240626	A4F1545-03	Water	06/26/24 12:38	06/26/24 14:55
22B-U-S-20240626	A4F1545-04	Water	06/26/24 09:00	06/26/24 14:55
TB-22B-U-S-20240626	A4F1545-05	Water	06/26/24 00:00	06/26/24 14:55
TB-22B-U-D-20240626	A4F1545-06	Water	06/26/24 00:00	06/26/24 14:55

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**ANALYTICAL SAMPLE RESULTS**

**Hydrocarbon Identification Screen by NWTPH-HCID**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0024</b>		
Gasoline Range Organics	ND	0.101	0.101	mg/L	1	07/01/24 23:36	NWTPH-HCID	
Diesel Range Organics	ND	0.253	0.253	mg/L	1	07/01/24 23:36	NWTPH-HCID	
Oil Range Organics	ND	0.253	0.253	mg/L	1	07/01/24 23:36	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>07/01/24 23:36</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>58 %</i>		<i>10-120 %</i>		<i>1</i>	<i>07/01/24 23:36</i>	<i>NWTPH-HCID</i>
<b>22B-U-S-20240626 (A4F1545-04)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0024</b>		
Gasoline Range Organics	ND	0.109	0.109	mg/L	1	07/02/24 00:22	NWTPH-HCID	
Diesel Range Organics	ND	0.272	0.272	mg/L	1	07/02/24 00:22	NWTPH-HCID	
Oil Range Organics	ND	0.272	0.272	mg/L	1	07/02/24 00:22	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>07/02/24 00:22</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>69 %</i>		<i>10-120 %</i>		<i>1</i>	<i>07/02/24 00:22</i>	<i>NWTPH-HCID</i>

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0024</b>		
Diesel	ND	0.101	0.202	mg/L	1	07/01/24 23:36	NWTPH-Dx	
Oil	ND	0.202	0.404	mg/L	1	07/01/24 23:36	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>07/01/24 23:36</i>	<i>NWTPH-Dx</i>
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0024</b>		
Diesel	ND	0.109	0.217	mg/L	1	07/02/24 00:22	NWTPH-Dx	
Oil	ND	0.217	0.435	mg/L	1	07/02/24 00:22	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>07/02/24 00:22</i>	<i>NWTPH-Dx</i>

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

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**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
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>		<b>Batch: 24F0965</b>		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/28/24 13:27	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>06/28/24 13:27</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>109 %</i>	<i>50-150 %</i>	<i>1</i>	<i>06/28/24 13:27</i>	<i>NWTPH-Gx (MS)</i>	
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>		<b>Batch: 24F0965</b>		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/28/24 13:00	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	<i>1</i>	<i>06/28/24 13:00</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>			<i>109 %</i>	<i>50-150 %</i>	<i>1</i>	<i>06/28/24 13:00</i>	<i>NWTPH-Gx (MS)</i>	

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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>		<b>Batch: 24F0965</b>		
Acetone	ND	10.0	20.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	06/28/24 13:27	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	06/28/24 13:27	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Chloroethane	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	06/28/24 13:27	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>		<b>Batch: 24F0965</b>		
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
<b>Ethylbenzene</b>	<b>0.430</b>	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	<b>J</b>
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	06/28/24 13:27	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Naphthalene	ND	2.50	5.00	ug/L	1	06/28/24 13:27	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	06/28/24 13:27	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	06/28/24 13:27	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	06/28/24 13:27	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	06/28/24 13:27	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			<b>Matrix: Water</b>			<b>Batch: 24F0965</b>		
<b>22B-U-D-20240626 (A4F1545-03)</b>								
Acrolein	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
2-Chloroethyl vinyl ether	ND	5.00	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
Iodomethane	ND	10.0	10.0	ug/L	1	06/28/24 13:27	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>06/28/24 13:27</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>				<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>06/28/24 13:27</i>
<i>4-Bromofluorobenzene (Surr)</i>				<i>103 %</i>		<i>80-120 %</i>	<i>1</i>	<i>06/28/24 13:27</i>
			<b>Matrix: Water</b>			<b>Batch: 24F0965</b>		
<b>22B-U-S-20240626 (A4F1545-04)</b>								
Acetone	ND	10.0	20.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	06/28/24 13:00	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	06/28/24 13:00	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Chloroethane	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	06/28/24 13:00	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>		<b>Batch: 24F0965</b>		
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
<b>Ethylbenzene</b>	<b>0.530</b>	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	06/28/24 13:00	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Naphthalene	ND	2.50	5.00	ug/L	1	06/28/24 13:00	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Styrene	ND	1.00	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	06/28/24 13:00	EPA 8260D	

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-S-20240626 (A4F1545-04)</b>			<b>Matrix: Water</b>			<b>Batch: 24F0965</b>		
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	06/28/24 13:00	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	06/28/24 13:00	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	06/28/24 13:00	EPA 8260D	
Acrolein	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
2-Chloroethyl vinyl ether	ND	5.00	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
Iodomethane	ND	10.0	10.0	ug/L	1	06/28/24 13:00	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>06/28/24 13:00</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>06/28/24 13:00</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>	<i>1</i>	<i>06/28/24 13:00</i>	<i>EPA 8260D</i>	
<b>TB-22B-U-S-20240626 (A4F1545-05)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
Acetone	ND	10.0	20.0	ug/L	1	07/01/24 16:43	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	07/01/24 16:43	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>TB-22B-U-S-20240626 (A4F1545-05)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Naphthalene	ND	2.50	5.00	ug/L	1	07/01/24 16:43	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>TB-22B-U-S-20240626 (A4F1545-05)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	07/01/24 16:43	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	07/01/24 16:43	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	07/01/24 16:43	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	07/01/24 16:43	EPA 8260D	
Acrolein	ND	5.00	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	H-01
Iodomethane	ND	10.0	10.0	ug/L	1	07/01/24 16:43	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>07/01/24 16:43</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>103 %</i>		<i>80-120 %</i>		<i>1</i>	<i>07/01/24 16:43</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>1</i>	<i>07/01/24 16:43</i>	<i>EPA 8260D</i>

<b>TB-22B-U-D-20240626 (A4F1545-06)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
Acetone	ND	10.0	20.0	ug/L	1	07/01/24 17:05	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	07/01/24 17:05	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>TB-22B-U-D-20240626 (A4F1545-06)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Volatile Organic Compounds by EPA 8260D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>TB-22B-U-D-20240626 (A4F1545-06)</b>			<b>Matrix: Water</b>			<b>Batch: 24G0011</b>		
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Naphthalene	ND	2.50	5.00	ug/L	1	07/01/24 17:05	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	07/01/24 17:05	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	07/01/24 17:05	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	07/01/24 17:05	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	07/01/24 17:05	EPA 8260D	
Acrolein	ND	5.00	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	H-01
Iodomethane	ND	10.0	10.0	ug/L	1	07/01/24 17:05	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>07/01/24 17:05</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>103 %</i>		<i>80-120 %</i>		<i>1</i>	<i>07/01/24 17:05</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>105 %</i>		<i>80-120 %</i>		<i>1</i>	<i>07/01/24 17:05</i>	<i>EPA 8260D</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>		
Acenaphthene	<b>0.0125</b>	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	<b>J</b>
Acenaphthylene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Anthracene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Benz(a)anthracene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzo(a)pyrene	ND	0.0158	0.0316	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0158	0.0316	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0158	0.0316	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Chrysene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Fluoranthene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Fluorene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
1-Methylnaphthalene	ND	0.0211	0.0421	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2-Methylnaphthalene</b>	<b>0.0244</b>	0.0211	0.0421	ug/L	1	07/03/24 15:06	EPA 8270E	<b>J</b>
<b>Naphthalene</b>	<b>0.0336</b>	0.0211	0.0421	ug/L	1	07/03/24 15:06	EPA 8270E	<b>J</b>
<b>Phenanthrene</b>	<b>0.0140</b>	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	<b>J</b>
Pyrene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Carbazole	ND	0.0158	0.0316	ug/L	1	07/03/24 15:06	EPA 8270E	
Dibenzofuran	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
2-Chlorophenol	ND	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2,4-Dichlorophenol</b>	<b>0.438</b>	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
2,4-Dimethylphenol	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E	
2,4-Dinitrophenol	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2-Methylphenol</b>	<b>0.0557</b>	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0526	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
2-Nitrophenol	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Nitrophenol	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>Pentachlorophenol (PCP)</b>	<b>0.234</b>	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	<b>B-02</b>
Phenol	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2,3,4,6-Tetrachlorophenol</b>	<b>0.408</b>	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	<b>B</b>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>		
2,3,5,6-Tetrachlorophenol	ND	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2,4,5-Trichlorophenol</b>	<b>0.150</b>	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
<b>2,4,6-Trichlorophenol</b>	<b>0.114</b>	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Butyl benzyl phthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Diethylphthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Dimethylphthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Di-n-butylphthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Di-n-octyl phthalate	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
Hexachlorobenzene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
Hexachlorobutadiene	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
Hexachloroethane	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
2-Chloronaphthalene	ND	0.0105	0.0211	ug/L	1	07/03/24 15:06	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
Aniline	ND	0.0526	0.105	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Chloroaniline	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E	
2-Nitroaniline	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
3-Nitroaniline	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
4-Nitroaniline	ND	0.211	0.421	ug/L	1	07/03/24 15:06	EPA 8270E	
Nitrobenzene	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
2,4-Dinitrotoluene	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
2,6-Dinitrotoluene	ND	0.211	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzoic acid	ND	1.32	2.63	ug/L	1	07/03/24 15:06	EPA 8270E	
Benzyl alcohol	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E	

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ANALYTICAL REPORT

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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
<b>22B-U-D-20240626 (A4F1545-03RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>			
Isophorone	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E		
Azobenzene (1,2-DPH)	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E		
Bis(2-Ethylhexyl) adipate	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E		
3,3'-Dichlorobenzidine	ND	0.526	1.05	ug/L	1	07/03/24 15:06	EPA 8270E	Q-52	
1,2-Dinitrobenzene	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E		
1,3-Dinitrobenzene	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E		
1,4-Dinitrobenzene	ND	0.263	0.526	ug/L	1	07/03/24 15:06	EPA 8270E		
Pyridine	ND	0.105	0.211	ug/L	1	07/03/24 15:06	EPA 8270E		
1,2-Dichlorobenzene	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E		
1,3-Dichlorobenzene	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E		
1,4-Dichlorobenzene	ND	0.0263	0.0526	ug/L	1	07/03/24 15:06	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>42 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	<i>S-06</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>42 %</i>	<i>44-120 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>Phenol-d6 (Surr)</i>				<i>14 %</i>	<i>10-133 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>				<i>82 %</i>	<i>50-134 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>				<i>21 %</i>	<i>19-120 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>				<i>95 %</i>	<i>43-140 %</i>	<i>1</i>	<i>07/03/24 15:06</i>	<i>EPA 8270E</i>	
<b>22B-U-S-20240626 (A4F1545-04RE2)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>			
Acenaphthene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Acenaphthylene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Anthracene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Benz(a)anthracene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Benzo(a)pyrene	ND	0.0160	0.0319	ug/L	1	07/03/24 13:19	EPA 8270E		
Benzo(b)fluoranthene	ND	0.0160	0.0319	ug/L	1	07/03/24 13:19	EPA 8270E		
Benzo(k)fluoranthene	ND	0.0160	0.0319	ug/L	1	07/03/24 13:19	EPA 8270E		
Benzo(g,h,i)perylene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Chrysene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Dibenz(a,h)anthracene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Fluoranthene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
Fluorene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Indeno(1,2,3-cd)pyrene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E		
1-Methylnaphthalene	ND	0.0213	0.0426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
2-Methylnaphthalene	ND	0.0213	0.0426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	

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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-S-20240626 (A4F1545-04RE2)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>		
Naphthalene	ND	0.0213	0.0426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
<b>Phenanthrene</b>	<b>0.0127</b>	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	<b>J, Q-42</b>
Pyrene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	
Carbazole	ND	0.0160	0.0319	ug/L	1	07/03/24 13:19	EPA 8270E	
Dibenzofuran	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
2-Chlorophenol	ND	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
4-Chloro-3-methylphenol	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
<b>2,4-Dichlorophenol</b>	<b>0.352</b>	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	<b>Q-42</b>
2,4-Dimethylphenol	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
2,4-Dinitrophenol	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E	
<b>2-Methylphenol</b>	<b>0.0477</b>	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	<b>J, Q-42</b>
3+4-Methylphenol(s)	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
2-Nitrophenol	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
4-Nitrophenol	ND	0.330	0.330	ug/L	1	07/03/24 13:19	EPA 8270E	R-02
<b>Pentachlorophenol (PCP)</b>	<b>0.215</b>	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	<b>B-02</b>
Phenol	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
<b>2,3,4,6-Tetrachlorophenol</b>	<b>0.266</b>	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	<b>B</b>
2,3,5,6-Tetrachlorophenol	ND	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	
<b>2,4,5-Trichlorophenol</b>	<b>0.139</b>	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	
<b>2,4,6-Trichlorophenol</b>	<b>0.105</b>	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E	<b>J, Q-42</b>
Bis(2-ethylhexyl)phthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	
Butyl benzyl phthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	
Diethylphthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	
Dimethylphthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
Di-n-butylphthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	
Di-n-octyl phthalate	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
N-Nitroso-di-n-propylamine	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
N-Nitrosodiphenylamine	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
Bis(2-Chloroethyl) ether	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42
2,2'-Oxybis(1-Chloropropane)	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42

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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
<b>22B-U-S-20240626 (A4F1545-04RE2)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>			
Hexachlorobenzene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Hexachlorobutadiene	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Hexachlorocyclopentadiene	ND	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E		
Hexachloroethane	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
2-Chloronaphthalene	ND	0.0106	0.0213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
1,2,4-Trichlorobenzene	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
4-Bromophenyl phenyl ether	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
4-Chlorophenyl phenyl ether	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Aniline	ND	0.0532	0.106	ug/L	1	07/03/24 13:19	EPA 8270E		
4-Chloroaniline	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
2-Nitroaniline	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
3-Nitroaniline	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
4-Nitroaniline	ND	0.213	0.426	ug/L	1	07/03/24 13:19	EPA 8270E		
Nitrobenzene	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
2,4-Dinitrotoluene	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E		
2,6-Dinitrotoluene	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Benzoic acid	ND	1.33	2.66	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Benzyl alcohol	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Isophorone	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Azobenzene (1,2-DPH)	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
Bis(2-Ethylhexyl) adipate	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E		
3,3'-Dichlorobenzidine	ND	0.532	1.06	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42, Q-52	
1,2-Dinitrobenzene	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E		
1,3-Dinitrobenzene	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E		
1,4-Dinitrobenzene	ND	0.266	0.532	ug/L	1	07/03/24 13:19	EPA 8270E		
Pyridine	ND	0.106	0.213	ug/L	1	07/03/24 13:19	EPA 8270E		
1,2-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
1,3-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
1,4-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	07/03/24 13:19	EPA 8270E	Q-42	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 26 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>28 %</i>		<i>44-120 %</i>		<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>Phenol-d6 (Surr)</i>		<i>8 %</i>		<i>10-133 %</i>		<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>77 %</i>		<i>50-134 %</i>		<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>13 %</i>		<i>19-120 %</i>		<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	<i>S-03</i>

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**ANALYTICAL SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-S-20240626 (A4F1545-04RE2)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0041</b>		
<i>Surrogate: 2,4,6-Tribromophenol (Surr)</i>			<i>Recovery: 86 %</i>	<i>Limits: 43-140 %</i>	<i>1</i>	<i>07/03/24 13:19</i>	<i>EPA 8270E</i>	

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**ANALYTICAL SAMPLE RESULTS**

**Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				<b>Matrix: Water</b>		<b>Batch: 24G0202</b>		
Mercury	1.50	0.250	0.500	ng/L	1	07/09/24 15:23	EPA 1631E-LL	
				<b>Matrix: Water</b>		<b>Batch: 24G0202</b>		
Mercury	1.45	0.250	0.500	ng/L	1	07/09/24 15:28	EPA 1631E-LL	

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**ANALYTICAL SAMPLE RESULTS**

**Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				<b>Matrix: Water</b>		<b>Batch: 24G0204</b>		
<b>Mercury</b>	<b>0.899</b>	0.250	0.500	ng/L	1	07/09/24 16:43	EPA 1631E-LL (Diss)	
				<b>Matrix: Water</b>		<b>Batch: 24G0204</b>		
<b>Mercury</b>	<b>0.690</b>	0.250	0.500	ng/L	1	07/09/24 16:48	EPA 1631E-LL (Diss)	

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**ANALYTICAL SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03) Matrix: Water</b>								
Batch: 24G0199								
Arsenic	8.03	0.500	1.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Barium	23.7	1.00	2.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Cadmium	ND	0.100	0.200	ug/L	1	07/08/24 18:11	EPA 200.8	
Calcium	35000	375	600	ug/L	1	07/08/24 18:11	EPA 200.8	
Chromium	ND	1.00	2.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Copper	1.05	1.00	2.00	ug/L	1	07/08/24 18:11	EPA 200.8	J
Iron	715	25.0	50.0	ug/L	1	07/08/24 18:11	EPA 200.8	
Lead	0.374	0.100	0.200	ug/L	1	07/08/24 18:11	EPA 200.8	
Manganese	152	0.500	1.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Nickel	ND	2.00	4.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Selenium	ND	0.500	1.00	ug/L	1	07/08/24 18:11	EPA 200.8	
Silver	ND	0.100	0.200	ug/L	1	07/08/24 18:11	EPA 200.8	
<b>22B-U-D-20240626 (A4F1545-03RE1) Matrix: Water</b>								
Batch: 24G0199								
Magnesium	9510	75.0	150	ug/L	1	07/09/24 16:41	EPA 200.8	
<b>22B-U-D-20240626 (A4F1545-03RE2) Matrix: Water</b>								
Batch: 24G0358								
Zinc	5.73	2.00	4.00	ug/L	1	07/11/24 21:17	EPA 200.8	B-02
<b>22B-U-S-20240626 (A4F1545-04) Matrix: Water</b>								
Batch: 24G0031								
Arsenic	7.89	0.500	1.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Barium	23.4	1.00	2.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Cadmium	ND	0.100	0.200	ug/L	1	07/03/24 00:32	EPA 200.8	
Calcium	34400	375	600	ug/L	1	07/03/24 00:32	EPA 200.8	
Chromium	ND	1.00	2.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Copper	ND	1.00	2.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Iron	647	25.0	50.0	ug/L	1	07/03/24 00:32	EPA 200.8	
Lead	0.147	0.100	0.200	ug/L	1	07/03/24 00:32	EPA 200.8	J, B
Magnesium	10600	75.0	150	ug/L	1	07/03/24 00:32	EPA 200.8	
Manganese	113	0.500	1.00	ug/L	1	07/03/24 00:32	EPA 200.8	

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**ANALYTICAL SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>				
Nickel	ND	2.00	4.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Selenium	ND	0.500	1.00	ug/L	1	07/03/24 00:32	EPA 200.8	
Silver	ND	0.100	0.200	ug/L	1	07/03/24 00:32	EPA 200.8	
<b>22B-U-S-20240626 (A4F1545-04RE2)</b>				<b>Matrix: Water</b>				
Batch: 24G0031								
<b>Zinc</b>	<b>2.39</b>	2.00	4.00	ug/L	1	07/03/24 13:05	EPA 200.8	<b>J</b>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**ANALYTICAL SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-F-D-20240626 (A4F1545-01)</b>		<b>Matrix: Water</b>						
Batch: 24G0035								
Arsenic	<b>5.62</b>	0.500	1.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Barium	<b>20.2</b>	0.500	1.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Calcium	<b>34100</b>	300	600	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Copper	ND	1.00	2.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Iron	<b>109</b>	25.0	50.0	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Lead	ND	0.100	0.200	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Magnesium	<b>10600</b>	75.0	150	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Manganese	<b>102</b>	0.500	1.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Nickel	ND	2.00	4.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Silver	ND	0.100	0.200	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	
Zinc	<b>2.06</b>	2.00	4.00	ug/L	1	07/02/24 04:07	EPA 200.8 (Diss)	J
<b>22B-F-S-20240626 (A4F1545-02)</b>		<b>Matrix: Water</b>						
Batch: 24G0035								
Arsenic	<b>5.36</b>	0.500	1.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Barium	<b>19.6</b>	0.500	1.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Calcium	<b>34300</b>	300	600	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Copper	ND	1.00	2.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Iron	<b>37.4</b>	25.0	50.0	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	J
Lead	ND	0.100	0.200	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Magnesium	<b>10700</b>	75.0	150	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Manganese	<b>102</b>	0.500	1.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Nickel	ND	2.00	4.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Silver	ND	0.100	0.200	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	
Zinc	ND	2.00	4.00	ug/L	1	07/02/24 04:12	EPA 200.8 (Diss)	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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**ANALYTICAL SAMPLE RESULTS**

**Solid and Moisture Determinations**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>				
Batch: 24G0064								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	07/02/24 12:25	SM 2540 D	TSS
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>				
Batch: 24G0064								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	07/02/24 12:25	SM 2540 D	TSS

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**Weck Laboratories, Inc.**

**ANALYTICAL SAMPLE RESULTS (Subcontracted)**

**Hexavalent Chromium by IC**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-F-D-20240626 (A4F1545-01)</b>				<b>Matrix: Water</b>		<b>Batch: W4G0440</b>		
Batch: W4G0440								
<b>Chromium 6+, Dissolved</b>	<b>0.12</b>	---	0.020	ug/l	1	07/08/24 15:22	EPA 218.6	
<b>22B-F-S-20240626 (A4F1545-02)</b>				<b>Matrix: Water</b>		<b>Batch: W4G0440</b>		
Batch: W4G0440								
<b>Chromium 6+, Dissolved</b>	<b>0.12</b>	---	0.020	ug/l	1	07/08/24 15:35	EPA 218.6	
<b>22B-U-D-20240626 (A4F1545-03)</b>				<b>Matrix: Water</b>		<b>Batch: W4G0440</b>		
Batch: W4G0440								
<b>Chromium 6+</b>	<b>0.11</b>	---	0.020	ug/l	1	07/08/24 15:47	EPA 218.6	
<b>22B-U-S-20240626 (A4F1545-04)</b>				<b>Matrix: Water</b>		<b>Batch: W4G0440</b>		
Batch: W4G0440								
<b>Chromium 6+</b>	<b>0.10</b>	---	0.020	ug/l	1	07/08/24 16:26	EPA 218.6	

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Hydrocarbon Identification Screen by NWTPH-HCID**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0024 - EPA 3510C (Fuels/Acid Ext.)</b>						<b>Water</b>						
<b>Blank (24G0024-BLK1)</b>						Prepared: 07/01/24 11:50 Analyzed: 07/01/24 22:26						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	0.100	0.100	mg/L	1	---	---	---	---	---	---	
Diesel Range Organics	ND	0.250	0.250	mg/L	1	---	---	---	---	---	---	
Oil Range Organics	ND	0.250	0.250	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 142 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>111 %</i>		<i>10-120 %</i>		<i>"</i>						

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**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
<b>Batch 24G0024 - EPA 3510C (Fuels/Acid Ext.)</b>						<b>Water</b>						
<b>Blank (24G0024-BLK1)</b>						Prepared: 07/01/24 11:50 Analyzed: 07/01/24 22:26						
<u>NWTPH-Dx</u>												
Diesel	ND	0.100	0.200	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.200	0.400	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 149 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<b>LCS (24G0024-BS1)</b>						Prepared: 07/01/24 11:50 Analyzed: 07/01/24 22:49						
<u>NWTPH-Dx</u>												
Diesel	1.05	0.100	0.200	mg/L	1	1.25	---	84	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<b>LCS Dup (24G0024-BSD1)</b>						Prepared: 07/01/24 11:50 Analyzed: 07/01/24 23:12						
<u>NWTPH-Dx</u>												
Diesel	1.08	0.100	0.200	mg/L	1	1.25	---	86	36-132%	3	30%	<b>Q-19</b>
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Blank (24F0965-BLK1)</b>			Prepared: 06/28/24 06:27 Analyzed: 06/28/24 09:20									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	<b>0.0533</b>	0.0500	0.100	mg/L	1	---	---	---	---	---	---	B-02, J
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>"</i>						
<b>LCS (24F0965-BS2)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 08:53						
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.609	0.0500	0.100	mg/L	1	0.500	---	<b>122</b>	<b>80-120%</b>	---	---	B-02, Q-29
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>101 %</i>		<i>50-150 %</i>		<i>"</i>						
<b>Duplicate (24F0965-DUP1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 19:49						
<u>QC Source Sample: Non-SDG (A4F1412-07)</u>												
Gasoline Range Organics	<b>7.71</b>	2.50	5.00	mg/L	50	---	7.66	---	---	0.5	30%	B-02
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>112 %</i>		<i>50-150 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director

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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Blank (24F0965-BLK1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 09:20						
<b>EPA 8260D</b>												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Blank (24F0965-BLK1)</b>			Prepared: 06/28/24 06:27			Analyzed: 06/28/24 09:20						
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Acrolein	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
--	--	---

**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Blank (24F0965-BLK1)</b>			Prepared: 06/28/24 06:27			Analyzed: 06/28/24 09:20						
2-Chloroethyl vinyl ether	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Iodomethane	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
<b>LCS (24F0965-BS1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 08:21						
<b>EPA 8260D</b>												
Acetone	33.6	10.0	20.0	ug/L	1	40.0	---	84	80-120%	---	---	
Acrylonitrile	20.5	1.00	2.00	ug/L	1	20.0	---	103	80-120%	---	---	
Benzene	21.7	0.100	0.200	ug/L	1	20.0	---	109	80-120%	---	---	
Bromobenzene	20.9	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Bromochloromethane	21.4	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromodichloromethane	22.6	0.500	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Bromoform	22.7	0.500	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Bromomethane	18.9	5.00	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
2-Butanone (MEK)	38.2	5.00	10.0	ug/L	1	40.0	---	96	80-120%	---	---	
n-Butylbenzene	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
sec-Butylbenzene	21.4	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
tert-Butylbenzene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Carbon disulfide	25.9	5.00	10.0	ug/L	1	20.0	---	<b>129</b>	<b>80-120%</b>	---	---	ICV-01, Q-56
Carbon tetrachloride	22.2	0.500	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Chlorobenzene	20.4	0.250	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Chloroethane	24.2	5.00	10.0	ug/L	1	20.0	---	<b>121</b>	<b>80-120%</b>	---	---	Q-56
Chloroform	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Chloromethane	19.5	2.50	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
2-Chlorotoluene	20.3	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
4-Chlorotoluene	21.1	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromochloromethane	19.5	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.2	2.50	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.0	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromomethane	22.6	0.500	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2-Dichlorobenzene	22.3	0.250	0.500	ug/L	1	20.0	---	111	80-120%	---	---	
1,3-Dichlorobenzene	21.7	0.250	0.500	ug/L	1	20.0	---	109	80-120%	---	---	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>LCS (24F0965-BS1)</b>			Prepared: 06/28/24 06:27 Analyzed: 06/28/24 08:21									
1,4-Dichlorobenzene	20.2	0.250	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Dichlorodifluoromethane	20.1	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethane	20.7	0.200	0.400	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dichloroethane (EDC)	19.8	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,1-Dichloroethene	19.3	0.200	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
cis-1,2-Dichloroethene	20.4	0.200	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,2-Dichloroethene	19.7	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichloropropane	20.7	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
1,3-Dichloropropane	20.9	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
2,2-Dichloropropane	25.2	0.500	1.00	ug/L	1	20.0	---	<b>126</b>	<b>80-120%</b>	---	---	Q-56
1,1-Dichloropropene	21.5	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
cis-1,3-Dichloropropene	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
trans-1,3-Dichloropropene	21.5	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Ethylbenzene	21.0	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Hexachlorobutadiene	22.3	2.50	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
2-Hexanone	35.0	5.00	10.0	ug/L	1	40.0	---	88	80-120%	---	---	
Isopropylbenzene	18.6	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
4-Isopropyltoluene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Methylene chloride	20.5	5.00	10.0	ug/L	1	20.0	---	103	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	36.9	5.00	10.0	ug/L	1	40.0	---	92	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Naphthalene	19.2	2.50	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
n-Propylbenzene	21.1	0.250	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Styrene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,1,1,2-Tetrachloroethane	23.6	0.200	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
1,1,1,2,2-Tetrachloroethane	22.5	0.250	0.500	ug/L	1	20.0	---	113	80-120%	---	---	
Tetrachloroethene (PCE)	20.9	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Toluene	19.9	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	23.4	1.00	2.00	ug/L	1	20.0	---	117	80-120%	---	---	
1,2,4-Trichlorobenzene	21.7	1.00	2.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,1-Trichloroethane	21.2	0.200	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
1,1,2-Trichloroethane	21.1	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Trichloroethene (TCE)	20.6	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichlorofluoromethane	22.5	1.00	2.00	ug/L	1	20.0	---	112	80-120%	---	---	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24F0965 - EPA 5030C</b>												
<b>Water</b>												
<b>LCS (24F0965-BS1)</b>												
						Prepared: 06/28/24 06:27		Analyzed: 06/28/24 08:21				
1,2,3-Trichloropropane	21.4	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2,4-Trimethylbenzene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,3,5-Trimethylbenzene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Vinyl chloride	19.8	0.100	0.200	ug/L	1	20.0	---	99	80-120%	---	---	
m,p-Xylene	38.4	0.500	1.00	ug/L	1	40.0	---	96	80-120%	---	---	
o-Xylene	18.4	0.250	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Acrolein	23.0	5.00	10.0	ug/L	1	20.0	---	115	80-120%	---	---	
2-Chloroethyl vinyl ether	11.9	5.00	10.0	ug/L	1	20.0	---	<b>59</b>	<b>80-120%</b>	---	---	NR
Iodomethane	21.1	10.0	10.0	ug/L	1	20.0	---	105	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						

<b>Duplicate (24F0965-DUP1)</b>												
						Prepared: 06/28/24 06:27		Analyzed: 06/28/24 19:49				
<b>QC Source Sample: Non-SDG (A4F1412-07)</b>												
Acetone	ND	500	1000	ug/L	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
Benzene	ND	5.00	10.0	ug/L	50	---	ND	---	---	---	30%	
Bromobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromoform	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromomethane	ND	250	250	ug/L	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Chloroethane	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Chloroform	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Chloromethane	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Duplicate (24F0965-DUP1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 19:49						
<b>QC Source Sample: Non-SDG (A4F1412-07)</b>												
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Dibromomethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	<b>962</b>	10.0	20.0	ug/L	50	---	926	---	---	4	30%	
trans-1,2-Dichloroethene	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
2-Hexanone	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Methylene chloride	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MIBK)	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Naphthalene	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Styrene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Duplicate (24F0965-DUP1)</b>			Prepared: 06/28/24 06:27 Analyzed: 06/28/24 19:49									
<b>QC Source Sample: Non-SDG (A4F1412-07)</b>												
Tetrachloroethene (PCE)	988	10.0	20.0	ug/L	50	---	986	---	---	0.3	30%	
Toluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	10.0	20.0	ug/L	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	1040	10.0	20.0	ug/L	50	---	1040	---	---	0.4	30%	
Trichlorofluoromethane	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Vinyl chloride	11.5	5.00	10.0	ug/L	50	---	11.0	---	---	4	30%	
m,p-Xylene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
o-Xylene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Acrolein	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
2-Chloroethyl vinyl ether	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Iodomethane	ND	500	500	ug/L	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						

<b>Matrix Spike (24F0965-MS1)</b>			Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:16									
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
<b>EPA 8260D</b>												
Acetone	46.7	10.0	20.0	ug/L	1	40.0	ND	117	39-160%	---	---	
Acrylonitrile	23.2	1.00	2.00	ug/L	1	20.0	ND	116	63-135%	---	---	
Benzene	24.4	0.100	0.200	ug/L	1	20.0	ND	122	79-120%	---	---	Q-01
Bromobenzene	22.5	0.250	0.500	ug/L	1	20.0	ND	112	80-120%	---	---	
Bromochloromethane	24.3	0.500	1.00	ug/L	1	20.0	ND	121	78-123%	---	---	
Bromodichloromethane	25.2	0.500	1.00	ug/L	1	20.0	ND	126	79-125%	---	---	Q-01
Bromoform	24.7	0.500	1.00	ug/L	1	20.0	ND	123	66-130%	---	---	
Bromomethane	22.1	5.00	5.00	ug/L	1	20.0	ND	110	53-141%	---	---	
2-Butanone (MEK)	42.5	5.00	10.0	ug/L	1	40.0	ND	106	56-143%	---	---	

