

GROUNDWATER MONITORING REPORT

RCRA CORRECTIVE ACTION PROGRAM BOEING RENTON FACILITY PROJECT # PS20203450.2022

Prepared for:

THE BOEING COMPANY

Seattle, Washington

NOVEMBER 30, 2022



GROUNDWATER MONITORING REPORT

RCRA CORRECTIVE ACTION PROGRAM
PROJECT LOCATION
PROJECT # PS20203450.2022

Prepared for:

The Boeing Company Seattle, Washington

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LIST OF ACRONYMS

μg/L micrograms per liter

AOC area of concern

Boeing The Boeing Company
CAP Cleanup Action Plan
cis-1,2-DCE cis 1,2-dichloroethene

CMP Compliance Monitoring Plan

COC constituent of concern

CPOC conditional point of compliance

CUL cleanup level

DO dissolved oxygen

Ecology Washington State Department of Ecology

EDR Engineering Design Report

ERD enhanced reductive dechlorination

Facility Boeing Renton facility
MA monitored attenuation

MCL Maximum contaminant level
MNA monitored natural attenuation

MTCA Model Toxics Control Act (Chapter 173-340 WAC)

Order Agreed Order No. 8191

ORP oxidation/reduction potential

PCE tetrachloroethene

RCRA Resource Conservation and Recovery Act

SVE soil vapor extraction

SWMU solid waste management unit

TCE trichloroethene

TOC total organic carbon

TPH total petroleum hydrocarbons

VC vinyl chloride

VOC volatile organic compound

1 INTRODUCTION

This report provides progress reporting in conformance with Section VII.B.1 of Agreed Order No. 8191 (Order) and summarizes cleanup actions and monitoring conducted during the dry season of 2022 at The Boeing Company (Boeing) Renton facility (the Facility) (Figure 1). This work is required under the Resource Conservation and Recovery Act (RCRA) Corrective Action Program being performed at the Facility. Corrective action activities are performed for those solid waste management units (SWMUs), areas of concern (AOCs), and other areas where cleanup actions are ongoing. Monitoring, cleanup activities, and reporting are being conducted as part of the final remedy implementation described in the Engineering Design Report (EDR) (AMEC, 2014).

As approved by the Washington State Department of Ecology (Ecology) in a letter dated July 31, 2020, progress reporting is conducted on a semiannual basis in conjunction with monitoring, operations, and maintenance activities conducted pursuant to the Order and as outlined in the EDR.

The following documents summarize ongoing compliance activities conducted at the Facility:

- The original monitoring plan presented in Appendix D of the EDR (AMEC, 2014) was superseded by the Compliance Monitoring Plan (CMP) (Amec Foster Wheeler, 2016a), which was subsequently revised in the Addendum to the CMP (CMP Addendum #1) (Amec Foster Wheeler, 2017).
- The groundwater monitoring program was further revised in the second Addendum to the CMP (CMP Addendum #2) (Wood, 2019), which removed selected areas or wells from the sampling program. These changes were approved by Ecology.
- Boeing submitted a third Addendum to the CMP (CMP Addendum #3) (CALIBRE, 2020) to Ecology on
 June 30, 2020. This addendum recommended further modifications to the groundwater monitoring program
 at the Facility and was approved by Ecology in July 2020.

Groundwater monitoring and cleanup actions are being conducted at the following areas (the ongoing remedies for each of these areas are noted in parentheses):

- SWMU-168: (monitored natural attenuation [MNA]);
- SWMU-172 and SWMU-174: (bioremediation, and monitored attenuation [MA]);
- Building 4-78/79 SWMU/AOC Group: (bioremediation and MA; SVE has been discontinued, and Ecology approved the SVE system decommissioning in 2018);
- Former Fuel Farm AOC Group: (MNA);
- AOC-003: (MA);
- AOC-004: (MA);
- AOC-060: (bioremediation and MA);
- AOC-090: (MA); and
- Apron A: (bioremediation and MA).

The background and investigation history for each affected unit or group of units is described in the Cleanup Action Plan (CAP) (AMEC, 2012) and/or EDR (AMEC, 2014).

Although Apron A was not included in the CAP or EDR, this report includes monitoring results for Apron A. Semiannual monitoring began in Apron A starting in the fourth quarter 2016 (Amec Foster Wheeler, 2016b).

The goals for cleanup of groundwater at the Facility, as described in the CAP, include protection of groundwater for drinking water beneficial use at all areas of the site, and demonstration of protection of surface water beneficial uses at the conditional points of compliance (CPOCs) for each SWMU and AOC. Cleanup goals and comparison with specific criteria are discussed in this report for each SWMU and AOC. Concentrations for protection of groundwater for beneficial use for each constituent of concern (COC) are based on site-specific cleanup levels (CULs) specified in the CAP. Ecology has made multiple clarifications and changes to the CULs in the Model Toxics Control Act regulations since the draft CAP (AMEC, 2012) was prepared that are relevant to the

Facility CULs. Boeing submitted proposed updates to the CULs (CALIBRE, 2021) to Ecology that are currently under review. The measured COC concentrations in groundwater presented in this report are compared with the CULs specified in the CAP.

This semiannual report:

- Describes work completed during the reporting period;
- Describes any deviations from corrective action tasks required under the Order and/or CAP;
- Describes revisions to the corrective action schedule;
- Describes work projected to occur during the next semiannual sampling event, including any planned deviation from the CAP;
- Discusses remediation operation and maintenance activities conducted at the Facility during the reporting period;
- Documents monitoring activities conducted during the reporting period;
- Describes and discusses trends in monitoring data;
- Assesses remediation at each area; and
- Assesses attainment of CULs at the CPOCs.

This report presents information based on monitoring activities conducted during the dry season 2022 for the period from May 1 through October 31, 2022. In accordance with the requirements of the Order, corrective action activities were conducted at the Facility as described in this report.

1.1 WORK COMPLETED IN THE DRY SEASON OF 2022

The following work was completed during the dry season of 2022 (the period from May 1 through October 31):

- Boeing submitted the wet season 2022 Groundwater Monitoring Report to Ecology and City of Renton on May 27, 2022.
- CALIBRE completed the more recent bioremediation injections in June 2022. Areas injected were SWMU172/174, Building 4-78/79 (including injections for enhanced reductive dechlorination [ERD] and benzene treatment), AOC-060, AOC-090, Apron A, and AOC-003. See Section 3 for details.
- The soil vapor extraction (SVE) system in SWMU-172 and SWMU-174 operated throughout the dry season until October 24, 2022. The system was shut down temporarily, as approved by Ecology (Email communication to N. Garson, September 20, 2022). Boeing is retaining all equipment and infrastructure pending future discussions with Ecology regarding permanent shutdown and removal.
- CALIBRE installed monitoring wells GW-031S-R and GW-244S-R to replace wells GW0315 and GW244S, which were decommissioned during excavation activities in 2021.
- Landau Associates completed the 2022 site-wide dry season sampling from August 15 through 19, 2022.

1.2 DEVIATIONS FROM REQUIRED TASKS

No deviations from tasks required in the Order occurred during this activity period.

1.3 DEVIATIONS FROM CAP

No deviations from the CAP occurred during this activity period.

1.4 SCHEDULE OF MONITORING

Ecology approved the modifications to the monitoring plan in CMP Addendum #3 (CALIBRE, 2020) on July 31, 2020, changing to a sitewide semiannual sampling program with sampling events to occur during the wet and dry seasons (in February and August, respectively). The revised monitoring plan is detailed in Appendix A, Table A-1. This revised sampling schedule began in August 2020 and will continue through 2023.

1.5 WORK PROJECTED FOR THE NEXT REPORTING PERIOD

The following work is projected for the upcoming 2023 wet season (November 1, 2022, to April 30, 2023):

- Surveying of the replacement wells in the Building 4-78/79 area and the Apron A area is planned for the next reporting period.
- Apron R construction schedule delays were incurred due to a recent concrete workers strike. Based on the most current schedule provided by the Boeing Facilities Group, ongoing Apron R construction activities at the Boeing Renton site are planned for completion in Summer 2023. Selected monitoring wells in the area of construction at Apron R were decommissioned in November 2019 and October 2022; four additional wells will be decommissioned in December 2022 or January 2023. Upon completion of the Apron R construction work, estimated for mid 2023, the Apron R wells that were a part of the CMP Addendum #1 sampling program area (AOC-001 and -002) will be replaced and Boeing will evaluate if continued ERD treatment is needed for VOCs in groundwater in AOC 001/002. The Apron R well abandonment memo (Wood, 2021) provides more details and a comprehensive list of the plan of wells to be decommissioned and/or replaced.
- A technical memorandum recommending decommissioning of wells that are no longer required for investigative, bioremediation, or compliance monitoring purposes was submitted to Ecology on January 5, 2022 (CALIBRE, 2022). Ecology approved the well decommissioning plan on January 18, 2022, and the decommissioning activities began in May 2022. Most wells approved for decommissioning within the Boeing Facility were closed by October 2022 (Phases 1 and 2 with 57 of 89 wells decommissioned). Wells in the City Park and on the Renton Airport side of the Cedar River have not yet been closed due to delays completing the City of Renton License Agreement. Phase 3, the remaining wells, are planned to be decommissioned in the Spring of 2023.
- Boeing recommended shutdown of the SVE system at SWMU 172/174 based on the shutdown criteria in the EDR and CMP, Ecology approved shutdown of the SVE system subject to the results of sub-slab vapor verification sampling and other criteria. The sub-slab sampling is planned for Winter 2023, subject to Ecology's approval of the work plan.
- Based on evaluation of the biannual monitoring data (see Table 3-1 in Appendix E), the following areas will be considered for continued ERD treatment of VOCs in groundwater: SWMU-172/174, Building 4-78/4-79 SWMU/AOC Group, AOC-060, and Apron A. The following areas, AOC-003 and AOC-090, will transition from the ERD program to Monitored Attenuation in accordance with the CAP.
- Reporting will be completed in accordance with the Order, CAP, EDR, and changes approved by Ecology, including those modifications proposed in CMP Addendum #3 (CALIBRE, 2020).

2 GROUNDWATER SAMPLING METHODOLOGY

Groundwater was sampled and analyzed as described in Appendix A. These procedures are in accordance with the methods specified in the CMP (Amec Foster Wheeler, 2016a) and CMP Addendum #3 (CALIBRE, 2020). Table A-1 summarizes the current groundwater monitoring program and COCs specified in the CAP and revised in CMP Addendum #1 (Amec Foster Wheeler, 2017), CMP Addendum #2 (Wood, 2019) and CMP Addendum #3 (CALIBRE, 2020) for all Facility corrective action areas. Table A-2 summarizes the current groundwater monitoring program for the corrective action areas that include MNA or MA as part of the cleanup remedy specified in the CAP. Tables A-1 and A-2 also specify monitoring requirements for Apron A, which was not included in the CAP. Any changes or exceptions to the sampling or analytical methods cited in Appendix A during the event is described in the applicable subsections in Section 3. The field data sheets, which document the groundwater sample collection and field parameter monitoring for each well sampled during this event, are included in Appendix B.

The analytical methods, field duplicate, lab duplicate, and matrix spike/matrix spike duplicate frequencies are specified in the Quality Assurance Project Plan (Amec Foster Wheeler, 2016c). The full analytical reports provided by the laboratory are provided separately on a secure online storage application, OneDrive. The data validation memoranda are included in Appendix C.

3 CORRECTIVE ACTION ACTIVITIES COMPLETED DURING THE REPORTING PERIOD

This section describes the corrective action activities conducted at the Facility during the dry season of 2022. Operation of the SVE system at SWMU-172/174 continued during the dry season, as discussed in Section 3.2.1.2. Compliance monitoring was conducted in accordance with the CMP (Amec Foster Wheeler, 2016a) and CMP Addendum #3 (CALIBRE, 2020).

3.1 SWMU-168

This section describes corrective action activities conducted at this SWMU. Figure 2 shows the locations of the groundwater monitoring wells at SWMU-168 for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and the groundwater elevation at the remaining well measured during this monitoring event. The cleanup remedy for SWMU-168 is MNA; therefore, cleanup activities consist of monitoring only.

3.1.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period.

3.1.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored in this group and the COC remained the same.

3.1.3 WATER LEVELS

The groundwater elevation measured during this groundwater monitoring event at SWMU 168 is summarized in Table 1 and shown on Figure 2. Groundwater elevation contours are not shown since only one well, GW230I, is currently monitored in this group. The general direction of groundwater flow depicted on Figure 2 is based on historical information.

3.1.4 GROUNDWATER MONITORING RESULTS

Results for primary geochemical indicators are presented in Table 2; results for the single SWMU-168 COC, vinyl chloride, are presented in Table 3; and COC results for sampling events in recent years are presented in Appendix D.

3.1.4.1 Natural Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 2. Data from the CPOC area well indicate that conditions are conducive to natural attenuation of vinyl chloride (VC) in this SWMU. The pH value measured was slightly acidic at 6.22. The CPOC well showed reducing conditions with low dissolved oxygen (DO) and a low but positive oxidation/reduction potential (ORP) reading. Reducing conditions are present in well GW230I, indicating conditions favorable for dechlorination of volatile organic compounds (VOCs).

3.1.4.2 COC Results for Source Area

Groundwater samples were not collected from the source area well, GW228S, for SWMU-168 per CMP Addendum #3 (CALIBRE, 2020).

3.1.4.3 COC Results for Conditional Point of Compliance Area

Table 3 lists the analytical result for the SWMU-168 area. The concentration of VC in the groundwater from CPOC area well GW230I was above the CUL of 0.11 micrograms per liter (μ g/L), at 0.539 μ g/L; this detection is below the maximum contaminant level (MCL) for VC (2.0 μ g/L) but above Model Toxics Control Act (MTCA) Method C criterion for potable water supply (0.29 μ g/L). The MTCA criteria for potable water supply values were proposed in the five-year review cleanup memo, which is currently pending Ecology response. Historical trends for VC in GW230I are shown in Appendix D and depicted on Figure 3. VC concentrations show an apparent seasonal pattern with higher concentrations in the dry season; the recent dry season concentration increased since the last monitoring event, in keeping with the trend.

3.2 SWMU-172 AND SWMU-174

This section describes corrective action activities conducted at these two SWMUs. The cleanup remedy for SWMU-172 and SWMU-174 is a combination of SVE, bioremediation, and MA. Figure 4 shows the layout of the groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and the remediation system for these SWMUs.

3.2.1 CLEANUP ACTION ACTIVITIES

3.2.1.1 Installation/Construction Activities

No installation/construction activities were conducted for these SWMUs during this monitoring period.

3.2.1.2 Soil Vapor Extraction and Bioremediation Operations

The SVE system operated throughout the dry season of 2022 until October 24, 2022. The system was shut down temporarily, as approved by Ecology (email to N. Garson, September 20, 2022). The last bioremediation injection was completed in June 2022, including ERD treatments. Details of system operations are included in the SVE operations and monitoring summary prepared by CALIBRE and included as Appendix E. All of the SVE system equipment and infrastructure has been retained pending future discussions with Ecology regarding permanent shutdown and removal.

3.2.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored in this group and the COCs remained the same.

3.2.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at SWMU-172 and SWMU-174 are summarized in Table 4 and shown on Figure 4. The groundwater elevation data show a flow direction generally to the southeast, toward the Cedar River Waterway; however, the sheet pile wall to the east of this area prevents a direct groundwater connection to the river, as depicted by the contours.

3.2.4 GROUNDWATER MONITORING RESULTS

Groundwater at this area is monitored following the analysis protocol presented in Tables A-1 and A-2 in Appendix A. Results for primary geochemical indicators are presented in Table 5; results for the SWMU 172 and SWMU-174 area COCs are presented in Table 6.

3.2.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 5. Specific conductivity ranged between 220.1 and 781.0 microsiemens per centimeter across the area, which are normal observed values for the groundwater in this SWMU, with one exception: the specific conductivity in GW152S was 4,841.0 microsiemens per centimeter, which is significantly higher than past sampling events. pH was slightly acidic across SWMU-172 and SWMU-174. ORP was positive in well GW152S, and negative for all other wells; DO and ORP results indicate reducing conditions in the area and other natural attenuation parameter results were generally uniform across this area. Total organic carbon (TOC) concentrations ranged from 1.52 to 2,389 milligrams per liter for all SWMU-172 and SWMU-174 monitoring wells.

3.2.4.2 COC Results for Source and Downgradient Plume Areas

Table 6 lists the analytical results for the SWMU-172 and SWMU-174 COCs. Historical trend plots for tetrachloroethene (PCE), trichloroethene (TCE), VC, and cis 1,2 dichloroethene (cis-1,2-DCE) in source area wells GW152S and GW153S are shown on Figure 5, in downgradient plume area wells GW172S and GW173S on Figure 6, and\in downgradient plume area well GW226S on Figure 7. Groundwater flows generally from the vicinity of source area well GW152S to downgradient plume area well GW172S; groundwater from source area well GW153S is also expected to generally flow toward the downgradient plume area. PCE and TCE are the chlorinated solvents that were used at the Facility, and cis 1,2-DCE and VC are breakdown products resulting from biodegradation processes.

As shown in Figures 5 through 7, the concentrations of VOCs in groundwater from source area wells and downgradient plume area wells have generally remained stable or decreased over time.

Arsenic was detected above the CUL in the groundwater from all source area and downgradient plume area wells in this SWMU area. As shown on Figure 8, the arsenic concentrations in groundwater from source and downgradient plume area wells have generally remained stable over the past two years, with the exception of source area well GW152S. The observed range of arsenic in groundwater is within the naturally occurring background arsenic range reported by Ecology for Washington State (Ecology 2022).