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24F0965 - EPA 5030C</b>												
<b>Water</b>												
<b>Matrix Spike (24F0965-MS1)</b>												
Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:16												
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
n-Butylbenzene	22.2	0.500	1.00	ug/L	1	20.0	ND	111	75-128%	---	---	
sec-Butylbenzene	24.1	0.500	1.00	ug/L	1	20.0	ND	120	77-126%	---	---	
tert-Butylbenzene	22.5	0.500	1.00	ug/L	1	20.0	ND	112	78-124%	---	---	
Carbon disulfide	29.5	5.00	10.0	ug/L	1	20.0	ND	<b>148</b>	<b>64-133%</b>	---	---	ICV-01, Q-54b
Carbon tetrachloride	25.4	0.500	1.00	ug/L	1	20.0	ND	127	72-136%	---	---	
Chlorobenzene	22.6	0.250	0.500	ug/L	1	20.0	ND	113	80-120%	---	---	
Chloroethane	29.4	5.00	10.0	ug/L	1	20.0	ND	<b>147</b>	<b>60-138%</b>	---	---	Q-54
Chloroform	23.6	0.500	1.00	ug/L	1	20.0	ND	118	79-124%	---	---	
Chloromethane	22.6	2.50	5.00	ug/L	1	20.0	ND	113	50-139%	---	---	
2-Chlorotoluene	22.3	0.500	1.00	ug/L	1	20.0	ND	111	79-122%	---	---	
4-Chlorotoluene	23.8	0.500	1.00	ug/L	1	20.0	ND	119	78-122%	---	---	
Dibromochloromethane	21.5	0.500	1.00	ug/L	1	20.0	ND	107	74-126%	---	---	
1,2-Dibromo-3-chloropropane	21.0	2.50	5.00	ug/L	1	20.0	ND	105	62-128%	---	---	
1,2-Dibromoethane (EDB)	22.8	0.250	0.500	ug/L	1	20.0	ND	114	77-121%	---	---	
Dibromomethane	24.4	0.500	1.00	ug/L	1	20.0	ND	122	79-123%	---	---	
1,2-Dichlorobenzene	24.0	0.250	0.500	ug/L	1	20.0	ND	120	80-120%	---	---	
1,3-Dichlorobenzene	23.5	0.250	0.500	ug/L	1	20.0	ND	118	80-120%	---	---	
1,4-Dichlorobenzene	21.8	0.250	0.500	ug/L	1	20.0	ND	109	79-120%	---	---	
Dichlorodifluoromethane	22.9	0.500	1.00	ug/L	1	20.0	ND	114	32-152%	---	---	
1,1-Dichloroethane	23.5	0.200	0.400	ug/L	1	20.0	ND	118	77-125%	---	---	
1,2-Dichloroethane (EDC)	22.2	0.200	0.400	ug/L	1	20.0	ND	111	73-128%	---	---	
1,1-Dichloroethene	22.5	0.200	0.400	ug/L	1	20.0	ND	112	71-131%	---	---	
cis-1,2-Dichloroethene	23.2	0.200	0.400	ug/L	1	20.0	ND	116	78-123%	---	---	
trans-1,2-Dichloroethene	22.8	0.200	0.400	ug/L	1	20.0	ND	114	75-124%	---	---	
1,2-Dichloropropane	23.2	0.250	0.500	ug/L	1	20.0	ND	116	78-122%	---	---	
1,3-Dichloropropane	23.0	0.500	1.00	ug/L	1	20.0	ND	115	80-120%	---	---	
2,2-Dichloropropane	24.5	0.500	1.00	ug/L	1	20.0	ND	123	60-139%	---	---	Q-54a
1,1-Dichloropropene	24.6	0.500	1.00	ug/L	1	20.0	ND	123	79-125%	---	---	
cis-1,3-Dichloropropene	19.6	0.500	1.00	ug/L	1	20.0	ND	98	75-124%	---	---	
trans-1,3-Dichloropropene	22.5	0.500	1.00	ug/L	1	20.0	ND	113	73-127%	---	---	
Ethylbenzene	24.6	0.250	0.500	ug/L	1	20.0	0.530	121	79-121%	---	---	
Hexachlorobutadiene	23.5	2.50	5.00	ug/L	1	20.0	ND	118	66-134%	---	---	
2-Hexanone	39.0	5.00	10.0	ug/L	1	40.0	ND	97	57-139%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24F0965 - EPA 5030C</b>												
<b>Water</b>												
<b>Matrix Spike (24F0965-MS1)</b>												
Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:16												
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
Isopropylbenzene	21.8	0.500	1.00	ug/L	1	20.0	ND	109	72-131%	---	---	
4-Isopropyltoluene	21.4	0.500	1.00	ug/L	1	20.0	ND	107	77-127%	---	---	
Methylene chloride	22.5	5.00	10.0	ug/L	1	20.0	ND	113	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	40.9	5.00	10.0	ug/L	1	40.0	ND	102	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	22.6	0.500	1.00	ug/L	1	20.0	ND	113	71-124%	---	---	
Naphthalene	19.6	2.50	5.00	ug/L	1	20.0	ND	98	61-128%	---	---	
n-Propylbenzene	23.7	0.250	0.500	ug/L	1	20.0	ND	119	76-126%	---	---	
Styrene	22.9	0.500	1.00	ug/L	1	20.0	ND	112	78-123%	---	---	
1,1,1,2-Tetrachloroethane	25.9	0.200	0.400	ug/L	1	20.0	ND	<b>130</b>	<b>78-124%</b>	---	---	Q-01
1,1,2,2-Tetrachloroethane	24.4	0.250	0.500	ug/L	1	20.0	ND	<b>122</b>	<b>71-121%</b>	---	---	Q-01
Tetrachloroethene (PCE)	23.2	0.200	0.400	ug/L	1	20.0	ND	116	74-129%	---	---	
Toluene	22.3	0.500	1.00	ug/L	1	20.0	ND	111	80-121%	---	---	
1,2,3-Trichlorobenzene	23.9	1.00	2.00	ug/L	1	20.0	ND	119	69-129%	---	---	
1,2,4-Trichlorobenzene	21.9	1.00	2.00	ug/L	1	20.0	ND	110	69-130%	---	---	
1,1,1-Trichloroethane	24.0	0.200	0.400	ug/L	1	20.0	ND	120	74-131%	---	---	
1,1,2-Trichloroethane	22.4	0.250	0.500	ug/L	1	20.0	ND	112	80-120%	---	---	
Trichloroethene (TCE)	23.1	0.200	0.400	ug/L	1	20.0	ND	115	79-123%	---	---	
Trichlorofluoromethane	26.0	1.00	2.00	ug/L	1	20.0	ND	130	65-141%	---	---	
1,2,3-Trichloropropane	22.9	0.500	1.00	ug/L	1	20.0	ND	115	73-122%	---	---	
1,2,4-Trimethylbenzene	21.8	0.500	1.00	ug/L	1	20.0	ND	109	76-124%	---	---	
1,3,5-Trimethylbenzene	21.9	0.500	1.00	ug/L	1	20.0	ND	109	75-124%	---	---	
Vinyl chloride	23.2	0.100	0.200	ug/L	1	20.0	ND	116	58-137%	---	---	
m,p-Xylene	43.5	0.500	1.00	ug/L	1	40.0	ND	109	80-121%	---	---	
o-Xylene	20.9	0.250	0.500	ug/L	1	20.0	ND	104	78-122%	---	---	
Acrolein	23.8	5.00	10.0	ug/L	1	20.0	ND	119	39-155%	---	---	
Iodomethane	22.5	10.0	10.0	ug/L	1	20.0	ND	112	69-131%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	Recovery: 104 %	Limits: 80-120 %	Dilution: 1x
Toluene-d8 (Surr)	95 %	80-120 %	"
4-Bromofluorobenzene (Surr)	95 %	80-120 %	"

**Matrix Spike Dup (24F0965-MSD1)** Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:44 **T-02**

**QC Source Sample: 22B-U-S-20240626 (A4F1545-04)**

**EPA 8260D**

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
--	--	--

**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike Dup (24F0965-MSD1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:44						T-02
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
Acetone	39.8	10.0	20.0	ug/L	1	40.0	ND	99	39-160%	16	30%	
Acrylonitrile	21.3	1.00	2.00	ug/L	1	20.0	ND	106	63-135%	9	30%	
Benzene	23.9	0.100	0.200	ug/L	1	20.0	ND	119	79-120%	2	30%	
Bromobenzene	21.7	0.250	0.500	ug/L	1	20.0	ND	109	80-120%	3	30%	
Bromochloromethane	22.9	0.500	1.00	ug/L	1	20.0	ND	114	78-123%	6	30%	
Bromodichloromethane	24.3	0.500	1.00	ug/L	1	20.0	ND	121	79-125%	4	30%	
Bromoform	23.7	0.500	1.00	ug/L	1	20.0	ND	118	66-130%	4	30%	
Bromomethane	22.6	5.00	5.00	ug/L	1	20.0	ND	113	53-141%	2	30%	
2-Butanone (MEK)	41.4	5.00	10.0	ug/L	1	40.0	ND	104	56-143%	3	30%	
n-Butylbenzene	21.6	0.500	1.00	ug/L	1	20.0	ND	108	75-128%	3	30%	
sec-Butylbenzene	23.4	0.500	1.00	ug/L	1	20.0	ND	117	77-126%	3	30%	
tert-Butylbenzene	21.9	0.500	1.00	ug/L	1	20.0	ND	109	78-124%	3	30%	
Carbon disulfide	29.1	5.00	10.0	ug/L	1	20.0	ND	<b>146</b>	<b>64-133%</b>	1	30%	ICV-01, Q-54b
Carbon tetrachloride	24.8	0.500	1.00	ug/L	1	20.0	ND	124	72-136%	2	30%	
Chlorobenzene	21.7	0.250	0.500	ug/L	1	20.0	ND	109	80-120%	4	30%	
Chloroethane	26.7	5.00	10.0	ug/L	1	20.0	ND	133	60-138%	10	30%	Q-54
Chloroform	22.9	0.500	1.00	ug/L	1	20.0	ND	114	79-124%	3	30%	
Chloromethane	23.3	2.50	5.00	ug/L	1	20.0	ND	116	50-139%	3	30%	
2-Chlorotoluene	21.2	0.500	1.00	ug/L	1	20.0	ND	106	79-122%	5	30%	
4-Chlorotoluene	22.7	0.500	1.00	ug/L	1	20.0	ND	113	78-122%	5	30%	
Dibromochloromethane	20.4	0.500	1.00	ug/L	1	20.0	ND	102	74-126%	5	30%	
1,2-Dibromo-3-chloropropane	19.8	2.50	5.00	ug/L	1	20.0	ND	99	62-128%	6	30%	
1,2-Dibromoethane (EDB)	21.8	0.250	0.500	ug/L	1	20.0	ND	109	77-121%	5	30%	
Dibromomethane	23.8	0.500	1.00	ug/L	1	20.0	ND	119	79-123%	3	30%	
1,2-Dichlorobenzene	23.0	0.250	0.500	ug/L	1	20.0	ND	115	80-120%	4	30%	
1,3-Dichlorobenzene	23.1	0.250	0.500	ug/L	1	20.0	ND	115	80-120%	2	30%	
1,4-Dichlorobenzene	21.1	0.250	0.500	ug/L	1	20.0	ND	105	79-120%	3	30%	
Dichlorodifluoromethane	24.2	0.500	1.00	ug/L	1	20.0	ND	121	32-152%	5	30%	
1,1-Dichloroethane	23.0	0.200	0.400	ug/L	1	20.0	ND	115	77-125%	2	30%	
1,2-Dichloroethane (EDC)	21.3	0.200	0.400	ug/L	1	20.0	ND	107	73-128%	4	30%	
1,1-Dichloroethene	22.2	0.200	0.400	ug/L	1	20.0	ND	111	71-131%	1	30%	
cis-1,2-Dichloroethene	22.5	0.200	0.400	ug/L	1	20.0	ND	112	78-123%	3	30%	
trans-1,2-Dichloroethene	22.1	0.200	0.400	ug/L	1	20.0	ND	111	75-124%	3	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike Dup (24F0965-MSD1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:44						T-02
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
1,2-Dichloropropane	22.4	0.250	0.500	ug/L	1	20.0	ND	112	78-122%	4	30%	
1,3-Dichloropropane	22.0	0.500	1.00	ug/L	1	20.0	ND	110	80-120%	4	30%	
2,2-Dichloropropane	23.5	0.500	1.00	ug/L	1	20.0	ND	118	60-139%	4	30%	Q-54a
1,1-Dichloropropene	24.3	0.500	1.00	ug/L	1	20.0	ND	122	79-125%	1	30%	
cis-1,3-Dichloropropene	19.2	0.500	1.00	ug/L	1	20.0	ND	96	75-124%	2	30%	
trans-1,3-Dichloropropene	22.0	0.500	1.00	ug/L	1	20.0	ND	110	73-127%	3	30%	
Ethylbenzene	23.8	0.250	0.500	ug/L	1	20.0	0.530	116	79-121%	3	30%	
Hexachlorobutadiene	23.6	2.50	5.00	ug/L	1	20.0	ND	118	66-134%	0.6	30%	
2-Hexanone	36.7	5.00	10.0	ug/L	1	40.0	ND	92	57-139%	6	30%	
Isopropylbenzene	21.0	0.500	1.00	ug/L	1	20.0	ND	105	72-131%	4	30%	
4-Isopropyltoluene	21.0	0.500	1.00	ug/L	1	20.0	ND	105	77-127%	2	30%	
Methylene chloride	21.8	5.00	10.0	ug/L	1	20.0	ND	109	74-124%	4	30%	
4-Methyl-2-pentanone (MiBK)	38.9	5.00	10.0	ug/L	1	40.0	ND	97	67-130%	5	30%	
Methyl tert-butyl ether (MTBE)	22.6	0.500	1.00	ug/L	1	20.0	ND	113	71-124%	0.04	30%	
Naphthalene	19.4	2.50	5.00	ug/L	1	20.0	ND	97	61-128%	1	30%	
n-Propylbenzene	22.9	0.250	0.500	ug/L	1	20.0	ND	114	76-126%	4	30%	
Styrene	22.2	0.500	1.00	ug/L	1	20.0	ND	108	78-123%	3	30%	
1,1,1,2-Tetrachloroethane	25.0	0.200	0.400	ug/L	1	20.0	ND	<b>125</b>	<b>78-124%</b>	4	30%	Q-01
1,1,2,2-Tetrachloroethane	22.7	0.250	0.500	ug/L	1	20.0	ND	113	71-121%	7	30%	
Tetrachloroethene (PCE)	22.2	0.200	0.400	ug/L	1	20.0	ND	111	74-129%	4	30%	
Toluene	21.3	0.500	1.00	ug/L	1	20.0	ND	107	80-121%	4	30%	
1,2,3-Trichlorobenzene	23.7	1.00	2.00	ug/L	1	20.0	ND	118	69-129%	0.8	30%	
1,2,4-Trichlorobenzene	22.7	1.00	2.00	ug/L	1	20.0	ND	113	69-130%	3	30%	
1,1,1-Trichloroethane	23.4	0.200	0.400	ug/L	1	20.0	ND	117	74-131%	2	30%	
1,1,2-Trichloroethane	21.8	0.250	0.500	ug/L	1	20.0	ND	109	80-120%	3	30%	
Trichloroethene (TCE)	22.4	0.200	0.400	ug/L	1	20.0	ND	112	79-123%	3	30%	
Trichlorofluoromethane	24.9	1.00	2.00	ug/L	1	20.0	ND	124	65-141%	4	30%	
1,2,3-Trichloropropane	21.6	0.500	1.00	ug/L	1	20.0	ND	108	73-122%	6	30%	
1,2,4-Trimethylbenzene	21.1	0.500	1.00	ug/L	1	20.0	ND	106	76-124%	3	30%	
1,3,5-Trimethylbenzene	21.3	0.500	1.00	ug/L	1	20.0	ND	106	75-124%	3	30%	
Vinyl chloride	23.8	0.100	0.200	ug/L	1	20.0	ND	119	58-137%	2	30%	
m,p-Xylene	42.1	0.500	1.00	ug/L	1	40.0	ND	105	80-121%	3	30%	
o-Xylene	20.1	0.250	0.500	ug/L	1	20.0	ND	101	78-122%	4	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24F0965 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike Dup (24F0965-MSD1)</b>						Prepared: 06/28/24 06:27 Analyzed: 06/28/24 20:44						T-02
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
Acrolein	21.5	5.00	10.0	ug/L	1	20.0	ND	108	39-155%	10	30%	
Iodomethane	23.1	10.0	10.0	ug/L	1	20.0	ND	115	69-131%	3	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director



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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24G0011 - EPA 5030C</b>												
<b>Water</b>												
<b>Blank (24G0011-BLK1)</b>												
						Prepared: 07/01/24 09:51 Analyzed: 07/01/24 15:13						
<b>EPA 8260D</b>												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>												
<b>Water</b>												
<b>Blank (24G0011-BLK1)</b>												
						Prepared: 07/01/24 09:51			Analyzed: 07/01/24 15:13			
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Acrolein	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Blank (24G0011-BLK1)</b>			Prepared: 07/01/24 09:51 Analyzed: 07/01/24 15:13									
Iodomethane	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>"</i>						

<b>LCS (24G0011-BS1)</b>			Prepared: 07/01/24 09:51 Analyzed: 07/01/24 14:15									
<b>EPA 8260D</b>												
Acetone	37.4	10.0	20.0	ug/L	1	40.0	---	94	80-120%	---	---	
Acrylonitrile	18.0	1.00	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
Benzene	17.4	0.100	0.200	ug/L	1	20.0	---	87	80-120%	---	---	
Bromobenzene	18.7	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Bromochloromethane	19.5	0.500	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Bromodichloromethane	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromoform	22.8	0.500	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Bromomethane	19.2	5.00	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
2-Butanone (MEK)	37.0	5.00	10.0	ug/L	1	40.0	---	93	80-120%	---	---	
n-Butylbenzene	21.3	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
sec-Butylbenzene	21.1	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
tert-Butylbenzene	21.2	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Carbon disulfide	18.4	5.00	10.0	ug/L	1	20.0	---	92	80-120%	---	---	
Carbon tetrachloride	23.7	0.500	1.00	ug/L	1	20.0	---	119	80-120%	---	---	
Chlorobenzene	19.9	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Chloroethane	25.2	5.00	5.00	ug/L	1	20.0	---	<b>126</b>	<b>80-120%</b>	---	---	Q-56
Chloroform	20.3	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloromethane	18.6	2.50	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
2-Chlorotoluene	18.9	0.500	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
4-Chlorotoluene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromochloromethane	21.5	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.3	2.50	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.1	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dibromomethane	19.7	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichlorobenzene	20.0	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
1,3-Dichlorobenzene	19.2	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
1,4-Dichlorobenzene	19.4	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>							<b>Water</b>					
<b>LCS (24G0011-BS1)</b>			Prepared: 07/01/24 09:51 Analyzed: 07/01/24 14:15									
Dichlorodifluoromethane	22.4	0.500	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,1-Dichloroethane	19.3	0.200	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dichloroethane (EDC)	21.5	0.200	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
1,1-Dichloroethene	21.1	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
cis-1,2-Dichloroethene	19.5	0.200	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	19.6	0.200	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloropropane	18.6	0.250	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,3-Dichloropropane	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
2,2-Dichloropropane	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,1-Dichloropropene	19.6	0.500	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
cis-1,3-Dichloropropene	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
trans-1,3-Dichloropropene	21.6	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Ethylbenzene	20.8	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Hexachlorobutadiene	20.8	2.50	5.00	ug/L	1	20.0	---	104	80-120%	---	---	
2-Hexanone	39.9	5.00	10.0	ug/L	1	40.0	---	100	80-120%	---	---	
Isopropylbenzene	21.6	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
4-Isopropyltoluene	21.2	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Methylene chloride	17.9	5.00	10.0	ug/L	1	20.0	---	90	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	42.2	5.00	10.0	ug/L	1	40.0	---	105	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	19.4	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Naphthalene	18.6	2.50	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
n-Propylbenzene	20.0	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Styrene	20.7	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,1,1,2-Tetrachloroethane	21.7	0.200	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,1,2,2-Tetrachloroethane	18.6	0.250	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Tetrachloroethene (PCE)	20.2	0.200	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
Toluene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	19.3	1.00	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2,4-Trichlorobenzene	19.2	1.00	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,1-Trichloroethane	21.8	0.200	0.400	ug/L	1	20.0	---	109	80-120%	---	---	
1,1,2-Trichloroethane	20.2	0.250	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Trichloroethene (TCE)	18.5	0.200	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
Trichlorofluoromethane	25.2	1.00	2.00	ug/L	1	20.0	---	<b>126</b>	<b>80-120%</b>	---	---	Q-56
1,2,3-Trichloropropane	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>												
<b>Water</b>												
<b>LCS (24G0011-BS1)</b>												
Prepared: 07/01/24 09:51						Analyzed: 07/01/24 14:15						
1,2,4-Trimethylbenzene	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,3,5-Trimethylbenzene	20.3	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Vinyl chloride	19.6	0.100	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
m,p-Xylene	42.9	0.500	1.00	ug/L	1	40.0	---	107	80-120%	---	---	
o-Xylene	21.0	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Acrolein	15.9	5.00	10.0	ug/L	1	20.0	---	80	80-120%	---	---	
Iodomethane	16.1	10.0	10.0	ug/L	1	20.0	---	81	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						

<b>Duplicate (24G0011-DUP1)</b>												
Prepared: 07/01/24 09:51						Analyzed: 07/01/24 23:03						
<b>QC Source Sample: Non-SDG (A4F1531-02)</b>												
Acetone	ND	100	200	ug/L	10	---	ND	---	---	---	30%	
Acrylonitrile	ND	20.0	20.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
Bromobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
n-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323

ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Duplicate (24G0011-DUP1)</b>						Prepared: 07/01/24 09:51 Analyzed: 07/01/24 23:03						
<b>QC Source Sample: Non-SDG (A4F1531-02)</b>												
1,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**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
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**Batch 24G0011 - EPA 5030C**

**Water**

**Duplicate (24G0011-DUP1)**

Prepared: 07/01/24 09:51 Analyzed: 07/01/24 23:03

**QC Source Sample: Non-SDG (A4F1531-02)**

1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Acrolein	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Iodomethane	ND	100	100	ug/L	10	---	ND	---	---	---	30%	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 88 % Limits: 80-120 % Dilution: 1x  
 Toluene-d8 (Surr) 100 % 80-120 % "  
 4-Bromofluorobenzene (Surr) 102 % 80-120 % "

**Duplicate (24G0011-DUP2)**

Prepared: 07/01/24 09:51 Analyzed: 07/02/24 00:10

**QC Source Sample: Non-SDG (A4F1531-04)**

Acetone	ND	100	200	ug/L	10	---	ND	---	---	---	30%	
Acrylonitrile	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
Bromobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
n-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Duplicate (24G0011-DUP2)</b>						Prepared: 07/01/24 09:51 Analyzed: 07/02/24 00:10						
<b>QC Source Sample: Non-SDG (A4F1531-04)</b>												
Carbon tetrachloride	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24G0011 - EPA 5030C</b>												
<b>Water</b>												
<b>Duplicate (24G0011-DUP2)</b>												
Prepared: 07/01/24 09:51 Analyzed: 07/02/24 00:10												
<b>QC Source Sample: Non-SDG (A4F1531-04)</b>												
Methyl tert-butyl ether (MTBE)	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Acrolein	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Iodomethane	ND	100	100	ug/L	10	---	ND	---	---	---	30%	

Surr: 1,4-Difluorobenzene (Surr)	Recovery: 88 %	Limits: 80-120 %	Dilution: 1x
Toluene-d8 (Surr)	102 %	80-120 %	"
4-Bromofluorobenzene (Surr)	105 %	80-120 %	"

**Matrix Spike (24G0011-MS1)** Prepared: 07/01/24 09:51 Analyzed: 07/01/24 21:33

**QC Source Sample: Non-SDG (A4F1587-08)**

**EPA 8260D**

Acetone	39.2	10.0	20.0	ug/L	1	40.0	ND	98	39-160%	---	---
Acrylonitrile	18.0	1.00	2.00	ug/L	1	20.0	ND	90	63-135%	---	---
Benzene	18.2	0.100	0.200	ug/L	1	20.0	ND	91	79-120%	---	---
Bromobenzene	19.2	0.250	0.500	ug/L	1	20.0	ND	96	80-120%	---	---

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike (24G0011-MS1)</b>						Prepared: 07/01/24 09:51 Analyzed: 07/01/24 21:33						
<b>QC Source Sample: Non-SDG (A4F1587-08)</b>												
Bromochloromethane	19.2	0.500	1.00	ug/L	1	20.0	ND	96	78-123%	---	---	
Bromodichloromethane	20.5	0.500	1.00	ug/L	1	20.0	ND	103	79-125%	---	---	
Bromoform	21.6	0.500	1.00	ug/L	1	20.0	ND	108	66-130%	---	---	
Bromomethane	20.1	5.00	5.00	ug/L	1	20.0	ND	100	53-141%	---	---	
2-Butanone (MEK)	38.0	5.00	10.0	ug/L	1	40.0	ND	95	56-143%	---	---	
n-Butylbenzene	21.5	0.500	1.00	ug/L	1	20.0	ND	108	75-128%	---	---	
sec-Butylbenzene	21.7	0.500	1.00	ug/L	1	20.0	ND	108	77-126%	---	---	
tert-Butylbenzene	21.7	0.500	1.00	ug/L	1	20.0	ND	109	78-124%	---	---	
Carbon disulfide	19.3	5.00	10.0	ug/L	1	20.0	ND	97	64-133%	---	---	
Carbon tetrachloride	24.8	0.500	1.00	ug/L	1	20.0	ND	124	72-136%	---	---	
Chlorobenzene	19.8	0.250	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
Chloroethane	26.3	5.00	5.00	ug/L	1	20.0	ND	131	60-138%	---	---	Q-54a
Chloroform	20.5	0.500	1.00	ug/L	1	20.0	ND	103	79-124%	---	---	
Chloromethane	18.9	2.50	5.00	ug/L	1	20.0	ND	94	50-139%	---	---	
2-Chlorotoluene	19.7	0.500	1.00	ug/L	1	20.0	ND	98	79-122%	---	---	
4-Chlorotoluene	20.2	0.500	1.00	ug/L	1	20.0	ND	101	78-122%	---	---	
Dibromochloromethane	20.8	0.500	1.00	ug/L	1	20.0	ND	104	74-126%	---	---	
1,2-Dibromo-3-chloropropane	19.0	2.50	5.00	ug/L	1	20.0	ND	95	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.4	0.250	0.500	ug/L	1	20.0	ND	102	77-121%	---	---	
Dibromomethane	19.7	0.500	1.00	ug/L	1	20.0	ND	99	79-123%	---	---	
1,2-Dichlorobenzene	19.9	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
1,3-Dichlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
1,4-Dichlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	ND	97	79-120%	---	---	
Dichlorodifluoromethane	21.9	0.500	1.00	ug/L	1	20.0	ND	110	32-152%	---	---	
1,1-Dichloroethane	20.2	0.200	0.400	ug/L	1	20.0	ND	101	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.4	0.200	0.400	ug/L	1	20.0	ND	107	73-128%	---	---	
1,1-Dichloroethene	22.2	0.200	0.400	ug/L	1	20.0	ND	111	71-131%	---	---	
cis-1,2-Dichloroethene	20.0	0.200	0.400	ug/L	1	20.0	ND	100	78-123%	---	---	
trans-1,2-Dichloroethene	20.4	0.200	0.400	ug/L	1	20.0	ND	102	75-124%	---	---	
1,2-Dichloropropane	18.6	0.250	0.500	ug/L	1	20.0	ND	93	78-122%	---	---	
1,3-Dichloropropane	20.4	0.500	1.00	ug/L	1	20.0	ND	102	80-120%	---	---	
2,2-Dichloropropane	22.0	0.500	1.00	ug/L	1	20.0	ND	110	60-139%	---	---	
1,1-Dichloropropene	20.8	0.500	1.00	ug/L	1	20.0	ND	104	79-125%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike (24G0011-MS1)</b>						Prepared: 07/01/24 09:51 Analyzed: 07/01/24 21:33						
<b>QC Source Sample: Non-SDG (A4F1587-08)</b>												
cis-1,3-Dichloropropene	20.3	0.500	1.00	ug/L	1	20.0	ND	102	75-124%	---	---	
trans-1,3-Dichloropropene	21.3	0.500	1.00	ug/L	1	20.0	ND	106	73-127%	---	---	
Ethylbenzene	21.0	0.250	0.500	ug/L	1	20.0	ND	105	79-121%	---	---	
Hexachlorobutadiene	20.6	2.50	5.00	ug/L	1	20.0	ND	103	66-134%	---	---	
2-Hexanone	40.4	5.00	10.0	ug/L	1	40.0	ND	101	57-139%	---	---	
Isopropylbenzene	21.8	0.500	1.00	ug/L	1	20.0	ND	109	72-131%	---	---	
4-Isopropyltoluene	21.2	0.500	1.00	ug/L	1	20.0	ND	106	77-127%	---	---	
Methylene chloride	17.7	5.00	10.0	ug/L	1	20.0	ND	88	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	41.2	5.00	10.0	ug/L	1	40.0	ND	103	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	19.6	0.500	1.00	ug/L	1	20.0	ND	98	71-124%	---	---	
Naphthalene	18.8	2.50	5.00	ug/L	1	20.0	ND	94	61-128%	---	---	
n-Propylbenzene	20.9	0.250	0.500	ug/L	1	20.0	ND	105	76-126%	---	---	
Styrene	19.5	0.500	1.00	ug/L	1	20.0	ND	97	78-123%	---	---	
1,1,1,2-Tetrachloroethane	21.8	0.200	0.400	ug/L	1	20.0	ND	109	78-124%	---	---	
1,1,2,2-Tetrachloroethane	19.6	0.250	0.500	ug/L	1	20.0	ND	98	71-121%	---	---	
Tetrachloroethene (PCE)	21.4	0.200	0.400	ug/L	1	20.0	ND	107	74-129%	---	---	
Toluene	20.1	0.500	1.00	ug/L	1	20.0	ND	101	80-121%	---	---	
1,2,3-Trichlorobenzene	19.0	1.00	2.00	ug/L	1	20.0	ND	95	69-129%	---	---	
1,2,4-Trichlorobenzene	18.9	1.00	2.00	ug/L	1	20.0	ND	94	69-130%	---	---	
1,1,1-Trichloroethane	22.4	0.200	0.400	ug/L	1	20.0	ND	112	74-131%	---	---	
1,1,2-Trichloroethane	20.0	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Trichloroethene (TCE)	19.2	0.200	0.400	ug/L	1	20.0	ND	94	79-123%	---	---	
Trichlorofluoromethane	28.2	1.00	2.00	ug/L	1	20.0	ND	141	65-141%	---	---	Q-54a
1,2,3-Trichloropropane	21.2	0.500	1.00	ug/L	1	20.0	ND	106	73-122%	---	---	
1,2,4-Trimethylbenzene	20.4	0.500	1.00	ug/L	1	20.0	ND	102	76-124%	---	---	
1,3,5-Trimethylbenzene	20.6	0.500	1.00	ug/L	1	20.0	ND	103	75-124%	---	---	
Vinyl chloride	21.3	0.100	0.200	ug/L	1	20.0	ND	106	58-137%	---	---	
m,p-Xylene	43.2	0.500	1.00	ug/L	1	40.0	ND	108	80-121%	---	---	
o-Xylene	21.0	0.250	0.500	ug/L	1	20.0	ND	105	78-122%	---	---	
Acrolein	14.3	5.00	10.0	ug/L	1	20.0	ND	71	39-155%	---	---	
Iodomethane	16.5	10.0	10.0	ug/L	1	20.0	ND	82	69-131%	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 92 % Limits: 80-120 % Dilution: 1x  
 Toluene-d8 (Surr) 98 % 80-120 % "

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Philip Nerenberg, Lab Director



**ANALYTICAL REPORT**

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**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
<b>Batch 24G0011 - EPA 5030C</b>						<b>Water</b>						
<b>Matrix Spike (24G0011-MS1)</b>			Prepared: 07/01/24 09:51 Analyzed: 07/01/24 21:33									
<b>QC Source Sample: Non-SDG (A4F1587-08)</b>												
<i>Surr: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0041-BLK2)</b>						Prepared: 07/02/24 09:09 Analyzed: 07/03/24 10:15						
<u>EPA 8270E</u>												
Acenaphthene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	<b>0.109</b>	0.100	0.200	ug/L	1	---	---	---	---	---	---	B-02, J
Phenol	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	<b>0.160</b>	0.0500	0.100	ug/L	1	---	---	---	---	---	---	B

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0041-BLK2)</b>			Prepared: 07/02/24 09:09			Analyzed: 07/03/24 10:15						
2,3,5,6-Tetrachlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Aniline	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	1.25	2.50	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
--	--	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0041-BLK2)</b>			Prepared: 07/02/24 09:09			Analyzed: 07/03/24 10:15						
Azobenzene (1,2-DPH)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 66 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>18 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>80 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>29 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>62 %</i>		<i>43-140 %</i>		<i>"</i>						
<b>LCS (24G0041-BS2)</b>			Prepared: 07/02/24 09:09			Analyzed: 07/03/24 10:51						
<b>EPA 8270E</b>												
Acenaphthene	2.82	0.0400	0.0800	ug/L	4	4.00	---	71	47-122%	---	---	
Acenaphthylene	2.95	0.0400	0.0800	ug/L	4	4.00	---	74	41-130%	---	---	
Anthracene	3.19	0.0400	0.0800	ug/L	4	4.00	---	80	57-123%	---	---	
Benz(a)anthracene	3.21	0.0400	0.0800	ug/L	4	4.00	---	80	58-125%	---	---	
Benzo(a)pyrene	3.36	0.0600	0.120	ug/L	4	4.00	---	84	54-128%	---	---	
Benzo(b)fluoranthene	3.32	0.0600	0.120	ug/L	4	4.00	---	83	53-131%	---	---	
Benzo(k)fluoranthene	3.27	0.0600	0.120	ug/L	4	4.00	---	82	57-129%	---	---	
Benzo(g,h,i)perylene	3.38	0.0400	0.0800	ug/L	4	4.00	---	85	50-134%	---	---	
Chrysene	3.24	0.0400	0.0800	ug/L	4	4.00	---	81	59-123%	---	---	
Dibenz(a,h)anthracene	3.17	0.0400	0.0800	ug/L	4	4.00	---	79	51-134%	---	---	
Fluoranthene	3.63	0.0400	0.0800	ug/L	4	4.00	---	91	57-128%	---	---	
Fluorene	3.09	0.0400	0.0800	ug/L	4	4.00	---	77	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.03	0.0400	0.0800	ug/L	4	4.00	---	76	52-134%	---	---	
1-Methylnaphthalene	2.71	0.0800	0.160	ug/L	4	4.00	---	68	41-120%	---	---	
2-Methylnaphthalene	2.76	0.0800	0.160	ug/L	4	4.00	---	69	40-121%	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS (24G0041-BS2)</b>			Prepared: 07/02/24 09:09			Analyzed: 07/03/24 10:51						
Naphthalene	2.58	0.0800	0.160	ug/L	4	4.00	---	64	40-121%	---	---	
Phenanthrene	3.14	0.0400	0.0800	ug/L	4	4.00	---	79	59-120%	---	---	
Pyrene	3.60	0.0400	0.0800	ug/L	4	4.00	---	90	57-126%	---	---	
Carbazole	3.80	0.0600	0.120	ug/L	4	4.00	---	95	60-122%	---	---	
Dibenzofuran	2.90	0.0400	0.0800	ug/L	4	4.00	---	72	53-120%	---	---	
2-Chlorophenol	2.28	0.200	0.400	ug/L	4	4.00	---	57	38-120%	---	---	
4-Chloro-3-methylphenol	2.95	0.400	0.800	ug/L	4	4.00	---	74	52-120%	---	---	
2,4-Dichlorophenol	3.02	0.200	0.400	ug/L	4	4.00	---	75	47-121%	---	---	
2,4-Dimethylphenol	1.91	1.00	1.00	ug/L	4	4.00	---	48	31-124%	---	---	
2,4-Dinitrophenol	5.02	1.00	2.00	ug/L	4	4.00	---	125	23-143%	---	---	Q-41
4,6-Dinitro-2-methylphenol	5.11	1.00	2.00	ug/L	4	4.00	---	128	44-137%	---	---	Q-41
2-Methylphenol	2.13	0.100	0.200	ug/L	4	4.00	---	53	30-120%	---	---	
3+4-Methylphenol(s)	2.19	0.100	0.200	ug/L	4	4.00	---	55	29-120%	---	---	
2-Nitrophenol	4.10	0.400	0.800	ug/L	4	4.00	---	102	47-123%	---	---	Q-41
4-Nitrophenol	1.48	0.400	0.800	ug/L	4	4.00	---	37	10-120%	---	---	
Pentachlorophenol (PCP)	3.88	0.400	0.800	ug/L	4	4.00	---	97	35-138%	---	---	B-02
Phenol	0.984	0.800	0.800	ug/L	4	4.00	---	25	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	3.86	0.200	0.400	ug/L	4	4.00	---	97	50-128%	---	---	B
2,3,5,6-Tetrachlorophenol	3.83	0.200	0.400	ug/L	4	4.00	---	96	50-121%	---	---	
2,4,5-Trichlorophenol	3.41	0.200	0.400	ug/L	4	4.00	---	85	53-123%	---	---	
2,4,6-Trichlorophenol	3.24	0.200	0.400	ug/L	4	4.00	---	81	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.32	0.800	1.60	ug/L	4	4.00	---	83	55-135%	---	---	
Butyl benzyl phthalate	3.47	0.800	1.60	ug/L	4	4.00	---	87	53-134%	---	---	
Diethylphthalate	3.39	0.800	1.60	ug/L	4	4.00	---	85	56-125%	---	---	
Dimethylphthalate	3.17	0.800	1.60	ug/L	4	4.00	---	79	45-127%	---	---	
Di-n-butylphthalate	3.78	0.800	1.60	ug/L	4	4.00	---	95	59-127%	---	---	
Di-n-octyl phthalate	3.51	0.800	1.60	ug/L	4	4.00	---	88	51-140%	---	---	
N-Nitrosodimethylamine	1.40	0.100	0.200	ug/L	4	4.00	---	35	19-120%	---	---	
N-Nitroso-di-n-propylamine	2.42	0.100	0.200	ug/L	4	4.00	---	61	49-120%	---	---	
N-Nitrosodiphenylamine	3.20	0.100	0.200	ug/L	4	4.00	---	80	51-123%	---	---	
Bis(2-Chloroethoxy) methane	2.86	0.100	0.200	ug/L	4	4.00	---	72	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.24	0.100	0.200	ug/L	4	4.00	---	56	43-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	2.25	0.100	0.200	ug/L	4	4.00	---	56	41-120%	---	---	
Hexachlorobenzene	2.97	0.0400	0.0800	ug/L	4	4.00	---	74	53-125%	---	---	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS (24G0041-BS2)</b>			Prepared: 07/02/24 09:09			Analyzed: 07/03/24 10:51						
Hexachlorobutadiene	2.43	0.100	0.200	ug/L	4	4.00	---	61	22-124%	---	---	
Hexachlorocyclopentadiene	3.17	0.200	0.400	ug/L	4	4.00	---	79	10-127%	---	---	
Hexachloroethane	2.39	0.100	0.200	ug/L	4	4.00	---	60	21-120%	---	---	
2-Chloronaphthalene	2.85	0.0400	0.0800	ug/L	4	4.00	---	71	40-120%	---	---	
1,2,4-Trichlorobenzene	2.47	0.100	0.200	ug/L	4	4.00	---	62	29-120%	---	---	
4-Bromophenyl phenyl ether	3.13	0.100	0.200	ug/L	4	4.00	---	78	55-124%	---	---	
4-Chlorophenyl phenyl ether	3.07	0.100	0.200	ug/L	4	4.00	---	77	53-121%	---	---	
Aniline	1.85	0.200	0.400	ug/L	4	4.00	---	46	10-120%	---	---	
4-Chloroaniline	2.52	0.100	0.200	ug/L	4	4.00	---	63	33-120%	---	---	
2-Nitroaniline	3.64	0.800	1.60	ug/L	4	4.00	---	91	55-127%	---	---	
3-Nitroaniline	2.94	0.800	1.60	ug/L	4	4.00	---	73	41-128%	---	---	
4-Nitroaniline	2.95	0.800	1.60	ug/L	4	4.00	---	74	25-120%	---	---	
Nitrobenzene	2.57	0.400	0.800	ug/L	4	4.00	---	64	45-121%	---	---	
2,4-Dinitrotoluene	3.80	0.400	0.800	ug/L	4	4.00	---	95	57-128%	---	---	Q-41
2,6-Dinitrotoluene	3.40	0.400	0.800	ug/L	4	4.00	---	85	57-124%	---	---	
Benzoic acid	3.38	2.00	2.00	ug/L	4	8.00	---	42	10-120%	---	---	
Benzyl alcohol	2.06	0.400	0.800	ug/L	4	4.00	---	51	31-120%	---	---	
Isophorone	2.70	0.100	0.200	ug/L	4	4.00	---	67	42-124%	---	---	
Azobenzene (1,2-DPH)	2.84	0.100	0.200	ug/L	4	4.00	---	71	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.27	1.00	2.00	ug/L	4	4.00	---	82	63-121%	---	---	
3,3'-Dichlorobenzidine	9.02	2.00	4.00	ug/L	4	8.00	---	113	27-129%	---	---	Q-31, Q-52
1,2-Dinitrobenzene	3.64	1.00	2.00	ug/L	4	4.00	---	91	59-120%	---	---	Q-41
1,3-Dinitrobenzene	3.96	1.00	2.00	ug/L	4	4.00	---	99	49-128%	---	---	Q-41
1,4-Dinitrobenzene	4.09	1.00	2.00	ug/L	4	4.00	---	102	54-120%	---	---	Q-41
Pyridine	1.53	0.400	0.800	ug/L	4	4.00	---	38	10-120%	---	---	
1,2-Dichlorobenzene	2.19	0.100	0.200	ug/L	4	4.00	---	55	32-120%	---	---	
1,3-Dichlorobenzene	2.16	0.100	0.200	ug/L	4	4.00	---	54	28-120%	---	---	
1,4-Dichlorobenzene	2.15	0.100	0.200	ug/L	4	4.00	---	54	29-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 73 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>77 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>23 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>87 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>32 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>96 %</i>		<i>43-140 %</i>		<i>"</i>						

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ANALYTICAL REPORT

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<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike (24G0041-MS1)</b>						Prepared: 07/02/24 06:35 Analyzed: 07/03/24 13:55						
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
<b>EPA 8270E</b>												
Acenaphthene	1.15	0.0396	0.0792	ug/L	4	3.96	ND	29	47-122%	---	---	Q-01
Acenaphthylene	1.22	0.0396	0.0792	ug/L	4	3.96	ND	31	41-130%	---	---	Q-01
Anthracene	2.73	0.0396	0.0792	ug/L	4	3.96	ND	69	57-123%	---	---	
Benz(a)anthracene	3.07	0.0396	0.0792	ug/L	4	3.96	ND	77	58-125%	---	---	
Benzo(a)pyrene	3.22	0.0594	0.119	ug/L	4	3.96	ND	81	54-128%	---	---	
Benzo(b)fluoranthene	3.28	0.0594	0.119	ug/L	4	3.96	ND	83	53-131%	---	---	
Benzo(k)fluoranthene	3.15	0.0594	0.119	ug/L	4	3.96	ND	79	57-129%	---	---	
Benzo(g,h,i)perylene	3.32	0.0396	0.0792	ug/L	4	3.96	ND	84	50-134%	---	---	
Chrysene	3.13	0.0396	0.0792	ug/L	4	3.96	ND	79	59-123%	---	---	
Dibenz(a,h)anthracene	3.14	0.0396	0.0792	ug/L	4	3.96	ND	79	51-134%	---	---	
Fluoranthene	3.33	0.0396	0.0792	ug/L	4	3.96	ND	84	57-128%	---	---	
Fluorene	1.73	0.0396	0.0792	ug/L	4	3.96	ND	44	52-124%	---	---	Q-01
Indeno(1,2,3-cd)pyrene	3.02	0.0396	0.0792	ug/L	4	3.96	ND	76	52-134%	---	---	
1-Methylnaphthalene	0.832	0.0792	0.158	ug/L	4	3.96	ND	21	41-120%	---	---	Q-01
2-Methylnaphthalene	0.803	0.0792	0.158	ug/L	4	3.96	ND	20	40-121%	---	---	Q-01
Naphthalene	0.742	0.0792	0.158	ug/L	4	3.96	ND	19	40-121%	---	---	Q-01
Phenanthrene	2.72	0.0396	0.0792	ug/L	4	3.96	ND	69	59-120%	---	---	
Pyrene	3.35	0.0396	0.0792	ug/L	4	3.96	ND	85	57-126%	---	---	
Carbazole	3.59	0.0594	0.119	ug/L	4	3.96	ND	91	60-122%	---	---	
Dibenzofuran	1.34	0.0396	0.0792	ug/L	4	3.96	ND	34	53-120%	---	---	Q-01
2-Chlorophenol	0.710	0.198	0.396	ug/L	4	3.96	ND	18	38-120%	---	---	Q-01
4-Chloro-3-methylphenol	2.13	0.396	0.792	ug/L	4	3.96	ND	54	52-120%	---	---	
2,4-Dichlorophenol	1.56	0.198	0.396	ug/L	4	3.96	0.352	31	47-121%	---	---	Q-01
2,4-Dimethylphenol	1.13	0.990	1.98	ug/L	4	3.96	ND	28	31-124%	---	---	J, Q-01
2,4-Dinitrophenol	6.15	0.990	1.98	ug/L	4	3.96	ND	155	23-143%	---	---	Q-01, Q-41
4,6-Dinitro-2-methylphenol	5.58	0.990	1.98	ug/L	4	3.96	ND	141	44-137%	---	---	Q-01, Q-41
2-Methylphenol	0.800	0.0990	0.198	ug/L	4	3.96	ND	20	30-120%	---	---	Q-01
3+4-Methylphenol(s)	0.889	0.0990	0.198	ug/L	4	3.96	ND	22	29-120%	---	---	Q-01
2-Nitrophenol	1.30	0.396	0.792	ug/L	4	3.96	ND	33	47-123%	---	---	Q-01, Q-41
4-Nitrophenol	1.58	1.23	1.23	ug/L	4	3.96	ND	40	10-120%	---	---	
Pentachlorophenol (PCP)	4.51	0.396	0.792	ug/L	4	3.96	ND	114	35-138%	---	---	B-02

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike (24G0041-MS1)</b>						Prepared: 07/02/24 06:35 Analyzed: 07/03/24 13:55						
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
Phenol	ND	0.792	1.58	ug/L	4	3.96	ND		<b>10-120%</b>	---	---	Q-01
2,3,4,6-Tetrachlorophenol	3.93	0.198	0.396	ug/L	4	3.96	0.266	93	50-128%	---	---	B
2,3,5,6-Tetrachlorophenol	3.68	0.198	0.396	ug/L	4	3.96	ND	93	50-121%	---	---	
2,4,5-Trichlorophenol	2.66	0.198	0.396	ug/L	4	3.96	ND	67	53-123%	---	---	
2,4,6-Trichlorophenol	2.01	0.198	0.396	ug/L	4	3.96	ND	51	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.37	0.792	1.58	ug/L	4	3.96	ND	85	55-135%	---	---	
Butyl benzyl phthalate	3.51	0.792	1.58	ug/L	4	3.96	ND	89	53-134%	---	---	
Diethylphthalate	2.80	0.792	1.58	ug/L	4	3.96	ND	71	56-125%	---	---	
Dimethylphthalate	2.06	0.792	1.58	ug/L	4	3.96	ND	52	45-127%	---	---	
Di-n-butylphthalate	3.57	0.792	1.58	ug/L	4	3.96	ND	90	59-127%	---	---	
Di-n-octyl phthalate	3.56	0.792	1.58	ug/L	4	3.96	ND	90	51-140%	---	---	
N-Nitrosodimethylamine	0.399	0.0990	0.198	ug/L	4	3.96	ND	<b>10</b>	<b>19-120%</b>	---	---	Q-01
N-Nitroso-di-n-propylamine	0.753	0.0990	0.198	ug/L	4	3.96	ND	<b>19</b>	<b>49-120%</b>	---	---	Q-01
N-Nitrosodiphenylamine	2.49	0.0990	0.198	ug/L	4	3.96	ND	63	51-123%	---	---	
Bis(2-Chloroethoxy) methane	0.801	0.0990	0.198	ug/L	4	3.96	ND	<b>20</b>	<b>48-120%</b>	---	---	Q-01
Bis(2-Chloroethyl) ether	0.626	0.0990	0.198	ug/L	4	3.96	ND	<b>16</b>	<b>43-120%</b>	---	---	Q-01
2,2'-Oxybis(1-Chloropropane)	0.640	0.0990	0.198	ug/L	4	3.96	ND	<b>16</b>	<b>41-120%</b>	---	---	Q-01
Hexachlorobenzene	2.08	0.0396	0.0792	ug/L	4	3.96	ND	53	53-125%	---	---	
Hexachlorobutadiene	0.519	0.0990	0.198	ug/L	4	3.96	ND	<b>13</b>	<b>22-124%</b>	---	---	Q-01
Hexachlorocyclopentadiene	0.707	0.198	0.396	ug/L	4	3.96	ND	18	10-127%	---	---	
Hexachloroethane	0.500	0.0990	0.198	ug/L	4	3.96	ND	<b>13</b>	<b>21-120%</b>	---	---	Q-01
2-Chloronaphthalene	0.910	0.0396	0.0792	ug/L	4	3.96	ND	<b>23</b>	<b>40-120%</b>	---	---	Q-01
1,2,4-Trichlorobenzene	0.592	0.0990	0.198	ug/L	4	3.96	ND	<b>15</b>	<b>29-120%</b>	---	---	Q-01
4-Bromophenyl phenyl ether	2.16	0.0990	0.198	ug/L	4	3.96	ND	55	55-124%	---	---	
4-Chlorophenyl phenyl ether	1.65	0.0990	0.198	ug/L	4	3.96	ND	<b>42</b>	<b>53-121%</b>	---	---	Q-01
Aniline	0.526	0.198	0.396	ug/L	4	3.96	ND	13	10-120%	---	---	
4-Chloroaniline	0.699	0.0990	0.198	ug/L	4	3.96	ND	<b>18</b>	<b>33-120%</b>	---	---	Q-01
2-Nitroaniline	2.48	0.792	1.58	ug/L	4	3.96	ND	63	55-127%	---	---	
3-Nitroaniline	0.964	0.792	1.58	ug/L	4	3.96	ND	<b>24</b>	<b>41-128%</b>	---	---	J, Q-01
4-Nitroaniline	1.39	0.792	1.58	ug/L	4	3.96	ND	35	25-120%	---	---	J
Nitrobenzene	0.794	0.396	0.792	ug/L	4	3.96	ND	<b>20</b>	<b>45-121%</b>	---	---	Q-01
2,4-Dinitrotoluene	3.25	0.396	0.792	ug/L	4	3.96	ND	82	57-128%	---	---	Q-41
2,6-Dinitrotoluene	2.31	0.396	0.792	ug/L	4	3.96	ND	58	57-124%	---	---	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike (24G0041-MS1)</b>			Prepared: 07/02/24 06:35 Analyzed: 07/03/24 13:55									
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
Benzoic acid	ND	4.95	9.90	ug/L	4	7.92	ND		<b>10-120%</b>	---	---	Q-01
Benzyl alcohol	0.594	0.396	0.792	ug/L	4	3.96	ND	<b>15</b>	<b>31-120%</b>	---	---	J, Q-01
Isophorone	0.993	0.0990	0.198	ug/L	4	3.96	ND	<b>25</b>	<b>42-124%</b>	---	---	Q-01
Azobenzene (1,2-DPH)	1.78	0.0990	0.198	ug/L	4	3.96	ND	<b>45</b>	<b>61-120%</b>	---	---	Q-01
Bis(2-Ethylhexyl) adipate	3.33	0.990	1.98	ug/L	4	3.96	ND	<b>84</b>	63-121%	---	---	
3,3'-Dichlorobenzidine	ND	1.98	3.96	ug/L	4	7.92	ND		<b>27-129%</b>	---	---	Q-01, Q-31, Q-52
1,2-Dinitrobenzene	2.83	0.990	1.98	ug/L	4	3.96	ND	<b>72</b>	59-120%	---	---	Q-41
1,3-Dinitrobenzene	2.83	0.990	1.98	ug/L	4	3.96	ND	<b>71</b>	49-128%	---	---	Q-41
1,4-Dinitrobenzene	2.79	0.990	1.98	ug/L	4	3.96	ND	<b>70</b>	54-120%	---	---	Q-41
Pyridine	0.494	0.396	0.792	ug/L	4	3.96	ND	<b>12</b>	10-120%	---	---	J
1,2-Dichlorobenzene	0.544	0.0990	0.198	ug/L	4	3.96	ND	<b>14</b>	<b>32-120%</b>	---	---	Q-01
1,3-Dichlorobenzene	0.516	0.0990	0.198	ug/L	4	3.96	ND	<b>13</b>	<b>28-120%</b>	---	---	Q-01
1,4-Dichlorobenzene	0.513	0.0990	0.198	ug/L	4	3.96	ND	<b>13</b>	<b>29-120%</b>	---	---	Q-01
<i>Surr: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 23 %</i>			<i>Limits: 44-120 %</i>		<i>Dilution: 4x</i>				S-03
<i>2-Fluorobiphenyl (Surr)</i>			<i>27 %</i>			<i>44-120 %</i>						S-03
<i>Phenol-d6 (Surr)</i>			<i>7 %</i>			<i>10-133 %</i>						S-03
<i>p-Terphenyl-d14 (Surr)</i>			<i>78 %</i>			<i>50-134 %</i>						
<i>2-Fluorophenol (Surr)</i>			<i>10 %</i>			<i>19-120 %</i>						S-03
<i>2,4,6-Tribromophenol (Surr)</i>			<i>100 %</i>			<i>43-140 %</i>						

<b>Matrix Spike Dup (24G0041-MSD1)</b>			Prepared: 07/02/24 06:35 Analyzed: 07/03/24 14:30									
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
<b>EPA 8270E</b>												
Acenaphthene	0.976	0.0404	0.0808	ug/L	4	4.04	ND	<b>24</b>	<b>47-122%</b>	17	30%	Q-01
Acenaphthylene	1.02	0.0404	0.0808	ug/L	4	4.04	ND	<b>25</b>	<b>41-130%</b>	18	30%	Q-01
Anthracene	2.34	0.0404	0.0808	ug/L	4	4.04	ND	<b>58</b>	57-123%	16	30%	
Benz(a)anthracene	2.68	0.0404	0.0808	ug/L	4	4.04	ND	<b>66</b>	58-125%	14	30%	
Benzo(a)pyrene	2.80	0.0606	0.121	ug/L	4	4.04	ND	<b>69</b>	54-128%	14	30%	
Benzo(b)fluoranthene	2.85	0.0606	0.121	ug/L	4	4.04	ND	<b>70</b>	53-131%	14	30%	
Benzo(k)fluoranthene	2.73	0.0606	0.121	ug/L	4	4.04	ND	<b>68</b>	57-129%	14	30%	
Benzo(g,h,i)perylene	2.88	0.0404	0.0808	ug/L	4	4.04	ND	<b>71</b>	50-134%	14	30%	
Chrysene	2.75	0.0404	0.0808	ug/L	4	4.04	ND	<b>68</b>	59-123%	13	30%	

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike Dup (24G0041-MSD1)</b>						Prepared: 07/02/24 06:35 Analyzed: 07/03/24 14:30						
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
Dibenz(a,h)anthracene	2.75	0.0404	0.0808	ug/L	4	4.04	ND	68	51-134%	13	30%	
Fluoranthene	2.98	0.0404	0.0808	ug/L	4	4.04	ND	74	57-128%	11	30%	
Fluorene	1.41	0.0404	0.0808	ug/L	4	4.04	ND	<b>35</b>	<b>52-124%</b>	20	30%	Q-01
Indeno(1,2,3-cd)pyrene	2.66	0.0404	0.0808	ug/L	4	4.04	ND	66	52-134%	13	30%	
1-Methylnaphthalene	0.740	0.0808	0.162	ug/L	4	4.04	ND	<b>18</b>	<b>41-120%</b>	12	30%	Q-01
2-Methylnaphthalene	0.734	0.0808	0.162	ug/L	4	4.04	ND	<b>18</b>	<b>40-121%</b>	9	30%	Q-01
Naphthalene	0.682	0.0808	0.162	ug/L	4	4.04	ND	<b>17</b>	<b>40-121%</b>	9	30%	Q-01
Phenanthrene	2.31	0.0404	0.0808	ug/L	4	4.04	ND	<b>57</b>	<b>59-120%</b>	16	30%	Q-01
Pyrene	2.99	0.0404	0.0808	ug/L	4	4.04	ND	74	57-126%	11	30%	
Carbazole	3.23	0.0606	0.121	ug/L	4	4.04	ND	80	60-122%	11	30%	
Dibenzofuran	1.12	0.0404	0.0808	ug/L	4	4.04	ND	<b>28</b>	<b>53-120%</b>	18	30%	Q-01
2-Chlorophenol	0.682	0.202	0.404	ug/L	4	4.04	ND	<b>17</b>	<b>38-120%</b>	4	30%	Q-01
4-Chloro-3-methylphenol	1.90	0.404	0.808	ug/L	4	4.04	ND	<b>47</b>	<b>52-120%</b>	11	30%	Q-01
2,4-Dichlorophenol	1.26	0.202	0.404	ug/L	4	4.04	0.352	<b>22</b>	<b>47-121%</b>	22	30%	Q-01
2,4-Dimethylphenol	ND	1.01	2.02	ug/L	4	4.04	ND		<b>31-124%</b>	<b>200</b>	<b>30%</b>	Q-01
2,4-Dinitrophenol	5.45	1.01	2.02	ug/L	4	4.04	ND	135	23-143%	12	30%	Q-41
4,6-Dinitro-2-methylphenol	4.91	1.01	2.02	ug/L	4	4.04	ND	122	44-137%	13	30%	Q-41
2-Methylphenol	0.706	0.101	0.202	ug/L	4	4.04	ND	<b>17</b>	<b>30-120%</b>	13	30%	Q-01
3+4-Methylphenol(s)	0.765	0.101	0.202	ug/L	4	4.04	ND	<b>19</b>	<b>29-120%</b>	15	30%	Q-01
2-Nitrophenol	1.24	0.404	0.808	ug/L	4	4.04	ND	<b>31</b>	<b>47-123%</b>	5	30%	Q-01, Q-41
4-Nitrophenol	1.60	1.25	1.25	ug/L	4	4.04	ND	40	10-120%	1	30%	
Pentachlorophenol (PCP)	3.88	0.404	0.808	ug/L	4	4.04	ND	96	35-138%	15	30%	B-02
Phenol	ND	0.808	1.62	ug/L	4	4.04	ND		<b>10-120%</b>	<b>200</b>	<b>30%</b>	Q-01
2,3,4,6-Tetrachlorophenol	3.13	0.202	0.404	ug/L	4	4.04	0.266	71	50-128%	23	30%	B
2,3,5,6-Tetrachlorophenol	3.19	0.202	0.404	ug/L	4	4.04	ND	79	50-121%	14	30%	
2,4,5-Trichlorophenol	2.29	0.202	0.404	ug/L	4	4.04	ND	57	53-123%	15	30%	
2,4,6-Trichlorophenol	1.68	0.202	0.404	ug/L	4	4.04	ND	<b>42</b>	<b>50-125%</b>	18	30%	Q-01
Bis(2-ethylhexyl)phthalate	2.84	0.808	1.62	ug/L	4	4.04	ND	70	55-135%	17	30%	
Butyl benzyl phthalate	3.04	0.808	1.62	ug/L	4	4.04	ND	75	53-134%	14	30%	
Diethylphthalate	2.40	0.808	1.62	ug/L	4	4.04	ND	59	56-125%	15	30%	
Dimethylphthalate	1.72	0.808	1.62	ug/L	4	4.04	ND	<b>42</b>	<b>45-127%</b>	18	30%	Q-01
Di-n-butylphthalate	3.14	0.808	1.62	ug/L	4	4.04	ND	78	59-127%	13	30%	
Di-n-octyl phthalate	3.07	0.808	1.62	ug/L	4	4.04	ND	76	51-140%	15	30%	

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike Dup (24G0041-MSD1)</b>						Prepared: 07/02/24 06:35 Analyzed: 07/03/24 14:30						
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
N-Nitrosodimethylamine	0.457	0.101	0.202	ug/L	4	4.04	ND	<b>11</b>	<b>19-120%</b>	14	30%	Q-01
N-Nitroso-di-n-propylamine	0.727	0.101	0.202	ug/L	4	4.04	ND	<b>18</b>	<b>49-120%</b>	4	30%	Q-01
N-Nitrosodiphenylamine	2.17	0.101	0.202	ug/L	4	4.04	ND	54	51-123%	14	30%	
Bis(2-Chloroethoxy) methane	0.723	0.101	0.202	ug/L	4	4.04	ND	<b>18</b>	<b>48-120%</b>	10	30%	Q-01
Bis(2-Chloroethyl) ether	0.627	0.101	0.202	ug/L	4	4.04	ND	<b>16</b>	<b>43-120%</b>	0.09	30%	Q-01
2,2'-Oxybis(1-Chloropropane)	0.637	0.101	0.202	ug/L	4	4.04	ND	<b>16</b>	<b>41-120%</b>	0.4	30%	Q-01
Hexachlorobenzene	1.74	0.0404	0.0808	ug/L	4	4.04	ND	<b>43</b>	<b>53-125%</b>	18	30%	Q-01
Hexachlorobutadiene	0.451	0.101	0.202	ug/L	4	4.04	ND	<b>11</b>	<b>22-124%</b>	14	30%	Q-01
Hexachlorocyclopentadiene	0.603	0.202	0.404	ug/L	4	4.04	ND	15	10-127%	16	30%	
Hexachloroethane	0.475	0.101	0.202	ug/L	4	4.04	ND	<b>12</b>	<b>21-120%</b>	5	30%	Q-01
2-Chloronaphthalene	0.802	0.0404	0.0808	ug/L	4	4.04	ND	<b>20</b>	<b>40-120%</b>	13	30%	Q-01
1,2,4-Trichlorobenzene	0.535	0.101	0.202	ug/L	4	4.04	ND	<b>13</b>	<b>29-120%</b>	10	30%	Q-01
4-Bromophenyl phenyl ether	1.85	0.101	0.202	ug/L	4	4.04	ND	<b>46</b>	<b>55-124%</b>	15	30%	Q-01
4-Chlorophenyl phenyl ether	1.37	0.101	0.202	ug/L	4	4.04	ND	<b>34</b>	<b>53-121%</b>	19	30%	Q-01
Aniline	0.530	0.202	0.404	ug/L	4	4.04	ND	13	10-120%	0.7	30%	
4-Chloroaniline	0.626	0.101	0.202	ug/L	4	4.04	ND	<b>15</b>	<b>33-120%</b>	11	30%	Q-01
2-Nitroaniline	2.14	0.808	1.62	ug/L	4	4.04	ND	<b>53</b>	<b>55-127%</b>	15	30%	Q-01
3-Nitroaniline	1.01	0.808	1.62	ug/L	4	4.04	ND	<b>25</b>	<b>41-128%</b>	5	30%	Q-01, J
4-Nitroaniline	1.36	0.808	1.62	ug/L	4	4.04	ND	34	25-120%	2	30%	J
Nitrobenzene	0.762	0.404	0.808	ug/L	4	4.04	ND	<b>19</b>	<b>45-121%</b>	4	30%	Q-01, J
2,4-Dinitrotoluene	2.78	0.404	0.808	ug/L	4	4.04	ND	69	57-128%	16	30%	Q-41
2,6-Dinitrotoluene	1.96	0.404	0.808	ug/L	4	4.04	ND	<b>48</b>	<b>57-124%</b>	16	30%	Q-01
Benzoic acid	ND	5.05	10.1	ug/L	4	8.08	ND		<b>10-120%</b>	<b>200</b>	<b>30%</b>	Q-01
Benzyl alcohol	0.599	0.404	0.808	ug/L	4	4.04	ND	<b>15</b>	<b>31-120%</b>	0.9	30%	Q-01, J
Isophorone	0.846	0.101	0.202	ug/L	4	4.04	ND	<b>21</b>	<b>42-124%</b>	16	30%	Q-01
Azobenzene (1,2-DPH)	1.51	0.101	0.202	ug/L	4	4.04	ND	<b>37</b>	<b>61-120%</b>	16	30%	Q-01
Bis(2-Ethylhexyl) adipate	2.84	1.01	2.02	ug/L	4	4.04	ND	70	63-121%	16	30%	
3,3'-Dichlorobenzidine	ND	2.02	4.04	ug/L	4	8.08	ND		<b>27-129%</b>		30%	Q-01, Q-31, Q-52
1,2-Dinitrobenzene	2.42	1.01	2.02	ug/L	4	4.04	ND	60	59-120%	16	30%	Q-41
1,3-Dinitrobenzene	2.39	1.01	2.02	ug/L	4	4.04	ND	59	49-128%	17	30%	Q-41
1,4-Dinitrobenzene	2.39	1.01	2.02	ug/L	4	4.04	ND	59	54-120%	16	30%	Q-41
Pyridine	0.578	0.404	0.808	ug/L	4	4.04	ND	14	10-120%	16	30%	J
1,2-Dichlorobenzene	0.506	0.101	0.202	ug/L	4	4.04	ND	<b>13</b>	<b>32-120%</b>	7	30%	Q-01