Source area groundwater CUL exceedances (Table 6) consisted of:

- GW152S:cis-1,2-DCE, PCE, TCE, VC, arsenic, copper, and lead; and
- GW153S: cis-1,2-DCE, TCE, VC, and arsenic.

Downgradient plume area groundwater CUL exceedances (Table 6) consisted of:

- GW172S: cis-1,2-DCE, arsenic, and lead;
- GW173S: TCE and VC, and arsenic; and
- GW226S: VC and arsenic.

For both the source area and downgradient plume areas the detected concentrations of cis-1,2-DCE, PCE, and TCE are below both the MCLs and the MTCA criteria for potable water supply. For VC, the detected concentrations are below the MCL but are above the MTCA criteria for potable water supply.

3.2.4.3 COC Results for Conditional Point of Compliance Area

As shown in Table 6, cis-1,2-DCE was detected above the CUL in the groundwater from all CPOC area wells; TCE was detected above the CUL in the groundwater from GW235I; and VC was detected above the CUL in the groundwater from GW232S and GW234S. VC was also detected in GW235I, but below the CUL. Trend charts for cis-

1,2-DCE, TCE, and VC for all CPOC area wells are presented in Figure 9. Figure 9 shows the COCs in the CPOC area have increased since the previous sampling event, keeping in trend with the historical patterns of higher concentrations detected during the dry season event.

Arsenic was detected in the groundwater from all CPOC area wells except for GW235I, but only exceeded the CUL in the groundwater from well GW232S (Table 6) Lead and copper were detected in GW234S and 236S below the CUL, and lead was detected below the CUL in GW232S. Figure 10 shows arsenic, copper, and lead concentration trends in groundwater from the CPOC area wells since the beginning of compliance monitoring. As shown in Figure 10, these COCs have remained within a stable range or decreased since the last monitoring event.

3.3 BUILDING 4-78/79 SWMU/AOC GROUP

This section describes corrective action activities conducted at the Building 4-78/79 SWMU/AOC Group. The cleanup remedy for this SMWU/AOC group is bioremediation and MA as well as excavation of soils contaminated with total petroleum hydrocarbons (TPH); discontinuation of SVE was approved by Ecology on November 1, 2018, and the system was decommissioned during the first quarter of 2019. Figure 11 shows the location of the September 2021 TPH source area soil excavation, groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020), extraction wells, decommissioned wells, horizontal SVE wells, and bioremediation injection wells for this area.

3.3.1 CLEANUP ACTION ACTIVITIES

3.3.1.1 Installation/Construction Activities

Monitoring wells GW031S and GW244S were replaced during the dry season 2022. Surveying of the replacement wells is planned for the wet season 2023. Details on the replacement wells are included in Appendix E. No other installation or construction activities were conducted during this season.

3.3.1.2 Soil Vapor Extraction and Bioremediation Activities

SVE operations were discontinued in late 2018; anaerobic biodegradation of benzene by nitrate/sulfate injections is the current remediation method. Certain bioremediation injection wells are still sampled to monitor the status of COCs. Trend charts for cis-1,2-DCE and benzene in nitrate/sulfate injection wells are presented in Figure 12, and trend charts for TCE and VC in the injection wells are presented in Figure 13.

A nitrate/sulfate solution was injected in this area for benzene and ERD treatment in June 2022. More details are presented (Appendix E). These two wells are not regularly monitored; therefore, trend charts have not been created to include their results.

3.3.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored in this group and the COCs remained the same.

3.3.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at Building 4-78/79 SWMU/AOC group are summarized in Table 7 and shown on Figure 11. The observed direction of groundwater flow from the source area during August was generally westerly toward Building 4-79 and a piezometric low area.

3.3.4 GROUNDWATER MONITORING RESULTS

Groundwater at this area is monitored following the analysis protocol presented in Tables A-1 and A-2 in Appendix A. Results for primary geochemical indicators are presented in Table 8; results for Building 4-78/79 SWMU/AOC Group COCs are presented in Table 9.

3.3.4.1 Natural Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 8. In general, source area and CPOC area wells had moderate to low levels of DO and high specific conductivity. The pH was slightly acidic, ranging between 5.87 and 6.41 standard units in all wells. The source area wells showed reducing conditions favorable for dechlorination of VOCs. Results for the other primary geochemical indicators were generally consistent in all wells. TOC concentrations in source area wells ranged from 4.65 to 14.78 mg/L.

3.3.4.2 COC Results for Source Area

Table 9 lists the analytical results for Building 4-78/79 SWMU/AOC Group COCs. Figures 14 and 15 are trend charts showing historical trends for COCs for the source area wells.

VC was detected above the CUL in all the source area wells, and benzene was also detected above the CUL in source area well GW033S (and the duplicate sample). In the source area wells the detected concentrations of cis-1,2-DCE, and TCE are below both the MCLs and the MTCA criteria for potable water supply. For VC in the source area wells the detected concentrations are below the MCL but are above the MTCA criteria for potable water supply. TPH as gasoline was not detected above the CUL in any source area wells, which shows a significant improvement from the last dry season's TPH level likely attributed to the removal of TPH-contaminated soil which took place September 9 and 10, 2021.

Figure 14 shows trends for VOCs in source area wells GW031S and GW033S. COCs in GW033S appear to be stabilizing over the past four monitoring events.

Figure 15 shows trends for VOCs in source area wells GW034S and GW244S. Concentrations of COCs in GW034S appear generally stable, with all COCs except for VC below laboratory detection limits for the past ten monitoring events. Concentrations of COCs in GW244S have remained below the CUL (except VC) and appear to be stabilizing over the last three monitoring events for which samples were collected from this location (samples were not collected during wet season 2022).

3.3.4.3 COC Results for Conditional Point of Compliance Area

As shown in Table 6, cis-1,2-DCE and TCE were detected above their respective CULs in groundwater from GW143S. All other CPOC area results were below laboratory detection limits. Trend charts for CPOC area wells are shown in Figures 16 through 18.

Figure 16 shows that benzene and cis-1,2-DCE have been sporadically detected above the CUL in CPOC area wells GW237S and GW143S, respectively. However, benzene was not detected in any CPOC area wells during this monitoring period, and cis-1,2-DCE was detected only in GW143S. This improvement is also likely due to the removal of TPH-contaminated soil during the dry season of 2021.

Figure 17 shows that TCE has not been detected in the CPOC area for four consecutive events, with the exception of GW143S during this sampling event. VC was only detected in GW237S over the last six monitoring events and was not detected in any of the CPOC area wells during this event. Figure 18 shows that TPH as gasoline was detected only in GW237S since monitoring began and has been steadily decreasing, with no detections above the CUL during the last six monitoring events.

In the downgradient CPOC wells the measured concentrations of benzene, cis-1,2-DCE, TCE, and VC are below both the MCLs and MTCA criteria for potable water supply.

3.4 FORMER FUEL FARM AOC GROUP

This section describes corrective action activities conducted at the Former Fuel Farm AOC Group. Figure 19 shows the layout of the groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020). The final remedy for the Former Fuel Farm is MNA.

3.4.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period.

3.4.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored and the COCs remained the same for this group.

3.4.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at the Former Fuel Farm AOC group are summarized in Table 10 and shown on Figure 19. Groundwater elevation contours are not shown since only three wells are monitored in this group and data are too limited to produce accurate contours. Groundwater flow direction to the northeast is based on historical information from this AOC.

3.4.4 GROUNDWATER MONITORING RESULTS

Results for primary geochemical indicators are presented in Table 11; results for the Former Fuel Farm AOC Group COCs are presented in Table 12.

3.4.4.1 Monitored Natural Attenuation Indicators

The geochemical indicator results are presented in Table 11. Results in Table 11 indicate that geochemical conditions are generally consistent throughout the Former Fuel Farm AOC Group. Specific conductivity was moderate for groundwater. Slightly acidic pH was observed in CPOC area wells ranging from 5.35 to 6.27 standard units. Low to moderate DO and low ORP was observed in all monitored wells. The geochemical indicators indicate natural attenuation of the COCs for the Former Fuel Farm AOC Group is occurring.

3.4.4.2 COC Results for Source Area

The single source area well for this group was removed from the monitoring plan with Ecology's acceptance of CMP Addendum #3 (CALIBRE, 2020).

3.4.4.3 COC Results for Conditional Point of Compliance Area

Table 12 lists the analytical results for the Former Fuel Farm AOC group COCs. Figure 20 shows trend data for CPOC area wells GW211S, GW221S, and GW224S. Figure 20 shows that the dry season event results for these wells are consistent with the historical monitoring results since late 2013. Samples were analyzed for TPH as diesel (, as motor oil, and Jet A. TPH as diesel was detected above the CUL in GW221S and GW224S (and its duplicate sample). TPH as motor oil was not detected in any of the CPOC area wells. Jet A was detected above the CUL in GW221S, GW224S, and its associated duplicate sample. None of the COCs were detected in GW211S. It is worth noting that both TPH-D and Jet-A have been below the CUL in GW211S for the previous nine monitoring events. COC concentrations in GW221S remain in a stable range. Concentrations in GW224S appear to be decreasing steadily, with annual fluctuations in both TPH as diesel and Jet A.

3.5 AOC-001 AND AOC-002

Apron R near AOC-001 and AOC-002 is under construction. Therefore, no monitoring was conducted for this area during this monitoring period. Monitoring wells in these areas were decommissioned on November 25, 2019, and October 2022 (three wells). Four additional wells are scheduled to be decommissioned in December 2022 or January 2023. Monitoring wells are planned to be reinstalled after construction is complete, which is currently anticipated for late 2023. Groundwater monitoring activities are anticipated to resume in 2024 after the wells are replaced.

3.6 AOC-003

This section describes corrective action activities conducted at AOC-003. The cleanup remedy for this AOC is bioremediation and MA. Figure 21 shows the location of groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and bioremediation wells, as well as the groundwater elevations measured during this monitoring event.

3.6.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period. A substrate injection for ERD treatment was implemented in June 2022.

3.6.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored and COCs remained the same for this AOC.

3.6.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at AOC-003 are summarized in Table 13 and shown on Figure 21. Groundwater elevations measured during this event are consistent with historical groundwater flow patterns to the northwest.

3.6.4 GROUNDWATER MONITORING RESULTS

Results for geochemical indicators are presented in Table 14; results for the AOC-003 COCs are presented in Table 15.

3.6.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 14. Results in Table 14 indicate that geochemical conditions are generally consistent throughout this AOC. High specific conductivity and low DO were observed during this monitoring event, and pH readings were near neutral for all wells in this area. Based on the geochemical indicators, reducing conditions are occurring in this area.

3.6.4.2 COC Results for Source and downgradient Plume Areas

Table 15 lists the analytical results for the AOC-003 COCs. Samples from wells in this group were analyzed for VC. The concentrations in both the source area and downgradient plume area wells were above the CUL; the VC levels detected are below the MCL but remain above the MTCA criteria for potable water supply. The result for the source area well is qualified as estimated (see Appendix C for more information). Figure 22 shows the historical trends for VC in source area well GW249S and downgradient plume area well GW188S.

3.6.4.3 COC Results for Conditional Point of Compliance Area

VC was detected above the CUL in both CPOC area wells (Table 15). Figure 23 shows the historical trends for VC in CPOC area wells GW247S and GW248I. VC concentrations in GW248I appear to be increasing slightly (0.144 μ g/L since the previous monitoring event) with annual fluctuations. The VC levels detected in CPOC wells (all below 1 μ g/L) are below the MCL but remain above the MTCA criteria for potable water supply

3.7 AOC-004

This section describes corrective action activities conducted at AOC-004. The cleanup remedy for this AOC is bioremediation and MA. Figure 24 shows the location of the groundwater monitoring well for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and bioremediation wells, as well as the groundwater elevation measured during this monitoring event.

3.7.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period.

3.7.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period and COCs remained the same for this AOC.

3.7.3 WATER LEVELS

The groundwater elevation measured during this groundwater monitoring event at AOC-004 is summarized in Table 16 and shown on Figure 24. Groundwater contouring and flow direction cannot be determined from the single groundwater elevation measurement, but a general direction of groundwater flow based on historical information is shown on Figure 24.

3.7.4 GROUNDWATER MONITORING RESULTS

Results for geochemical indicators are presented in Table 17; results for the AOC-004 COCs are presented in Table 18.

3.7.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 17. The pH reading was near neutral at 6.82 standard units. Moderate specific conductivity, DO, and ORP readings were observed during this monitoring event.

3.7.4.2 COC Results for Source Area

Table 18 lists the analytical results for the AOC-004 COCs. The source area well in this group was analyzed for lead and the result was slightly above the CUL of 1 μ g/L, at 1.31 μ g/L. Figure 25 shows the historical trend chart for lead in GW250S.

3.8 AOC-060

This section describes corrective action activities conducted at AOC-060. The cleanup remedy for this AOC is bioremediation and MA. Figure 26 shows the location of groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and bioremediation wells, as well as the groundwater elevations measured during this monitoring event.

3.8.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period. substrate injection for ERD treatment was implemented in June 2022.

3.8.2 COMPLIANCE MONITORING PLAN DEVIATIONS

No deviations from the CMP occurred for this area during this monitoring period. The wells monitored and COCs remained the same for this AOC.

3.8.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at AOC-060 are summarized in Table 19 and shown on Figure 26. Groundwater flow direction is generally to the west southwest, toward the Cedar River Waterway.

3.8.4 GROUNDWATER MONITORING RESULTS

Results for geochemical indicators are presented in Table 20; results for the AOC-060 COCs are presented in Table 21.

3.8.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 20. Results during this monitoring event showed high specific conductivity and low DO. The pH ranged between near neutral and somewhat acidic in this AOC, between 4.62 and 6.29 standard units. TOC results from all wells varied greatly, with a range from 4.74 to 10,260 mg/L.

3.8.4.2 COC Results for Source and Downgradient Plume Areas

Table 21 lists the analytical results for the AOC-060 COCs. Wells in this group were analyzed for cis-1,2-DCE, TCE, and VC. Groundwater from all source area and downgradient plume area wells exceeded the CULs for all three COCs. In the source and downgradient plume area wells the detected concentrations of cis-1,2-DCE, and TCE are below both the MCLs and the MTCA criteria for potable water supply. For VC in the source and downgradient plume area wells the detected concentrations are below the MCL in all wells except GW147S which exceeds the MCL at 3.39 μ g/L, and all samples are above the MTCA criteria for potable water supply.

The results for GW012S, GW014S, and its duplicate were qualified as estimated (details in Appendix C). Figure 27 shows historical trends for COCs in source area well GW009S, which have been stable since monitoring began. Figures 27 and 28 show historical trends for COCs in downgradient plume area wells. COC results in GW014S have been generally stable since monitoring began, but GW012S and GW147S exhibit more fluctuation in COC concentrations, possibly due to seasonal groundwater flow variations. TCE in GW012S appears to have increased during this monitoring period, departing from its stabilization over the past several monitoring events, but still within the historical range for TCE concentrations in this well.

3.8.4.3 COC Results for Conditional Point of Compliance Area

As shown in the Table 21, groundwater from both CPOC area wells exceeded the CUL for cis-1,2-DCE and TCE. VC was detected in groundwater from both CPOC area wells but did not exceed the CUL. In the downgradient CPOC wells the measured concentrations of cis-1,2-DCE, TCE, and VC are below both the MCLs and MTCA criteria for potable water supply. Figure 29 shows historical trends for COCs in CPOC area wells GW150S and GW253I. Considerable fluctuation is still present for cis-1,2-DCE and VC, but TCE appears to be stabilizing in both CPOC area wells.

3.9 AOC-090

This section describes corrective action activities conducted at AOC-090. The cleanup remedy for this AOC is bioremediation and MA. Figure 30 shows the location of groundwater monitoring wells for which sampling is required under CMP Addendum #3 (CALIBRE, 2020) and bioremediation wells, as well as the groundwater elevations measured during this monitoring event.

3.9.1 CLEANUP ACTION ACTIVITIES

No installation/construction activities were conducted for this cleanup action area during this monitoring period. substrate injection for ERD treatment was implemented in June 2022.

3.9.2 COMPLIANCE MONITORING PLAN DEVIATIONS

During this sampling event, the water levels at GW010S and GW011D were inadvertently not measured. This is not a deviation from the CMP; however, it is a gap in data that is normally collected. No other deviations occurred during this monitoring period. The wells monitored and COCs remained the same for this AOC.

3.9.3 WATER LEVELS

The groundwater elevations measured during this groundwater monitoring event at AOC-090 are summarized in Table 22 and shown on Figure 30. Groundwater flow direction is to the west, toward the Cedar River Waterway; however, the sheet pile wall to the west of this area prevents a direct groundwater connection to the river, as depicted by the contours.

3.9.4 GROUNDWATER MONITORING RESULTS

Results for geochemical indicators are presented in Table 23; results for the AOC-090 COCs are presented in Table 24.

3.9.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 23. Results in Table 23 indicate that geochemical conditions are consistent throughout this AOC. The pH was slightly acidic in this AOC, with all wells ranging between 5.25 and 5.87 standard units. Specific conductivity was moderate to high across the wells in this area and DO was relatively low. TOC was measured at 21.83 mg/L in source area well GW189S. The trend plot for TOC in GW189S shows TOC has decreased significantly since the last substrate injection in 2017 (Figure 31).

3.9.4.2 COC Results for Source and Downgradient Plume Areas

Table 24 lists the analytical results for the AOC-090 COCs. Groundwater from source area well GW189S exceeded the CUL for TCE, VC, TPH as diesel, and TPH as motor oil. Historical trends for GW189S show chlorinated VOCs have been trending downward since the start of monitoring, with seasonal fluctuations at a high during this monitoring event (Figure 31). Downgradient plume area well GW176S exceeded the CUL for VC. For the source area and downgradient plume area wells the measured concentrations of PCE and TCE are below both the MCLs and MTCA criteria for potable water supply. VC is below the MCL in all wells (source area, downgradient plume area, and CPOC wells) but remains above the MTCA criteria for potable water supply.