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0041 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Matrix Spike Dup (24G0041-MSD1)</b>						Prepared: 07/02/24 06:35 Analyzed: 07/03/24 14:30						
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
1,3-Dichlorobenzene	0.488	0.101	0.202	ug/L	4	4.04	ND	12	28-120%	6	30%	Q-01
1,4-Dichlorobenzene	0.495	0.101	0.202	ug/L	4	4.04	ND	12	29-120%	4	30%	Q-01
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 21 % Limits: 44-120 % Dilution: 4x S-03</i>												
<i>2-Fluorobiphenyl (Surr) 22 % 44-120 % " S-03</i>												
<i>Phenol-d6 (Surr) 7 % 10-133 % " S-03</i>												
<i>p-Terphenyl-d14 (Surr) 65 % 50-134 % " S-03</i>												
<i>2-Fluorophenol (Surr) 10 % 19-120 % " S-03</i>												
<i>2,4,6-Tribromophenol (Surr) 79 % 43-140 % " S-03</i>												

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<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0181-BLK1)</b>						Prepared: 07/08/24 05:43 Analyzed: 07/08/24 20:05						
<u>EPA 8270E</u>												
Acenaphthene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
2-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
Naphthalene	ND	0.0200	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	0.0150	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	<b>0.110</b>	0.100	0.200	ug/L	1	---	---	---	---	---	---	B-02, J
Phenol	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	<b>0.198</b>	0.0500	0.100	ug/L	1	---	---	---	---	---	---	B

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0181-BLK1)</b>			Prepared: 07/08/24 05:43 Analyzed: 07/08/24 20:05									
2,3,5,6-Tetrachlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	<b>0.0406</b>	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	B-02, J
2,2'-Oxybis(1-Chloropropane)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Hexachlorocyclopentadiene	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.0100	0.0200	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
4-Bromophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Aniline	ND	0.0500	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	1.25	2.50	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
--	--	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>Blank (24G0181-BLK1)</b>			Prepared: 07/08/24 05:43			Analyzed: 07/08/24 20:05						
Azobenzene (1,2-DPH)	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,3-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,4-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>59 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>25 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>91 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>36 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>81 %</i>		<i>43-140 %</i>		<i>"</i>						
<b>LCS (24G0181-BS1)</b>			Prepared: 07/08/24 05:43			Analyzed: 07/08/24 20:38						
<b>EPA 8270E</b>												
Acenaphthene	2.05	0.0400	0.0800	ug/L	4	4.00	---	51	47-122%	---	---	
Acenaphthylene	2.42	0.0400	0.0800	ug/L	4	4.00	---	61	41-130%	---	---	
Anthracene	3.22	0.0400	0.0800	ug/L	4	4.00	---	80	57-123%	---	---	
Benz(a)anthracene	3.50	0.0400	0.0800	ug/L	4	4.00	---	88	58-125%	---	---	
Benzo(a)pyrene	3.64	0.0600	0.120	ug/L	4	4.00	---	91	54-128%	---	---	
Benzo(b)fluoranthene	3.64	0.0600	0.120	ug/L	4	4.00	---	91	53-131%	---	---	
Benzo(k)fluoranthene	3.59	0.0600	0.120	ug/L	4	4.00	---	90	57-129%	---	---	
Benzo(g,h,i)perylene	3.44	0.0400	0.0800	ug/L	4	4.00	---	86	50-134%	---	---	
Chrysene	3.45	0.0400	0.0800	ug/L	4	4.00	---	86	59-123%	---	---	
Dibenz(a,h)anthracene	3.41	0.0400	0.0800	ug/L	4	4.00	---	85	51-134%	---	---	
Fluoranthene	3.48	0.0400	0.0800	ug/L	4	4.00	---	87	57-128%	---	---	
Fluorene	2.70	0.0400	0.0800	ug/L	4	4.00	---	68	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.29	0.0400	0.0800	ug/L	4	4.00	---	82	52-134%	---	---	
1-Methylnaphthalene	1.59	0.0800	0.160	ug/L	4	4.00	---	<b>40</b>	<b>41-120%</b>	---	---	Q-30
2-Methylnaphthalene	1.55	0.0800	0.160	ug/L	4	4.00	---	<b>39</b>	<b>40-121%</b>	---	---	Q-30

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Philip Nerenberg, Lab Director

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15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS (24G0181-BS1)</b>			Prepared: 07/08/24 05:43 Analyzed: 07/08/24 20:38									
Naphthalene	1.61	0.0800	0.160	ug/L	4	4.00	---	40	40-121%	---	---	
Phenanthrene	3.08	0.0400	0.0800	ug/L	4	4.00	---	77	59-120%	---	---	
Pyrene	3.35	0.0400	0.0800	ug/L	4	4.00	---	84	57-126%	---	---	
Carbazole	3.60	0.0600	0.120	ug/L	4	4.00	---	90	60-122%	---	---	
Dibenzofuran	2.43	0.0400	0.0800	ug/L	4	4.00	---	61	53-120%	---	---	
2-Chlorophenol	2.66	0.200	0.400	ug/L	4	4.00	---	67	38-120%	---	---	
4-Chloro-3-methylphenol	3.66	0.400	0.800	ug/L	4	4.00	---	91	52-120%	---	---	Q-41
2,4-Dichlorophenol	3.58	0.200	0.400	ug/L	4	4.00	---	89	47-121%	---	---	Q-41
2,4-Dimethylphenol	2.62	1.00	2.00	ug/L	4	4.00	---	65	31-124%	---	---	
2,4-Dinitrophenol	5.27	1.00	2.00	ug/L	4	4.00	---	132	23-143%	---	---	Q-41
4,6-Dinitro-2-methylphenol	4.33	1.00	2.00	ug/L	4	4.00	---	108	44-137%	---	---	Q-41
2-Methylphenol	2.40	0.100	0.200	ug/L	4	4.00	---	60	30-120%	---	---	
3+4-Methylphenol(s)	2.45	0.100	0.200	ug/L	4	4.00	---	61	29-120%	---	---	
2-Nitrophenol	3.19	0.400	0.800	ug/L	4	4.00	---	80	47-123%	---	---	
4-Nitrophenol	1.54	0.400	0.800	ug/L	4	4.00	---	39	10-120%	---	---	Q-41
Pentachlorophenol (PCP)	3.09	0.400	0.800	ug/L	4	4.00	---	77	35-138%	---	---	B-02
Phenol	1.19	0.800	0.800	ug/L	4	4.00	---	30	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	3.63	0.200	0.400	ug/L	4	4.00	---	91	50-128%	---	---	B
2,3,5,6-Tetrachlorophenol	3.85	0.200	0.400	ug/L	4	4.00	---	96	50-121%	---	---	
2,4,5-Trichlorophenol	4.36	0.200	0.400	ug/L	4	4.00	---	109	53-123%	---	---	Q-41
2,4,6-Trichlorophenol	3.82	0.200	0.400	ug/L	4	4.00	---	95	50-125%	---	---	Q-41
Bis(2-ethylhexyl)phthalate	3.62	0.800	1.60	ug/L	4	4.00	---	91	55-135%	---	---	
Butyl benzyl phthalate	3.68	0.800	1.60	ug/L	4	4.00	---	92	53-134%	---	---	
Diethylphthalate	3.54	0.800	1.60	ug/L	4	4.00	---	88	56-125%	---	---	
Dimethylphthalate	3.48	0.800	1.60	ug/L	4	4.00	---	87	45-127%	---	---	
Di-n-butylphthalate	3.72	0.800	1.60	ug/L	4	4.00	---	93	59-127%	---	---	
Di-n-octyl phthalate	3.86	0.800	1.60	ug/L	4	4.00	---	97	51-140%	---	---	
N-Nitrosodimethylamine	1.48	0.100	0.200	ug/L	4	4.00	---	37	19-120%	---	---	
N-Nitroso-di-n-propylamine	3.38	0.100	0.200	ug/L	4	4.00	---	84	49-120%	---	---	
N-Nitrosodiphenylamine	3.10	0.100	0.200	ug/L	4	4.00	---	78	51-123%	---	---	
Bis(2-Chloroethoxy) methane	3.16	0.100	0.200	ug/L	4	4.00	---	79	48-120%	---	---	
Bis(2-Chloroethyl) ether	3.08	0.100	0.200	ug/L	4	4.00	---	77	43-120%	---	---	B-02
2,2'-Oxybis(1-Chloropropane)	2.50	0.100	0.200	ug/L	4	4.00	---	62	41-120%	---	---	
Hexachlorobenzene	2.72	0.0400	0.0800	ug/L	4	4.00	---	68	53-125%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS (24G0181-BS1)</b>			Prepared: 07/08/24 05:43 Analyzed: 07/08/24 20:38									
Hexachlorobutadiene	0.742	0.100	0.200	ug/L	4	4.00	---	19	22-124%	---	---	Q-30
Hexachlorocyclopentadiene	0.544	0.200	0.400	ug/L	4	4.00	---	14	10-127%	---	---	
Hexachloroethane	0.846	0.100	0.200	ug/L	4	4.00	---	21	21-120%	---	---	
2-Chloronaphthalene	1.74	0.0400	0.0800	ug/L	4	4.00	---	43	40-120%	---	---	
1,2,4-Trichlorobenzene	1.00	0.100	0.200	ug/L	4	4.00	---	25	29-120%	---	---	Q-30
4-Bromophenyl phenyl ether	2.36	0.100	0.200	ug/L	4	4.00	---	59	55-124%	---	---	
4-Chlorophenyl phenyl ether	2.04	0.100	0.200	ug/L	4	4.00	---	51	53-121%	---	---	Q-30
Aniline	1.58	0.200	0.400	ug/L	4	4.00	---	39	10-120%	---	---	
4-Chloroaniline	2.40	0.100	0.200	ug/L	4	4.00	---	60	33-120%	---	---	
2-Nitroaniline	3.98	0.800	1.60	ug/L	4	4.00	---	100	55-127%	---	---	
3-Nitroaniline	2.77	0.800	1.60	ug/L	4	4.00	---	69	41-128%	---	---	
4-Nitroaniline	2.76	0.800	1.60	ug/L	4	4.00	---	69	25-120%	---	---	
Nitrobenzene	3.17	0.400	0.800	ug/L	4	4.00	---	79	45-121%	---	---	
2,4-Dinitrotoluene	3.49	0.400	0.800	ug/L	4	4.00	---	87	57-128%	---	---	
2,6-Dinitrotoluene	3.33	0.400	0.800	ug/L	4	4.00	---	83	57-124%	---	---	
Benzoic acid	5.17	5.00	5.00	ug/L	4	8.00	---	65	10-120%	---	---	Q-41
Benzyl alcohol	2.70	0.400	0.800	ug/L	4	4.00	---	68	31-120%	---	---	
Isophorone	3.21	0.100	0.200	ug/L	4	4.00	---	80	42-124%	---	---	
Azobenzene (1,2-DPH)	2.97	0.100	0.200	ug/L	4	4.00	---	74	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.35	1.00	2.00	ug/L	4	4.00	---	84	63-121%	---	---	
3,3'-Dichlorobenzidine	6.04	2.00	4.00	ug/L	4	8.00	---	76	27-129%	---	---	Q-31, Q-52
1,2-Dinitrobenzene	3.47	1.00	2.00	ug/L	4	4.00	---	87	59-120%	---	---	
1,3-Dinitrobenzene	3.82	1.00	2.00	ug/L	4	4.00	---	96	49-128%	---	---	
1,4-Dinitrobenzene	4.04	1.00	2.00	ug/L	4	4.00	---	101	54-120%	---	---	Q-41
Pyridine	1.64	0.400	0.800	ug/L	4	4.00	---	41	10-120%	---	---	
1,2-Dichlorobenzene	1.01	0.100	0.200	ug/L	4	4.00	---	25	32-120%	---	---	Q-30
1,3-Dichlorobenzene	0.915	0.100	0.200	ug/L	4	4.00	---	23	28-120%	---	---	Q-30
1,4-Dichlorobenzene	0.974	0.100	0.200	ug/L	4	4.00	---	24	29-120%	---	---	Q-30
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>86 %</i>		<i>Limits:</i>		<i>44-120 %</i>		<i>Dilution: 4x</i>		
<i>2-Fluorobiphenyl (Surr)</i>				<i>64 %</i>				<i>44-120 %</i>		<i>"</i>		
<i>Phenol-d6 (Surr)</i>				<i>25 %</i>				<i>10-133 %</i>		<i>"</i>		
<i>p-Terphenyl-d14 (Surr)</i>				<i>85 %</i>				<i>50-134 %</i>		<i>"</i>		
<i>2-Fluorophenol (Surr)</i>				<i>36 %</i>				<i>19-120 %</i>		<i>"</i>		
<i>2,4,6-Tribromophenol (Surr)</i>				<i>90 %</i>				<i>43-140 %</i>		<i>"</i>		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS Dup (24G0181-BSD1)</b>												<b>Q-19</b>
Prepared: 07/08/24 05:43						Analyzed: 07/08/24 21:12						
<u>EPA 8270E</u>												
Acenaphthene	2.07	0.0400	0.0800	ug/L	4	4.00	---	52	47-122%	1	30%	
Acenaphthylene	2.39	0.0400	0.0800	ug/L	4	4.00	---	60	41-130%	1	30%	
Anthracene	3.12	0.0400	0.0800	ug/L	4	4.00	---	78	57-123%	3	30%	
Benz(a)anthracene	3.30	0.0400	0.0800	ug/L	4	4.00	---	83	58-125%	6	30%	
Benzo(a)pyrene	3.55	0.0600	0.120	ug/L	4	4.00	---	89	54-128%	3	30%	
Benzo(b)fluoranthene	3.57	0.0600	0.120	ug/L	4	4.00	---	89	53-131%	2	30%	
Benzo(k)fluoranthene	3.47	0.0600	0.120	ug/L	4	4.00	---	87	57-129%	3	30%	
Benzo(g,h,i)perylene	3.36	0.0400	0.0800	ug/L	4	4.00	---	84	50-134%	2	30%	
Chrysene	3.28	0.0400	0.0800	ug/L	4	4.00	---	82	59-123%	5	30%	
Dibenz(a,h)anthracene	3.26	0.0400	0.0800	ug/L	4	4.00	---	82	51-134%	4	30%	
Fluoranthene	3.21	0.0400	0.0800	ug/L	4	4.00	---	80	57-128%	8	30%	
Fluorene	2.70	0.0400	0.0800	ug/L	4	4.00	---	68	52-124%	0.2	30%	
Indeno(1,2,3-cd)pyrene	3.19	0.0400	0.0800	ug/L	4	4.00	---	80	52-134%	3	30%	
1-Methylnaphthalene	1.63	0.0800	0.160	ug/L	4	4.00	---	41	41-120%	2	30%	
2-Methylnaphthalene	1.56	0.0800	0.160	ug/L	4	4.00	---	<b>39</b>	<b>40-121%</b>	1	30%	Q-30
Naphthalene	1.61	0.0800	0.160	ug/L	4	4.00	---	40	40-121%	0.6	30%	
Phenanthrene	3.02	0.0400	0.0800	ug/L	4	4.00	---	75	59-120%	2	30%	
Pyrene	3.10	0.0400	0.0800	ug/L	4	4.00	---	78	57-126%	8	30%	
Carbazole	3.38	0.0600	0.120	ug/L	4	4.00	---	84	60-122%	6	30%	
Dibenzofuran	2.38	0.0400	0.0800	ug/L	4	4.00	---	59	53-120%	2	30%	
2-Chlorophenol	2.63	0.200	0.400	ug/L	4	4.00	---	66	38-120%	1	30%	
4-Chloro-3-methylphenol	3.55	0.400	0.800	ug/L	4	4.00	---	89	52-120%	3	30%	Q-41
2,4-Dichlorophenol	3.42	0.200	0.400	ug/L	4	4.00	---	85	47-121%	5	30%	Q-41
2,4-Dimethylphenol	2.38	1.00	2.00	ug/L	4	4.00	---	59	31-124%	10	30%	
2,4-Dinitrophenol	4.67	1.00	2.00	ug/L	4	4.00	---	117	23-143%	12	30%	Q-41
4,6-Dinitro-2-methylphenol	3.81	1.00	2.00	ug/L	4	4.00	---	95	44-137%	13	30%	Q-41
2-Methylphenol	2.36	0.100	0.200	ug/L	4	4.00	---	59	30-120%	2	30%	
3+4-Methylphenol(s)	2.38	0.100	0.200	ug/L	4	4.00	---	60	29-120%	3	30%	
2-Nitrophenol	3.21	0.400	0.800	ug/L	4	4.00	---	80	47-123%	0.5	30%	
4-Nitrophenol	1.38	0.400	0.800	ug/L	4	4.00	---	34	10-120%	11	30%	Q-41
Pentachlorophenol (PCP)	2.82	0.400	0.800	ug/L	4	4.00	---	71	35-138%	9	30%	B-02
Phenol	1.17	0.800	0.800	ug/L	4	4.00	---	29	10-120%	2	30%	
2,3,4,6-Tetrachlorophenol	3.39	0.200	0.400	ug/L	4	4.00	---	85	50-128%	7	30%	B

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS Dup (24G0181-BSD1)</b>						Prepared: 07/08/24 05:43 Analyzed: 07/08/24 21:12						<b>Q-19</b>
2,3,5,6-Tetrachlorophenol	3.56	0.200	0.400	ug/L	4	4.00	---	89	50-121%	8	30%	
2,4,5-Trichlorophenol	4.11	0.200	0.400	ug/L	4	4.00	---	103	53-123%	6	30%	Q-41
2,4,6-Trichlorophenol	3.63	0.200	0.400	ug/L	4	4.00	---	91	50-125%	5	30%	Q-41
Bis(2-ethylhexyl)phthalate	3.58	0.800	1.60	ug/L	4	4.00	---	89	55-135%	1	30%	
Butyl benzyl phthalate	3.67	0.800	1.60	ug/L	4	4.00	---	92	53-134%	0.4	30%	
Diethylphthalate	3.42	0.800	1.60	ug/L	4	4.00	---	85	56-125%	4	30%	
Dimethylphthalate	3.39	0.800	1.60	ug/L	4	4.00	---	85	45-127%	3	30%	
Di-n-butylphthalate	3.60	0.800	1.60	ug/L	4	4.00	---	90	59-127%	3	30%	
Di-n-octyl phthalate	3.91	0.800	1.60	ug/L	4	4.00	---	98	51-140%	1	30%	
N-Nitrosodimethylamine	1.38	0.100	0.200	ug/L	4	4.00	---	34	19-120%	7	30%	
N-Nitroso-di-n-propylamine	3.40	0.100	0.200	ug/L	4	4.00	---	85	49-120%	0.7	30%	
N-Nitrosodiphenylamine	3.08	0.100	0.200	ug/L	4	4.00	---	77	51-123%	0.6	30%	
Bis(2-Chloroethoxy) methane	3.11	0.100	0.200	ug/L	4	4.00	---	78	48-120%	2	30%	
Bis(2-Chloroethyl) ether	2.95	0.100	0.200	ug/L	4	4.00	---	74	43-120%	4	30%	B-02
2,2'-Oxybis(1-Chloropropane)	2.58	0.100	0.200	ug/L	4	4.00	---	65	41-120%	3	30%	
Hexachlorobenzene	2.79	0.0400	0.0800	ug/L	4	4.00	---	70	53-125%	2	30%	
Hexachlorobutadiene	0.746	0.100	0.200	ug/L	4	4.00	---	<b>19</b>	<b>22-124%</b>	0.5	30%	Q-30
Hexachlorocyclopentadiene	0.504	0.200	0.400	ug/L	4	4.00	---	13	10-127%	7	30%	
Hexachloroethane	0.863	0.100	0.200	ug/L	4	4.00	---	22	21-120%	2	30%	
2-Chloronaphthalene	1.72	0.0400	0.0800	ug/L	4	4.00	---	43	40-120%	1	30%	
1,2,4-Trichlorobenzene	1.01	0.100	0.200	ug/L	4	4.00	---	<b>25</b>	<b>29-120%</b>	1	30%	Q-30
4-Bromophenyl phenyl ether	2.44	0.100	0.200	ug/L	4	4.00	---	61	55-124%	3	30%	
4-Chlorophenyl phenyl ether	2.04	0.100	0.200	ug/L	4	4.00	---	<b>51</b>	<b>53-121%</b>	0.1	30%	Q-30
Aniline	1.64	0.200	0.400	ug/L	4	4.00	---	41	10-120%	4	30%	
4-Chloroaniline	2.36	0.100	0.200	ug/L	4	4.00	---	59	33-120%	2	30%	
2-Nitroaniline	3.64	0.800	1.60	ug/L	4	4.00	---	91	55-127%	9	30%	
3-Nitroaniline	2.52	0.800	1.60	ug/L	4	4.00	---	63	41-128%	9	30%	
4-Nitroaniline	2.62	0.800	1.60	ug/L	4	4.00	---	65	25-120%	5	30%	
Nitrobenzene	3.05	0.400	0.800	ug/L	4	4.00	---	76	45-121%	4	30%	
2,4-Dinitrotoluene	3.24	0.400	0.800	ug/L	4	4.00	---	81	57-128%	7	30%	
2,6-Dinitrotoluene	3.17	0.400	0.800	ug/L	4	4.00	---	79	57-124%	5	30%	
Benzoic acid	4.64	2.00	2.00	ug/L	4	8.00	---	58	10-120%	11	30%	Q-41
Benzyl alcohol	2.60	0.400	0.800	ug/L	4	4.00	---	65	31-120%	4	30%	
Isophorone	3.20	0.100	0.200	ug/L	4	4.00	---	80	42-124%	0.06	30%	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0181 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS Dup (24G0181-BSD1)</b>						Prepared: 07/08/24 05:43 Analyzed: 07/08/24 21:12						<b>Q-19</b>
Azobenzene (1,2-DPH)	2.97	0.100	0.200	ug/L	4	4.00	---	74	61-120%	0.03	30%	
Bis(2-Ethylhexyl) adipate	3.39	1.00	2.00	ug/L	4	4.00	---	85	63-121%	1	30%	
3,3'-Dichlorobenzidine	6.13	2.00	4.00	ug/L	4	8.00	---	77	27-129%	1	30%	Q-31, Q-52
1,2-Dinitrobenzene	3.24	1.00	2.00	ug/L	4	4.00	---	81	59-120%	7	30%	
1,3-Dinitrobenzene	3.52	1.00	2.00	ug/L	4	4.00	---	88	49-128%	8	30%	
1,4-Dinitrobenzene	3.71	1.00	2.00	ug/L	4	4.00	---	93	54-120%	9	30%	Q-41
Pyridine	1.65	0.400	0.800	ug/L	4	4.00	---	41	10-120%	0.1	30%	
1,2-Dichlorobenzene	1.03	0.100	0.200	ug/L	4	4.00	---	<b>26</b>	<b>32-120%</b>	2	30%	Q-30
1,3-Dichlorobenzene	0.907	0.100	0.200	ug/L	4	4.00	---	<b>23</b>	<b>28-120%</b>	0.9	30%	Q-30
1,4-Dichlorobenzene	0.965	0.100	0.200	ug/L	4	4.00	---	<b>24</b>	<b>29-120%</b>	0.9	30%	Q-30
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 86 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 64 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 26 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 93 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 39 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 90 % 43-140 % "</i>												

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0202 - 1631E Mercury (H2O)</b>						<b>Water</b>						
<b>Blank (24G0202-BLK1)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:03						
<u>EPA 1631E-LL</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0202-BLK2)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:08						
<u>EPA 1631E-LL</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0202-BLK3)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:13						
<u>EPA 1631E-LL</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>LCS (24G0202-BS1)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:18						
<u>EPA 1631E-LL</u>												
Mercury	8.24	0.250	0.500	ng/L	1	8.00	---	103	80-120%	---	---	
<b>Matrix Spike (24G0202-MS1)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:33						
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</u>												
<u>EPA 1631E-LL</u>												
Mercury	10.2	0.250	0.500	ng/L	1	8.00	1.45	109	75-125%	---	---	
<b>Matrix Spike Dup (24G0202-MSD1)</b>						Prepared: 07/08/24 11:57 Analyzed: 07/09/24 15:38						
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</u>												
<u>EPA 1631E-LL</u>												
Mercury	9.12	0.250	0.500	ng/L	1	8.00	1.45	96	75-125%	11	24%	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAf) by EPA 1631E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0204 - 1631E Mercury (H2O)</b>						<b>Water</b>						
<b>Blank (24G0204-BLK1)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:23									
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0204-BLK2)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:28									
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0204-BLK3)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:33									
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>LCS (24G0204-BS1)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:38									
<u>EPA 1631E-LL (Diss)</u>												
Mercury	7.75	0.250	0.500	ng/L	1	8.00	---	97	80-120%	---	---	
<b>Matrix Spike (24G0204-MS1)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 17:03									
<u>QC Source Sample: 22B-F-S-20240626 (A4F1545-02)</u>												
<u>EPA 1631E-LL (Diss)</u>												
Mercury	8.43	0.250	0.500	ng/L	1	8.00	0.690	97	75-125%	---	---	
<b>Matrix Spike Dup (24G0204-MSD1)</b>			Prepared: 07/08/24 12:06 Analyzed: 07/09/24 17:08									
<u>QC Source Sample: 22B-F-S-20240626 (A4F1545-02)</u>												
<u>EPA 1631E-LL (Diss)</u>												
Mercury	7.81	0.250	0.500	ng/L	1	8.00	0.690	89	75-125%	8	24%	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0031 - EPA 3015A</b>												
<b>Water</b>												
<b>Blank (24G0031-BLK1)</b> Prepared: 07/01/24 14:29 Analyzed: 07/02/24 23:54												
<u>EPA 200.8</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Calcium	ND	375	600	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Lead	<b>1.01</b>	0.100	0.200	ug/L	1	---	---	---	---	---	---	B
Magnesium	ND	75.0	150	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Nickel	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
<b>Blank (24G0031-BLK2)</b> Prepared: 07/01/24 14:29 Analyzed: 07/03/24 12:25												
<u>EPA 200.8</u>												
Zinc	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	Q-16
<b>LCS (24G0031-BS1)</b> Prepared: 07/01/24 14:29 Analyzed: 07/03/24 00:00												
<u>EPA 200.8</u>												
Arsenic	58.0	0.500	1.00	ug/L	1	55.6	---	104	85-115%	---	---	
Barium	60.1	1.00	2.00	ug/L	1	55.6	---	108	85-115%	---	---	
Cadmium	58.5	0.100	0.200	ug/L	1	55.6	---	105	85-115%	---	---	
Calcium	2870	375	600	ug/L	1	2780	---	103	85-115%	---	---	
Chromium	59.3	1.00	2.00	ug/L	1	55.6	---	107	85-115%	---	---	
Copper	62.3	1.00	2.00	ug/L	1	55.6	---	112	85-115%	---	---	
Iron	2860	25.0	50.0	ug/L	1	2780	---	103	85-115%	---	---	
Lead	60.1	0.100	0.200	ug/L	1	55.6	---	108	85-115%	---	---	B
Magnesium	2960	75.0	150	ug/L	1	2780	---	107	85-115%	---	---	
Manganese	59.5	0.500	1.00	ug/L	1	55.6	---	107	85-115%	---	---	
Nickel	59.1	2.00	4.00	ug/L	1	55.6	---	106	85-115%	---	---	
Selenium	29.0	0.500	1.00	ug/L	1	27.8	---	104	85-115%	---	---	
Silver	28.5	0.100	0.200	ug/L	1	27.8	---	103	85-115%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0031 - EPA 3015A</b>												
<b>Water</b>												
<b>LCS (24G0031-BS3)</b>												
						Prepared: 07/01/24 14:29 Analyzed: 07/03/24 12:32						
<u>EPA 200.8</u>												
Zinc	61.3	2.00	4.00	ug/L	1	55.6	---	110	85-115%	---	---	Q-16
<b>Duplicate (24G0031-DUP1)</b>												
						Prepared: 07/01/24 14:29 Analyzed: 07/03/24 00:38						
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</u>												
<u>EPA 200.8</u>												
Arsenic	7.95	0.500	1.00	ug/L	1	---	7.89	---	---	0.8	20%	
Barium	23.1	1.00	2.00	ug/L	1	---	23.4	---	---	1	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Calcium	34900	375	600	ug/L	1	---	34400	---	---	1	20%	
Chromium	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Copper	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Iron	655	25.0	50.0	ug/L	1	---	647	---	---	1	20%	
Lead	0.142	0.100	0.200	ug/L	1	---	0.147	---	---	3	20%	J, B
Magnesium	10800	75.0	150	ug/L	1	---	10600	---	---	1	20%	
Manganese	114	0.500	1.00	ug/L	1	---	113	---	---	0.4	20%	
Nickel	ND	2.00	4.00	ug/L	1	---	ND	---	---	---	20%	
Selenium	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
<b>Duplicate (24G0031-DUP3)</b>												
						Prepared: 07/01/24 14:29 Analyzed: 07/03/24 13:12						
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</u>												
<u>EPA 200.8</u>												
Zinc	2.38	2.00	4.00	ug/L	1	---	2.39	---	---	0.5	20%	Q-16, J
<b>Matrix Spike (24G0031-MS1)</b>												
						Prepared: 07/01/24 14:29 Analyzed: 07/03/24 00:43						
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</u>												
<u>EPA 200.8</u>												
Arsenic	66.4	0.500	1.00	ug/L	1	55.6	7.89	105	70-130%	---	---	
Barium	83.2	1.00	2.00	ug/L	1	55.6	23.4	108	70-130%	---	---	
Cadmium	60.3	0.100	0.200	ug/L	1	55.6	ND	109	70-130%	---	---	
Calcium	37400	375	600	ug/L	1	2780	34400	109	70-130%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0031 - EPA 3015A</b>												
<b>Water</b>												
<b>Matrix Spike (24G0031-MS1)</b> Prepared: 07/01/24 14:29    Analyzed: 07/03/24 00:43												
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</b>												
Chromium	58.0	1.00	2.00	ug/L	1	55.6	ND	104	70-130%	---	---	
Copper	60.2	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Iron	3360	25.0	50.0	ug/L	1	2780	647	98	70-130%	---	---	
Lead	58.5	0.100	0.200	ug/L	1	55.6	0.147	105	70-130%	---	---	B
Magnesium	13400	75.0	150	ug/L	1	2780	10600	99	70-130%	---	---	
Manganese	170	0.500	1.00	ug/L	1	55.6	113	103	70-130%	---	---	
Nickel	57.7	2.00	4.00	ug/L	1	55.6	ND	104	70-130%	---	---	
Selenium	28.6	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Silver	28.1	0.100	0.200	ug/L	1	27.8	ND	101	70-130%	---	---	
<b>Matrix Spike (24G0031-MS2)</b> Prepared: 07/01/24 14:29    Analyzed: 07/03/24 01:48												
<b>QC Source Sample: Non-SDG (A4F1643-01)</b>												
<b>EPA 200.8</b>												
Arsenic	59.7	0.500	1.00	ug/L	1	55.6	ND	107	70-130%	---	---	
Barium	94.2	1.00	2.00	ug/L	1	55.6	39.0	99	70-130%	---	---	
Cadmium	59.8	0.100	0.200	ug/L	1	55.6	ND	108	70-130%	---	---	
Calcium	5080	375	600	ug/L	1	2780	2140	106	70-130%	---	---	
Chromium	65.6	1.00	2.00	ug/L	1	55.6	7.10	105	70-130%	---	---	
Copper	60.1	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Iron	3540	25.0	50.0	ug/L	1	2780	642	104	70-130%	---	---	
Lead	57.3	0.100	0.200	ug/L	1	55.6	ND	103	70-130%	---	---	B
Magnesium	3750	75.0	150	ug/L	1	2780	761	107	70-130%	---	---	
Manganese	60.7	0.500	1.00	ug/L	1	55.6	0.730	108	70-130%	---	---	
Nickel	57.4	2.00	4.00	ug/L	1	55.6	ND	103	70-130%	---	---	
Selenium	28.4	0.500	1.00	ug/L	1	27.8	2.17	95	70-130%	---	---	
Silver	36.0	0.100	0.200	ug/L	1	27.8	7.77	102	70-130%	---	---	
<b>Matrix Spike (24G0031-MS5)</b> Prepared: 07/01/24 14:29    Analyzed: 07/03/24 13:18												
<b>QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2)</b>												
<b>EPA 200.8</b>												
Zinc	60.0	2.00	4.00	ug/L	1	55.6	2.39	104	70-130%	---	---	Q-16

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Table with 3 columns: Client (WSP USA Environment & Infrastructure Inc.), Project (Starlink Uplands Support), and Report ID (A4F1545 - 09 13 24 0013).

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Table for Batch 24G0031 - EPA 3015A Water. Matrix Spike (24G0031-MS6). QC Source Sample: Non-SDG (A4F1643-01RE1). EPA 200.8 results for Zinc.

Table for Matrix Spike Dup (24G0031-MSD1). QC Source Sample: 22B-U-S-20240626 (A4F1545-04). EPA 200.8 results for Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Selenium, Silver.

Table for Matrix Spike Dup (24G0031-MSD5). QC Source Sample: 22B-U-S-20240626 (A4F1545-04RE2). EPA 200.8 results for Zinc.

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Philip Nerenberg (signature)

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
--	--	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0199 - EPA 3015A</b>												
<b>Water</b>												
<b>Blank (24G0199-BLK1)</b>												
						Prepared: 07/08/24 11:29 Analyzed: 07/08/24 18:00						
<u>EPA 200.8</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Calcium	ND	375	600	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Magnesium	ND	75.0	150	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Nickel	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Zinc	<b>6.84</b>	2.00	4.00	ug/L	1	---	---	---	---	---	---	B

<b>LCS (24G0199-BS1)</b>												
						Prepared: 07/08/24 11:29 Analyzed: 07/08/24 18:06						
<u>EPA 200.8</u>												
Arsenic	57.2	0.500	1.00	ug/L	1	55.6	---	103	85-115%	---	---	
Barium	58.8	1.00	2.00	ug/L	1	55.6	---	106	85-115%	---	---	
Cadmium	57.2	0.100	0.200	ug/L	1	55.6	---	103	85-115%	---	---	
Calcium	2970	375	600	ug/L	1	2780	---	107	85-115%	---	---	
Chromium	58.4	1.00	2.00	ug/L	1	55.6	---	105	85-115%	---	---	
Copper	60.2	1.00	2.00	ug/L	1	55.6	---	108	85-115%	---	---	
Iron	2880	25.0	50.0	ug/L	1	2780	---	104	85-115%	---	---	
Lead	58.5	0.100	0.200	ug/L	1	55.6	---	105	85-115%	---	---	
Magnesium	3010	75.0	150	ug/L	1	2780	---	108	85-115%	---	---	
Manganese	59.3	0.500	1.00	ug/L	1	55.6	---	107	85-115%	---	---	
Nickel	58.0	2.00	4.00	ug/L	1	55.6	---	104	85-115%	---	---	
Selenium	27.9	0.500	1.00	ug/L	1	27.8	---	101	85-115%	---	---	
Silver	27.8	0.100	0.200	ug/L	1	27.8	---	100	85-115%	---	---	
Zinc	66.9	2.00	4.00	ug/L	1	55.6	---	<b>120</b>	<b>85-115%</b>	---	---	B, Q-29

<b>Duplicate (24G0199-DUP1)</b>												
						Prepared: 07/08/24 11:29 Analyzed: 07/08/24 18:16						

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0199 - EPA 3015A</b>						<b>Water</b>						
<b>Duplicate (24G0199-DUP1)</b>			Prepared: 07/08/24 11:29 Analyzed: 07/08/24 18:16									
<b>QC Source Sample: 22B-U-D-20240626 (A4F1545-03)</b>												
<b>EPA 200.8</b>												
Arsenic	7.87	0.500	1.00	ug/L	1	---	8.03	---	---	2	20%	
Barium	23.4	1.00	2.00	ug/L	1	---	23.7	---	---	1	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Calcium	34300	375	600	ug/L	1	---	35000	---	---	2	20%	
Chromium	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Copper	ND	1.00	2.00	ug/L	1	---	1.05	---	---	***	20%	
Iron	703	25.0	50.0	ug/L	1	---	715	---	---	2	20%	
Lead	0.230	0.100	0.200	ug/L	1	---	0.374	---	---	48	20%	Q-05
Manganese	151	0.500	1.00	ug/L	1	---	152	---	---	0.5	20%	
Nickel	ND	2.00	4.00	ug/L	1	---	ND	---	---	---	20%	
Selenium	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Zinc	12.0	2.00	4.00	ug/L	1	---	25.8	---	---	73	20%	B, Q-04, Q-29
<b>Duplicate (24G0199-DUP2)</b>			Prepared: 07/08/24 11:29 Analyzed: 07/09/24 16:47									
<b>QC Source Sample: 22B-U-D-20240626 (A4F1545-03RE1)</b>												
<b>EPA 200.8</b>												
Magnesium	9280	75.0	150	ug/L	1	---	9510	---	---	2	20%	Q-16
<b>Matrix Spike (24G0199-MS1)</b>			Prepared: 07/08/24 11:29 Analyzed: 07/08/24 18:27									
<b>QC Source Sample: Non-SDG (A4F1574-01)</b>												
<b>EPA 200.8</b>												
Arsenic	60.8	0.500	1.00	ug/L	1	55.6	0.897	108	70-130%	---	---	
Barium	116	1.00	2.00	ug/L	1	55.6	57.8	105	70-130%	---	---	
Cadmium	59.5	0.100	0.200	ug/L	1	55.6	0.240	107	70-130%	---	---	
Chromium	59.5	1.00	2.00	ug/L	1	55.6	ND	107	70-130%	---	---	
Copper	57.5	1.00	2.00	ug/L	1	55.6	1.12	102	70-130%	---	---	
Iron	3020	25.0	50.0	ug/L	1	2780	102	105	70-130%	---	---	
Lead	55.4	0.100	0.200	ug/L	1	55.6	ND	100	70-130%	---	---	
Nickel	64.0	2.00	4.00	ug/L	1	55.6	7.05	103	70-130%	---	---	
Selenium	29.9	0.500	1.00	ug/L	1	27.8	ND	107	70-130%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
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<b>Batch 24G0199 - EPA 3015A</b>							<b>Water</b>					
<b>Matrix Spike (24G0199-MS1)</b>			Prepared: 07/08/24 11:29			Analyzed: 07/08/24 18:27						
<b>QC Source Sample: Non-SDG (A4F1574-01)</b>												
Silver	27.9	0.100	0.200	ug/L	1	27.8	ND	100	70-130%	---	---	
Zinc	63.3	2.00	4.00	ug/L	1	55.6	10.3	95	70-130%	---	---	B, Q-29

<b>Matrix Spike (24G0199-MS2)</b>			Prepared: 07/08/24 11:29			Analyzed: 07/08/24 18:38						
<b>QC Source Sample: Non-SDG (A4F1574-02)</b>												
<b>EPA 200.8</b>												
Arsenic	55.7	0.500	1.00	ug/L	1	55.6	1.43	98	70-130%	---	---	
Barium	119	1.00	2.00	ug/L	1	55.6	58.0	109	70-130%	---	---	
Cadmium	59.6	0.100	0.200	ug/L	1	55.6	ND	107	70-130%	---	---	
Calcium	5440	375	600	ug/L	1	2780	2930	90	70-130%	---	---	
Chromium	56.0	1.00	2.00	ug/L	1	55.6	1.21	99	70-130%	---	---	
Copper	57.1	1.00	2.00	ug/L	1	55.6	2.67	98	70-130%	---	---	
Iron	4190	25.0	50.0	ug/L	1	2780	1710	89	70-130%	---	---	
Lead	58.6	0.100	0.200	ug/L	1	55.6	2.95	100	70-130%	---	---	
Manganese	92.7	0.500	1.00	ug/L	1	55.6	38.1	98	70-130%	---	---	
Nickel	54.0	2.00	4.00	ug/L	1	55.6	ND	97	70-130%	---	---	
Selenium	26.6	0.500	1.00	ug/L	1	27.8	ND	96	70-130%	---	---	
Silver	27.6	0.100	0.200	ug/L	1	27.8	ND	99	70-130%	---	---	
Zinc	61.7	2.00	4.00	ug/L	1	55.6	16.6	81	70-130%	---	---	B, Q-29

<b>Matrix Spike (24G0199-MS3)</b>			Prepared: 07/08/24 11:29			Analyzed: 07/09/24 17:01						
<b>QC Source Sample: Non-SDG (A4F1574-01RE1)</b>												
<b>EPA 200.8</b>												
Calcium	226000	3750	6000	ug/L	10	2780	224000	<b>59</b>	<b>70-130%</b>	---	---	Q-16
Magnesium	124000	750	1500	ug/L	10	2780	124000	<b>13</b>	<b>70-130%</b>	---	---	Q-16
Manganese	11100	5.00	10.0	ug/L	10	55.6	11000	<b>297</b>	<b>70-130%</b>	---	---	Q-16

<b>Matrix Spike (24G0199-MS4)</b>			Prepared: 07/08/24 11:29			Analyzed: 07/09/24 17:14						
<b>QC Source Sample: Non-SDG (A4F1574-02RE1)</b>												
<b>EPA 200.8</b>												
Magnesium	3040	75.0	150	ug/L	1	2780	578	89	70-130%	---	---	Q-16

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
--	--	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0296 - EPA 3015A</b>						<b>Water</b>						
<b>Blank (24G0296-BLK1)</b>			Prepared: 07/10/24 12:10 Analyzed: 07/11/24 02:50									
<u>EPA 200.8</u>												
Zinc	10.9	2.00	4.00	ug/L	1	---	---	---	---	---	---	B
<b>LCS (24G0296-BS1)</b>			Prepared: 07/10/24 12:10 Analyzed: 07/11/24 02:56									
<u>EPA 200.8</u>												
Zinc	59.9	2.00	4.00	ug/L	1	55.6	---	108	85-115%	---	---	B
<b>Duplicate (24G0296-DUP1)</b>			Prepared: 07/10/24 12:10 Analyzed: 07/11/24 03:33									
<u>QC Source Sample: Non-SDG (A4F1647-09)</u>												
Zinc	166	2.00	4.00	ug/L	1	---	176	---	---	6	20%	PRO.B
<b>Matrix Spike (24G0296-MS1)</b>			Prepared: 07/10/24 12:10 Analyzed: 07/11/24 03:44									
<u>QC Source Sample: Non-SDG (A4G0853-01)</u>												
<u>EPA 200.8</u>												
Zinc	61.6	2.00	4.00	ug/L	1	55.6	6.79	99	70-130%	---	---	B

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0358 - EPA 3015A</b>						<b>Water</b>						
<b>Blank (24G0358-BLK2)</b>						Prepared: 07/11/24 16:46 Analyzed: 07/12/24 10:32						
<u>EPA 200.8</u>												
Zinc	3.44	2.00	4.00	ug/L	1	---	---	---	---	---	---	J, B-02, Q-16
<b>LCS (24G0358-BS1)</b>						Prepared: 07/11/24 16:46 Analyzed: 07/11/24 21:11						
<u>EPA 200.8</u>												
Zinc	60.4	2.00	4.00	ug/L	1	55.6	---	109	85-115%	---	---	B-02
<b>Duplicate (24G0358-DUP1)</b>						Prepared: 07/11/24 16:46 Analyzed: 07/11/24 21:57						
<u>QC Source Sample: Non-SDG (A4G1078-01)</u>												
Zinc	5.27	2.00	4.00	ug/L	1	---	5.81	---	---	10	20%	B-02
<b>Matrix Spike (24G0358-MS1)</b>						Prepared: 07/11/24 16:46 Analyzed: 07/11/24 22:24						
<u>QC Source Sample: Non-SDG (A4G1078-02)</u>												
<u>EPA 200.8</u>												
Zinc	67.8	2.00	4.00	ug/L	1	55.6	10.0	104	70-130%	---	---	B-02

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15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>						<b>Water</b>						
<b>Blank (24G0035-BLK1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 03:34						
<u>EPA 200.8 (Diss)</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	---
Barium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	---
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	---
Calcium	ND	300	600	ug/L	1	---	---	---	---	---	---	---
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	---
Copper	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	---
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	---
Lead	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	---
Magnesium	ND	75.0	150	ug/L	1	---	---	---	---	---	---	---
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	---
Nickel	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	---
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	---
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	---
Zinc	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	---
<b>LCS (24G0035-BS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 03:40						
<u>EPA 200.8 (Diss)</u>												
Arsenic	56.9	0.500	1.00	ug/L	1	55.6	---	102	85-115%	---	---	---
Barium	61.4	0.500	1.00	ug/L	1	55.6	---	111	85-115%	---	---	---
Cadmium	57.3	0.100	0.200	ug/L	1	55.6	---	103	85-115%	---	---	---
Calcium	2830	300	600	ug/L	1	2780	---	102	85-115%	---	---	---
Chromium	59.1	1.00	2.00	ug/L	1	55.6	---	106	85-115%	---	---	---
Copper	62.4	1.00	2.00	ug/L	1	55.6	---	112	85-115%	---	---	---
Iron	2880	25.0	50.0	ug/L	1	2780	---	104	85-115%	---	---	---
Lead	58.6	0.100	0.200	ug/L	1	55.6	---	106	85-115%	---	---	---
Magnesium	2990	75.0	150	ug/L	1	2780	---	108	85-115%	---	---	---
Manganese	59.8	0.500	1.00	ug/L	1	55.6	---	108	85-115%	---	---	---
Nickel	61.2	2.00	4.00	ug/L	1	55.6	---	110	85-115%	---	---	---
Selenium	27.9	0.500	1.00	ug/L	1	27.8	---	100	85-115%	---	---	---
Silver	27.6	0.100	0.200	ug/L	1	27.8	---	99	85-115%	---	---	---
Zinc	60.5	2.00	4.00	ug/L	1	55.6	---	109	85-115%	---	---	---
<b>Matrix Spike (24G0035-MS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:18						

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>						<b>Water</b>						
<b>Matrix Spike (24G0035-MS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:18						
<b>QC Source Sample: 22B-F-S-20240626 (A4F1545-02)</b>												
<b>EPA 200.8 (Diss)</b>												
Arsenic	61.9	0.500	1.00	ug/L	1	55.6	5.36	102	70-130%	---	---	
Barium	79.3	0.500	1.00	ug/L	1	55.6	19.6	108	70-130%	---	---	
Cadmium	58.8	0.100	0.200	ug/L	1	55.6	ND	106	70-130%	---	---	
Calcium	35800	300	600	ug/L	1	2780	34300	<b>54</b>	<b>70-130%</b>	---	---	Q-65
Chromium	56.9	1.00	2.00	ug/L	1	55.6	ND	102	70-130%	---	---	
Copper	59.8	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	37.4	99	70-130%	---	---	
Lead	57.6	0.100	0.200	ug/L	1	55.6	ND	104	70-130%	---	---	
Magnesium	13100	75.0	150	ug/L	1	2780	10700	86	70-130%	---	---	
Manganese	158	0.500	1.00	ug/L	1	55.6	102	102	70-130%	---	---	
Nickel	58.8	2.00	4.00	ug/L	1	55.6	ND	106	70-130%	---	---	
Selenium	28.5	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Silver	27.6	0.100	0.200	ug/L	1	27.8	ND	99	70-130%	---	---	
Zinc	59.5	2.00	4.00	ug/L	1	55.6	ND	107	70-130%	---	---	

<b>Matrix Spike (24G0035-MS2)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 05:50						
<b>QC Source Sample: Non-SDG (A4F1646-01)</b>												
<b>EPA 200.8 (Diss)</b>												
Arsenic	65.6	0.500	1.00	ug/L	1	55.6	7.52	105	70-130%	---	---	
Barium	137	0.500	1.00	ug/L	1	55.6	77.2	108	70-130%	---	---	
Cadmium	58.9	0.100	0.200	ug/L	1	55.6	ND	106	70-130%	---	---	
Calcium	31600	300	600	ug/L	1	2780	29700	<b>68</b>	<b>70-130%</b>	---	---	Q-65
Chromium	58.3	1.00	2.00	ug/L	1	55.6	ND	105	70-130%	---	---	
Copper	61.0	1.00	2.00	ug/L	1	55.6	ND	110	70-130%	---	---	
Iron	3070	25.0	50.0	ug/L	1	2780	228	102	70-130%	---	---	
Lead	57.6	0.100	0.200	ug/L	1	55.6	ND	104	70-130%	---	---	
Magnesium	11700	75.0	150	ug/L	1	2780	9170	90	70-130%	---	---	
Manganese	344	0.500	1.00	ug/L	1	55.6	289	99	70-130%	---	---	
Nickel	60.1	2.00	4.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Selenium	28.6	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Silver	27.4	0.100	0.200	ug/L	1	27.8	ND	98	70-130%	---	---	
Zinc	62.8	2.00	4.00	ug/L	1	55.6	3.18	107	70-130%	---	---	

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ANALYTICAL REPORT

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15862 SW 72nd Ave. Suite 150	Project Number: <b>OF22B Dry Weather Month</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1545 - 09 13 24 0013</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>							<b>Water</b>					
<b>Matrix Spike Dup (24G0035-MSD1)</b>			Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:23									
<b>QC Source Sample: 22B-F-S-20240626 (A4F1545-02)</b>												
<b>EPA 200.8 (Diss)</b>												
Arsenic	63.4	0.500	1.00	ug/L	1	55.6	5.36	104	70-130%	2	20%	
Barium	79.8	0.500	1.00	ug/L	1	55.6	19.6	108	70-130%	0.6	20%	
Cadmium	59.7	0.100	0.200	ug/L	1	55.6	ND	107	70-130%	1	20%	
Calcium	36200	300	600	ug/L	1	2780	34300	70	70-130%	1	20%	
Chromium	57.7	1.00	2.00	ug/L	1	55.6	ND	104	70-130%	1	20%	
Copper	59.9	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	0.3	20%	
Iron	2830	25.0	50.0	ug/L	1	2780	37.4	101	70-130%	1	20%	
Lead	58.2	0.100	0.200	ug/L	1	55.6	ND	105	70-130%	1	20%	
Magnesium	13300	75.0	150	ug/L	1	2780	10700	92	70-130%	1	20%	
Manganese	159	0.500	1.00	ug/L	1	55.6	102	104	70-130%	0.8	20%	
Nickel	59.5	2.00	4.00	ug/L	1	55.6	ND	107	70-130%	1	20%	
Selenium	28.6	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	0.1	20%	
Silver	27.8	0.100	0.200	ug/L	1	27.8	ND	100	70-130%	0.6	20%	
Zinc	61.0	2.00	4.00	ug/L	1	55.6	ND	110	70-130%	3	20%	

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Solid and Moisture Determinations**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0064 - Total Suspended Solids - 2022</b>						<b>Water</b>						
<b>Blank (24G0064-BLK1)</b>			Prepared: 07/02/24 10:30 Analyzed: 07/02/24 12:25									
<u>SM 2540 D</u>												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	---	---	---	---	---	
<b>Duplicate (24G0064-DUP1)</b>			Prepared: 07/02/24 10:30 Analyzed: 07/02/24 12:25									
<u>QC Source Sample: Non-SDG (A4F1534-01)</u>												
Total Suspended Solids	<b>24.0</b>	5.00	5.00	mg/L	1	---	23.0	---	---	4.26	10%	TSS
<b>Duplicate (24G0064-DUP2)</b>			Prepared: 07/02/24 10:30 Analyzed: 07/02/24 12:25									
<u>QC Source Sample: 22B-U-S-20240626 (A4F1545-04)</u>												
<u>SM 2540 D</u>												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	ND	---	---	---	10%	TSS
<b>Reference (24G0064-SRM1)</b>			Prepared: 07/02/24 10:30 Analyzed: 07/02/24 12:25									
<u>SM 2540 D</u>												
Total Suspended Solids	930			mg/L	1	897	104	85-115%	---	---		

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**Weck Laboratories, Inc.**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Hexavalent Chromium by IC**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch W4G0440 - _NONE (LC) <span style="float: right;">Water</span></b>												
<b>Blank (W4G0440-BLK1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 12:16									
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	ND	---	0.020	ug/l	1	---	---	---	---	---	---	---
Chromium 6+	ND	---	0.020	ug/l	1	---	---	---	---	---	---	---
<b>LCS (W4G0440-BS1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 12:29									
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	4.98	---	0.020	ug/l	1	5.00	---	100	90-110%	---	---	---
Chromium 6+	4.98	---	0.020	ug/l	1	5.00	---	100	90-110%	---	---	---
<b>Matrix Spike (W4G0440-MS1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:00									
<u>QC Source Sample: Well 703G (4F06007-01)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	24.3	---	0.10	ug/l	5	25.0	0.276	96	88-112%	---	---	---
Chromium 6+	24.3	---	0.10	ug/l	5	25.0	0.276	96	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS2)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:26									
<u>QC Source Sample: Well 1318N (4F06009-01)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	24.5	---	0.10	ug/l	5	25.0	0.290	97	88-112%	---	---	---
Chromium 6+	24.5	---	0.10	ug/l	5	25.0	0.290	97	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS3)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:02									
<u>QC Source Sample: A4F1545-02 (A4F1545-02)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	4.98	---	0.020	ug/l	1	5.00	0.115	97	88-112%	---	---	---
Chromium 6+	4.98	---	0.020	ug/l	1	5.00	0.115	97	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS4)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:28									
<u>QC Source Sample: A4F1545-04 (A4F1545-04)</u>												
<u>EPA 218.6</u>												

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**Weck Laboratories, Inc.**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Hexavalent Chromium by IC**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch W4G0440 - _NONE (LC)</b>						<b>Water</b>						
<b>Matrix Spike (W4G0440-MS4)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:28									
<b>QC Source Sample: A4F1545-04 (A4F1545-04)</b>												
<b>EPA 218.6</b>												
Chromium 6+, Dissolved	4.97	---	0.020	ug/l	1	5.00	0.101	97	88-112%	---	---	
Chromium 6+	4.97	---	0.020	ug/l	1	5.00	0.101	97	88-112%	---	---	
<b>Matrix Spike Dup (W4G0440-MSD1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:13									
<b>QC Source Sample: Well 703G (4F06007-01)</b>												
<b>EPA 218.6</b>												
Chromium 6+, Dissolved	24.5	---	0.10	ug/l	5	25.0	0.276	97	88-112%	1	10%	
Chromium 6+	24.5	---	0.10	ug/l	5	25.0	0.276	97	88-112%	1	10%	
<b>Matrix Spike Dup (W4G0440-MSD2)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:39									
<b>QC Source Sample: Well 1318N (4F06009-01)</b>												
<b>EPA 218.6</b>												
Chromium 6+, Dissolved	24.7	---	0.10	ug/l	5	25.0	0.290	97	88-112%	0.5	10%	
Chromium 6+	24.7	---	0.10	ug/l	5	25.0	0.290	97	88-112%	0.5	10%	
<b>Matrix Spike Dup (W4G0440-MSD3)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:15									
<b>QC Source Sample: A4F1545-02 (A4F1545-02)</b>												
<b>EPA 218.6</b>												
Chromium 6+, Dissolved	5.11	---	0.020	ug/l	1	5.00	0.115	100	88-112%	3	10%	
Chromium 6+	5.11	---	0.020	ug/l	1	5.00	0.115	100	88-112%	3	10%	
<b>Matrix Spike Dup (W4G0440-MSD4)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:40									
<b>QC Source Sample: A4F1545-04 (A4F1545-04)</b>												
<b>EPA 218.6</b>												
Chromium 6+, Dissolved	5.08	---	0.020	ug/l	1	5.00	0.101	100	88-112%	2	10%	
Chromium 6+	5.08	---	0.020	ug/l	1	5.00	0.101	100	88-112%	2	10%	

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**SAMPLE PREPARATION INFORMATION**

Hydrocarbon Identification Screen by NWTPH-HCID

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24G0024</u>							
A4F1545-03	Water	NWTPH-HCID	06/26/24 12:38	07/01/24 11:50	990mL/5mL	1000mL/5mL	1.01
A4F1545-04	Water	NWTPH-HCID	06/26/24 09:00	07/01/24 11:50	920mL/5mL	1000mL/5mL	1.09

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24G0024</u>							
A4F1545-03	Water	NWTPH-Dx	06/26/24 12:38	07/01/24 11:50	990mL/5mL	1000mL/5mL	1.01
A4F1545-04	Water	NWTPH-Dx	06/26/24 09:00	07/01/24 11:50	920mL/5mL	1000mL/5mL	1.09

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

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0965</u>							
A4F1545-03	Water	NWTPH-Gx (MS)	06/26/24 12:38	06/28/24 08:42	5mL/5mL	5mL/5mL	1.00
A4F1545-04	Water	NWTPH-Gx (MS)	06/26/24 09:00	06/28/24 08:42	5mL/5mL	5mL/5mL	1.00

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0965</u>							
A4F1545-03	Water	EPA 8260D	06/26/24 12:38	06/28/24 08:42	5mL/5mL	5mL/5mL	1.00
A4F1545-04	Water	EPA 8260D	06/26/24 09:00	06/28/24 08:42	5mL/5mL	5mL/5mL	1.00
<u>Batch: 24G0011</u>							
A4F1545-05	Water	EPA 8260D	06/26/24 00:00	07/01/24 09:51	5mL/5mL	5mL/5mL	1.00
A4F1545-06	Water	EPA 8260D	06/26/24 00:00	07/01/24 09:51	5mL/5mL	5mL/5mL	1.00

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid/Base Neutral)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24G0041</u>							

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ANALYTICAL REPORT

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Table with 3 columns: Client (WSP USA Environment & Infrastructure Inc.), Project (Starlink Uplands Support), and Report ID (A4F1545 - 09 13 24 0013).

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4F1545-03RE1 and A4F1545-04RE2.

Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAf) by EPA 1631E

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4F1545-03 and A4F1545-04.

Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAf) by EPA 1631E

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4F1545-01 and A4F1545-02.

Total Metals by EPA 200.8 (ICPMS)

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4F1545-04, A4F1545-04RE2, A4F1545-03, A4F1545-03RE1, and A4F1545-03RE2.

Dissolved Metals by EPA 200.8 (ICPMS)

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor.

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Philip Nerenberg (signature)

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**SAMPLE PREPARATION INFORMATION**

Dissolved Metals by EPA 200.8 (ICPMS)

<u>Prep: Matrix Matched Direct Inject</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24G0035</u>							
A4F1545-01	Water	EPA 200.8 (Diss)	06/26/24 13:17	07/01/24 15:28	45mL/50mL	45mL/50mL	1.00
A4F1545-02	Water	EPA 200.8 (Diss)	06/26/24 12:28	07/01/24 15:28	45mL/50mL	45mL/50mL	1.00

Solid and Moisture Determinations

<u>Prep: Total Suspended Solids - 2022</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24G0064</u>							
A4F1545-03	Water	SM 2540 D	06/26/24 12:38	07/02/24 10:30			NA
A4F1545-04	Water	SM 2540 D	06/26/24 09:00	07/02/24 10:30			NA

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**Weck Laboratories, Inc.**

**SAMPLE PREPARATION INFORMATION**

**Hexavalent Chromium by IC**

Prep: NONE (LC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: W4G0440</u>							
A4F1545-01	Water	EPA 218.6	06/26/24 13:17	07/08/24 10:20	5ml/5ml	5ml/5ml	1.00
A4F1545-02	Water	EPA 218.6	06/26/24 12:28	07/08/24 10:20	5ml/5ml	5ml/5ml	1.00
A4F1545-03	Water	EPA 218.6	06/26/24 12:38	07/08/24 10:20	5ml/5ml	5ml/5ml	1.00
A4F1545-04	Water	EPA 218.6	06/26/24 09:00	07/08/24 10:20	5ml/5ml	5ml/5ml	1.00

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**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.)
- H-01** Analyzed outside the recommended holding time.
- ICV-01** Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
- J** Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified DL.
- NR** Not Reported.
- PRO** Sample has undergone sample processing prior to extraction and analysis.
- Q-01** Spike recovery and/or RPD is outside acceptance limits.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-30** Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
- Q-31** Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- Q-52** Due to known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method.
- 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 +6%. 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 +9%. 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. Samples that are ND (Non-Detect) are not impacted.

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Philip Nerenberg, Lab Director



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- Q-65** Spike recovery is estimated due to the high analyte concentration of the source sample.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-03** Sample re-extract, or the analysis of an associated Batch QC sample, confirms surrogate failure due to sample matrix effect.
- S-06** Surrogate recovery is outside of established control limits.
- T-02** This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.
- TSS** Dried residue was less than 2.5mg as specified in the method. Results meet regulatory requirements.

Apex Laboratories

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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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)**

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

**Reporting Limits: Limit of Quantitation (LOQ)**

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

**Reporting Conventions:**

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
  - " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")  
See Percent Solids section for details of dry weight analysis.
  - " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
  - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

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

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

**Miscellaneous Notes:**

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

Apex Laboratories

Philip Nerenberg, Lab Director

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**REPORTING NOTES AND CONVENTIONS (Cont.):**

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

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

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

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

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

**Preparation Notes:**

Mixed Matrix Samples:

Water Samples:

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

Soil and Sediment Samples:

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

**Sampling and Preservation Notes:**

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

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

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

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

Apex Laboratories

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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

Table with 3 columns: Client (WSP USA Environment & Infrastructure Inc.), Project (Starlink Uplands Support), and Report ID (A4F1545 - 09 13 24 0013).

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Table header with columns: Matrix, Analysis, TNI\_ID, Analyte, TNI\_ID, Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories

Handwritten signature of Philip Nerenberg

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**ANALYTICAL REPORT**

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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>OF22B Dry Weather Month</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1545 - 09 13 24 0013</b>
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**APEX LABS COOLER RECEIPT FORM**

Client: WSP Element WO#: A4 A4F1545

Project/Project #: Lockheed Martin US0025871.2251.410  
*REC for RAW / KRS lab in*

**Delivery Info:**  
Date/time received: 6/26/24 @ 1455 ~~1455~~ 6/26 By: KRS  
Delivered by: Apex  Client  ESS  FedEx  UPS  Radio  Morgan  SDS  Evergreen  Other

From USDA Regulated Origin? Yes  No

**Cooler Inspection** Date/time inspected: 6/26/24 @ 6/26/24 By: KRS

Chain of Custody included? Yes  No

Signed/dated by client? Yes  No

Contains USDA Reg. Soils? Yes  No  Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>3.8</u>	<u>4.2</u>	<u>0.5</u>	<u>4.8</u>	<u>0.5</u>		
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) Possible reason why: in 6/26

Green dots applied to out of temperature samples? Yes  No

Out of temperature samples form initiated? Yes  No

**Sample Inspection:** Date/time inspected: 6/26/24 @ 1630 By: KRS

All samples intact? Yes  No  Comments: in 6/26

Bottle labels/COCs agree? Yes  No  Comments: We received trip blank that weren't listed on lot. No T on 3/5 vials for 22B-U-D.

COC/container discrepancies form initiated? Yes  No  in 6/26 SEE FORM

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

Do VOA vials have visible headspace? Yes  No  NA

Comments:

Water samples: pH checked: Yes  No  NA  pH appropriate? Yes  No  NA  pH ID: A231172

Comments: TB# 3564 No T on lot in 6/26

Labeled by: RAW

Witness: U

Cooler Inspected by: RAW

Form Y-003 R-02

Apex Laboratories

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*Philip Nerenberg*

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Friday, September 13, 2024

Ted Norton  
WSP USA Environment & Infrastructure Inc.  
15862 SW 72nd Ave. Suite 150  
Portland, OR 97224

RE: A4F1635 - Starlink Uplands Support - US0025871.2251.410

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 A4F1635, which was received by the laboratory on 6/27/2024 at 4:05:00PM.