3.9.4.3 COC Results for Conditional Point of Compliance Area

Groundwater from all CPOC area wells exceeded the CUL for VC (Table 24).

3.10 APRON A AREA

This section describes corrective action activities conducted at the Apron A area. The cleanup remedy proposed for the Apron A area is bioremediation and MA. Figure 32 shows the locations of the groundwater monitoring wells in the Apron A area for which sampling is required under CMP Addendum #3 (CALIBRE, 2020).

3.10.1 CLEANUP ACTION ACTIVITIES

No construction or operations work was conducted in the Apron A area during this monitoring period. A substrate injection for ERD treatment was implemented in June 2022.

3.10.2 COMPLIANCE MONITORING PLAN DEVIATIONS

During this sampling event, the water levels at GW263S and GW264S were inadvertently not measured. This is not a deviation from the CMP; however, it is a gap in data that is normally collected. No other deviations occurred during this monitoring period. The wells monitored in this group and COCs remained the same.

3.10.3 WATER LEVELS

The depth to groundwater measurements during this groundwater monitoring event at Apron A are summarized in Table 25 and shown on Figure 32. Groundwater elevations are not available because the top of casing elevations were not surveyed. Surveying of wells in this area is planned for the wet season 2023. Groundwater flow direction is estimated based on historical information and an expected flow east toward the Cedar River Waterway.

3.10.4 GROUNDWATER MONITORING RESULTS

Results for primary geochemical indicators presented in Table 26; results for the Apron A area COCs are presented in Table 27.

3.10.4.1 Monitored Attenuation/Geochemical Indicators

The geochemical indicator results are presented in Table 26. Observations included high specific conductivity, moderate DO, somewhat acidic pH, and a low ORP reading. TOC was detected in GW264S and its associated field duplicate at concentrations over 2,000 mg/L, which is high and is associated with the substrate injection in this area.

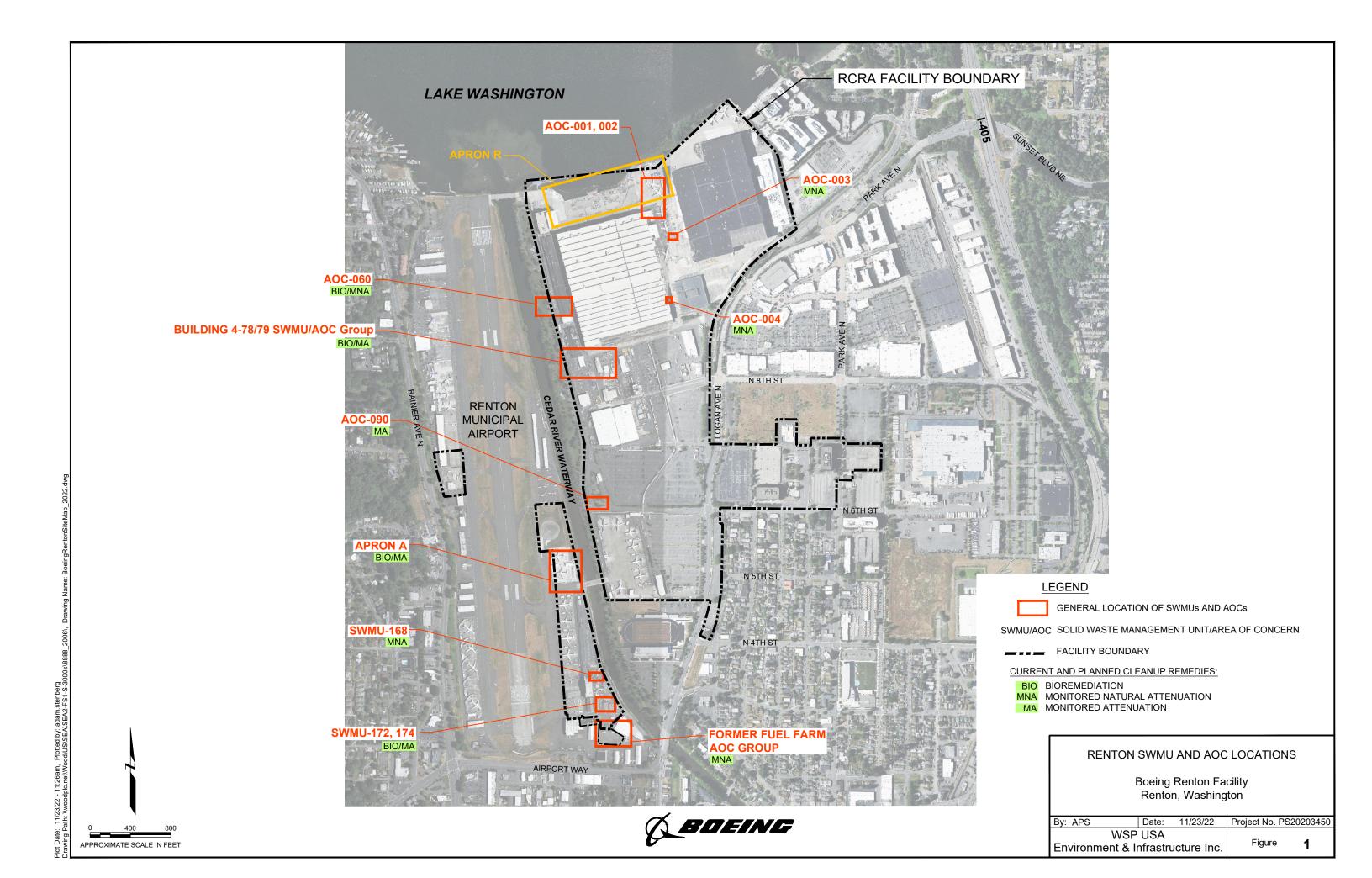
3.10.4.2 COC Results

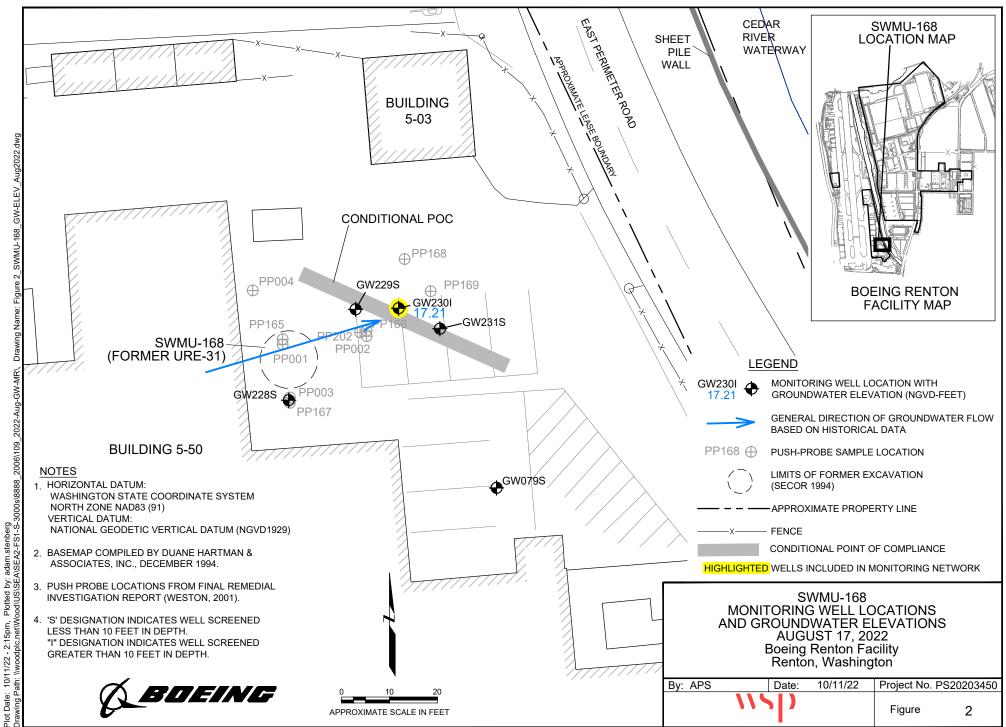
Table 27 lists the analytical results for the Apron A area COCs. Analytes from Apron A samples do not have established CULs because they were added to the monitoring program after the CMP (Amec Foster Wheeler, 2016a) was in place. Additional monitoring of the soil and groundwater in Apron A was completed in 2016 and included installation of the monitoring wells in this area (Amec Foster Wheeler, 2016b). Apron A COCs (cis-1,2-DCE and VC) for GW264S are presented in Table 27. Cis-1,2-DCE was not detected in the groundwater from GW264S or its associated field duplicate sample. VC was detected in the groundwater from monitoring well GW264S and its associated field duplicate sample at concentrations of 1.41 μ g/L and 1.57 μ g/L, respectively. These values are below the MCL (2.0 μ g/L) but exceed the MTCA Method C criteria for potable groundwater (0.29 μ g/L).. The trend plot for COCs in GW264S is shown in Figure 33. Cis-1,2-DCE has not been detected for four consecutive monitoring periods, but VC still appears to fluctuate.

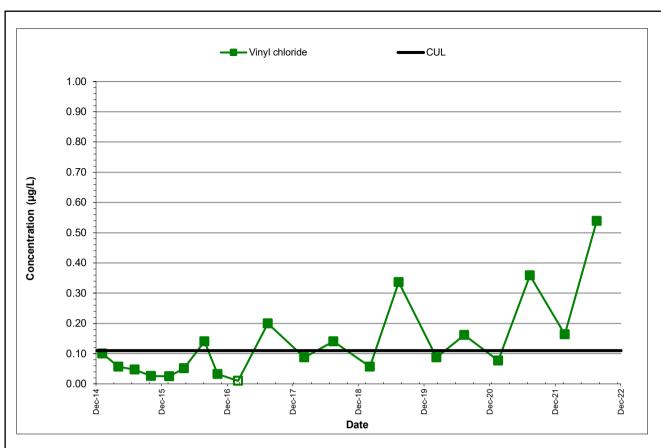
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FIGURES



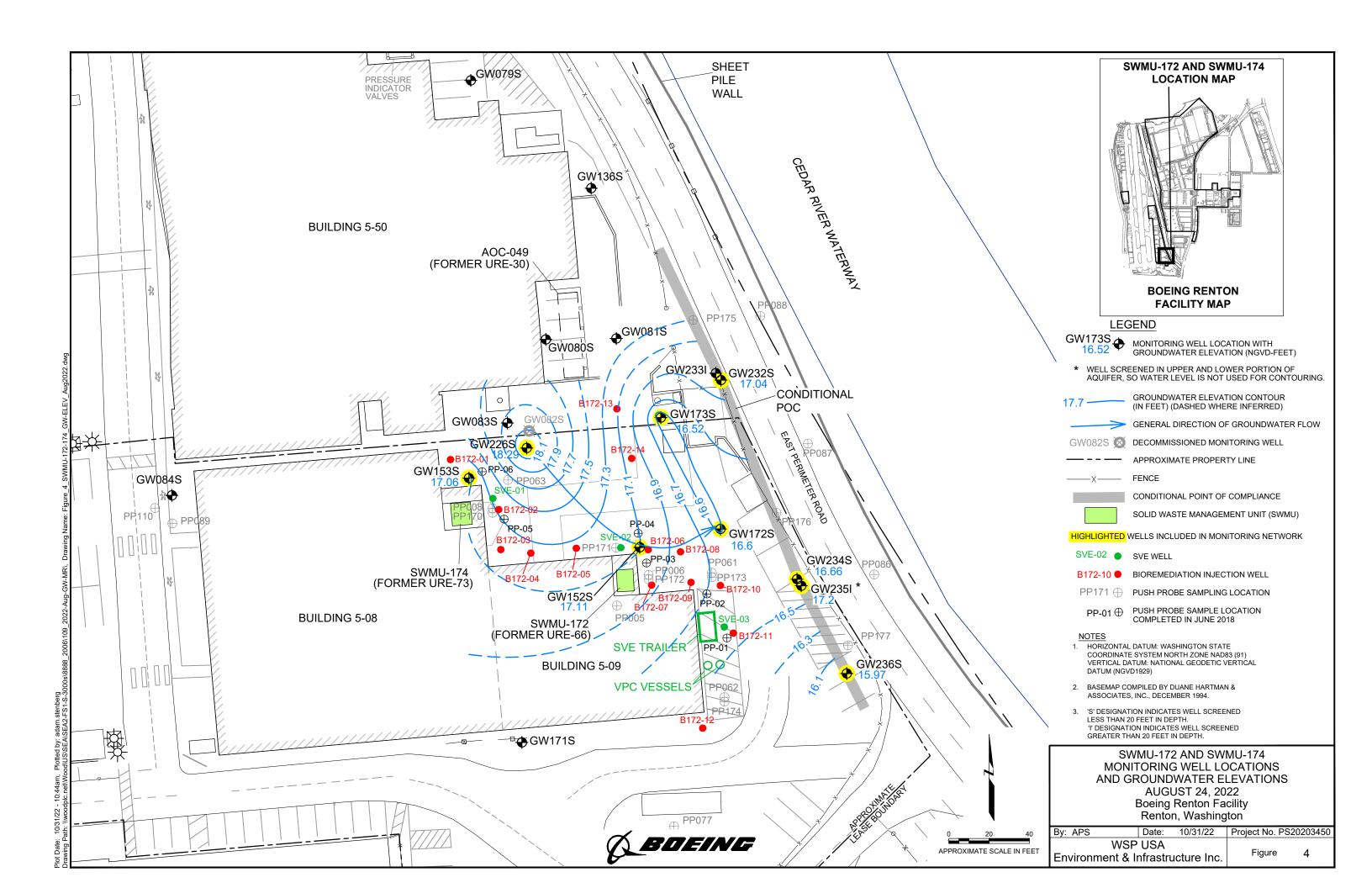


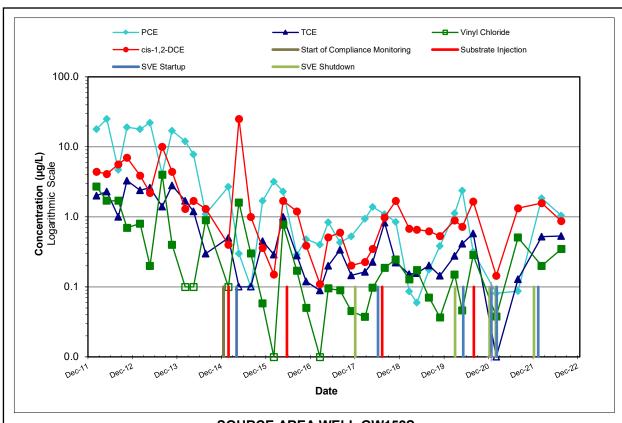


Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

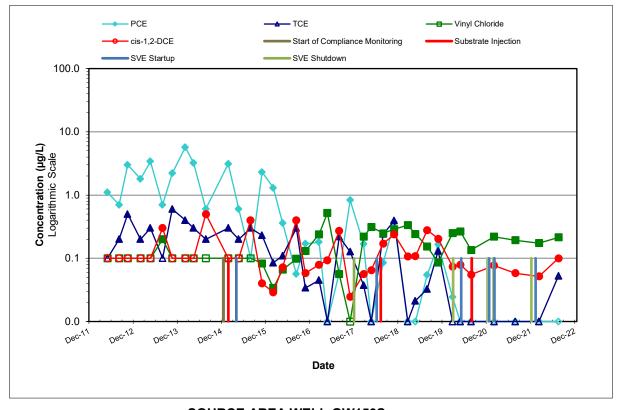
CPOC AREA WELL GW230I







SOURCE AREA WELL GW152S



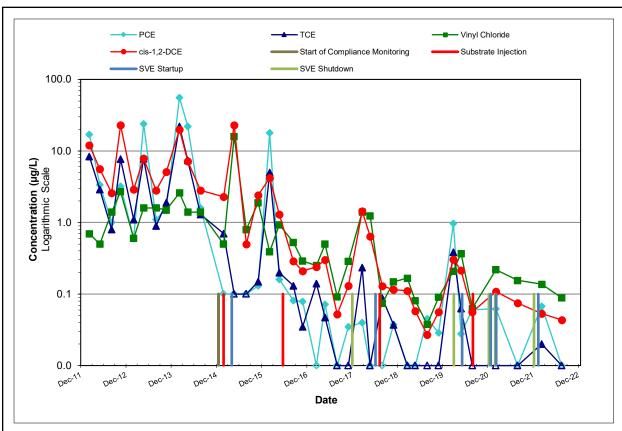
SOURCE AREA WELL GW153S

Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

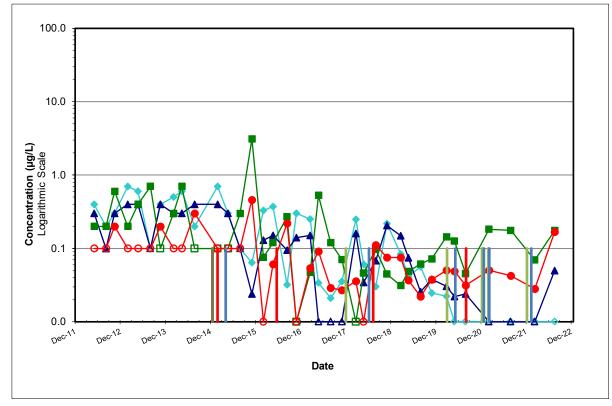


SWMU-172 AND SWMU-174 TREND PLOTS FOR SOURCE AREA WELLS GW152S AND GW153S Boeing Renton Facility Renton, Washington Project No. PS20203450

Figure 5



DOWNGRADIENT PLUME AREA WELL GW172S



DOWNGRADIENT PLUME AREA WELL GW173S

Note: Non-detected values shown at one-half the reporting limit and with an open symbol



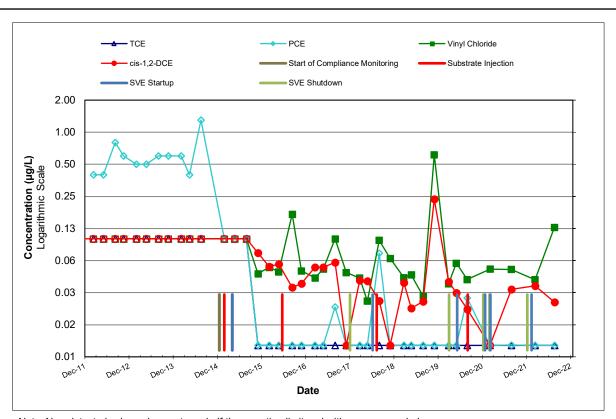
SWMU-172 AND SWMU-174 TREND PLOTS FOR DOWNGRADIENT PLUME AREA WELLS GW172S AND GW173S

Boeing Renton Facility

Renton, Washington

Project No. PS20203450

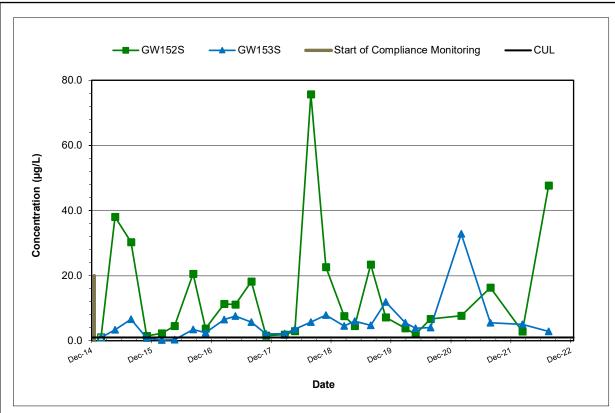
Figure 6



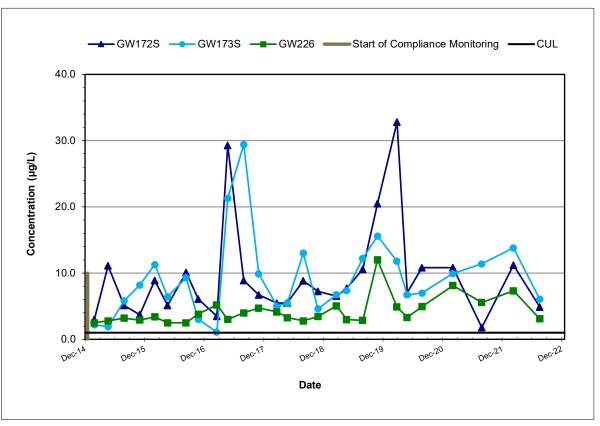
 $\underline{\text{Note}}\text{: Non-detected values shown at one-half the reporting limit and with an open symbol.}$

DOWNGRADIENT PLUME AREA WELL GW226S





TOTAL ARSENIC IN SOURCE AREA WELLS



TOTAL ARSENIC IN DOWNGRADIENT PLUME AREA WELLS

Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



SWMU-172 AND SWMU-174 TREND PLOTS FOR ARSENIC IN SELECT SOURCE AREA AND DOWNGRADIENT PLUME AREA WELLS START OF COMPLIANE MONITORING TO PRESENT Boeing Renton Facility, Renton, Washington

Project No. PS20203450

Figure 8

START OF COMPLIANCE MONITORING TO PRESENT

Boeing Renton Facility, Renton, Washington

Figure

- GW234S

- GW235I

- GW232S

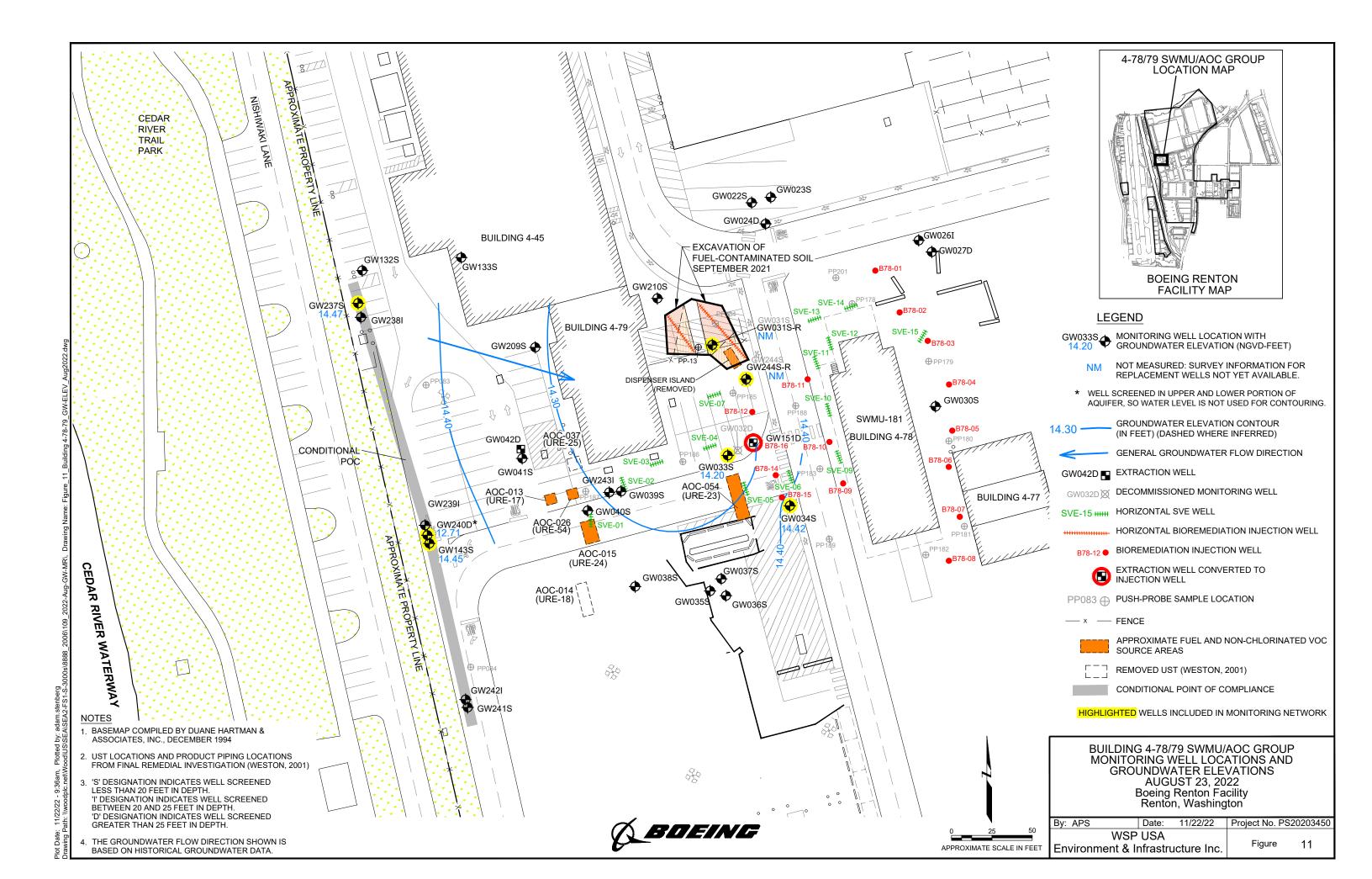
P:\8888 - Boeing Renton\9.0 Field & Lab Data Mgmt\Grapher and Excel Figure Files\excel\2022 Update\Figure 5 to 10_SWMU_172-174.xisx

START OF COMPLIANCE MONITORING TO PRESENT

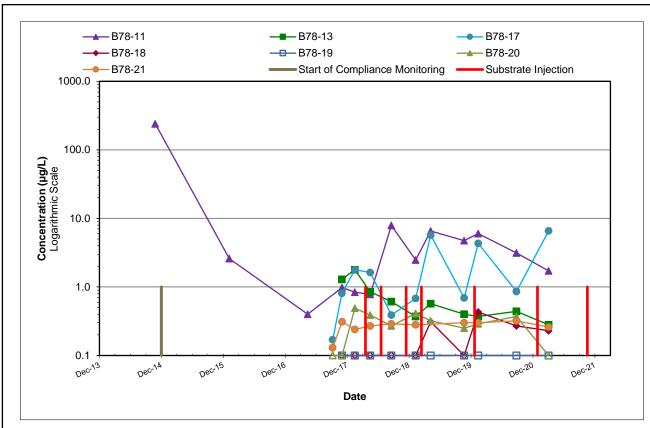
Boeing Renton Facility, Renton, Washington

Figure

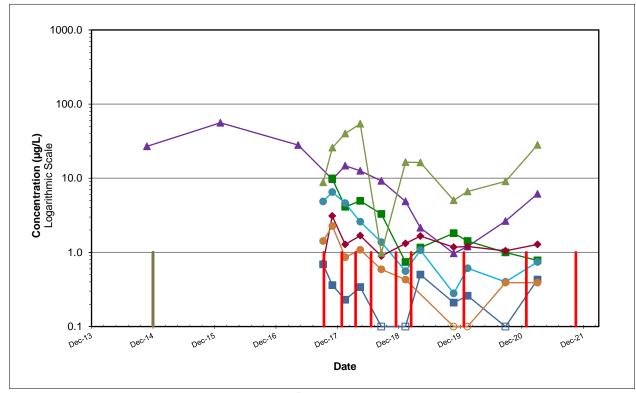
10







cis-1,2-Dichloroethene



Benzene

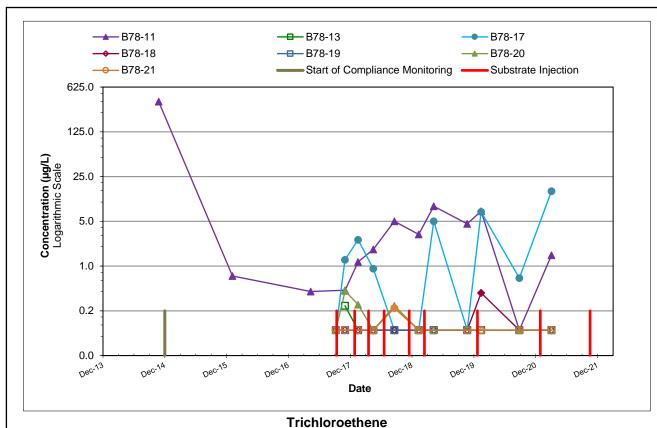
Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

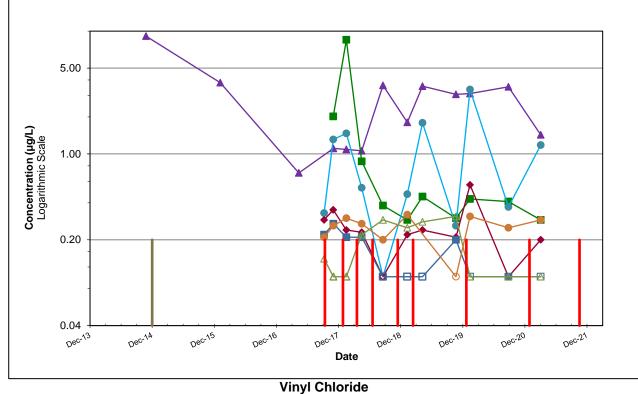


BUILDING 4-78/79 SWMU/AOC GROUP TREND PLOTS FOR CIS-1,2-DICHLOROETHENE AND BENZENE IN INJECTION WELLS Boeing Renton Facility Renton, Washington

Project No. PS20203450

> Figure 12



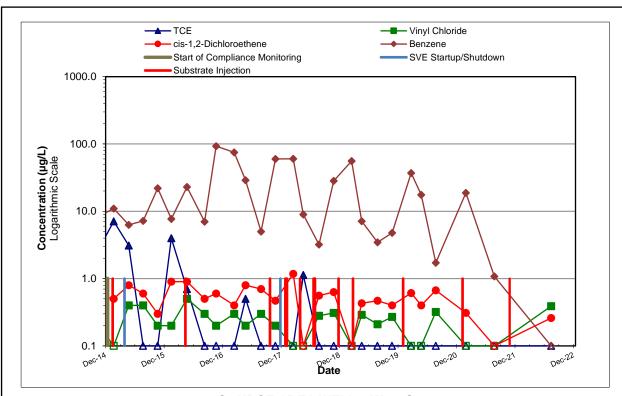


Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

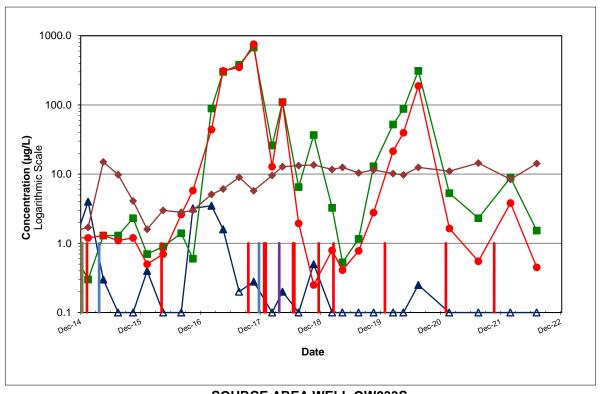


BUILDING 4-78/79 SWMU/AOC GROUP TREND PLOTS FOR TRICHLOROETHENE AND VINYL CHLORIDE IN INJECTION WELLS **Boeing Renton Facility** Renton, Washington

Project No. PS20203450



SOURCE AREA WELL GW031S

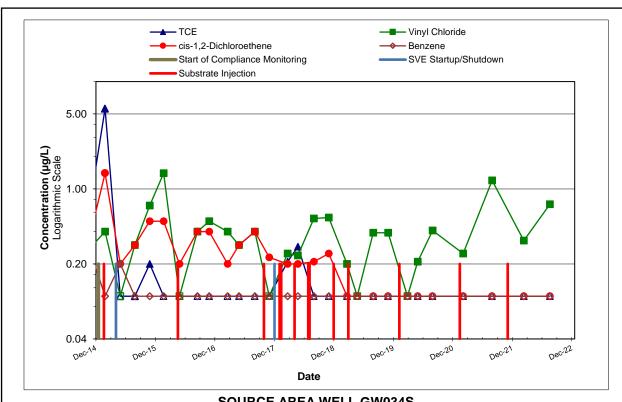


SOURCE AREA WELL GW033S

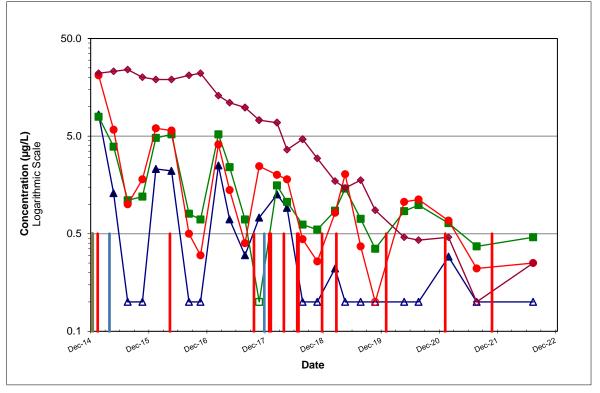
Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



BUILDING 4-78/79 SWMU/AOC GROUP TREND PLOTS FOR SOURCE AREA WELLS GW031S AND GW033S Boeing Renton Facility Renton, Washington Project No. PS20203450



SOURCE AREA WELL GW034S



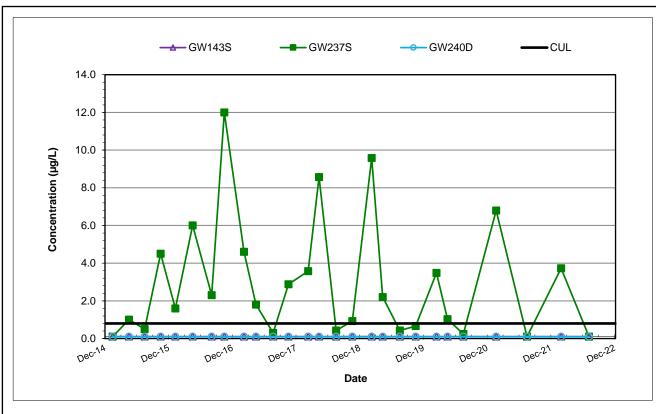
SOURCE AREA WELL GW244S

Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

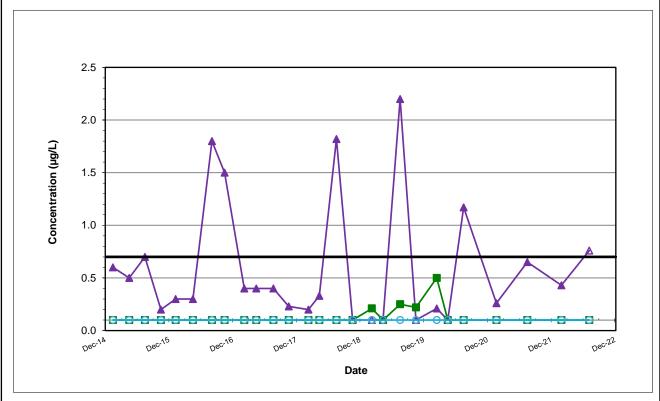


BLDG 4-78/79 SWMU/AOC GROUP TREND PLOTS FOR SOURCE AREA WELLS GW034S AND GW244S **Boeing Renton Facility**