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](mailto: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	
<p><u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u></p> <p>(See Cooler Receipt Form for details)</p>	
<p>Default Cooler</p> <hr style="width: 80%; margin-left: 0;"/>	<p>9.4 degC</p>

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

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



Apex Laboratories

Philip Nerenberg, Lab Director

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<b><u>WSP USA Environment &amp; Infrastructure Inc.</u></b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b><u>Starlink Uplands Support</u></b> Project Number: <b>US0025871.2251.410</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1635 - 09 13 24 0027</b>
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**ANALYTICAL REPORT FOR SAMPLES**

**SAMPLE INFORMATION**

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
22B-F-RB-20240627	A4F1635-01	Water	06/27/24 12:49	06/27/24 16:05

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Philip Nerenberg, Lab Director



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--	---	---

**ANALYTICAL SAMPLE RESULTS**

**Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-F-RB-20240627 (A4F1635-01)</b>				<b>Matrix: Water</b>		<b>Batch: 24G0204</b>		
Mercury	ND	0.250	0.500	ng/L	1	07/09/24 17:13	EPA 1631E-LL (Diss)	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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Tigard, OR 97223  
503-718-2323  
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<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>US0025871.2251.410</b> Project Manager: <b>Ted Norton</b>	Report ID: <b>A4F1635 - 09 13 24 0027</b>
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**ANALYTICAL SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-F-RB-20240627 (A4F1635-01)</b>				<b>Matrix: Water</b>				
Batch: 24G0035								
Arsenic	ND	0.500	1.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Barium	ND	0.500	1.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Calcium	ND	300	600	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Copper	ND	1.00	2.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Iron	ND	25.0	50.0	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Lead	ND	0.100	0.200	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Magnesium	ND	75.0	150	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Manganese	ND	0.500	1.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Nickel	ND	2.00	4.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Silver	ND	0.100	0.200	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	
Zinc	ND	2.00	4.00	ug/L	1	07/02/24 05:28	EPA 200.8 (Diss)	

Apex Laboratories

Philip Nerenberg, Lab Director

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--	---	---

**Weck Laboratories, Inc.**

**ANALYTICAL SAMPLE RESULTS (Subcontracted)**

**Hexavalent Chromium by IC**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>22B-F-RB-20240627 (A4F1635-01)</b>				<b>Matrix: Water</b>		<b>Batch: W4G0440</b>		
Batch: W4G0440								
<b>Chromium 6+, Dissolved</b>	<b>0.092</b>	---	0.020	ug/l	1	07/08/24 18:22	EPA 218.6	

Apex Laboratories

Philip Nerenberg, Lab Director

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAf) by EPA 1631E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0204 - 1631E Mercury (H2O)</b>						<b>Water</b>						
<b>Blank (24G0204-BLK1)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:23						
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0204-BLK2)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:28						
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>Blank (24G0204-BLK3)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:33						
<u>EPA 1631E-LL (Diss)</u>												
Mercury	ND	0.250	0.500	ng/L	1	---	---	---	---	---	---	
<b>LCS (24G0204-BS1)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 16:38						
<u>EPA 1631E-LL (Diss)</u>												
Mercury	7.75	0.250	0.500	ng/L	1	8.00	---	97	80-120%	---	---	
<b>Matrix Spike (24G0204-MS1)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 17:03						
<u>QC Source Sample: Non-SDG (A4F1545-02)</u>												
<u>EPA 1631E-LL (Diss)</u>												
Mercury	8.43	0.250	0.500	ng/L	1	8.00	0.690	97	75-125%	---	---	
<b>Matrix Spike Dup (24G0204-MSD1)</b>						Prepared: 07/08/24 12:06 Analyzed: 07/09/24 17:08						
<u>QC Source Sample: Non-SDG (A4F1545-02)</u>												
Mercury	7.81	0.250	0.500	ng/L	1	8.00	0.690	89	75-125%	8	24%	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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 503-718-2323  
 ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b>	Project: <b>Starlink Uplands Support</b>	
15862 SW 72nd Ave. Suite 150	Project Number: <b>US0025871.2251.410</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1635 - 09 13 24 0027</b>

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>						<b>Water</b>						
<b>Blank (24G0035-BLK1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 03:34						
<b>EPA 200.8 (Diss)</b>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Calcium	ND	300	600	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Magnesium	ND	75.0	150	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Nickel	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
<b>LCS (24G0035-BS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 03:40						
<b>EPA 200.8 (Diss)</b>												
Arsenic	56.9	0.500	1.00	ug/L	1	55.6	---	102	85-115%	---	---	
Barium	61.4	0.500	1.00	ug/L	1	55.6	---	111	85-115%	---	---	
Cadmium	57.3	0.100	0.200	ug/L	1	55.6	---	103	85-115%	---	---	
Calcium	2830	300	600	ug/L	1	2780	---	102	85-115%	---	---	
Chromium	59.1	1.00	2.00	ug/L	1	55.6	---	106	85-115%	---	---	
Copper	62.4	1.00	2.00	ug/L	1	55.6	---	112	85-115%	---	---	
Iron	2880	25.0	50.0	ug/L	1	2780	---	104	85-115%	---	---	
Lead	58.6	0.100	0.200	ug/L	1	55.6	---	106	85-115%	---	---	
Magnesium	2990	75.0	150	ug/L	1	2780	---	108	85-115%	---	---	
Manganese	59.8	0.500	1.00	ug/L	1	55.6	---	108	85-115%	---	---	
Nickel	61.2	2.00	4.00	ug/L	1	55.6	---	110	85-115%	---	---	
Selenium	27.9	0.500	1.00	ug/L	1	27.8	---	100	85-115%	---	---	
Silver	27.6	0.100	0.200	ug/L	1	27.8	---	99	85-115%	---	---	
Zinc	60.5	2.00	4.00	ug/L	1	55.6	---	109	85-115%	---	---	
<b>Matrix Spike (24G0035-MS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:18						

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

**Apex Laboratories, LLC**

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

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>US0025871.2251.410</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1635 - 09 13 24 0027</b>
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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>						<b>Water</b>						
<b>Matrix Spike (24G0035-MS1)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:18						
<b>QC Source Sample: Non-SDG (A4F1545-02)</b>												
<b>EPA 200.8 (Diss)</b>												
Arsenic	61.9	0.500	1.00	ug/L	1	55.6	5.36	102	70-130%	---	---	
Barium	79.3	0.500	1.00	ug/L	1	55.6	19.6	108	70-130%	---	---	
Cadmium	58.8	0.100	0.200	ug/L	1	55.6	ND	106	70-130%	---	---	
Calcium	35800	300	600	ug/L	1	2780	34300	<b>54</b>	<b>70-130%</b>	---	---	Q-65
Chromium	56.9	1.00	2.00	ug/L	1	55.6	ND	102	70-130%	---	---	
Copper	59.8	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	37.4	99	70-130%	---	---	
Lead	57.6	0.100	0.200	ug/L	1	55.6	ND	104	70-130%	---	---	
Magnesium	13100	75.0	150	ug/L	1	2780	10700	86	70-130%	---	---	
Manganese	158	0.500	1.00	ug/L	1	55.6	102	102	70-130%	---	---	
Nickel	58.8	2.00	4.00	ug/L	1	55.6	ND	106	70-130%	---	---	
Selenium	28.5	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Silver	27.6	0.100	0.200	ug/L	1	27.8	ND	99	70-130%	---	---	
Zinc	59.5	2.00	4.00	ug/L	1	55.6	ND	107	70-130%	---	---	

<b>Matrix Spike (24G0035-MS2)</b>						Prepared: 07/01/24 15:28 Analyzed: 07/02/24 05:50						
<b>QC Source Sample: Non-SDG (A4F1646-01)</b>												
<b>EPA 200.8 (Diss)</b>												
Arsenic	65.6	0.500	1.00	ug/L	1	55.6	7.52	105	70-130%	---	---	
Barium	137	0.500	1.00	ug/L	1	55.6	77.2	108	70-130%	---	---	
Cadmium	58.9	0.100	0.200	ug/L	1	55.6	ND	106	70-130%	---	---	
Calcium	31600	300	600	ug/L	1	2780	29700	<b>68</b>	<b>70-130%</b>	---	---	Q-65
Chromium	58.3	1.00	2.00	ug/L	1	55.6	ND	105	70-130%	---	---	
Copper	61.0	1.00	2.00	ug/L	1	55.6	ND	110	70-130%	---	---	
Iron	3070	25.0	50.0	ug/L	1	2780	228	102	70-130%	---	---	
Lead	57.6	0.100	0.200	ug/L	1	55.6	ND	104	70-130%	---	---	
Magnesium	11700	75.0	150	ug/L	1	2780	9170	90	70-130%	---	---	
Manganese	344	0.500	1.00	ug/L	1	55.6	289	99	70-130%	---	---	
Nickel	60.1	2.00	4.00	ug/L	1	55.6	ND	108	70-130%	---	---	
Selenium	28.6	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Silver	27.4	0.100	0.200	ug/L	1	27.8	ND	98	70-130%	---	---	
Zinc	62.8	2.00	4.00	ug/L	1	55.6	3.18	107	70-130%	---	---	

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Philip Nerenberg, Lab Director

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**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Dissolved Metals by EPA 200.8 (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24G0035 - Matrix Matched Direct Inject</b>							<b>Water</b>					
<b>Matrix Spike Dup (24G0035-MSD1)</b>					Prepared: 07/01/24 15:28 Analyzed: 07/02/24 04:23							
<b>QC Source Sample: Non-SDG (A4F1545-02)</b>												
Arsenic	63.4	0.500	1.00	ug/L	1	55.6	5.36	104	70-130%	2	20%	
Barium	79.8	0.500	1.00	ug/L	1	55.6	19.6	108	70-130%	0.6	20%	
Cadmium	59.7	0.100	0.200	ug/L	1	55.6	ND	107	70-130%	1	20%	
Calcium	36200	300	600	ug/L	1	2780	34300	70	70-130%	1	20%	
Chromium	57.7	1.00	2.00	ug/L	1	55.6	ND	104	70-130%	1	20%	
Copper	59.9	1.00	2.00	ug/L	1	55.6	ND	108	70-130%	0.3	20%	
Iron	2830	25.0	50.0	ug/L	1	2780	37.4	101	70-130%	1	20%	
Lead	58.2	0.100	0.200	ug/L	1	55.6	ND	105	70-130%	1	20%	
Magnesium	13300	75.0	150	ug/L	1	2780	10700	92	70-130%	1	20%	
Manganese	159	0.500	1.00	ug/L	1	55.6	102	104	70-130%	0.8	20%	
Nickel	59.5	2.00	4.00	ug/L	1	55.6	ND	107	70-130%	1	20%	
Selenium	28.6	0.500	1.00	ug/L	1	27.8	ND	103	70-130%	0.1	20%	
Silver	27.8	0.100	0.200	ug/L	1	27.8	ND	100	70-130%	0.6	20%	
Zinc	61.0	2.00	4.00	ug/L	1	55.6	ND	110	70-130%	3	20%	

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**Weck Laboratories, Inc.**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Hexavalent Chromium by IC**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch W4G0440 - _NONE (LC)</b>						<b>Water</b>						
<b>Blank (W4G0440-BLK1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 12:16									
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	ND	---	0.020	ug/l	1	---	---	---	---	---	---	---
<b>LCS (W4G0440-BS1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 12:29									
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	4.98	---	0.020	ug/l	1	5.00	---	100	90-110%	---	---	---
<b>Matrix Spike (W4G0440-MS1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:00									
<u>QC Source Sample: Well 703G (4F06007-01)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	24.3	---	0.10	ug/l	5	25.0	0.276	96	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS2)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:26									
<u>QC Source Sample: Well 1318N (4F06009-01)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	24.5	---	0.10	ug/l	5	25.0	0.290	97	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS3)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:02									
<u>QC Source Sample: A4F1545-02 (4F29010-02)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	4.98	---	0.020	ug/l	1	5.00	0.115	97	88-112%	---	---	---
<b>Matrix Spike (W4G0440-MS4)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:28									
<u>QC Source Sample: A4F1545-04 (4F29010-04)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	4.97	---	0.020	ug/l	1	5.00	0.101	97	88-112%	---	---	---
<b>Matrix Spike Dup (W4G0440-MSD1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:13									
<u>QC Source Sample: Well 703G (4F06007-01)</u>												
<u>EPA 218.6</u>												

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Philip Nerenberg, Lab Director

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15862 SW 72nd Ave. Suite 150	Project Number: <b>US0025871.2251.410</b>	<b>Report ID:</b>
Portland, OR 97224	Project Manager: <b>Ted Norton</b>	<b>A4F1635 - 09 13 24 0027</b>

**Weck Laboratories, Inc.**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Hexavalent Chromium by IC**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch W4G0440 - _NONE (LC)</b>						<b>Water</b>						
<b>Matrix Spike Dup (W4G0440-MSD1)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:13									
<u>QC Source Sample: Well 703G (4F06007-01)</u>												
Chromium 6+, Dissolved	24.5	---	0.10	ug/l	5	25.0	0.276	97	88-112%	1	10%	
<b>Matrix Spike Dup (W4G0440-MSD2)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/08/24 13:39									
<u>QC Source Sample: Well 1318N (4F06009-01)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	24.7	---	0.10	ug/l	5	25.0	0.290	97	88-112%	0.5	10%	
<b>Matrix Spike Dup (W4G0440-MSD3)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:15									
<u>QC Source Sample: A4F1545-02 (4F29010-02)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	5.11	---	0.020	ug/l	1	5.00	0.115	100	88-112%	3	10%	
<b>Matrix Spike Dup (W4G0440-MSD4)</b>			Prepared: 07/08/24 10:20 Analyzed: 07/09/24 10:40									
<u>QC Source Sample: A4F1545-04 (4F29010-04)</u>												
<u>EPA 218.6</u>												
Chromium 6+, Dissolved	5.08	---	0.020	ug/l	1	5.00	0.101	100	88-112%	2	10%	

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**SAMPLE PREPARATION INFORMATION**

Dissolved Low Level Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E

Prep: 1631E Mercury (H2O)					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24G0204</u>							
A4F1635-01	Water	EPA 1631E-LL (Diss)	06/27/24 12:49	07/08/24 12:06	20mL/20mL	20mL/20mL	1.00

Dissolved Metals by EPA 200.8 (ICPMS)

Prep: Matrix Matched Direct Inject					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24G0035</u>							
A4F1635-01	Water	EPA 200.8 (Diss)	06/27/24 12:49	07/01/24 15:28	45mL/50mL	45mL/50mL	1.00

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**Weck Laboratories, Inc.**

**SAMPLE PREPARATION INFORMATION**

Hexavalent Chromium by IC

Prep: NONE (LC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: W4G0440</u>							
A4F1635-01	Water	EPA 218.6	06/27/24 12:49	07/08/24 10:20	5ml/5ml	5ml/5ml	1.00

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**QUALIFIER DEFINITIONS**

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

**Apex Laboratories**

Q-65 Spike recovery is estimated due to the high analyte concentration of the source sample.

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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)**

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

**Reporting Limits: Limit of Quantitation (LOQ)**

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

**Reporting Conventions:**

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
- " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")  
See Percent Solids section for details of dry weight analysis.
  - " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
  - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

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

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

**Miscellaneous Notes:**

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

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**REPORTING NOTES AND CONVENTIONS (Cont.):**

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

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

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

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

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

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

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

**Soil and Sediment Samples:**

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

**Sampling and Preservation Notes:**

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

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

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

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

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Table with 3 columns: Client (WSP USA Environment & Infrastructure Inc.), Project (Starlink Uplands Support), and Report ID (A4F1635 - 09 13 24 0027).

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:

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Table header with columns: Matrix, Analysis, TNI\_ID, Analyte, TNI\_ID, Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

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Handwritten signature of Philip Nerenberg

Philip Nerenberg, Lab Director

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503-718-2323  
ORELAP ID: OR100062

<b>WSP USA Environment &amp; Infrastructure Inc.</b> 15862 SW 72nd Ave. Suite 150 Portland, OR 97224	Project: <b>Starlink Uplands Support</b> Project Number: <b>US0025871.2251.410</b> Project Manager: <b>Ted Norton</b>	<b>Report ID:</b> <b>A4F1635 - 09 13 24 0027</b>
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**APEX LABS COOLER RECEIPT FORM**

**Client:** WSP Element WO#: A4 F1635

**Project/Project #:** Starlink uplands support / US 0025871.2251.410

**Delivery Info:**

Date/time received: 6/27/24 @ 1605 By: KN

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

From USDA Regulated Origin? Yes  No

**Cooler Inspection** Date/time inspected: 6/27/24 @ 1605 By: KN

Chain of Custody included? Yes  No

Signed/dated by client? Yes  No

Contains USDA Reg. Soils? Yes  No  Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>9.9</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Gel</u>						
Condition (In/Out):	<u>Out</u>						

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

Green dots applied to out of temperature samples? Yes  No

Out of temperature samples form initiated? Yes  No

**Sample Inspection:** Date/time inspected: 6/27/24 @ 1453 By: WAB

All samples intact? Yes  No  Comments: \_\_\_\_\_

Bottle labels/COCs agree? Yes  No  Comments: \_\_\_\_\_

COC/container discrepancies form initiated? Yes  No

Containers/volumes received appropriate for analysis? Yes  No  Comments: \_\_\_\_\_

Do VOA vials have visible headspace? Yes  No  NA

Comments: \_\_\_\_\_

Water samples: pH checked: Yes  No  NA  pH appropriate? Yes  No  NA  pH ID: A237172

Comments: \_\_\_\_\_

Comments: \_\_\_\_\_

Comments: \_\_\_\_\_

Comments: \_\_\_\_\_

Labeled by: WAB Witness: [Signature] Cooler Inspected by: WAB

Form Y-003 R-02

Apex Laboratories

*Philip Nerenberg*

*The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.*

**APPENDIX D**

# Laboratory Data Validation Report

**QA LEVEL 2A - DATA VERIFICATION/DATA VALIDATION CHECKLIST**

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**Project Name:** Starlink / Uplands Support

**Project Number/Phase/Task:** US0025871.2251

**Reviewing Company:** WSP

**Project Manager:** Ted Norton

**Data Evaluator:** Michael Salema

**Data Evaluation Date:** September 23, 2024

**Checked by:** Sarah Gilles, Julie Lehrman

**Review Date:** September 25, 2024

**Laboratory:** Apex, Enthalpy Analytical, Matrix

**Lab SDG #:** A4F1635, A4F1545, P241097, 2406214

**Matrix:**  Aqueous     Soil     Sediment     Waste     Air     Other:

**Analytical Methods:** See Table 1

**Sample Information:** See Table 1

**Data qualification:** See Table 2.

**Work Plan or QAPP:** Final Outfall 22B IRAM Performance Monitoring, Sampling and Analysis Plan, Former Rhone-Poulenc Portland Site, Oregon Department of Environmental Quality, February 2015; Quality Assurance Project Plan Update, RP – Portland Site, AMEC Earth & Environmental, Inc. September 2009.

**Data Validation Guidance:** National Functional Guidelines for Superfund Organic/Inorganic Methods Data (EPA 2020); National Functional Guidelines for High Resolution Superfund Methods Data Review (EPA 2020).

<b>COC and Sample Receipt</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENT</b>
a) COC complete and correct?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Note 1
b) COC documents release of custody (signed and dated)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
c) Field QC types provided (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MS/MSD, FD, RB, TB
d) Did the cooler contents match the COC?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Note 1
e) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
f) Were cooler temperatures within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Note 2

<b>Data Package Information</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENT</b>
a) Laboratory name and location documented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
b) All samples on COC reported in data package?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
c) Requested analytical methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
d) Requested sample preparation methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e) Requested analyte list reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
f) Requested units reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g) Did the laboratory define the qualifiers used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
h) Data package contains all information necessary to complete the data quality review?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

<b>Analytical Assessment</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENT</b>
a) Solid samples reported on a dry-weight basis?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Were solid samples percent moisture criteria acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		See Note 3
d) Were detected concentrations less than the QL qualified by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Analytical Assessment**

**YES NO NA**

**COMMENT**

- e) Were detected concentrations above the calibration range reported by the laboratory?
- f) Did the laboratory satisfy the requested sensitivity requirements?

**Laboratory Case Narrative**

**YES NO NA**

**COMMENT**

- a) Do the laboratory narrative or laboratory qualifiers indicate deficiencies?
- b) Were all deficiencies noted in the laboratory qualifiers or narrative?

Addressed in sections below

**Sample Preservation and Holding Time**

**YES NO NA**

**COMMENT**

- a) Were samples properly preserved?
- b) Were holding times met for sample preparation?
- c) Were holding times met for sample analysis?

**Blanks**

**YES NO NA**

**COMMENTS**

- a) Were blanks analyzed at the appropriate frequency?
- b) Were any analytes detected in the associated preparation/method blank?
- c) Were any analytes detected in the associated trip blanks?
- d) Were any analytes detected in the associated field or equipment/rinsate blanks?
- e) Were any analytes detected in the associated storage blanks?

See Notes 4 & 5 and Tables 3 & 4

See Note 5 and Table 4

Only required for CLP methods

**Surrogates or Deuterated Monitoring Compounds**

**YES NO NA**

**COMMENTS**

- a) Were the correct surrogate compounds added to each sample?
- b) Were surrogate recoveries within control limits?
- c) If not, were samples analyzed at dilution factors 20x or greater?

See Note 6 and Table 5

**Isotope Dilution Standards**

**YES NO NA**

**COMMENTS**

- a) Were the correct isotope dilution standards added to each sample?
- b) Were isotope dilution standard recoveries within control limits?

See Note 7 and Table 6

**LCS/LCSD/OPR**

**YES NO NA**

**COMMENTS**

- a) Were LCS/LCSD or OPR reported at the appropriate frequency?
- b) Were proper analytes included in the LCS/LCSD or OPR?
- c) Were LCS/LCSD or OPR recoveries within control limits?
- d) Were RPD values within control limits (if LCSD or OPRD was analyzed)?

See Note 8 and Table 7

<b>MS/MSDs</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were project-specific MS (and MSD) reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		MS/MSD not required for Methods 1613B, 1668C and 1699
b) Were proper analytes reported in the MS/MSD?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Were project-specific MS/MSD recoveries within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 9 and Table 8
d) If not, were sample concentrations greater than the spiking concentration?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 9 and Table 8
e) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 9 and Table 8
f) Were project-specific post-digestion spikes analyzed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
g) Were project-specific post-digestion spike recoveries within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were project-specific laboratory duplicates reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22B-U-D-20240626
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 10 and Table 9 22B-U-S-20240626 / 22B-U-D-20240626
c) Were field duplicates reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22B-F-S-20240626 / 22B-F-D-20240626
d) Was field duplicate RPD or absolute difference criteria acceptable (30%)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 11 and Table 10

<b>ICP Serial Dilution (SD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was project-specific ICP SD data provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were project-specific ICP SD within acceptable criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Overall Evaluation</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were there any other technical problems not previously addressed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		See Notes 12, 13 and 14
b) Were data acceptable and usable, except where noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Comments/Notes:**

1. A trip blank collected on June 26, 2024 was not included on the COC but was received by the laboratory. The laboratory noted the discrepancy on the cooler receipt form. The trip blank was analyzed for project VOCs by method 8260D. The lab also noted that times were not written on the COC. The sample times were indicated on the sample bottles, these times were used when logging in the samples. No further action is required other than to note.
2. The rinse blank sample was received at the lab above the recommended temperature, sample receipt states "recently sampled" as a possible reason, no other action than to note.
3. Select samples were analyzed at dilutions to bring sample concentrations within the instrument calibration range. Reporting limits were elevated proportional to the dilution when undiluted results were not provided by the laboratory. The laboratory also flagged ('TSS' qualifier) total suspended solid results that were estimated due to minimum residue not being met for method SM2540D. The reporting level was adjusted to reflect the increased uncertainty in the result. The Guidelines do not require qualification based on dilution, but the end

user is alerted that the sensitivity of non-detect results should be considered as part of determining data usability.

4. Detections in the method blanks for high resolution Methods 1668 and 1699, including results identified as Estimated Maximum Potential Concentrations (EMPC), are summarized in Table 3, attached. See the table below for the blank qualifications applied to the samples using professional judgement informed by the High-Resolution Superfund Methods (HRSM) Guidelines.

Blank Results	Sample Result	Action
All analytes except OCDD/OCDF* ≥ MDL or EDL and < 1/2 QL  (OCDD/OCDF <QL)	Non-detect	No qualification necessary
	≥ MDL or EDL but < QL	Report at QL, raise MDL to sample result, and qualify as non-detect (U)
	≥ QL	Per professional judgment no qualification necessary
All analytes except OCDD/OCDF* ≥ 1/2x QL  (OCDD/OCDF <3xQL)	Non-detect	No qualification necessary
	< QL	Report at QL, raise MDL to sample result, and qualify as non-detect (U)
	≥ QL and < Blank Result	Raise MDL and QL to sample result and qualify as non-detect (U)
	≥ QL and ≥ Blank Result	Qualify J+ if sample result is < 10x Blank Result.
Estimated Maximum Possible Concentration (EMPC)	EMPC	Qualify EMPC results for same analyte using actions above.
	non-EMPC	No qualification necessary
<b>Gross Contamination (&gt;3xQL)</b>	All	Qualify R/UR

5. Analytes were detected in the method and rinsate blanks for non-high-resolution analyses, as noted in Table 4. Following Inorganic Guidelines and using professional judgement, when the blank concentration was above the RL, associated detected sample results detected below 10x the blank concentration were qualified as estimated, biased high (J+), and the MDL and RL are raised to the sample result. Following Inorganic Guidelines and using professional judgement, when the blank concentration was below the RL, associated detected sample results detected below RL were qualified as non-detect (U) and the MDL raised to sample result.
6. Certain surrogate recoveries were outside QC criteria in project samples, as shown on Table 5. As per the QAPP, primary samples do not need to be qualified according to QC sample surrogate recoveries. The surrogate recoveries are shown in Table 4 and the deficiency identified by the laboratory is noted here for completeness. Following the QAPP, when the recoveries of two or more surrogates in the same fraction were ≥ 9% but below QC limits, sample results were qualified as estimated (J/UJ). When recoveries of one or more surrogates in the same fraction were below 9%, detected sample results were qualified as estimated (J) and non-detects were rejected (R).
7. Labelled isotope dilution standard recoveries were outside control limits in QC samples as summarized in Table 6. Using professional judgement, no qualification was applied to lab QC samples and the deficiency identified by the laboratory is noted here for completeness.
8. LCS and LCSD recoveries were outside control limits as summarized in Table 7. Following the QAPP and historical project practice, when the LCS recovery was below the lower acceptance limit but above 10%, associated detect samples were qualified estimated (J-) and non-detect sample results were qualified as estimated (UJ). When the LCS recovery was above the upper acceptance limit, detect samples were qualified estimated (J+) associated non-detect sample results did not require qualification. No direction of bias was applied to sample results below the RL.
9. MS/MSD recoveries were outside of acceptance criteria for select analytes, as shown in Table 8. Only MS/MSD samples associated with project-specific samples reported in these SDGs were evaluated. Qualifications for MS/MSD deficiencies were applied to both the parent sample and field duplicate. Using professional judgment, samples are only qualified when two indicators are outside criteria. In accordance with the QAPP, organic

samples are only qualified when the spiking concentration is greater than the sample concentration. Following Guidelines, inorganic samples are only qualified when the spiking concentration is greater than 4x the sample concentration.

Following Organic Guidelines, when MS/MSD recoveries are below recovery criteria and greater than 10%, associated detects were qualified estimated, biased low (J-) and non-detects are qualified as estimated (UJ). when MS/MSD recoveries are above recovery criteria, associated detects were qualified estimated (J) and non-detects samples did not require qualification. When MS/MSD recoveries were below 10%, associated non-detect sample results were rejected (R).

10. Laboratory duplicate RPDs were above the QC criteria. Sample results not meeting the applicable laboratory duplicate criteria are shown in Table 9. Following Guidelines established by the QAPP, when either the sample result or field duplicate result was below 5x the RL and the absolute difference between the results was greater than the RL, associated results were qualified as estimated (J/UJ). When the absolute difference between the results was less than the RL, no qualifications were necessary. While in general qualification was applied to both the parent sample and the field duplicate, for the metals, the laboratory analyzed duplicates for both the primary and the duplicate sample. Therefore the laboratory duplicate was only applied to the specific sample.
11. Field duplicate RPDs were above the QC criteria established in the QAPP (30%). Sample results not meeting the applicable field duplicate criteria are shown in Table 10. Following Guidelines established by the QAPP, when both the primary and field duplicate results were greater than 5x the RL and the RPD was outside QC criteria, the associated results were qualified as estimated (J). When either the sample result or field duplicate result was below 5x the RL and the absolute difference between the results was greater than the RL, associated results were qualified as estimated (J/UJ). When the absolute difference between the results was less than the RL, no qualifications were necessary.
12. Following historical precedent for this project, results that are reported as estimated maximum potential concentrations (EMPC) in the report are reported as non-detects and qualified "EMPC, U" in the EDD. This designation has been retained in the data tables.
13. Apex applied other flags to the data to identify potential deviations. WSP reviewed these items, to the extent that supporting data was provided, and determined that no rejection of data was necessary. These flags are defined by the laboratory below.
  - a. Q-01 – Matrix spike recovery and/or RPD was outside acceptance limits.
  - b. Q-05 – Analyses were not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
  - c. Q-16 – Reanalysis of an original batch QC sample.
  - d. Q-19 – Blank spike duplicate sample analyzed in place of MS/MSD samples due to limited sample amount available for analysis.
  - e. Q-31 – Estimated results as recovery of CCV sample below lower control limit for this analyte. Results are likely biased low.
  - f. Q-41 – Estimated results as recovery of CCV sample above upper control limit for this analyte. Results are likely biased high.
  - g. Q-42 – MS/MSD analysis was performed on sample and recovery or RPD is outside laboratory control limits.
  - h. Q-52 – Due to known erratic recoveries, the result and reporting levels for this analyte are reported as estimated values. The analyte may not have passed all QC requirements.
  - i. Q-54 and Q-54a – Daily CCV recovery failed the +-20% criteria listed in the method. The results are reported as estimated values.

- j. Q-55 – Daily CCV/LCS recovery was below the +/-20% criteria listed in the method, however there is adequate sensitivity to ensure detection at the reporting level.
- k. Q-56 – Daily CCV/LCS recovery was below the +/-20% criteria listed in the method.
- l. Q-65 – Spike recovery is estimated due to high analyte concentration of the source sample.
- m. S-03 – Sample re-extract, or the analysis of an associate batch QC sample, confirmed surrogate failure due to sample matrix effect.
- n. S-06 – Surrogate recovery is outside of established control limits.
- o. E – Estimated value as the result was above the calibration range of the instrument.