Project No. PS20203450







cis-1,2-Dichloroethene

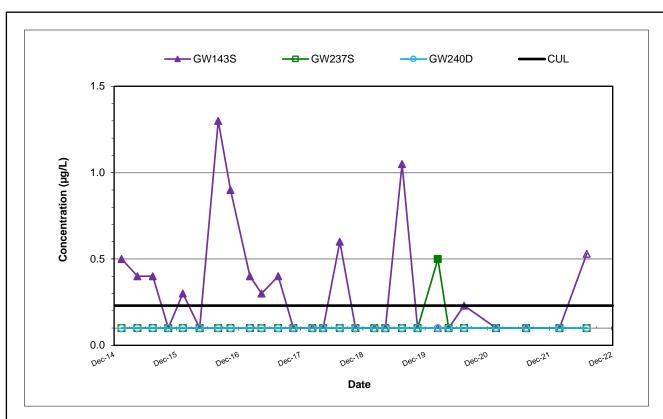
Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



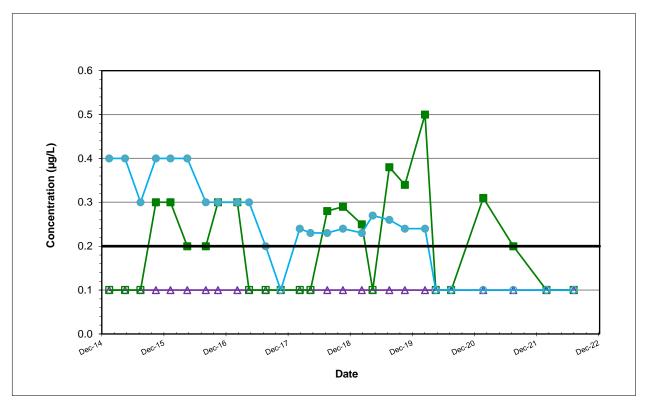
BUILDING 4-78/79 SWMU/AOC GROUP TREND PLOTS FOR BENZENE AND CIS-1,2-DICHLOROETHENE IN CPOC AREA WELLS Boeing Renton Facility Renton, Washington

Project No. PS20203450





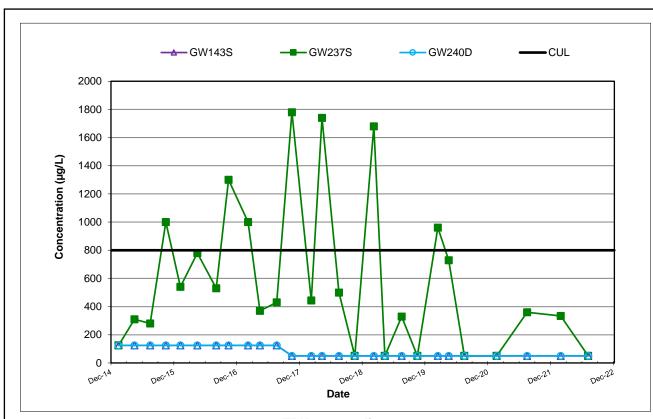
Trichloroethene



Vinyl Chloride

 $\underline{\text{Note}}\text{: Non-detected values shown at one-half the reporting limit and with an open symbol.}$

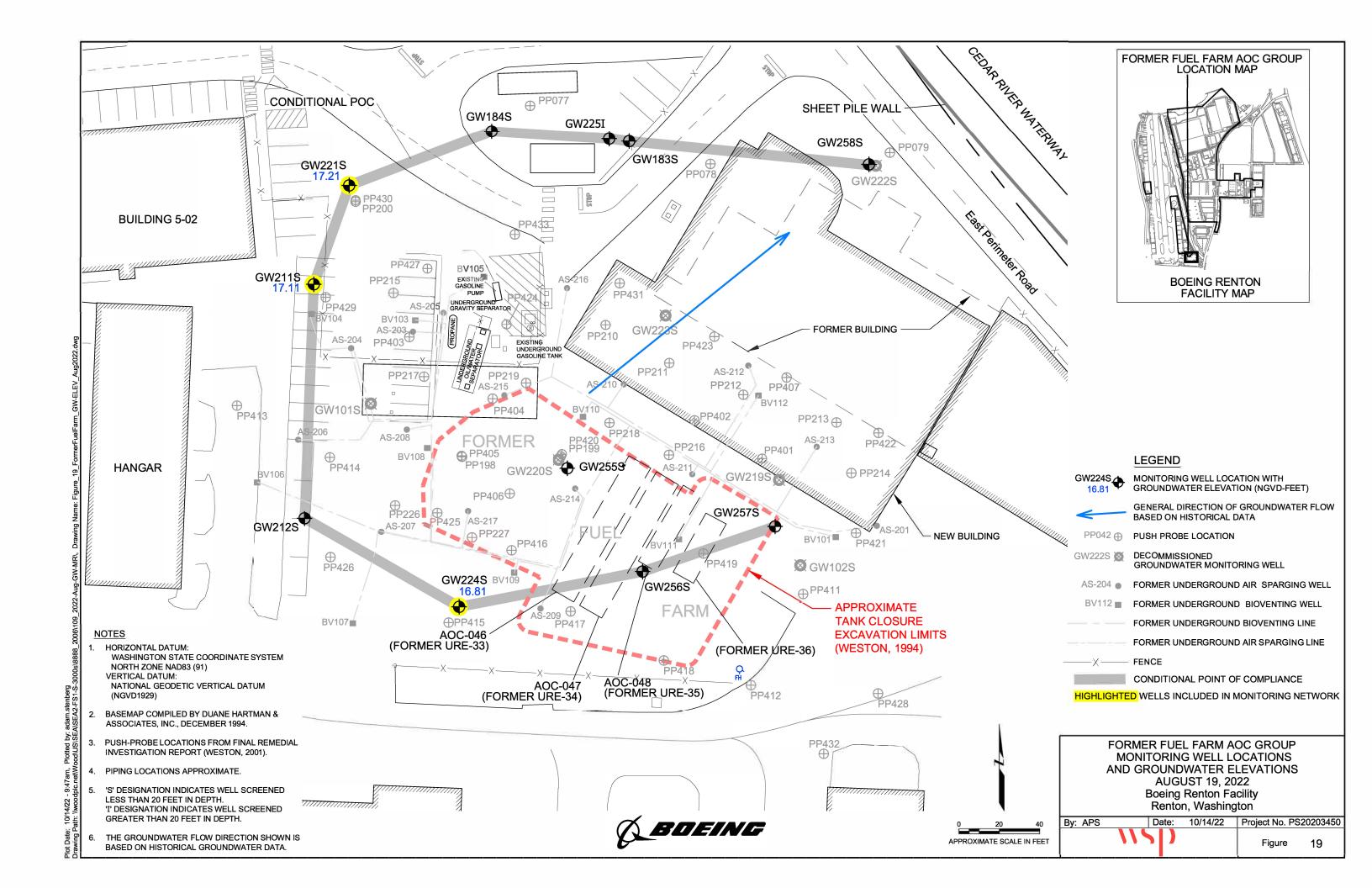


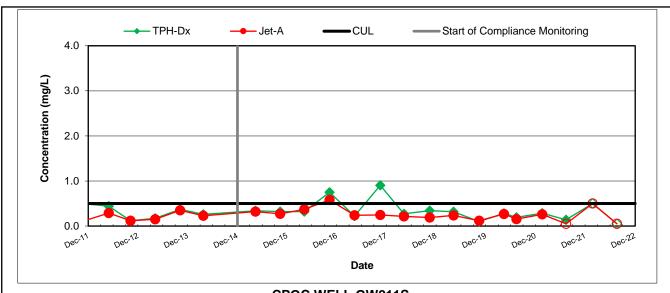


TPH as Gasoline

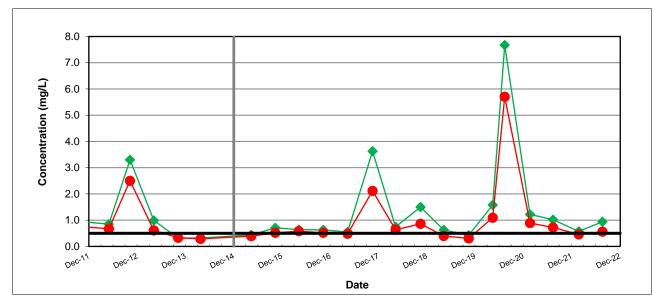
Non-detected values shown at one-half the reporting limit and with an open symbol.



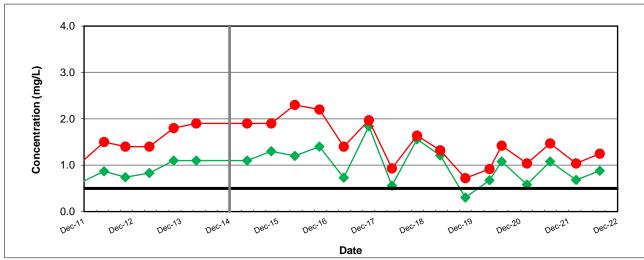




CPOC WELL GW211S



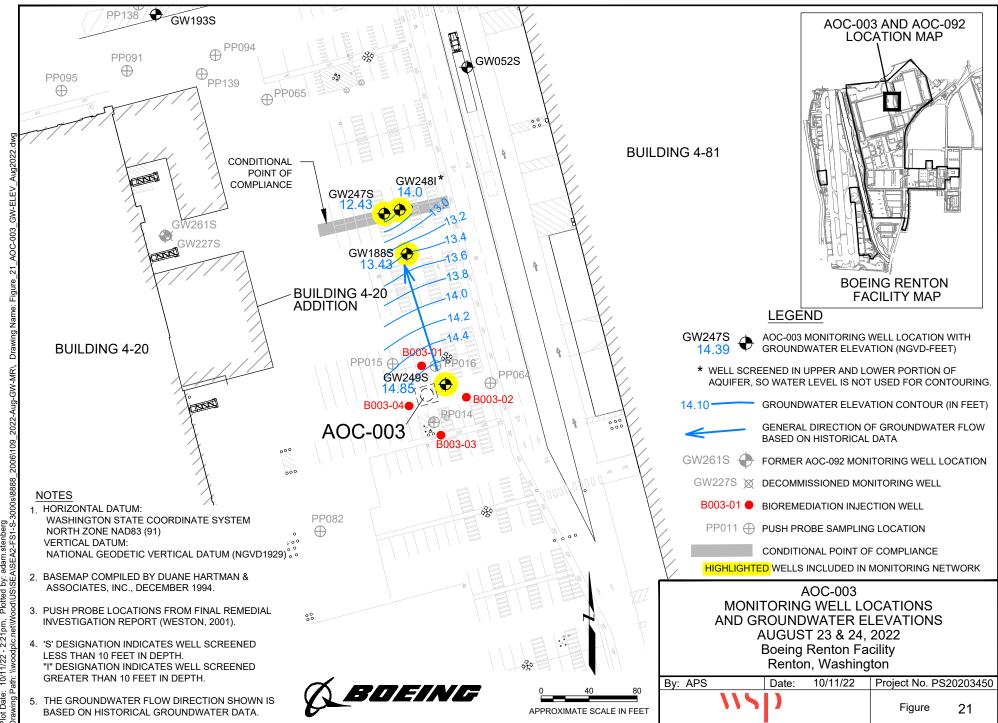
CPOC WELL GW221S

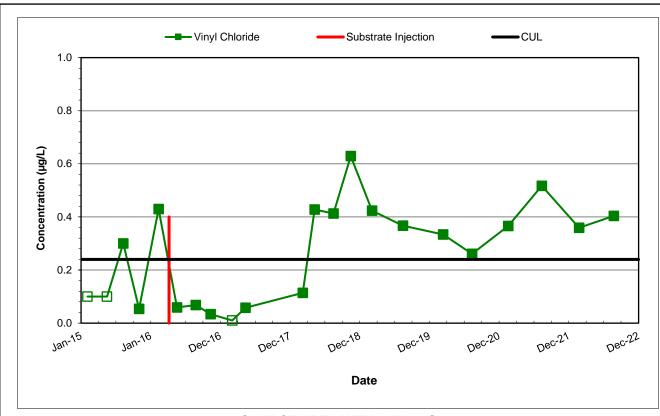


CPOC WELL GW224S

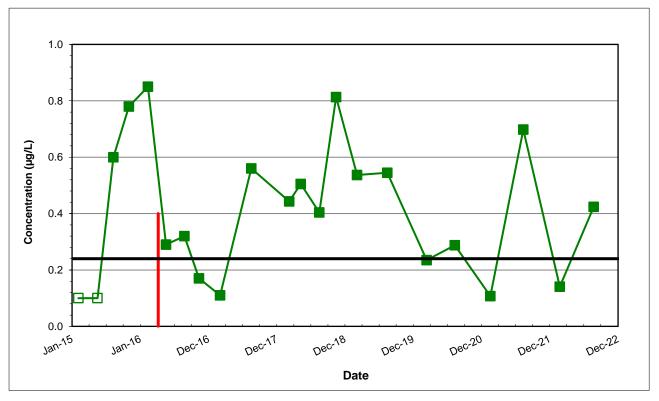
Note: Non-detected values shown at one-half the reporting limit and with an open symbol. Reporting limits were elevated for February 2022 results in GW211S.







SOURCE AREA WELL GW249S



DOWNGRADIENT PLUME AREA WELL GW188S

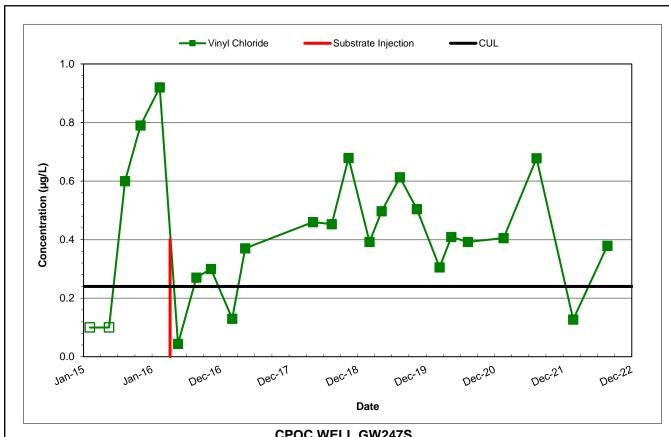
Note: Non-detected values shown at one-half the reporting limit and with an open symbol



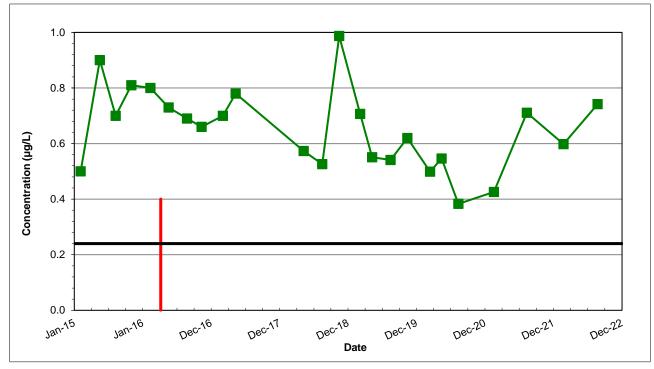
AOC-003 TREND PLOTS FOR SOURCE AREA WELL GW249S
AND DOWNGRADIENT PLUME AREA WELL GW188S
Boeing Renton Facility
Renton, Washington

Project No. PS20203450





CPOC WELL GW247S



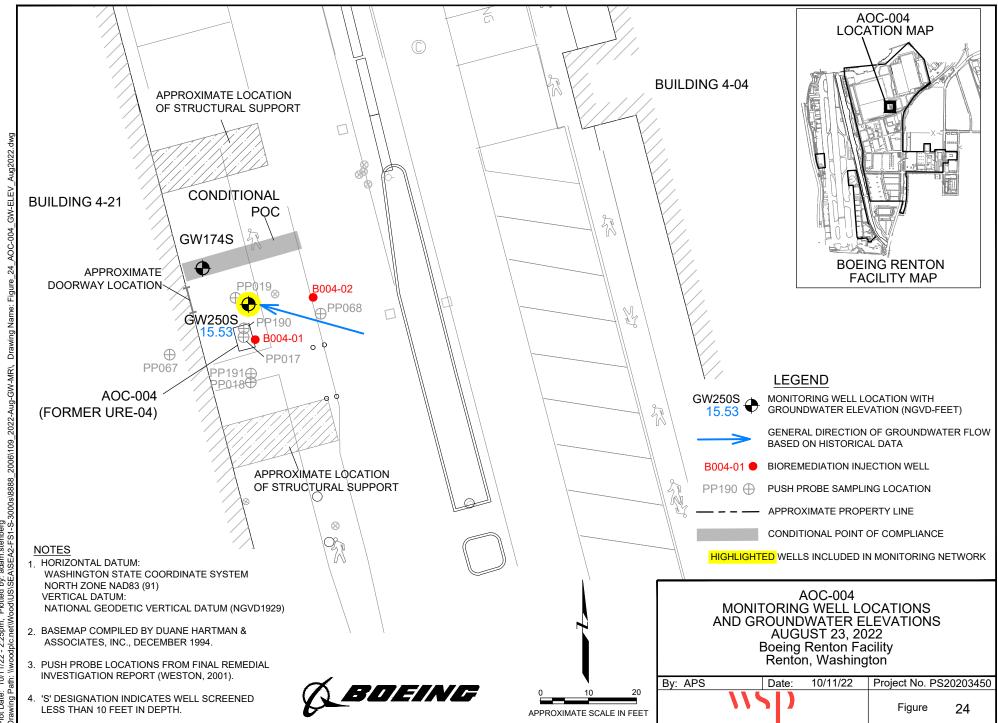
CPOC WELL GW248I

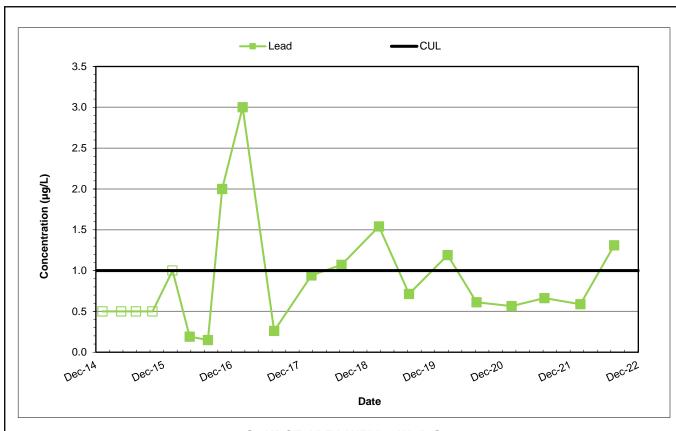
Note: Non-detected values shown at one-half the reporting limit and with an open symbol



AOC-003 TREND PLOTS FOR CPOC WELLS GW247S AND GW248I **Boeing Renton Facility** Renton, Washington

Project No. PS20203450

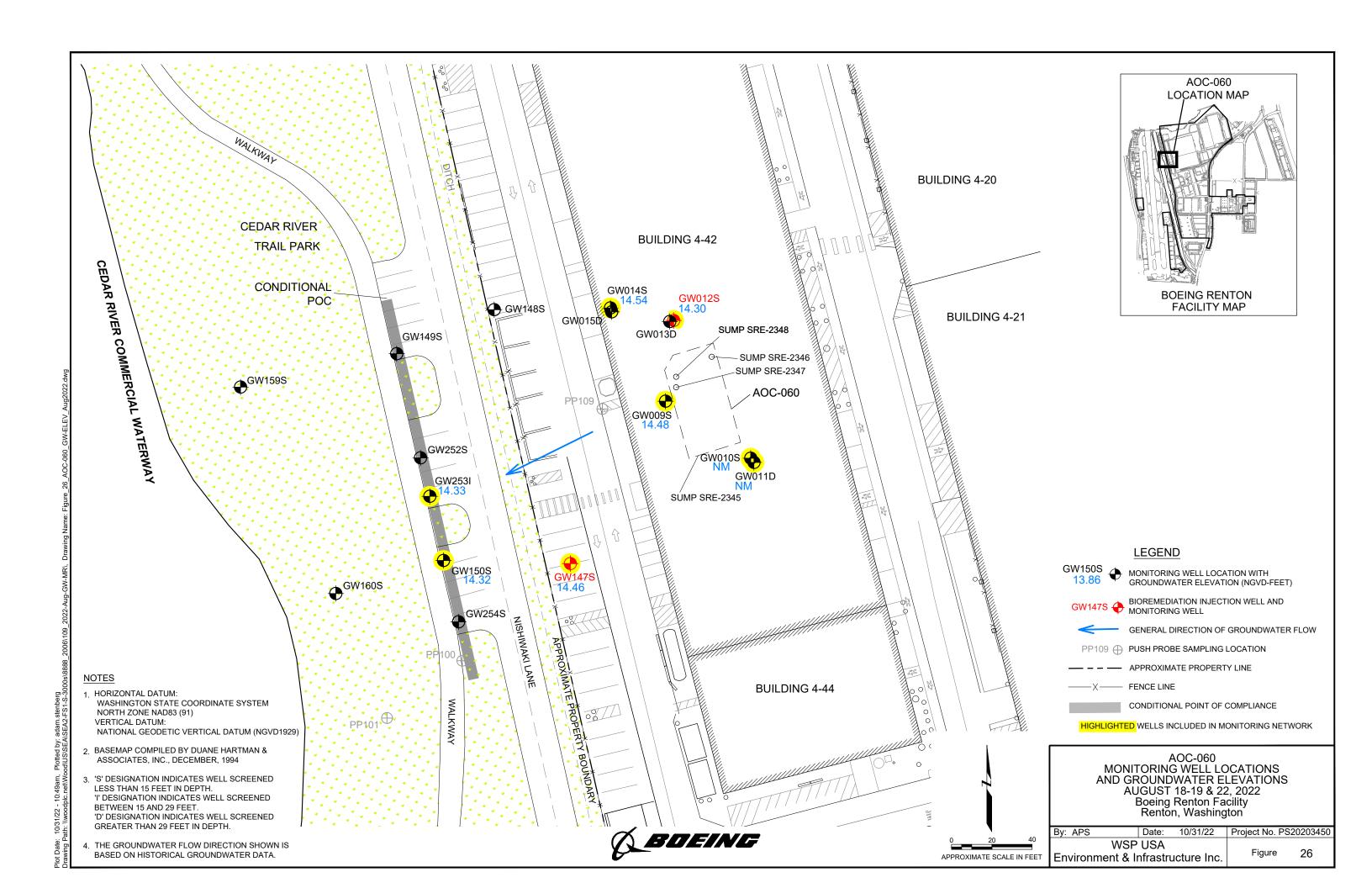


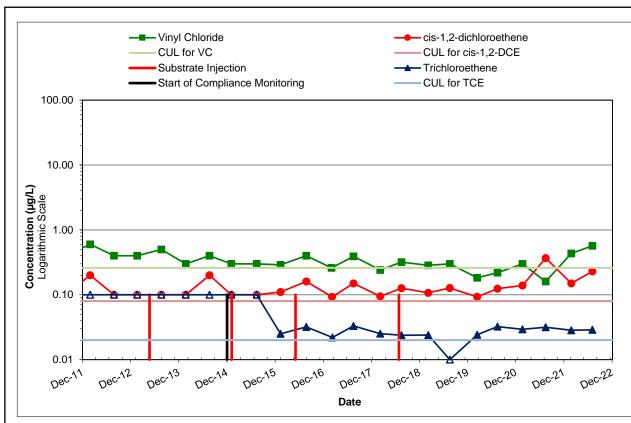


SOURCE AREA WELL GW250S

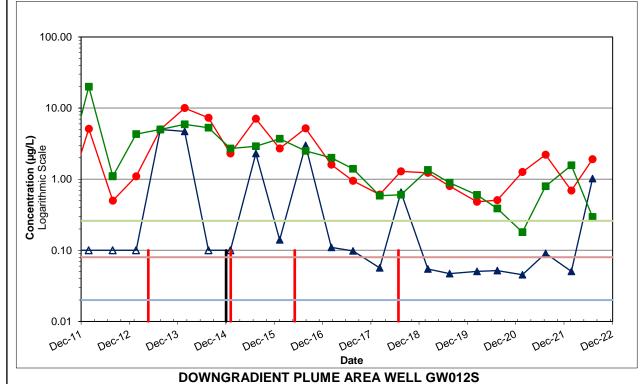
Note: Non-detected values shown at one-half the reporting limit and with an open symbol







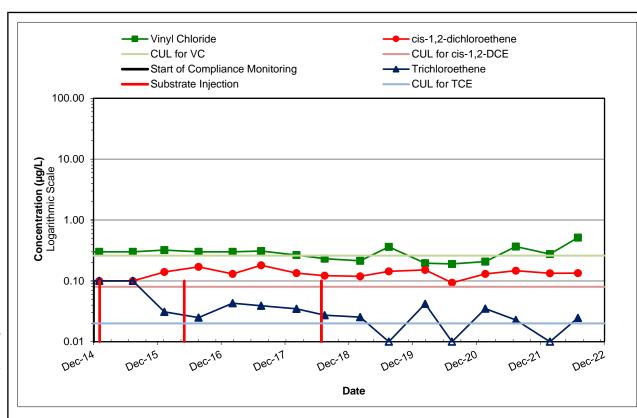




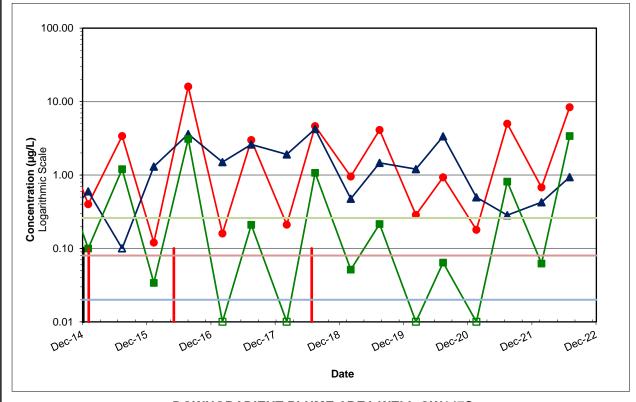
Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



AOC-060 TREND PLOTS FOR SOURCE AREA WELL GW009S AND DOWNGRADIENT PLUME AREA WELL GW012S Boeing Renton Facility Renton, Washington Project No. PS20203450



DOWNGRADIENT PLUME AREA WELL GW014S

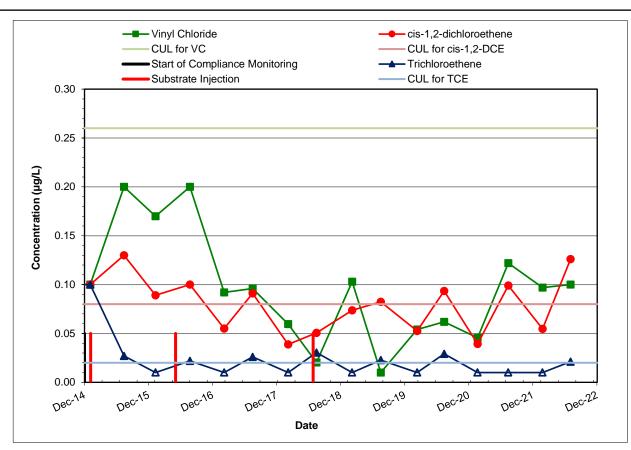


DOWNGRADIENT PLUME AREA WELL GW147S

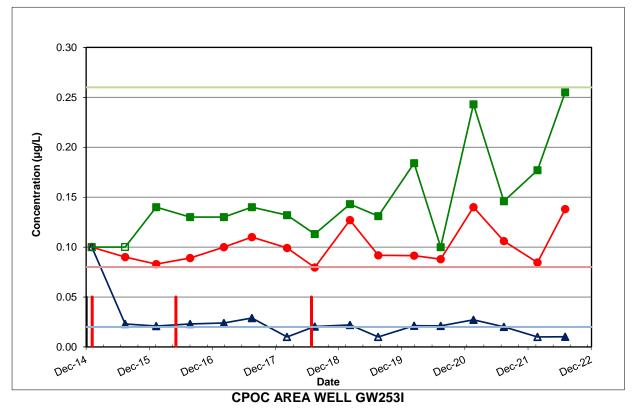
Note: Non-detected values shown at one-half the reporting limit and with an open symbol.







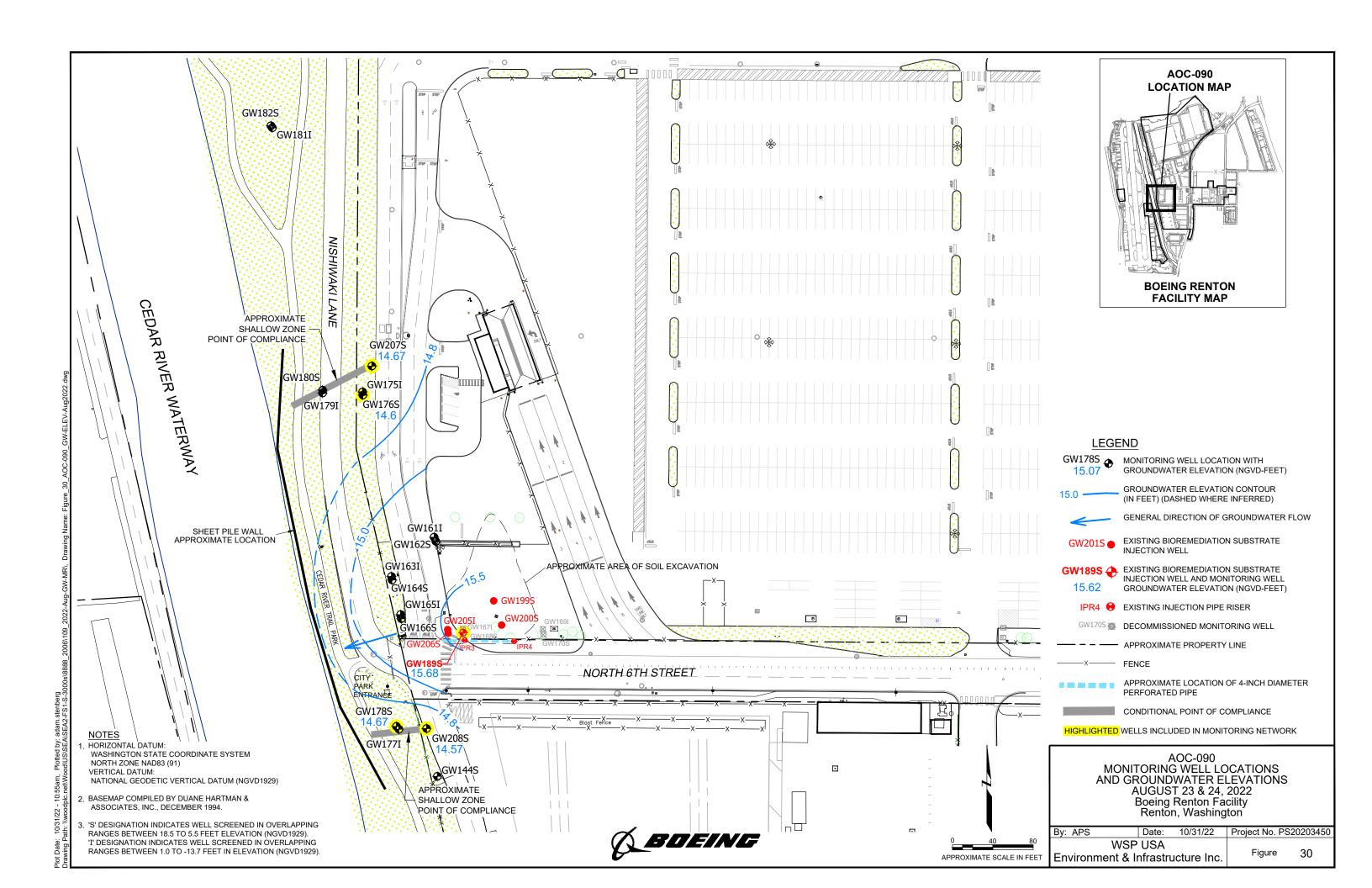
CPOC AREA WELL GW150S

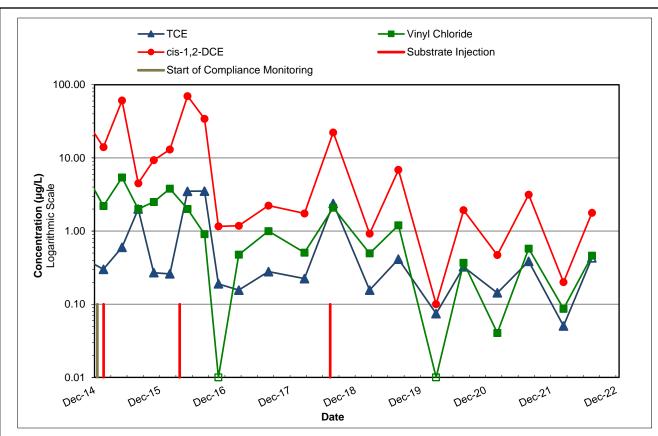


Note: Non-detected values shown at one-half the reporting limit and with an open symbol.

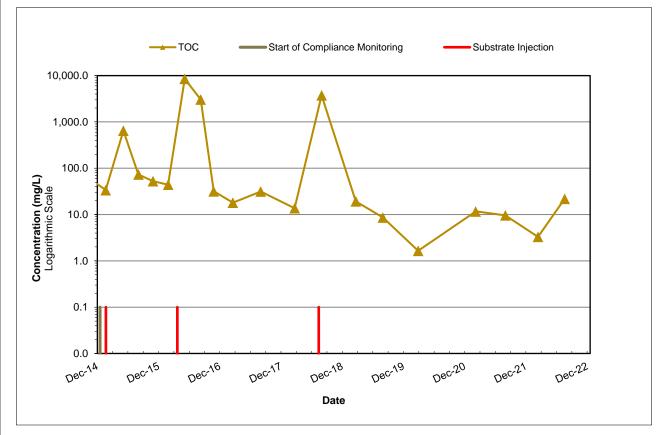


AOC-060 TREND PLOTS FOR CPOC AREA WELLS GW150S AND GW253I Boeing Renton Facility Renton, Washington Project No. PS20203450





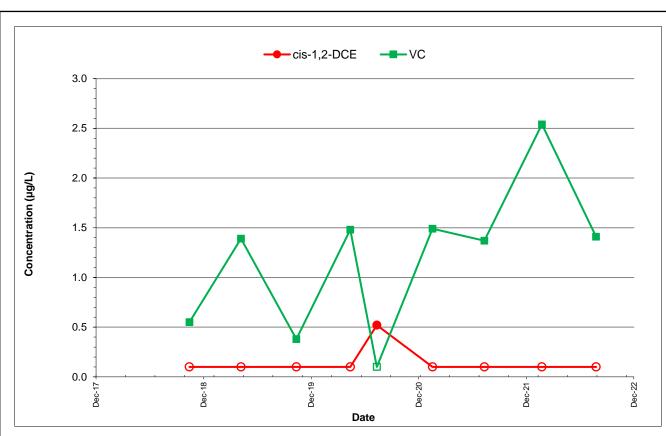
SOURCE AREA WELL GW189S



Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



AOC-090 TREND PLOTS FOR SOURCE AREA WELL GW189S Boeing Renton Facility Renton, Washington Project No. PS20203450



SOURCE AREA WELL GW264S

Note: Non-detected values shown at one-half the reporting limit and with an open symbol.