**Definitions:**

%D:	Percent Difference / Drift	QAPP:	Quality Assurance Project Plan
%R:	Percent Recovery	QC:	Quality Control
CCB:	Continuing Calibration Blank	QL:	Quantitation Limit
CCV:	Continuing Calibration Verification	RB:	Rinsate Blank
COC:	Chain of Custody	RDL:	Reported Detection Limit
CRQL:	Contract Required Quantitation Limit	RL:	Reporting Limit
DMC:	Deuterated Monitoring Compound	RPD:	Relative Percent Deviation
DRO:	Diesel Range Organics	RRF:	Relative Response Factor
EB:	Equipment Blank	RSD:	Relative Standard Deviation
FB:	Field Blank	SD:	Serial Dilution
GRO:	Gasoline Range Organics	SDG:	Sample Delivery Group
HT:	Holding Time	SPLP:	Synthetic Precipitate Leachate Procedure
ICB:	Initial Calibration Blank	SVOC:	Semivolatile Organic Compound
ICV:	Initial Calibration Verification	TAL:	Target Analyte List
IS:	Internal Standard	TAT:	Turn Around Time
LCS:	Laboratory Control Sample	TB:	Trip Blank
LCSD:	Laboratory Control Sample Duplicate	TCL:	Target Compound List
MB:	Method Blank	TCLP:	Toxicity Characteristic Leachate Procedure
MDL:	Method Detection Limit	TDS:	Total Dissolved Solids
MS:	Matrix Spike	TOC:	Total Organic Carbon
MSD:	Matrix Spike Duplicate	TPH:	Total Petroleum Hydrocarbons
PCB:	Polychlorinated Biphenyl	TSS:	Total Suspended Solids
PQL:	Practical Quantitation Limit	VOC:	Volatile Organic Compound
		ZHE:	Zero Headspace Extraction



**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-D-20240626	200.8	7439-89-6	Iron	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-S-20240626	200.8	7439-89-6	Iron	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	200.8	7439-92-1	Lead	-	-	-	J	Field and Laboratory duplicate absolute difference outside criteria
22B-U-S-20240626	200.8	7439-92-1	Lead	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	200.8	7440-66-6	Zinc	-	-	-	J	Method Blank Detection LCS/LCSD recovery above QC criteria Lab duplicate RPD outside criteria
22B-U-S-20240626	200.8	7440-66-6	Zinc	-	2.39	-	U	Method Blank Detection LCS/LCSD recovery above QC criteria
22B-F-D-20240626	218.6	18540-29-9	Hexavalent Chromium, Dissolved	-	0.12	0.12	J+	Rinsate blank detection
22B-F-S-20240626	218.6	18540-29-9	Hexavalent Chromium, Dissolved	-	0.12	0.12	J+	Rinsate blank detection
22B-U-S-20240626	1613	35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	-	-	-	U	Method Blank Detection
22B-U-D-20240626	1613	37871-00-4	Heptachlorinated Dibenzo-p-dioxins, Total	-	6.34	-	U	Method Blank Detection
22B-U-S-20240626	1613	37871-00-4	Heptachlorinated Dibenzo-p-dioxins, Total	-	12.2	-	U	Method Blank Detection
22B-U-D-20240626	1613	34465-46-8	Hexachlorinated Dibenzo-p-dioxins, Total	-	8.18	-	U	Method Blank Detection
22B-U-S-20240626	1613	34465-46-8	Hexachlorinated Dibenzo-p-dioxins, Total	-	15.0	-	U	Method Blank Detection
22B-U-D-20240626	1699	72-54-8	4,4-DDD	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-S-20240626	1699	72-54-8	4,4-DDD	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1699	72-55-9	4,4-DDE	-	-	-	J+	Method Blank Detection
22B-U-S-20240626	1699	72-55-9	4,4-DDE	-	-	-	J+	Method Blank Detection
22B-U-D-20240626	1699	60-57-1	Dieldrin	-	-	-	J	Field duplicate RPD outside criteria
22B-U-S-20240626	1699	60-57-1	Dieldrin	-	-	-	J	Field duplicate RPD outside criteria
22B-U-D-20240626	1699	118-74-1	Hexachlorobenzene	-	40.5	-	U	Method Blank Detection
22B-U-S-20240626	1699	118-74-1	Hexachlorobenzene	-	37.7	-	U	Method Blank Detection
22B-U-D-20240626	1699	28044-83-9	trans-Heptachlor Epoxide	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-S-20240626	1699	28044-83-9	trans-Heptachlor Epoxide	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1668C	52663-64-6	2,2',3,3',5,6,6'-Heptachlorobiphenyl	-	4.03	-	U	Method Blank Detection
22B-U-S-20240626	1668C	52663-64-6	2,2',3,3',5,6,6'-Heptachlorobiphenyl	-	3.92	-	U	Method Blank Detection
22B-U-D-20240626	1668C	2437-79-8	2,2',4,4'-Tetrachlorobiphenyl	-	-	-	J	Method Blank Detection Field Duplicate Absolute Difference outside criteria
22B-U-S-20240626	1668C	2437-79-8	2,2',4,4'-Tetrachlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1668C	68194-04-7	2,2',4,6'-Tetrachlorobiphenyl	-	-	-	UJ	Field duplicate absolute difference outside criteria
22B-U-S-20240626	1668C	68194-04-7	2,2',4,6'-Tetrachlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1668C	41464-41-9	2,2',5,6'-Tetrachlorobiphenyl	-	4.34	-	U	Method Blank Detection
22B-U-S-20240626	1668C	41464-41-9	2,2',5,6'-Tetrachlorobiphenyl	-	3.30	-	U	Method Blank Detection
22B-U-D-20240626	1668C	37680-65-2	2,2',5-Trichlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-S-20240626	1668C	37680-65-2	2,2',5-Trichlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1668C	73575-52-7	2,3',4,5'-Tetrachlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-S-20240626	1668C	73575-52-7	2,3',4,5'-Tetrachlorobiphenyl	-	-	-	J	Field duplicate absolute difference outside criteria
22B-U-D-20240626	1668C	PCB042_059	PCB-42/59	-	5.37	-	U	Method Blank Detection
22B-U-D-20240626	1668C	41464-39-5	PCB-44	-	-	-	J+	Method Blank Detection
22B-U-S-20240626	1668C	41464-39-5	PCB-44	-	-	-	J+	Method Blank Detection
22B-U-D-20240626	1668C	PCB052_069	PCB-52/69	-	-	-	J+	Method Blank Detection
22B-U-S-20240626	1668C	PCB052_069	PCB-52/69	-	-	-	J+	Method Blank Detection
22B-U-D-20240626	SW8260D	110-75-8	2-Chloroethylvinyl ether	-	-	-	UJ	LCS/LCSD recovery below QC criteria
22B-U-S-20240626	SW8260D	110-75-8	2-Chloroethylvinyl ether	-	-	-	UJ	LCS/LCSD recovery below QC criteria

**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-D-20240626	SW8270E	120-82-1	1,2,4-Trichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	120-82-1	1,2,4-Trichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	95-50-1	1,2-Dichlorobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	95-50-1	1,2-Dichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	528-29-0	1,2-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	528-29-0	1,2-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	541-73-1	1,3-Dichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	541-73-1	1,3-Dichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	99-65-0	1,3-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	99-65-0	1,3-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	106-46-7	1,4-Dichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	106-46-7	1,4-Dichlorobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	100-25-4	1,4-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	100-25-4	1,4-Dinitrobenzene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	90-12-0	1-Methylnaphthalene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	90-12-0	1-Methylnaphthalene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	39638-32-9	2,2'-Oxybis(1-Chloropropane)	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	39638-32-9	2,2'-Oxybis(1-Chloropropane)	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	58-90-2	2,3,4,6-Tetrachlorophenol	-	-	-	J	Method Blank Detection Field Duplicate RPD outside criteria
22B-U-S-20240626	SW8270E	58-90-2	2,3,4,6-Tetrachlorophenol	-	-	-	J	Method Blank Detection Field Duplicate RPD outside criteria Surrogate recoveries below 9%
22B-U-S-20240626	SW8270E	88-06-2	2,4,6-Trichlorophenol	-	-	-	J	Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	120-83-2	2,4-Dichlorophenol	-	-	-	J-	MS/MSD recovery below QC criteria
22B-U-S-20240626	SW8270E	120-83-2	2,4-Dichlorophenol	-	-	-	J-	MS/MSD recovery below QC criteria Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	105-67-9	2,4-Dimethylphenol	-	-	-	R	MSD recovery below 10%
22B-U-S-20240626	SW8270E	105-67-9	2,4-Dimethylphenol	-	-	-	R	MSD recovery below 10% Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	121-14-2	2,4-Dinitrotoluene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	121-14-2	2,4-Dinitrotoluene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	51-28-5	2,4-Dinitrophenol	-	-	-	R	Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	606-20-2	2,6-Dinitrotoluene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	606-20-2	2,6-Dinitrotoluene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	91-58-7	2-Chloronaphthalene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%

**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-S-20240626	SW8270E	91-58-7	2-Chloronaphthalene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	95-57-8	2-Chlorophenol				UJ	MS/MSD recovery below QC criteria
22B-U-S-20240626	SW8270E	95-57-8	2-Chlorophenol	-	-	-	R	MS/MSD recovery below QC criteria Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	91-57-6	2-Methylnaphthalene	-	-	-	J	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	91-57-6	2-Methylnaphthalene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	95-48-7	2-Methylphenol				J-	MS/MSD recovery below QC criteria
22B-U-S-20240626	SW8270E	95-48-7	2-Methylphenol	-	-	-	J	MS/MSD recovery below QC criteria Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	88-74-4	2-Nitroaniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	88-74-4	2-Nitroaniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	88-75-5	2-Nitrophenol				UJ	MS/MSD recovery below QC criteria
22B-U-S-20240626	SW8270E	88-75-5	2-Nitrophenol	-	-	-	R	MS/MSD recovery below QC criteria Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	1319-77-3	3 & 4-Methylphenol	-	-	-	UJ	MS/MSD recovery below QC criteria
22B-U-S-20240626	SW8270E	1319-77-3	3 & 4-Methylphenol				R	MS/MSD recovery below QC criteria Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	91-94-1	3,3'-Dichlorobenzidine				R	MS/MSD recoveries below 10% Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	91-94-1	3,3'-Dichlorobenzidine				R	MS/MSD recoveries below 10% Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	99-09-2	3-Nitroaniline				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	99-09-2	3-Nitroaniline	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	1570-65-6	4,6-Dichloro-o-cresol				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	1570-65-6	4,6-Dichloro-o-cresol				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	101-55-3	4-Bromophenyl phenyl ether				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	101-55-3	4-Bromophenyl phenyl ether				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	59-50-7	4-Chloro-3-Methylphenol				R	Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	106-47-8	4-Chloroaniline				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	106-47-8	4-Chloroaniline	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	7005-72-3	4-Chlorophenyl phenyl ether	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	7005-72-3	4-Chlorophenyl phenyl ether				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	100-01-6	4-Nitroaniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	100-01-6	4-Nitroaniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	100-02-7	4-Nitrophenol				R	Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	83-32-9	Acenaphthene				J	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	83-32-9	Acenaphthene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%

**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-D-20240626	SW8270E	208-96-8	Acenaphthylene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	208-96-8	Acenaphthylene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	62-53-3	Aniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	62-53-3	Aniline				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	120-12-7	Anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	120-12-7	Anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	103-33-3	Azobenzene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	103-33-3	Azobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	56-55-3	Benzo(a)anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	56-55-3	Benzo(a)anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	205-99-2	Benzo(b)fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	205-99-2	Benzo(b)fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	50-32-8	Benzo(a)pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	50-32-8	Benzo(a)pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	191-24-2	Benzo(g,h,i)perylene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	191-24-2	Benzo(g,h,i)perylene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	207-08-9	Benzo(k)fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	207-08-9	Benzo(k)fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	65-85-0	Benzoic Acid				R	MSD recovery below 10% Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	65-85-0	Benzoic Acid				R	MSD recovery below 10% Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	100-51-6	Benzyl Alcohol				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	100-51-6	Benzyl Alcohol	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	100-51-6	Benzyl Alcohol				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	111-91-1	Bis(2-Chloroethoxy) methane				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	111-91-1	Bis(2-Chloroethoxy) methane	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	111-44-4	bis(2-Chloroethyl) Ether				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	111-44-4	bis(2-Chloroethyl) Ether	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	117-81-7	bis(2-Ethylhexyl) Phthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	117-81-7	bis(2-Ethylhexyl) Phthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	85-68-7	Butylbenzylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	85-68-7	Butylbenzylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	86-74-8	Carbazole				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	86-74-8	Carbazole				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	218-01-9	Chrysene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	218-01-9	Chrysene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	103-23-1	Di-(2-ethylhexyl)adipate				UJ	Surrogate recoveries below QC limits and ≥9%

**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-S-20240626	SW8270E	103-23-1	Di-(2-ethylhexyl)adipate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	53-70-3	Dibenzo(a,h)anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	53-70-3	Dibenzo(a,h)anthracene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	132-64-9	Dibenzofuran				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	132-64-9	Dibenzofuran	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	84-66-2	Diethylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	84-66-2	Diethylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	131-11-3	Dimethylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	131-11-3	Dimethylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	84-74-2	Di-n-butylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	84-74-2	Di-n-butylphthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	117-84-0	di-n-Octyl Phthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	117-84-0	di-n-Octyl Phthalate				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	206-44-0	Fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	206-44-0	Fluoranthene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	86-73-7	Fluorene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	86-73-7	Fluorene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	118-74-1	Hexachlorobenzene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	118-74-1	Hexachlorobenzene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	87-68-3	Hexachlorobutadiene	-	-	-	UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	87-68-3	Hexachlorobutadiene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	87-68-3	Hexachlorobutadiene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	77-47-4	Hexachlorocyclopentadiene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	77-47-4	Hexachlorocyclopentadiene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	67-72-1	Hexachloroethane				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	67-72-1	Hexachloroethane	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	193-39-5	Indeno(1,2,3-cd)pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	193-39-5	Indeno(1,2,3-cd)pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	78-59-1	Isophorone				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	78-59-1	Isophorone	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	78-59-1	Isophorone				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	91-20-3	Naphthalene				J	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	91-20-3	Naphthalene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	98-95-3	Nitrobenzene				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%

**Table 2**  
**Qualifier Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample Name	Analysis	CAS RN	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22B-U-S-20240626	SW8270E	98-95-3	Nitrobenzene	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	62-75-9	n-Nitrosodimethylamine				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	62-75-9	n-Nitrosodimethylamine	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	621-64-7	n-Nitrosodi-n-propyl amine				UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	621-64-7	n-Nitrosodi-n-propyl amine	-	-	-	UJ	MS/MSD recovery below QC criteria Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	86-30-6	n-Nitrosodiphenylamine				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	86-30-6	n-Nitrosodiphenylamine				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	87-86-5	Pentachlorophenol	-	-	-	J+	Method Blank Detection
22B-U-S-20240626	SW8270E	87-86-5	Pentachlorophenol	-	-	-	J	Method Blank Detection Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	85-01-8	Phenanthrene				J	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	85-01-8	Phenanthrene				J	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	108-95-2	Phenol				R	MSD recovery below 10%
22B-U-S-20240626	SW8270E	108-95-2	Phenol				R	MSD recovery below 10% Surrogate recoveries below 9%
22B-U-D-20240626	SW8270E	129-00-0	Pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	129-00-0	Pyrene				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-D-20240626	SW8270E	110-86-1	Pyridine				UJ	Surrogate recoveries below QC limits and ≥9%
22B-U-S-20240626	SW8270E	110-86-1	Pyridine				UJ	Surrogate recoveries below QC limits and ≥9%
All samples	All analyses	--	--	--	--	--	--	Laboratory applied U-qualifiers indicating non-detect results and J-qualifiers indicating results below the reporting limit are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.
All Samples	All analyses	All 'EMPC' results	All 'EMPC' results	--	--	--	EMPC, U	Result qualified as EMPC in the PDF, final qualifiers are EMPC, U in the EDD and project database unless other qualifiers are indicated in this table.
All Samples	All analyses	All 'EMPC' results	All 'EMPC' results	--	varies	--	EMPC, U	Laboratory placed EMPC value in RDL field and reported EMPCs with numerical values above the MDL. MDL raised to the value of the EMPC.

**Table 3**  
**High Resolution Blanks Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Blank Type	Sample ID	Method	CAS RN	EDD Analyte Name	Laboratory Analyte Name	Blank Result	Quantitation Limit	Units	Lab Qualifier	Notes
MB	B24H176-BLK1	1613	35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-HpCDD	3.10	25.0	pg/L	J	MB<1/2QL, qual detect smpls <QL
MB	B24H176-BLK1	1613	41903-57-5	Tetrachlorinated Dibenzo-p-dioxins, Total	Total TCDD	11.2	19.6	pg/L	EMPC	MB EMPC, smpls not EMPC, no qual
MB	B24H176-BLK1	1613	36088-22-9	Pentachlorinated Dibenzo-p-dioxins, Total	Total PeCDD	20.2	25.0	pg/L	EMPC, J	MB EMPC, smpls not EMPC, no qual
MB	B24H176-BLK1	1613	34465-46-8	Hexachlorinated Dibenzo-p-dioxins, Total	Total HxCDD	12.4	25.0	pg/L	J	MB<1/2QL, smpls <QL, qual
MB	B24H176-BLK1	1613	37871-00-4	Heptachlorinated Dibenzo-p-dioxins, Total	Total HpCDD	7.72	25.0	pg/L	J	MB<1/2QL, smpls <QL, qual

**Table 4**  
**Blanks Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample ID	Method	Blank Type	CAS RN	Total or Diss	Analyte	Blank Result	Quantitation Limit	Units	Lab Qualifier	Notes
24G0031-BLK1	200.8	Method	7439-92-1	T	Lead	1.01	0.200	ug/L		Re-extracted, extraction was ND
24G0199-BLK1	200.8	Method	7440-66-6	T	Zinc	6.84	4.00	ug/L		Initial, re-extracted
24G0296-BLK1	200.8	Method	7440-66-6	T	Zinc	10.9	4.00	ug/L		Re-extracted
24G0358-BLK2	200.8	Method	7440-66-6	T	Zinc	3.44	4.00	ug/L	B-02Q-16 J	Final, samples qualified
24F0965-BLK1	NWTPH-GX	Method	GRO	N	Gasoline Range Hydrocarbons	0.0533	0.100	mg/L	B-02 J	Samples non-detects
24G0181-BLK1	SW8270E	Method	111-44-4	N	bis(2-Chloroethyl) Ether	0.0406	0.0500	ug/L	B-02 J	Sample ND
24G0181-BLK1	SW8270E	Method	58-90-2	N	2,3,4,6-Tetrachlorophenol	0.198	0.100	ug/L		Initial, re-extracted
24G0041-BLK2	SW8270E	Method	58-90-2	N	2,3,4,6-Tetrachlorophenol	0.160	0.100	ug/L	B	Final, samples qualified
24G0181-BLK1	SW8270E	Method	87-86-5	N	Pentachlorophenol	0.110	0.200	ug/L	B-02 J	Initial, re-extracted
24G0041-BLK2	SW8270E	Method	87-86-5	N	Pentachlorophenol	0.109	0.200	ug/L	B-02 J	Final, samples qualified
22B-F-RB-20240627	218.6	Rinsate	18540-29-9	D	Hexavalent Chromium, Dissolved	0.092	0.020	ug/L		Samples<10x blank, qualified

**Table 5**  
**Surrogate Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample ID	Method	Dilution Fraction	Cas RN	Laboratory Analyte Name	EDD Analyte Name	Result (%)	Criteria Range (%)
22B-U-D-20240626	SW8270E		321-60-8	2-Fluorobiphenyl	2-Fluorobiphenyl	42	44 - 120
22B-U-D-20240626	SW8270E		4165-60-0	Nitrobenzene-d5	Nitrobenzene-d5	42	44 - 120
22B-U-S-20240626	SW8270E		13127-88-3	Phenol-d6	Phenol-d6	8	44 - 120
22B-U-S-20240626	SW8270E		367-12-4	2-Fluorophenol	2-Fluorophenol	13	44 - 120
22B-U-S-20240626	SW8270E		321-60-8	2-Fluorobiphenyl	2-Fluorobiphenyl	28	44 - 120
22B-U-S-20240626	SW8270E		4165-60-0	Nitrobenzene-d5	Nitrobenzene-d5	26	44 - 120
24G0041-MS1	SW8270E	1	13127-88-3	Phenol-d6	Phenol-d6	7	10 - 133
24G0041-MS1	SW8270E	1	321-60-8	2-Fluorobiphenyl	2-Fluorobiphenyl	27	44 - 120
24G0041-MS1	SW8270E	1	367-12-4	2-Fluorophenol	2-Fluorophenol	10	19 - 120
24G0041-MS1	SW8270E	4	4165-60-0	Nitrobenzene-d5	Nitrobenzene-d5	23	44 - 120
24G0041-MSD1	SW8270E	1	13127-88-3	Phenol-d6	Phenol-d6	7	10 - 133
24G0041-MSD1	SW8270E	1	321-60-8	2-Fluorobiphenyl	2-Fluorobiphenyl	22	44 - 120
24G0041-MSD1	SW8270E	1	367-12-4	2-Fluorophenol	2-Fluorophenol	10	19 - 120
24G0041-MSD1	SW8270E	4	4165-60-0	Nitrobenzene-d5	Nitrobenzene-d5	21	44 - 120

**Table 5**  
**High Resolution Internal Standards Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample ID	Method	Laboratory Analyte Name	EDD Analyte Name	Result (%)	Criteria Range (%)	Note
B24G010-BLK1	1699	13C12-4,4'-DDE	13C-P,P-DDE	44.3	47-160	Do not qual blanks
B24G010-MSD1	1699	13C12-2,4'-DDE	13C-O,P-DDE	40.6	47-160	Do not lab samples
B24G010-MSD1	1699	13C12-4,4'-DDE	13C-P,P-DDE	42.3	47-160	Do not lab samples

**Table 7**  
**LCS/LCSD Exceedances Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Sample ID	Method	CAS RN	Analyte	LCS / LCSD Recovery (%)	RPD (%)	Recovery / RPD Criteria (%)
24G0199-BS1	200.8	7440-66-6	Zinc	<b>120</b>	-	85 - 115 / -
24F0965-BS2	NWTPH-GX	GRO	Gasoline Range Hydrocarbons	<b>122</b>	-	80 - 120 / -
24F0965-BS1	SW8260D	594-20-7	2,2-Dichloropropane	<b>126</b>	-	80 - 120 / -
24F0965-BS1	SW8260D	110-75-8	2-Chloroethylvinyl ether	<b>59</b>	-	80 - 120 / -
24F0965-BS1	SW8260D	75-15-0	Carbon disulfide	<b>129</b>	-	80 - 120 / -
24F0965-BS1	SW8260D	75-00-3	Chloroethane	<b>121</b>	-	80 - 120 / -
24G0011-BS1	SW8260D	75-00-3	Chloroethane	<b>126</b>	-	80 - 120 / -
24G0011-BS1	SW8260D	75-69-4	Trichlorofluoromethane	<b>126</b>	-	80 - 120 / -
24G0181-BS1	SW8270E	120-82-1	1,2,4-Trichlorobenzene	<b>25 / 25</b>	1	29 - 120 / 30
24G0181-BS1	SW8270E	95-50-1	1,2-Dichlorobenzene	<b>25 / 26</b>	2	32 - 120 / 30
24G0181-BS1	SW8270E	541-73-1	1,3-Dichlorobenzene	<b>23 / 23</b>	0.9	28 - 120 / 30
24G0181-BS1	SW8270E	106-46-7	1,4-Dichlorobenzene	<b>24 / 24</b>	0.9	29 - 120 / 30
24G0181-BS1	SW8270E	90-12-0	1-Methylnaphthalene	<b>40 / 41</b>	2	41 - 120 / 30
24G0181-BS1	SW8270E	91-57-6	2-Methylnaphthalene	<b>39 / 39</b>	1	40 - 121 / 30
24G0181-BS1	SW8270E	7005-72-3	4-Chlorophenyl phenyl ether	<b>51 / 51</b>	0.1	53 - 121 / 30
24G0181-BS1	SW8270E	87-68-3	Hexachlorobutadiene	<b>19 / 19</b>	0.5	22 - 124 / 30

**Table 8**  
**MS/MSD Exceedances Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

Primary Sample ID	Method	CAS RN	Analyte	MS / MSD Recovery (%)	RPD (%)	Recovery / RPD Criteria (%)
22B-U-S-20240626	1699	28044-83-9	trans-Heptachlor Epoxide	78.4 / 57.7	30.4	50-150 / 25
22B-F-S-20240626	200.8	7440-70-2	Calcium**	54 / 70	1	70 - 130 / 20
22B-U-S-20240626	SW8260D	630-20-6	1,1,1,2-Tetrachloroethane	130 / 125	4	78 - 124 / 30
22B-U-S-20240626	SW8260D	71-43-2	Benzene	122 / 119	1	79 - 120 / 30
22B-U-S-20240626	SW8260D	75-00-3	Chloroethane	147 / 133	10	60 - 138 / 30
22B-U-S-20240626	SW8260D	75-15-0	Carbon disulfide	148 / 146	1	64 - 133 / 30
22B-U-S-20240626	SW8260D	75-27-4	Bromodichloromethane	126 / 121	4	79 - 125 / 30
22B-U-S-20240626	SW8260D	79-34-5	1,1,2,2-Tetrachloroethane	122 / 113	7	78 - 124 / 30
22B-U-S-20240626	SW8270E	120-82-1	1,2,4-Trichlorobenzene	15 / 13	10	29 - 120 / 30
22B-U-S-20240626	SW8270E	95-50-1	1,2-Dichlorobenzene	14 / 13	7	32 - 120 / 30
22B-U-S-20240626	SW8270E	541-73-1	1,3-Dichlorobenzene	13 / 12	6	28 - 120 / 30
22B-U-S-20240626	SW8270E	106-46-7	1,4-Dichlorobenzene	13 / 12	4	29 - 120 / 30
22B-U-S-20240626	SW8270E	90-12-0	1-Methylnaphthalene	21 / 18	12	41 - 120 / 30
22B-U-S-20240626	SW8270E	39638-32-9	2,2'-Oxybis(1-Chloropropane)	16 / 16	0.4	41 - 120 / 30
22B-U-S-20240626	SW8270E	88-06-2	2,4,6-Trichlorophenol	51 / 42	18	50 - 125 / 30
22B-U-S-20240626	SW8270E	120-83-2	2,4-Dichlorophenol	31 / 22	22	47 - 121 / 30
22B-U-S-20240626	SW8270E	105-67-9	2,4-Dimethylphenol	28 / 0	200	31 - 124 / 30
22B-U-S-20240626	SW8270E	51-28-5	2,4-Dinitrophenol*	155 / 135	12	23 - 143 / 30
22B-U-S-20240626	SW8270E	606-20-2	2,6-Dinitrotoluene	58 / 48	16	57 - 124 / 30
22B-U-S-20240626	SW8270E	91-58-7	2-Chloronaphthalene	23 / 20	13	40 - 120 / 30
22B-U-S-20240626	SW8270E	95-57-8	2-Chlorophenol	18 / 17	4	38 - 120 / 30
22B-U-S-20240626	SW8270E	91-57-6	2-Methylnaphthalene	20 / 18	9	40 - 121 / 30
22B-U-S-20240626	SW8270E	95-48-7	2-Methylphenol	20 / 17	13	30 - 120 / 30
22B-U-S-20240626	SW8270E	88-74-4	2-Nitroaniline	63 / 53	15	55 - 127 / 30
22B-U-S-20240626	SW8270E	88-75-5	2-Nitrophenol	33 / 31	5	47 - 123 / 30
22B-U-S-20240626	SW8270E	1319-77-3	3 & 4-Methylphenol	22 / 19	15	29 - 120 / 30
22B-U-S-20240626	SW8270E	91-94-1	3,3'-Dichlorobenzidine	0/0	200	27-129 / 30
22B-U-S-20240626	SW8270E	99-09-2	3-Nitroaniline	24 / 25	5	41 - 128 / 30
22B-U-S-20240626	SW8270E	1570-65-6	4,6-Dichloro-o-cresol	141 / 122	13	44 - 137 / 30
22B-U-S-20240626	SW8270E	101-55-3	4-Bromophenyl phenyl ether	55 / 46	15	55 - 124 / 30
22B-U-S-20240626	SW8270E	59-50-7	4-Chloro-3-Methylphenol	54 / 47	11	52 - 120 / 30
22B-U-S-20240626	SW8270E	106-47-8	4-Chloroaniline	18 / 15	11	33 - 120 / 30
22B-U-S-20240626	SW8270E	7005-72-3	4-Chlorophenyl phenyl ether	42 / 34	19	53 - 121 / 30
22B-U-S-20240626	SW8270E	83-32-9	Acenaphthene	29 / 24	17	47 - 122 / 30
22B-U-S-20240626	SW8270E	208-96-8	Acenaphthylene	31 / 25	18	41 - 130 / 30
22B-U-S-20240626	SW8270E	103-33-3	Azobenzene	45 / 37	16	61 - 120 / 30
22B-U-S-20240626	SW8270E	65-85-0	Benzoic Acid	0/0	200	10 - 120 / 30
22B-U-S-20240626	SW8270E	100-51-6	Benzyl Alcohol	15 / 15	0.9	31 - 120 / 30
22B-U-S-20240626	SW8270E	111-91-1	Bis(2-Chloroethoxy) methane	20 / 18	10	48 - 120 / 30
22B-U-S-20240626	SW8270E	111-44-4	bis(2-Chloroethyl) Ether	16 / 16	0.09	43 - 120 / 30
22B-U-S-20240626	SW8270E	132-64-9	Dibenzofuran	34 / 28	18	53 - 120 / 30
22B-U-S-20240626	SW8270E	131-11-3	Dimethylphthalate	52 / 42	18	45 - 127 / 30
22B-U-S-20240626	SW8270E	86-73-7	Fluorene	44 / 35	20	52 - 124 / 30
22B-U-S-20240626	SW8270E	118-74-1	Hexachlorobenzene	53 / 43	18	53 - 125 / 30
22B-U-S-20240626	SW8270E	87-68-3	Hexachlorobutadiene	13 / 11	14	22 - 124 / 30
22B-U-S-20240626	SW8270E	67-72-1	Hexachloroethane	13 / 12	5	21 - 120 / 30
22B-U-S-20240626	SW8270E	78-59-1	Isophorone	25 / 21	16	42 - 124 / 30
22B-U-S-20240626	SW8270E	91-20-3	Naphthalene	19 / 17	9	40 - 121 / 30
22B-U-S-20240626	SW8270E	98-95-3	Nitrobenzene	20 / 19	4	45 - 121 / 30
22B-U-S-20240626	SW8270E	62-75-9	n-Nitrosodimethylamine	10 / 11	14	19 - 120 / 30
22B-U-S-20240626	SW8270E	621-64-7	n-Nitrosodi-n-propyl amine	19 / 18	4	49 - 120 / 30
22B-U-S-20240626	SW8270E	85-01-8	Phenanthrene	69 / 57	16	59 - 120 / 30
22B-U-S-20240626	SW8270E	108-95-2	Phenol	0/0	200	10 - 120 / 30

**Table 9**  
**Laboratory Duplicate Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

					Primary Sample		Laboratory Duplicate						
					22B-U-D-20240626		24G0199-DUP1						
Batch	Method	Fraction	CAS RN	Analyte	Result	RL	Result	RL	Abs Diff	RPD	RPD Limit	Criteria	Qualifier
24G0199	200.8	T	7439-92-1	Lead	0.374	0.2	0.23	0.2	0	48	20	Abs Diff	OK
24G0199	200.8	T	7440-50-8	Copper	1.05	2	2	2	0.95	62	20	Abs Diff	OK
24G0199	200.8	T	7440-66-6	Zinc	25.8	4	12	4	13.80	73	20	Abs Diff	J/UJ

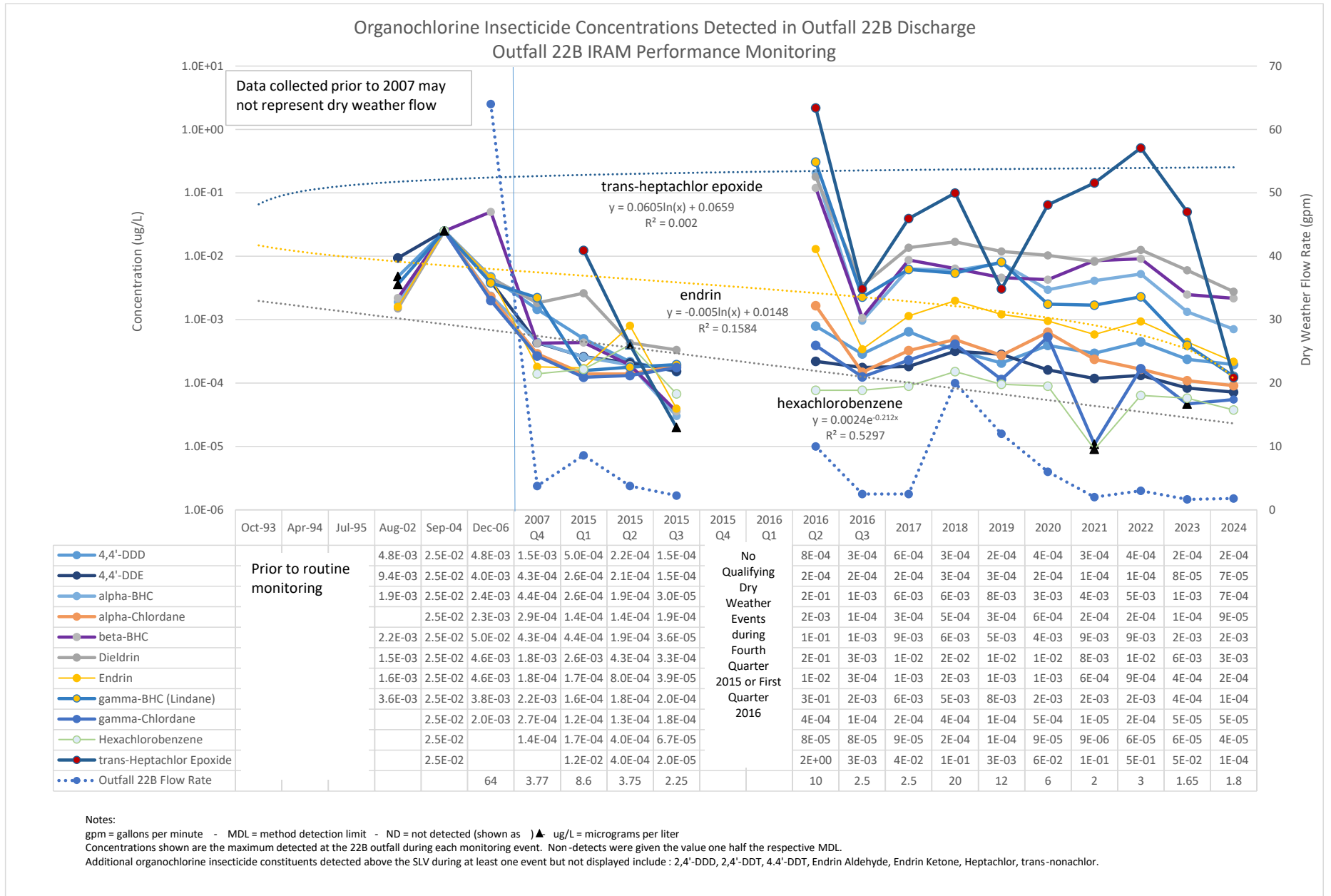
**Table 10**  
**Field Duplicate Summary Table**  
**Starlink / Uplands Support**  
**Outfall 22B 2024 Monitoring**

				Primary Sample		Laboratory Duplicate						
				22B-U-S-071322		22B-U-D-071322						
Method	Fraction	CAS RN	Analyte	Result	RL	Result	RL	Abs Diff	RPD	RPD Limit	Criteria	Qualifier
1668C	N	37680-65-2	2,2',5-Trichlorobiphenyl	19	4.79	24.5	5.36	6	25	20	Abs Diff	J/UJ
1668C	N	2437-79-8	2,2',4,4'-Tetrachlorobiphenyl	45	4.79	18.3	5.36	26.70	84	20	Abs Diff	J/UJ
1668C	N	68194-04-7	2,2',4,6'-Tetrachlorobiphenyl	14.7	4.79	5.36	5.36	9	93	20	Abs Diff	J/UJ
1668C	N	73575-52-7	2,3',4,5'-Tetrachlorobiphenyl	13.6	4.79	7.42	5.36	6.18	59	20	Abs Diff	J/UJ
1699	N	28044-83-9	trans-Heptachlor Epoxide	122	43.4	390	42.4	268	105	20	Abs Diff	J/UJ
1699	N	60-57-1	Dieldrin	2770	43.4	4150	42.4	1380.00	40	20	RPD	J
1699	N	72-54-8	4,4-DDD	195	43.4	285	42.4	90	38	20	Abs Diff	J/UJ
SW8270E	N	58-90-2	2,3,4,6-Tetrachlorophenol	0.266	0.106	0.408	0.105	0.14	42	20	Abs Diff	J/UJ
200.8	T	7439-92-1	Lead	0.147	0.2	0.374	0.2	0	87	20	Abs Diff	J/UJ
200.8	D	7439-89-6	Iron	37.4	50	109	50	72	98	20	Abs Diff	J/UJ

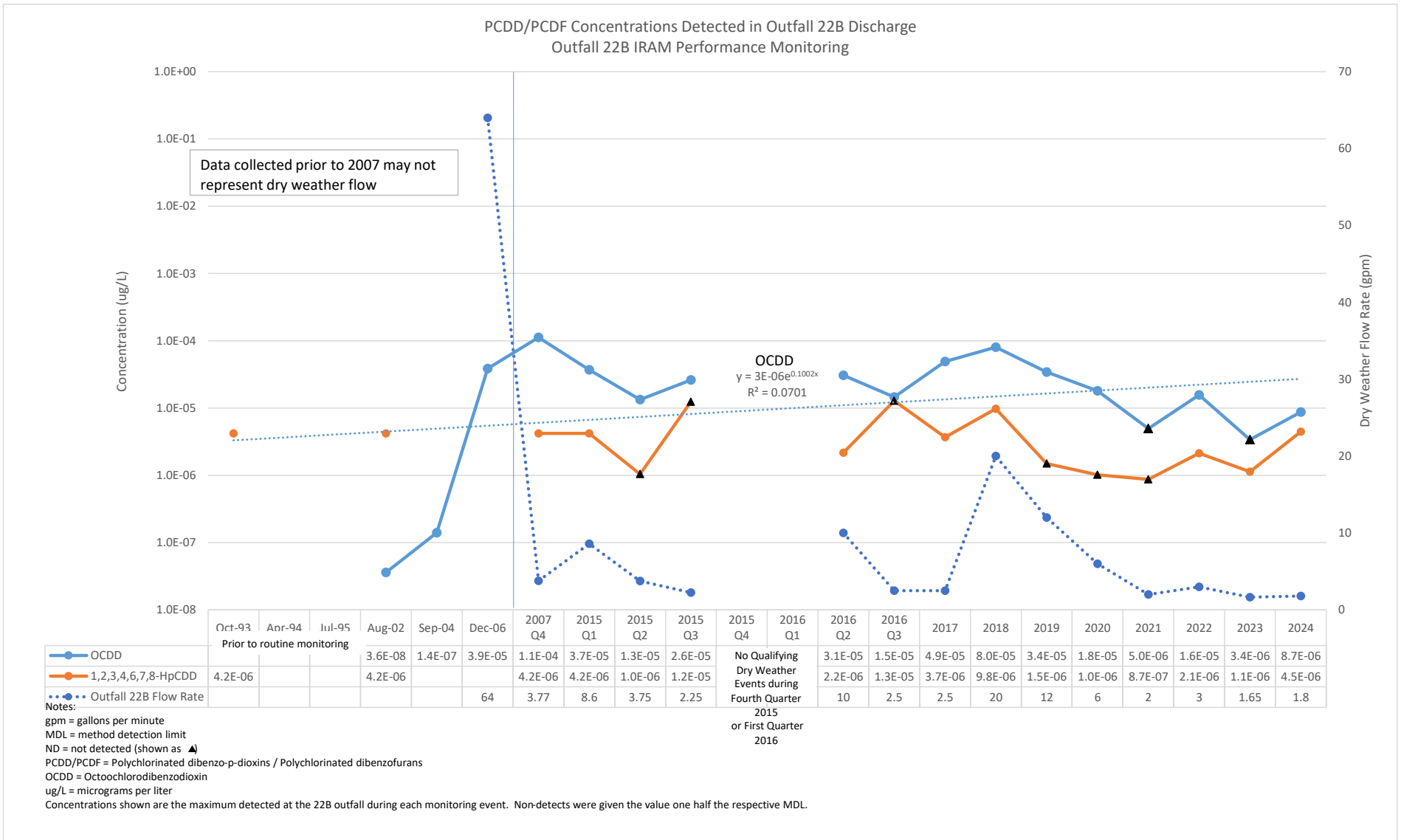
**APPENDIX E**

## Temporal Data Plots

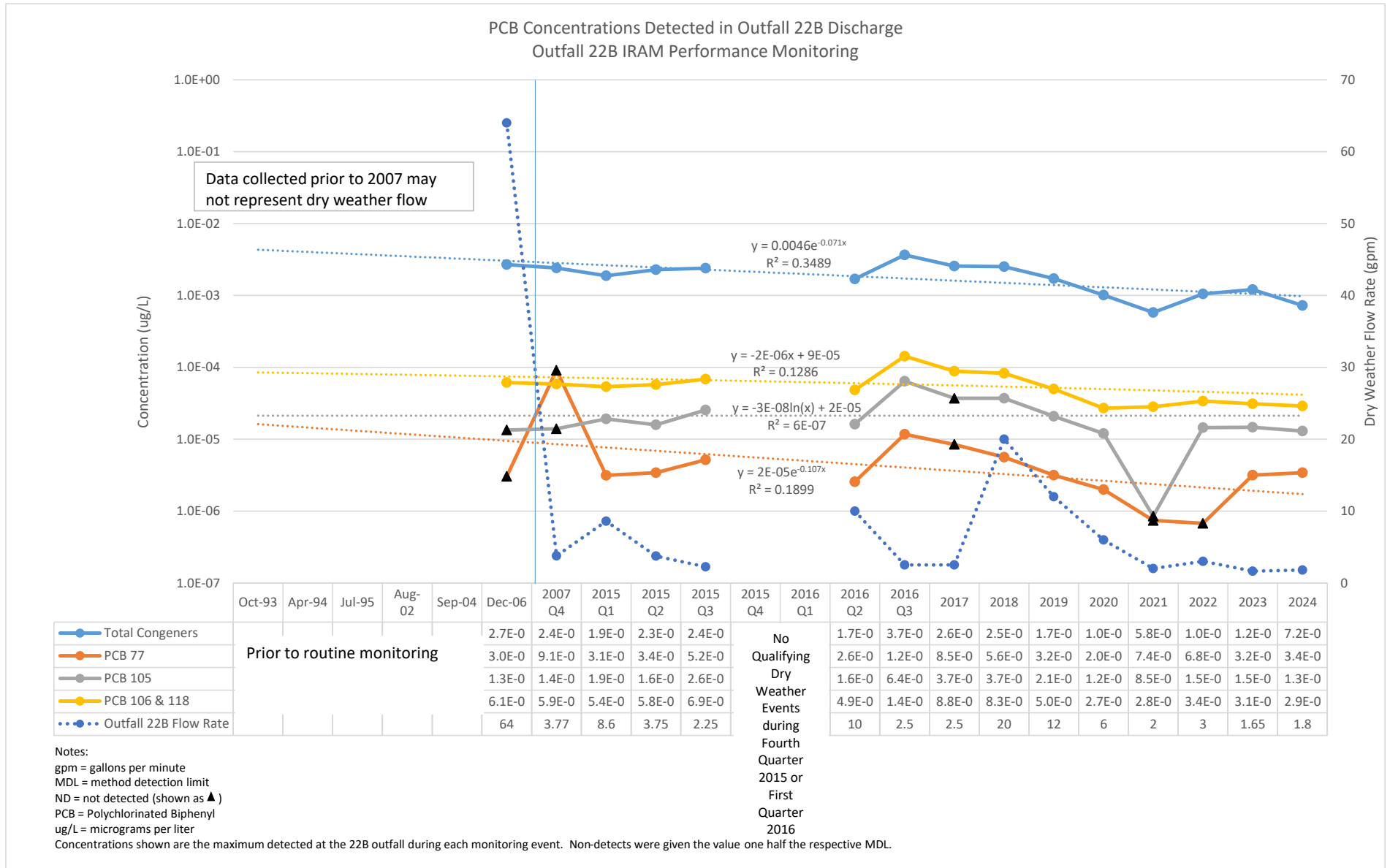
**Figure E-1**  
**Appendix E - Temporal Data Plots**  
**Outfall 22B IRAM Annual 2024 Report**



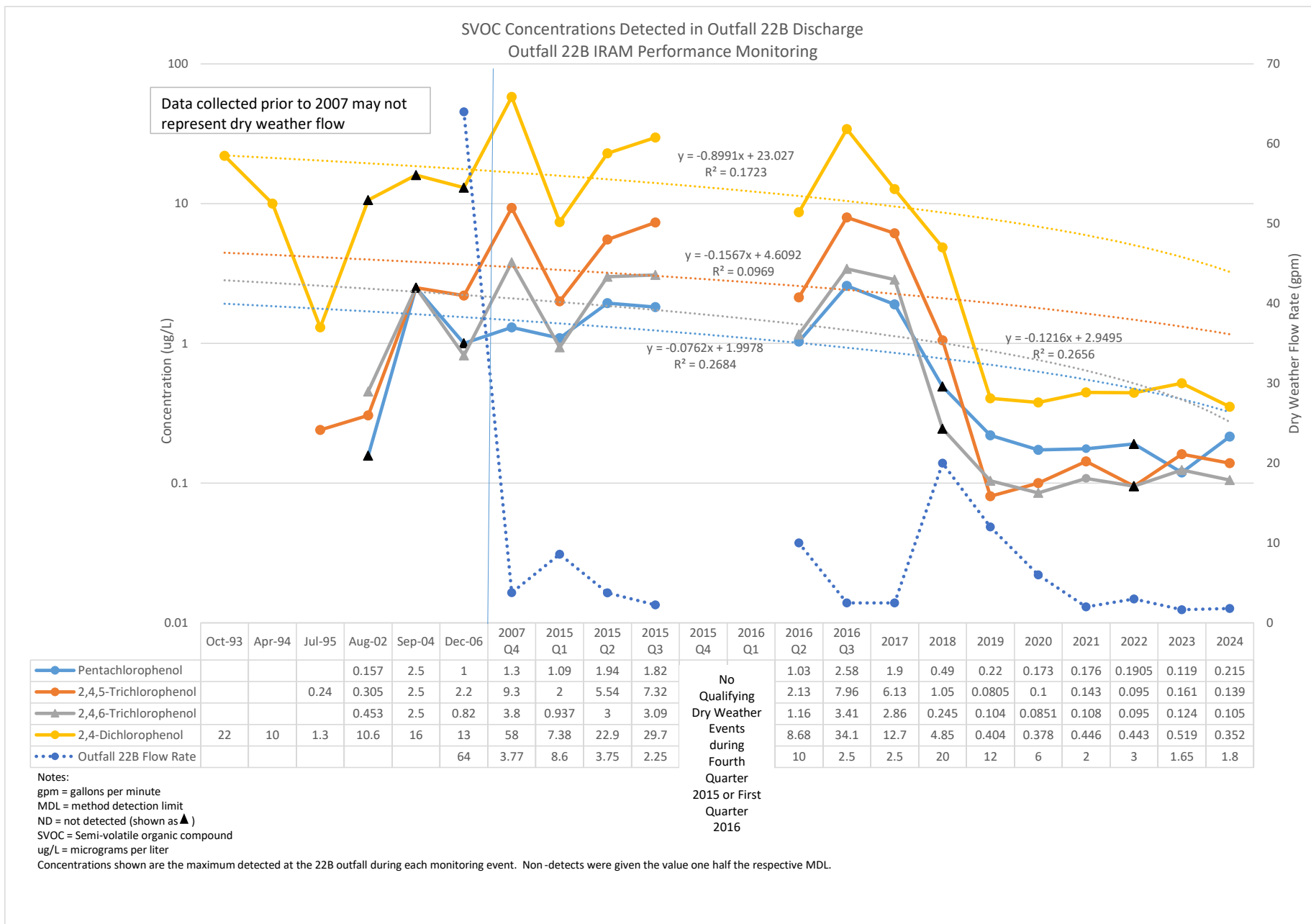
**Figure E-2**  
**Appendix E - Temporal Data Plots**  
**Outfall 22B IRAM Annual 2024 Report**



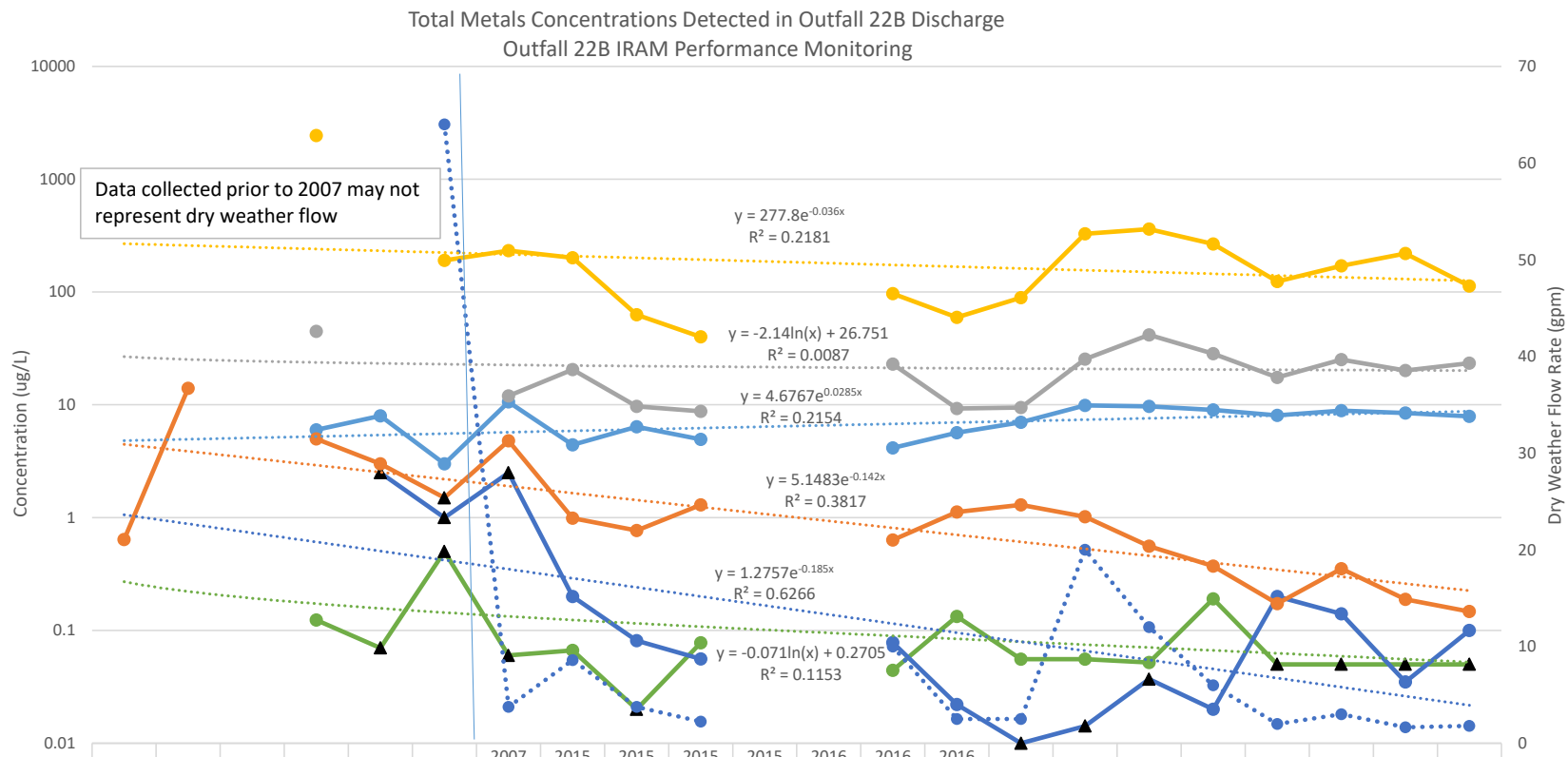
**Figure E-3**  
**Appendix E - Temporal Data Plots**  
**Outfall 22B IRAM Annual 2024 Report**



**Figure E-4**  
**Appendix E - Temporal Data Plots**  
**Outfall 22B IRAM Annual 2024 Report**



**Figure E-5**  
**Appendix E - Temporal Data Plots**  
**Outfall 22B IRAM Annual 2024 Report**



	Oct-93	Apr-94	Jul-95	Aug-02	Sep-04	Dec-06	2007 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2017	2018	2019	2020	2021	2022	2023	2024
Arsenic				6	8	3	10.6	4.41	6.4	4.94			4.16	5.67	6.99	9.87	9.71	9.03	8.07	8.9	8.48	7.89
Barium				44.7			12	20.5	9.67	8.76			23	9.29	9.47	25.4	41.7	28.4	17.5	25.2	20.1	23.4
Cadmium				0.124	0.07	0.5	0.06	0.0667	0.02	0.0778			0.0444	0.133	0.0556	0.0556	0.0519	0.19	0.05	0.05	0.05	0.05
Hexavalent Chromium					2.5	1	2.5	0.2	0.081	0.056			0.078	0.022	0.01	0.0142	0.037	0.02	0.2	0.14	0.035	0.1
Lead	0.64	14		5	3	1.5	4.8	0.989	0.767	1.3			0.633	1.12	1.3	1.02	0.559	0.372	0.173	0.353	0.189	0.147
Manganese				2440		191	233	201	63	40			96.6	59.6	89.3	328	361	266	124	171	219	113
Outfall 22B Flow Rate						64	3.77	8.6	3.75	2.25			10	2.5	2.5	20	12	6	2	3	1.65	1.8

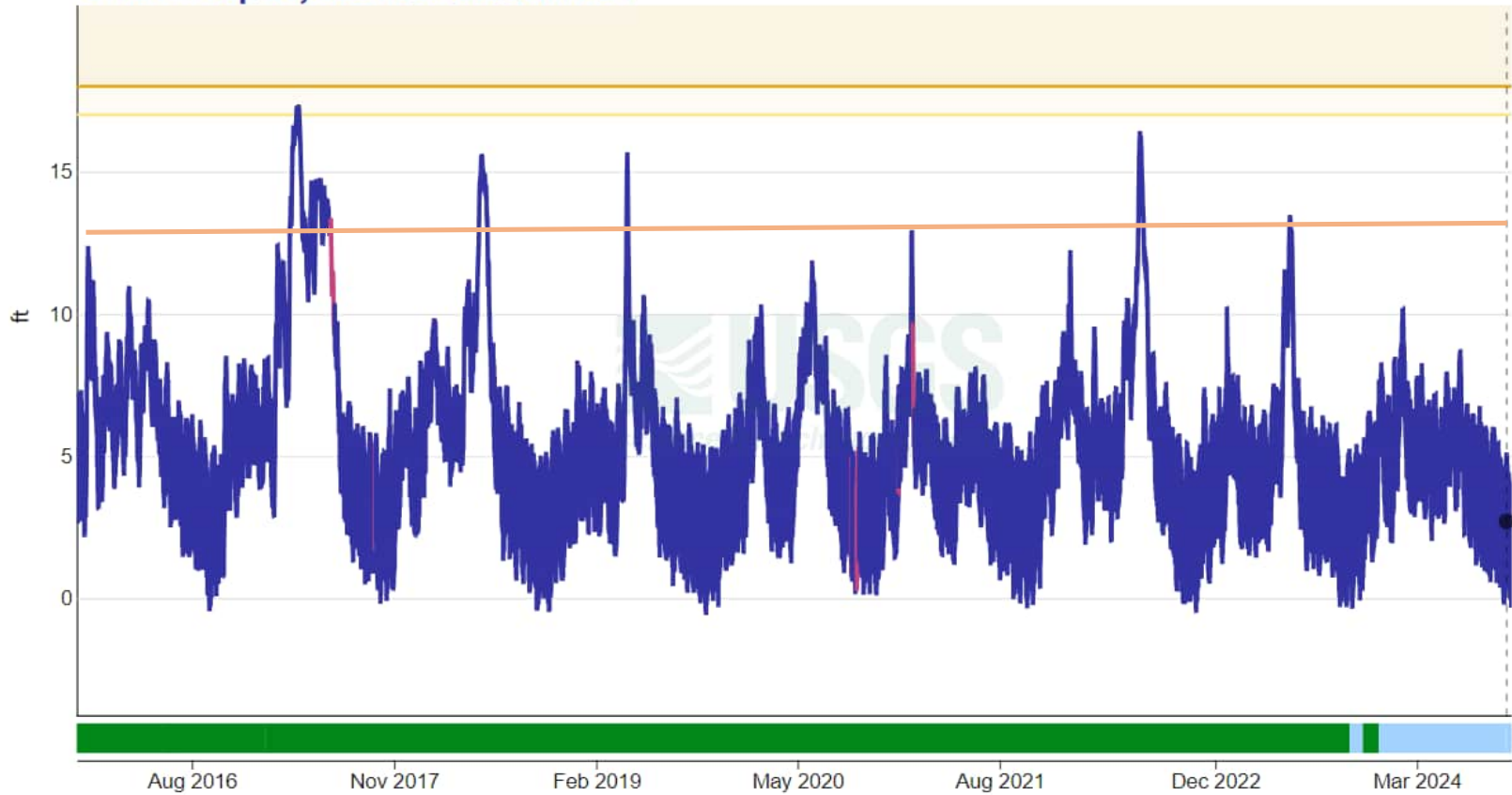
Notes:  
 gpm = gallons per minute  
 MDL = method detection limit  
 ND = not detected (shown as ▲)  
 ug/L = micrograms per liter  
 Concentrations shown are the maximum detected at the 22B outfall during each monitoring event. Non-detects were given the value one half the respective MDL.

# Willamette River at Portland, OR - 14211720

November 15, 2015 - October 1, 2024

Gage height, feet

2.70 ft - Sep 20, 2024 10:30:00 AM PDT



- Outfall 22B Invert Elevation (14.65 ft)
- USGS Gauge Minimum Operating Limit (-3 ft)
- ..... USGS Action Stage (17 ft)
- USGS Minor Flood Stage (18 ft)

Figure from OWRD (2024) for Monitoring location 14211720

November 2024

Mann-Kendall Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 10/11/2024 1:54:41 PM
From File	RP 2024 stats for Appendix E.xls
Full Precision	OFF
Confidence Coefficient	0.95
Level of Significance	0.05

Outfall 22B Flow Rate

General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	1.65
Maximum	20
Mean	5.701
Geometric Mean	4.143
Median	3.375
Standard Deviation	5.289
Coefficient of Variation	0.928

Mann-Kendall Test

M-K Test Value (S)	-28
Tabulated p-value	0.063
Standard Deviation of S	18.24
Standardized Value of S	-1.48
Approximate p-value	0.0694

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### OCDD

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	3.40E-06
Maximum	1.12E-04
Mean	3.26E-05
Geometric Mean	2.27E-05
Median	2.21E-05
Standard Deviation	3.03E-05
Coefficient of Variation	0.93

##### Mann-Kendall Test

M-K Test Value (S)	-39
Tabulated p-value	0.018
Standard Deviation of S	18.27
Standardized Value of S	-2.08
Approximate p-value	0.0187

Statistically significant evidence of a decreasing trend at the specified level of significance.

#### PCB 105

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	1.70E-06
Maximum	6.40E-05
Mean	2.18E-05
Geometric Mean	1.70E-05
Median	1.61E-05
Standard Deviation	1.55E-05
Coefficient of Variation	0.71

##### Mann-Kendall Test

M-K Test Value (S)	-21
Tabulated p-value	0.14
Standard Deviation of S	18.27
Standardized Value of S	-1.095
Approximate p-value	0.137

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

PCB 77

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	6.75E-07
Maximum	9.10E-05
Mean	1.04E-05
Geometric Mean	4.21E-06
Median	3.30E-06
Standard Deviation	2.34E-05
Coefficient of Variation	2.253

#### Mann-Kendall Test

M-K Test Value (S)	-29
Tabulated p-value	0.063
Standard Deviation of S	18.27
Standardized Value of S	-1.533
Approximate p-value	0.0627

Insufficient evidence to identify a significant trend at the specified level of significance.

PCB 106 & 118

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	2.70E-05
Maximum	1.43E-04
Mean	5.70E-05
Geometric Mean	5.04E-05
Median	5.19E-05
Standard Deviation	3.18E-05
Coefficient of Variation	0.558

#### Mann-Kendall Test

M-K Test Value (S)	-39
Tabulated p-value	0.018
Standard Deviation of S	18.27
Standardized Value of S	-2.08
Approximate p-value	0.0187

Statistically significant evidence of a decreasing trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### Total PCB Congeners

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	5.08E-04
Maximum	0.00366
Mean	0.00183
Geometric Mean	0.00161
Median	0.0018
Standard Deviation	8.72E-04
Coefficient of Variation	0.477

##### Mann-Kendall Test

M-K Test Value (S)	-41
Tabulated p-value	0.013
Standard Deviation of S	18.27
Standardized Value of S	-2.19
Approximate p-value	0.0143

Statistically significant evidence of a decreasing trend at the specified level of significance.

#### 4,4'-DDD

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	1.51E-04
Maximum	0.00146
Mean	4.46E-04
Geometric Mean	3.68E-04
Median	3.12E-04
Standard Deviation	3.42E-04
Coefficient of Variation	0.767

##### Mann-Kendall Test

M-K Test Value (S)	-19
Tabulated p-value	0.165
Standard Deviation of S	18.27
Standardized Value of S	-0.985
Approximate p-value	0.162

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

4,4'-DDE

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	7.99E-05
Maximum	4.34E-04
Mean	2.01E-04
Geometric Mean	1.80E-04
Median	1.79E-04
Standard Deviation	9.74E-05
Coefficient of Variation	0.486

#### Mann-Kendall Test

M-K Test Value (S)	-53
Tabulated p-value	0.002
Standard Deviation of S	18.27
Standardized Value of S	-2.847
Approximate p-value	0.00221

Statistically significant evidence of a decreasing trend at the specified level of significance.

alpha-BHC

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	3.02E-05
Maximum	0.204
Mean	0.0172
Geometric Mean	0.00175
Median	0.00215
Standard Deviation	0.0538
Coefficient of Variation	3.135

#### Mann-Kendall Test

M-K Test Value (S)	13
Tabulated p-value	0.259
Standard Deviation of S	18.27
Standardized Value of S	0.657
Approximate p-value	0.256

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

alpha-Chlordane

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	1.09E-04
Maximum	0.00166
Mean	3.51E-04
Geometric Mean	2.49E-04
Median	2.12E-04
Standard Deviation	4.06E-04
Coefficient of Variation	1.157

#### Mann-Kendall Test

M-K Test Value (S)	-13
Tabulated p-value	0.259
Standard Deviation of S	18.27
Standardized Value of S	-0.657
Approximate p-value	0.256

Insufficient evidence to identify a significant trend at the specified level of significance.

beta-BHC

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	3.57E-05
Maximum	0.12
Mean	0.012
Geometric Mean	0.00223
Median	0.00338
Standard Deviation	0.0313
Coefficient of Variation	2.597

#### Mann-Kendall Test

M-K Test Value (S)	23
Tabulated p-value	0.117
Standard Deviation of S	18.27
Standardized Value of S	1.204
Approximate p-value	0.114

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### Dieldrin

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	3.33E-04
Maximum	0.179
Mean	0.0194
Geometric Mean	0.00561
Median	0.00711
Standard Deviation	0.0462
Coefficient of Variation	2.385

##### Mann-Kendall Test

M-K Test Value (S)	15
Tabulated p-value	0.225
Standard Deviation of S	18.27
Standardized Value of S	0.766
Approximate p-value	0.222

Insufficient evidence to identify a significant trend at the specified level of significance.

#### Endrin

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	3.95E-05
Maximum	0.013
Mean	0.00157
Geometric Mean	5.96E-04
Median	6.93E-04
Standard Deviation	0.00333
Coefficient of Variation	2.115

##### Mann-Kendall Test

M-K Test Value (S)	5
Tabulated p-value	0.415
Standard Deviation of S	18.27
Standardized Value of S	0.219
Approximate p-value	0.413

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### gamma-BHC (Lindane)

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	1.22E-04
Maximum	0.306
Mean	0.0241
Geometric Mean	0.0016
Median	0.00199
Standard Deviation	0.0812
Coefficient of Variation	3.373

##### Mann-Kendall Test

M-K Test Value (S)	-3
Tabulated p-value	0.457
Standard Deviation of S	18.27
Standardized Value of S	-0.109
Approximate p-value	0.456

Insufficient evidence to identify a significant trend at the specified level of significance.

#### gamma-Chlordane

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	13
Number Values Reported (n)	13
Minimum	2.16E-05
Maximum	5.32E-04
Mean	2.10E-04
Geometric Mean	1.57E-04
Median	1.68E-04
Standard Deviation	1.52E-04
Coefficient of Variation	0.72

##### Mann-Kendall Test

M-K Test Value (S)	-10
Tabulated p-value	0.295
Standard Deviation of S	16.39
Standardized Value of S	-0.549
Approximate p-value	0.291

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

Hexachlorobenzene

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	4.05E-05
Maximum	4.00E-04
Mean	1.15E-04
Geometric Mean	9.63E-05
Median	8.92E-05
Standard Deviation	8.96E-05
Coefficient of Variation	0.781

#### Mann-Kendall Test

M-K Test Value (S)	-41
Tabulated p-value	0.013
Standard Deviation of S	18.27
Standardized Value of S	-2.19
Approximate p-value	0.0143

Statistically significant evidence of a decreasing trend at the specified level of significance.

trans-Heptachlor Epoxide

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	13
Number Values Reported (n)	14
Number Values Missing	1
Number Values Used	13
Minimum	1.99E-05
Maximum	2.19
Mean	0.24
Geometric Mean	0.0139
Median	0.0393
Standard Deviation	0.602
Coefficient of Variation	2.512

#### Mann-Kendall Test

M-K Test Value (S)	15
Tabulated p-value	0.218
Standard Deviation of S	16.36
Standardized Value of S	0.856
Approximate p-value	0.196

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

Arsenic (U)

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	4.16
Maximum	10.6
Mean	7.519
Geometric Mean	7.213
Median	8.05
Standard Deviation	2.113
Coefficient of Variation	0.281

#### Mann-Kendall Test

M-K Test Value (S)	17
Tabulated p-value	0.194
Standard Deviation of S	18.27
Standardized Value of S	0.876
Approximate p-value	0.191

Insufficient evidence to identify a significant trend at the specified level of significance.

Barium (U)

#### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	8.76
Maximum	41.7
Mean	19.62
Geometric Mean	17.57
Median	20.3
Standard Deviation	9.395
Coefficient of Variation	0.479

#### Mann-Kendall Test

M-K Test Value (S)	27
Tabulated p-value	0.079
Standard Deviation of S	18.27
Standardized Value of S	1.423
Approximate p-value	0.0773

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### Cadmium (U)

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	0.02
Maximum	0.19
Mean	0.0718
Geometric Mean	0.0625
Median	0.0556
Standard Deviation	0.0434
Coefficient of Variation	0.605

##### Mann-Kendall Test

M-K Test Value (S)	-9
Tabulated p-value	0.334
Standard Deviation of S	18.14
Standardized Value of S	-0.441
Approximate p-value	0.33

Insufficient evidence to identify a significant trend at the specified level of significance.

#### Manganese (U)

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	40
Maximum	361
Mean	171.7
Geometric Mean	142
Median	161.5
Standard Deviation	101.1
Coefficient of Variation	0.589

##### Mann-Kendall Test

M-K Test Value (S)	15
Tabulated p-value	0.225
Standard Deviation of S	18.27
Standardized Value of S	0.766
Approximate p-value	0.222

Insufficient evidence to identify a significant trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### 2,4,5-Trichlorophenol

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	0.0805
Maximum	9.3
Mean	3.011
Geometric Mean	0.897
Median	1.525
Standard Deviation	3.447
Coefficient of Variation	1.145

##### Mann-Kendall Test

M-K Test Value (S)	-45
Tabulated p-value	0.007
Standard Deviation of S	18.27
Standardized Value of S	-2.409
Approximate p-value	0.008

Statistically significant evidence of a decreasing trend at the specified level of significance.

#### 2,4,6-Trichlorophenol

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	0.0851
Maximum	3.8
Mean	1.367
Geometric Mean	0.524
Median	0.591
Standard Deviation	1.494
Coefficient of Variation	1.093

##### Mann-Kendall Test

M-K Test Value (S)	-49
Tabulated p-value	0.003
Standard Deviation of S	18.27
Standardized Value of S	-2.628
Approximate p-value	0.0043

Statistically significant evidence of a decreasing trend at the specified level of significance.

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### Mann-Kendall Trend Test Analysis

#### 2,4-Dichlorophenol

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	0.378
Maximum	58
Mean	12.92
Geometric Mean	3.468
Median	6.115
Standard Deviation	17.34
Coefficient of Variation	1.342

##### Mann-Kendall Test

M-K Test Value (S)	-51
Tabulated p-value	0.002
Standard Deviation of S	18.27
Standardized Value of S	-2.737
Approximate p-value	0.0031

Statistically significant evidence of a decreasing trend at the specified level of significance.

#### Pentachlorophenol

##### General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	14
Number Values Reported (n)	14
Minimum	0.119
Maximum	2.58
Mean	0.947
Geometric Mean	0.576
Median	0.76
Standard Deviation	0.84
Coefficient of Variation	0.887

##### Mann-Kendall Test

M-K Test Value (S)	-49
Tabulated p-value	0.003
Standard Deviation of S	18.27
Standardized Value of S	-2.628
Approximate p-value	0.0043

Statistically significant evidence of a decreasing trend at the specified level of significance.