TABLES

Table 1: SWMU-168 Groundwater Elevation Data

August 17, 2022

Boeing Renton Facility, Renton, Washington

1	Screen Interval Depth	TOC Elevation	Depth to Groundwater	Groundwater Elevation
Well ID ¹	(feet bgs)	(feet) ²	(feet below TOC)	(feet) ²
GW230I	4 to 14	24.86	7.65	17.21

Notes:

- 1. I = intermediate well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

bgs = below ground surface SWMU = solid waste management unit TOC = top of casing

Table 2: SWMU-168 Primary Geochemical Indicators¹ August 17, 2022

Boeing Renton Facility, Renton, Washington

	Well ID ²
	CPOC Area
Parameter	GW230I
Temperature (degrees C)	27.6
Specific Conductivity (µS/cm)	483.2
Dissolved Oxygen (mg/L)	0.10
pH (standard units)	6.22
Oxidation/Reduction Potential (mV)	27.6

Notes:

- 1. Primary geochemical indicators are measured in the field.
- 2. I = intermediate well.

Abbreviations:

μS/cm = microsiemens per centimeter CPOC = conditional point of compliance degrees C = degrees Celsius mg/L = milligrams per liter mV = millivolts SWMU = solid waste management unit

Table 3: SWMU-168 Concentrations of Constituents of Concern^{1, 2} August 17, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ⁴
		CPOC Area
Analyte	Cleanup Level ³	GW230I
Volatile Organic Compounds (μg/L)		
Vinyl Chloride	0.11	0.539 J

Notes:

- 1. Data qualifiers are as follows:
 - J = the value is estimated.
- 2. **Bolded** values exceed the cleanup levels.
- 3. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.
- 4. I = intermediate well.

Abbreviations:

 μ g/L = micrograms per liter

CPOC = conditional point of compliance

SWMU = solid waste management unit

Table 4: SWMU-172 and SWMU-174 Group Groundwater Elevation Data August 24, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet) ³	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet) ³
GW152S	5 to 20 ²	26.98	9.87	17.11
GW153S	5 to 20 ²	27.47	10.41	17.06
GW172S	8 to 18 ²	26.44	9.84	16.6
GW173S	8 to 18 ²	26.51	9.99	16.52
GW226S	5 to 20 ²	26.86	8.57	18.29
GW232S	4 to 14	24.45	7.41	17.04
GW234S	3 to 13	24.95	8.29	16.66
GW235I	15 to 25	24.90	7.70	17.2
GW236S	5 to 15	24.36	8.39	15.97

Notes:

- 1. S = shallow well; I = intermediate well.
- 2. Screen intervals are approximate and based on database listings of the screen interval depths for these wells.
- 3. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

bgs = below ground surface SWMU = solid waste management unit TOC = top of casing

Table 5: SWMU-172 and SWMU-174 Group Primary Geochemical Indicators¹
August 24, 2022
Boeing Renton Facility, Renton, Washington

Well ID ²										
	Sour	ce Area	Down	gradient Plum	e Area CPOC Area					
Parameter	GW152S	GW153S	GW172S	GW173S	GW226S	GW232S	GW234S	GW235I	GW236S	
Temperature (degrees C)	24.9	18.1	25.2	19.8	24.7	24.8	27.1	27.6	19.0	
Specific Conductivity (μS/cm)	4841.0	234.7	781.0	341.4	354.6	600.0	731.0	220.1	326.4	
Dissolved Oxygen (mg/L)	0.02	0.32	0.00	0.32	0.52	3.14	0.22	0.63	0.65	
pH (standard units)	5.00	6.06	6.68	6.12	6.02	5.85	6.44	6.17	6.11	
Oxidation/Reduction Potential (mV)	8.8	-64.0	-118.5	-81.7	-79.9	-93.3	-71.5	-71.4	-67.9	
Total Organic Carbon (mg/L)	2,389	5.09	3.74	5.88	8.90	9.84	4.06	1.52	2.67	

Notes

- 1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.
- 2. S = shallow well; I = intermediate well.

Abbreviations

μS/cm = microsiemens per centimeter
CPOC = conditional point of compliance
degrees C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts
SWMU = solid waste management unit

Table 6: SWMU-172 and SWMU-174 Group Concentrations of Constituents of Concern^{1, 2} August 24, 2022
Boeing Renton Facility, Renton, Washington

			Well ID ³								
	Cleanup	Source	e Area	Downgradient Plume Area			CPOC Area				
Analyte	Level ⁴	GW152S	GW153S	GW172S	GW173S	GW226S	GW232S	GW234S	GW235I	GW236S	
Volatile Organic Compounds (μg/L)											
cis -1,2-Dichloroethene	0.03	0.877	0.100	0.0436	0.168	0.0255	0.325	0.134	0.227	0.0572	
Tetrachloroethene	0.02	1.05	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	
Trichloroethene	0.02	0.534	0.0525	0.0200 U	0.0496	0.0200 U	0.0200 U	0.0200 U	0.0250	0.0200 U	
Vinyl Chloride	0.11	0.346	0.214	0.0887	0.175	0.128	0.558	0.170	0.0280	0.0200 U	
Total Metals (µg/L)											
Arsenic	1.0	47.7	2.85	4.86	6.04	3.09	3.83	0.974	0.200 U	0.995	
Copper	3.5	9.17	0.641	1.52	1.54	0.500 U	0.500 U	2.31	0.500 U	1.22	
Lead	1.0	5.75	0.123	1.32	0.468	0.100 U	0.122	0.830	0.100 U	0.798	

Notes:

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
 - J = the value is estimated.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations:

μg/L = micrograms per liter

CPOC = conditional point of compliance

SWMU = solid waste management unit

Table 7: Building 4-78/79 SWMU/AOC Group Groundwater Elevation Data August 17 & 23, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet) ²	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet) ²
GW031S	5 to 25	NA	5.26	NA
GW033S	5 to 25	19.49	5.29	14.20
GW034S	5 to 25	19.65	5.4	14.42
GW143S	10 to 15	19.81	5.36	14.45
GW237S	5 to 15	18.85	4.38	14.47
GW240D	22 to 27	19.81	7.10	12.71
GW244S	5 to 15	NA	5.08	NA

Notes:

- 1. S = shallow well; D = deep well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

AOC = area of concern

bgs = below ground surface

NA = not available

SWMU = solid waste management unit

TOC = top of casing

Table 8: Building 4-78/79 SWMU/AOC Group Primary Geochemical Indicators¹ August 17 & 23, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ²									
			Source Area								
			GW033S								
Parameter	GW031S	GW033S	(field dup.)	GW034S	GW244S	GW143S	GW237S	GW240D			
Temperature (degrees C)	22.6	23.6	NA	26.9	18.0	27.2	23.9	27.7			
Specific Conductivity (µS/cm)	452.2	518.0	NA	329.0	448.0	474.2	347.1	363.7			
Dissolved Oxygen (mg/L)	1.88	0.72	NA	0.43	1.84	0.01	0.02	0.96			
pH (standard units)	5.87	6.14	NA	6.34	5.92	6.41	6.26	6.39			
Oxidation/Reduction Potential (mV)	-100.9	-53.8	NA	-72.1	-86.4	54.7	51.2	16.9			
Total Organic Carbon (mg/L)	13.58	14.33 J	14.41 J	9.04 J	14.78	4.65 J	7.55 J	6.36 J			

Notes

1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.

2. S = shallow well; D = deep well.

Abbreviations

μS/cm = microsiemens per centimeter
AOC = area of concern
CPOC = conditional point of compliance
degrees C = degrees Celsius
field dup. = field duplicate

mg/L = milligrams per liter
mV = millivolts
NA = not analyzed
SWMU = solid waste management unit

Table 9: Building 4-78/79 SWMU/AOC Group Concentrations of Constituents of Concern^{1, 2} August 17 & 23, 2022

Boeing Renton Facility, Renton, Washington

			Well ID ³							
				Source Area		CPOC Area				
	Cleanup			GW033S						
Analyte	Level ⁴	GW031S	GW033S	(field dup.)	GW034S	GW244S	GW143S	GW237S	GW240D	
Volatile Organic Compounds (μg/L)										
Benzene	0.80	0.20 U	14.2 J	15.2 J	0.20 U	0.25	0.20 U	0.20 U	0.20 U	
cis -1,2-Dichloroethene	0.70	0.26	0.45 J	0.48 J	0.20 U	0.25	0.76 J	0.20 U	0.20 U	
Trichloroethene	0.23	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.53 J	0.20 U	0.20 U	
Vinyl Chloride	0.20	0.39	1.53 J	1.61 J	0.72 J	0.46	0.20 U	0.20 U	0.20 U	
Total Petroleum Hydrocarbons (μg/L)										
TPH-G (C7-C12)	800	100 U	300 J	304 J	100 U	100 U	100 U	100 U	100 U	

Notes:

1. Data qualifiers are as follows:

U = The analyte was not detected at the reporting limit indicated.

J = the value is estimated.

- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; D = deep well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

field dup. = field duplicate

SWMU = solid waste management unit

TPH-G = total petroleum hydrocarbons as gasoline

Table 10: Former Fuel Farm Groundwater Elevation Data August 19, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet) ²	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet) ²
GW211S	4.8 to 14.7	27.77	10.66	17.11
GW221S	5 to 15	27.93	10.72	17.21
GW224S	5 to 15	27.98	11.17	16.81

<u>Notes</u>

- 1. S = shallow well
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations

bgs = below ground surface TOC = top of casing

Table 11: Former Fuel Farm Primary Geochemical Indicators¹ August 19, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ²						
		CPOC Area						
Parameter	GW211S	GW221S	GW224S					
Temperature (degrees C)	20.6	22.5	21.5					
Specific Conductivity (µS/cm)	340.9	232.2	190.5					
Dissolved Oxygen (mg/L)	0.40	0.93	4.49					
pH (standard units)	6.27	5.49	5.35					
Oxidation/Reduction Potential (mV)	-184.0	-31.2	-33.5					

<u>Notes</u>

- 1. Primary geochemical indicators are measured in the field.
- 2. S = shallow well.

Abbreviations

 μ S/cm = microsiemens per centimeter CPOC = conditional point of compliance degrees C = degrees Celsius mg/L = milligrams per liter mV = millivolts

Table 12: Former Fuel Farm Concentrations of Constituents of Concern^{1, 2}

August 19, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ³ CPOC Area					
Analyte	Cleanup Level ⁴	GW221 GW221S GW224S (field d					
Total Petroleum Hydrocarbons (n	ng/L)						
TPH-D (C12-C24)	0.5	0.100 U	0.940	0.881	1.07		
TPH-O (C24-C38)	NE	0.200 U	0.200 U	0.200 U	0.200 U		
Jet A (C10-C18)	0.5	0.100 U	0.562	1.25	1.69		

Notes

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
- 2. Bolded values exceed the cleanup levels.
- 3. S = shallow well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations

CPOC = conditional point of compliance

field dup. = field duplicate

mg/L = milligrams per liter

NE = not established

TPH-D = total petroleum hydrocarbons as diesel

TPH-O = total petroleum hydrocarbons as motor oil

Table 13: AOC-003 Groundwater Elevation Data August 23 & 24, 2022

Boeing Renton Facility, Renton, Washington

	Screen Interval Depth	TOC Elevation	Depth to Groundwater	Groundwater Elevation
Well ID ¹	(feet bgs)	(feet) ²	(feet below TOC)	(feet) ²
GW188S	3.5 to 13.5	18.78	5.35	13.43
GW247S	4 to 14	18.91	6.48	12.43
GW248I	10 to 20	18.78	4.78	14.0
GW249S	4 to 14	18.85	3.99	14.85

Notes:

- 1. S = shallow well; I = intermediate well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

AOC = area of concern bgs = below ground surface

TOC = top of casing

Table 14: AOC-003 Primary Geochemical Indicators¹ August 23 & 24, 2022 Boeing Renton Facility, Renton, Washington

		Well ID ²			
		Downgradient			
	Source Area	Plume Area	CPOC Area		
Parameter	RGW249S	RGW188S	GW247S	GW248I	
Temperature (degrees C)	21.9	21.2	27.2	21.5	
Specific Conductivity (μS/cm)	944	467.2	563.0	470	
Dissolved Oxygen (mg/L)	0	0.28	0.24	0.6	
pH (standard units)	6.19	6.38	6.55	6.33	
Oxidation/Reduction Potential (mV)	-88.1	63.4	45.7	67.7	
Total Organic Carbon (mg/L)	NA	12.55	12.3	12.61	

Notes

- 1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.
- 2. S = shallow well; I = intermediate well.

Abbreviations

µS/cm = microsiemens per centimeter
AOC = area of concern
CPOC = conditional point of compliance
degrees C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts

Table 15: AOC-003 Concentrations of Constituents of Concern 1, 2

August 23 & 24, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ³				
	Sauras Ara		Source Area Downgradient			
	Cleanup	Source Area	Plume Area CPOC Area		Area	
Analyte	Level 4	GW249S	GW188S	GW247S	GW248I	
Volatile Organic Compounds (μg/L)						
Vinyl Chloride	0.24	0.404 J	0.424	0.379	0.742	

Notes:

- 1. Data qualifiers are as follows:
 - J = the value is estimated.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

Table 16: AOC-004 Groundwater Elevation Data

August 23, 2022

Boeing Renton Facility, Renton, Washington

	Screen Interval Depth	TOC Elevation	Depth to Groundwater	Groundwater Elevation
Well ID ¹	(feet bgs)	(feet) ²	(feet below TOC)	(feet) ²
GW250S	4 to 14	19.31	3.78	15.53

Notes:

- 1. S = shallow well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

AOC = area of concern bgs = below ground surface

TOC = top of casing

Page 1 of 1

Table 17: AOC-004 Primary Geochemical Indicators¹ August 23, 2022

Boeing Renton Facility, Renton, Washington

	Well ID ²
	Source Area
Parameter	GW250S
Temperature (degrees C)	20.9
Specific Conductivity (μS/cm)	137.8
Dissolved Oxygen (mg/L)	0.30
pH (standard units)	6.82
Oxidation/Reduction Potential (mV)	68.1

Notes:

- 1. Primary geochemical indicators are measured in the field.
- 2. S = shallow well.

Abbreviations:

μS/cm = microsiemens per centimeter
AOC = area of concern
degrees C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts

Table 18: AOC-004 Concentrations of Constituents of Concern

August 23, 2022

Boeing Renton Facility, Renton, Washington

		Well ID ¹
		Source Area
Analyte	Cleanup Level ²	GW250S
Metals (μg/L)		
Lead	1	1.31

Notes:

- 1. S = shallow well.
- 2. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations:

AOC = area of concern

 μ g/L = micrograms per liter

Table 19: AOC-060 Groundwater Elevation Data August 18–19 & 22, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet) ²	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet) ²
GW009S	4.5 to 14.5	19.36	4.88	14.48
GW010S	4.5 to 14.5	19.47	NM	NM
GW011D	29 to 39	19.49	NM	NM
GW012S	4.5 to 14.5	19.11	4.81	14.30
GW014S	4.5 to 14.5	19.24	4.70	14.54
GW147S	5 to 15	18.73	4.27	14.46
GW150S	5 to 15	19.10	4.78	14.32
GW253I	10 to 20	19.02	4.69	14.33

Notes:

- 1. S = shallow well; D = deep well; I = intermediate well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

AOC = area of concern bgs = below ground surface

TOC = top of casing

Table 20: AOC-060 Primary Geochemical Indicators¹ August 18–19 & 22, 2022 Boeing Renton Facility, Renton, Washington

		Well ID ²						
	Source Area		Downgradier	nt Plume Area		CPOC Area		
				GW014S				
Parameter	GW009S	GW012S	GW014S	(field dup.)	GW147S	GW150S	GW253I	
Temperature (degrees C)	20.8	23.4	23.0	NA	24.0	26.3	21.4	
Specific Conductivity (µS/cm)	399.9	711.0	599	NA	340.6	447.0	400.7	
Dissolved Oxygen (mg/L)	0.72	0.26	0.33	NA	1.65	2.39	0.96	
pH (standard units)	5.72	6.03	6.29	NA	4.62	5.89	5.87	
Oxidation/Reduction Potential (mV)	-88.1	-62.6	-26.8	NA	43.1	-75.8	-96.9	
Total Organic Carbon (mg/L)	8.93	10,260 J	4.74 J	4.69 J	140.7	5.44	5.46	

Notes:

- 1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.
- 2. S = shallow well; I = intermediate well.

Abbreviations:

 $\mu \text{S/cm} = \text{microsiemens per centimeter}$

AOC = area of concern

CPOC = conditional point of compliance

degrees C = degrees Celsius

field dup. = field duplicate mg/L = milligrams per liter

mV = millivolts

Table 21: AOC-060 Concentrations of Constituents of Concern^{1, 2} August 18–19 & 22, 2022 Boeing Renton Facility, Renton, Washington

		Well ID ³						
		Source Area	Source Area Downgradient Plume Area			СРОС	Area	
	Cleanup				GW014S			
Analyte	Levels 4	GW009S	GW012S	GW014S	(field dup.)	GW147S	GW150S	GW253I
Volatile Organic Compounds (μg/L)								
cis -1,2-Dichloroethene	0.08	0.229	1.91 J	0.134 J	0.132 J	8.37	0.126	0.138
Trichloroethene	0.02	0.0288	1.02 J	0.0246 J	0.0221 J	0.937	0.0212	0.0205
Vinyl Chloride	0.26	0.570	0.294 J	0.514 J	0.518 J	3.39	0.100	0.255

Notes:

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

Table 22: AOC-090 Groundwater Elevation Data August 23–24, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet) ²	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet) ²
GW176S	10 to 14.3	20.15	5.55	14.6
GW178S	11.2 to 15.5	22.73	8.06	14.67
GW189S	4 to 14	22.01	6.33	15.68
GW207S	7.3 to 12	21.12	6.45	14.67
GW208S	6.3 to 11	22.45	7.88	14.57

Notes:

- 1. S = shallow well.
- 2. Elevations in feet relative to National Geodetic Vertical Datum of 1929.

Abbreviations:

AOC = area of concern

bgs = below ground surface

TOC = top of casing

Table 23: AOC-090 Primary Geochemical Indicators¹ August 23–24, 2022

Boeing Renton Facility, Renton, Washington

	Well ID ²					
		Downgradient				
	Source Area	Plume Area	Shallow	Zone CPOC A	rea	
Parameter	GW189S ³	GW176S	GW178S	GW207S	GW208S	
Temperature (degrees C)	18.0	17.1	16.3	16.2	20.7	
Specific Conductivity (μS/cm)	256.6	547.0	335.6	418.6	488.6	
Dissolved Oxygen (mg/L)	2.20	2.98	0.68	1.95	0.71	
pH (standard units)	5.25	5.86	5.71	5.87	5.75	
Oxidation/Reduction Potential (mV)	-0.7	-101.9	-49.9	-90.6	-73.1	
Total Organic Carbon (mg/L)	21.83	NA	NA	NA	NA	

Notes

- 1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.
- 2. S = shallow well.
- 3. GW189S is the replacement well for GW168S.

Abbreviations:

 μ S/cm = microsiemens per centimeter

AOC = area of concern
CPOC = conditional point of compliance

degrees C = degrees Celsius

mg/L = milligrams per liter

mV = millivolts

NA = not analyzed

Table 24: AOC-090 Concentrations of Constituents of Concern^{1, 2} August 23–24, 2022 Boeing Renton Facility, Renton, Washington

		Well ID ³					
	Cleanup	Source Area	Downgradient Source Area Plume Area		Shallow Zone CPOC Area		
Analyte	Levels ⁴	GW189S ⁵	GW176S	GW178S	GW207S	GW208S	
Chlorinated Volatile Organic Compounds (µg/L)							
1,1,2,2-Tetrachloroethane	0.17	0.158	NA	NA	NA	NA	
1,1,2-Trichloroethane	0.2	0.20 U	NA	NA	NA	NA	
1,1-Dichloroethene	0.057	0.0432	NA	NA	NA	NA	
Acetone	300	6.28	NA	NA	NA	NA	
Benzene	0.8	0.20 U	NA	NA	NA	NA	
Carbon Tetrachloride	0.23	0.20 U	NA	NA	NA	NA	
Chloroform	2	0.20 U	NA	NA	NA	NA	
cis-1,2-Dichloroethene	2.4	1.78	NA	NA	NA	NA	
Methylene Chloride	2	1.00 U	NA	NA	NA	NA	
Toluene	75	43.7	NA	NA	NA	NA	
trans-1,2-Dichloroethene	53.9	0.20 U	NA	NA	NA	NA	
Tetrachloroethene	0.05	0.0206	NA	NA	NA	NA	
Trichloroethene	0.08	0.43	NA	NA	NA	NA	
Vinyl Chloride	0.13	0.460	0.364	0.390	0.326	0.400	
Total Petroleum Hydrocarbons (Total Petroleum Hydrocarbons (μg/L)						
TPH-G (C7-C12)	800	555	NA	NA	NA	NA	
TPH-D (C12-C24)	500	521	NA	NA	NA	NA	
TPH-O (C24-C40)	500	586	NA	NA	NA	NA	

Notes:

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well.
- 4. Cleanup levels obtained from Table 2 of the Cleanup Action Plan.
- 5. GW189S is the replacement well for GW168S.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

NA = not analyzed

TPH-D = total petroleum hydrocarbons as diesel

TPH-G = total petroleum hydrocarbons as gasoline

TPH-O = total petroleum hydrocarbons as motor oil

Table 25: Apron A Groundwater Elevation Data August 24, 2022

Boeing Renton Facility, Renton, Washington

Well ID ¹	Screen Interval Depth (feet bgs)	TOC Elevation (feet)	Depth to Groundwater (feet below TOC)	Groundwater Elevation (feet)
GW263S	8 to 18	NA	NM	NA
GW264S	8 to 18	NA	6.47	NA

<u>Notes</u>

1. S = shallow well.

Abbreviations

bgs = below ground surface

NA = not available

TOC = top of casing

Table 26: Apron A Primary Geochemical Indicators¹ August 24, 2022 Boeing Renton Facility, Renton, Washington

	Well ID ²		
	Sourc	e Area	
		GW264S	
Parameter	GW264S	(field dup.)	
Temperature (degrees C)	19.6	NA	
Specific Conductivity (μS/cm)	2,308	NA	
Dissolved Oxygen (mg/L)	5.68	NA	
pH (standard units)	4.69	NA	
Oxidation/Reduction Potential (mV)	51.3	NA	
Total Organic Carbon (mg/L)	2,189	2,224	

Notes

- 1. Primary geochemical indicators are measured in the field, with the exception of total organic carbon, which is measured in the laboratory.
- 2. S = shallow well.

Abbreviations

 μ S/cm = microsiemens per centimeter degrees C = degrees Celsius field dup. = field duplicate mg/L = milligrams per liter mV = millivolts

Table 27: Apron A Concentrations of Constituents of Concern¹ August 24, 2022

Boeing Renton Facility, Renton, Washington

		Wel	l ID²
Analyte	Cleanup Levels	GW264S	GW264S (field dup)
Volatile Organic Compounds (μg/L)	Cleanup Levels	GW2043	(Held dup)
cis- 1,2-Dichloroethene	NE	0.200 U	0.200 U
Vinyl Chloride	NE	1.41	1.57

Notes

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
- 2. S = shallow well.

Abbreviations

µg/L = micrograms per liter field dup. = field duplicate NE = not established

APPENDIX A

Summary of Groundwater Sampling Methodology

TABLE A-1: GROUNDWATER COMPLIANCE MONITORING PLAN

Boeing Renton Facility, Renton, Washington

		Monitoring W	/ells ^{1, 2}				
Cleanup Action				Additional Water Level			
Area	Source Area Wells	Downgradient Plume Wells	CPOC Wells	Monitoring Wells ³	Constituents of Concern ⁴	Analyses ⁵	
SWMU-168	NA	NA	GW230I	NA	VC	SW8260D SIM	
SWMU-172/SWMU-174	GW152S and GW153S	GW172S, GW173S,	GW232S, GW234S,	NA	cis -1,2-DCE, PCE, TCE, VC	SW8260D SIM ⁸	
27.1	0111525 dilla 0111535	and GW226S	GW235I, and GW236S		Arsenic, copper, and lead	EPA 6020A	
Building 4-78/79	GW031S, GW033S, GW034S,	NA	GW143S, GW237S, and	NA	VC, TCE, cis -1,2-DCE, benzene	SW8260D	
SWMU/AOC Group	and GW244S	, w.	GW240D	107	TPH-gasoline	NWTPH-Gx	
Former Fuel Farm SWMU/AOC Group	NA	NA	GW211S, GW221S, and GW224S	NA	TPH-jet fuel, TPH-diesel	NWTPH-Dx	
AOC-001/AOC-002 ^{6,7}		All wells closed with the start of	of Anran B construction		Benzene	SW8260D	
AUC-001/AUC-002		All wells closed with the start t	of Aproli & Construction.		TCE, cis -1,2-DCE, 1,1-dichloroethene, VC	SW8260D SIM ⁸	
AOC-003	GW249S	GW188S	GW247S and GW248I	NA	VC	SW8260D	
AOC-004	GW250S	NA	NA	NA	Lead	EPA 6020A	
AOC-060	GW009S	GW012S, GW014S, and GW147S	GW150S and GW253I	GW010S and GW011D	VC, TCE, cis-1,2-DCE	SW8260D SIM ⁸	
					1,1,2-Trichloroethane, acetone, benzene, toluene, carbon tetrachloride, chloroform, <i>cis</i> -1,2-DCE, <i>trans</i> - 1,2-DCE, methylene chloride	SW8260D	
AOC-090 ⁹ GW189S		GW176S	GW178S, GW207S, and GW208S	NA	1,1-Dichloroethene, 1,1,2,2-tetrachloroethane, VC, PCE, TCE	SW8260D SIM ⁸	
					TPH-gasoline	NWPTH-Gx	
					TPH-diesel, TPH-motor oil	NWTPH-Dx	
Apron A	GW264S	NA	NA	GW263S	cis -1,2-DCE and VC	SW8260D	

Notes:

- 1. The EDR presents the groundwater monitoring frequency for each SWMU/AOC. All sites are monitored on a semi-annual basis with sampling events occurring in February and August.
- 2. Groundwater monitoring wells are also monitored for groundwater levels.
- 3. Additional wells are monitored for groundwater levels only.
- 4. In addition to COCs, primary geochemical indicators will be monitored during each regular monitoring event. Geochemical indicators are listed in Table A-2.
- 5. Details of analytical methods are specified in the Quality Assurance Project Plan, which is Appendix E to the Cleanup Action Plan (AMEC, 2012).
- 6. Monitoring wells were abandoned on 11/25/2019 prior to Apron R construction and will be replaced upon completion of construction.
- 7. Groundwater monitoring and sampling will be suspended until completion of construction.
- 8. SIM methods will be used if the cleanup level is lower than the reporting limit achieved by the conventional 8021, 8260, or 8270 method. If cleanup levels become higher or if the conventional 8021, 8260, or 8270 methods are updated and able to achieve reporting limits below the cleanup levels, then the conventional method rather than the SIM method will be used.
- 9. GW189S will be sampled for CVOCs and TPH, all other wells will only be sampled for VC.

Abbreviations:

AOC = area of concern
cis-1,2-DCE = cis-1,2 dichloroethene
COCs = constituents of concern
CPOC = conditional point of compliance
CVOCs = chlorinated volatile organic compounds

EDR = Engineering Design Report EPA = Environmental Protection Agency NA = not applicable PCE = tetrachloroethene SIM = selected ion monitoring SWMU = solid waste management unit TCE = trichloroethene TPH = total petroleum hydrocarbons trans -1,2-DCE = trans -1,2 dichloroethene VC = vinyl chloride

TABLE A-2: MONITORED NATURAL ATTENUATION/MONITORED ATTENUATION PLAN

Boeing Renton Facility, Renton, Washington

		Groundwa		Primary Geochemical Parameters ^{1, 2}	
Cleanup Action Area	Cross-Gradient Wells	Source Area Wells	Downgradient Plume Wells	CPOC Wells	Indicators
SWMU-168	NA	NA	NA	GW230I	Dissolved oxygen, pH, ORP, temperature, specific conductance
SWMU-172/SWMU-174	NA	GW152S and GW153S	GW172S, GW173S, and GW226S	GW232S, GW234S, GW235I, and GW236S	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC
Building 4-78/79 SWMU/AOC Group	NA	GW031S, GW033S, GW034S, and GW244S	NA	GW143S, GW237S, and GW240D	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC
Former Fuel Farm SWMU/AOC Group	NA	NA	NA	GW211S, GW221S, and GW224S	Dissolved oxygen, pH, ORP, temperature, specific conductance
AOC-001/AOC-002 ^{3, 4}	NA		All wells closed v	with the start of Apron R construction	n.
AOC-003	NA	GW249S	GW188S	GW247S and GW248I	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC
AOC-004	NA	GW250S	NA	NA	Dissolved oxygen, pH, ORP, temperature, specific conductance
AOC-060	GW012S and GW014S	GW009S	GW147S	GW150S and GW253I	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC
AOC-090	NA	GW189S	GW176S	GW178S, GW207S, and GW208S	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC ⁵
Apron A	NA	GW264S	NA	NA	Dissolved oxygen, pH, ORP, temperature, specific conductance, TOC

Notes:

- 1. In addition to COCs listed in Table A-1, primary geochemical indicators will be monitored during each regular monitoring event.
- 2. All primary geochemical indicators except TOC are monitored in the field during sampling. TOC is analyzed in the laboratory following methods specified in the Quality Assurance Project Plan, which is Appendix E to the Cleanup Action Plan (AMEC, 2012). The primary geochemical indicators differ slightly depending on whether the site is a fuel-related site or a solvent-related site. At a fuel-related site, TOC is not necessary; at a solvent-related site, TOC is a measure of how much electron donor remains present. All MNA parameters are measured semiannually in all wells on a wet season/dry season basis.
- 3. Monitoring wells were abandoned on 11/25/2019 prior to Apron R construction and will be replaced upon completion of construction.
- 4. Groundwater monitoring and sampling will be suspended until completion of construction.
- 5. TOC will only be analyzed in the groundwater from the source area well (GW189S).

Abbreviations:

AOC = area of concern

COCs = constituents of concern

CPOC = conditional point of compliance

MNA = monitored natural attenuation

NA = not applicable

ORP = oxidation reduction potential

SWMU = solid waste management unit

TOC = total organic carbon

APPENDIX B

Field Forms



JAM

Groundwater Low-Flow Sample Collection Form

Project Name	e:	Boeing Renton			Project Numbe	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 19 /2022@	1427		
Sample Num	ber:	RGW009S-	220819		Weather:	indoor			
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	n:	Secure (YES	5)	Damaged (N	(O)	Describe:	(
DTW Before	Purging (ft)	4.88	Time:	1401	Flow through cel	ll vol.	200 mL	GW Meter No.(s	Heron 2
Begin Purge:	Date/Time:	8/ 19 /2022	@	End Purge:	Date/Time:	8/ 19 /2022 @	1423	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
T.	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C) Purge Goa	(uS/cm) ls: Stablizatio	(mg/L) on of Paramet	ters for three	(mV) consecutive read	(NTU) dings within the fo	(ft) ollowing limits	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%		+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1405	21.0	391.8	0.36	5.60	-51.9		4.88		
1408	20.9	403.2	0.46	5.65	-74.4		4.88		
1411	20.8	401.4	0.62	5.69	-83.4		4.88		
1414	20.8	400.9	0.65	5.70	-85.1				
1417	20.8	399.9	0.72	5.72	-88.1				
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Wa	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	iption (color,	turbidity, odo	r, sheen, etc.):	colorless / cl	ear / no odor / no	sheen			
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
•	(° F /° C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	20.8	399.7	0.72	5.72	-88.5				
2	20.8	399.4	0.72	5.72	-88.8				
3	20.8	399.4	0.73	5.73	-89.1				
4	20.8	399.2	0.74	5.73	-89.1				
Average:	20.8	399.4	0.73	5.73	-88.9				
QUANTITY	TVDICAL A	NAI VCIC AI	I OWED DE	D ROTTI E	TVPF (Circle or	oplicable or write	non standard a	nolycic bolow)	
3			NWTPH-G) (opiicable of write	non-standard a	WA	OR 🗌
						(8141) (Oil & G	rease)		OR 🗆
) (HCO3/CO3) (
1	(COD) (TOO	C) (Total PO	4) (Total Kie	dahl Nitroger	n) (NH3) (NO3/	/NO2)			
	•		vanide) (Free	•					
						(Pb) (Mg) (Mn) (
			o) (Ba) (Be) (C	.ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	') (Zn) (Hg) (K) (Ì	Na) (Hardness) (Silic
	VOC (Boein	ig short list) nane Ethene A	cetylene						
	Wiediane Ell	Eurone A	- John Comme						
	others								
Dunlicata Car	anla Ne(a):								
Duplicate San Comments:	ipie mo(s):								
Comments.									

Date: 8/19/2022



	ie:	Boeing Ren	ton		Project Number	:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/18 /2022@	1415		_
Sample Num	nber:	RGW012S-	2208		Weather:				
Landau Repr	resentative:	Joe Marin			-				
WATED LEV	/EL/WELL/PU	IDCE DATA							
Well Condition		Secure (YES)	Damaged (N	(0)	Describe:			
		,			,			CW Mater No. (a	Harrar 2
DTW Before		4.81	Time:		Flow through cel		115	GW Meter No.(s	Heron 2
	Date/Time:			End Purge:	Date/Time:			Gallons Purged:	1
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NTSYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	ters for three	(mV)	(NTU) lings within the fo	(ft)	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units		+/- 10%	< 0.3 ft	through cell	
	22.9	909	0.23	6.16	-61.8		4.84		
	23.3	823	0.27	6.13	-65.4		4.84		
	23.3	793	0.29	6.11	-65.3		4.84		
	23.4	759	0.3	6.08	-64.6				
	23.4	741	0.27	6.06	-62.9				
	23.4	716	0.26	6.04	-62.1				
	23.4	711	0.26	6.03	-62.6				
CAMPIECO	L ECTION D	- A.T.A							
Sample Collection	LLECTION D	AIA	Bailer		Pump/Pump Type	Bladder			
Made of:	cica wiai.	Stainless Ste	_	PVC	Teflon	Polyethylene	Other	Dedicated	
	. =				=		U Oulci	Dedicated	
Decon Proced	_	Alconox Wa	sn 📋	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	ription (color,	turbidity, odoi	r, sheen, etc.):	clear and col	orless				
Replicate	Temp								
	-	Cond.	D.O.	рH	ORP	Turbidity	DTW	Ferrous iron	Comments/
1	(° F /° C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	(°F/°C) 23.4			pH 6.05		· -			
2	23.4	(uS/cm)	(mg/L)	6.05	(mV) -62.8	· -			
2	23.4	(uS/cm) 710 710	(mg/L) 0.26 0.26	6.05	(mV) -62.8 -62.7	· -			
2 3	23.4 23.5 23.5	710 710 711	0.26 0.26 0.25	6.05 6.05 6.05	-62.8 -62.7 -62.8	· -			
2 3 4	23.4 23.5 23.5 23.5	710 710 711 711	0.26 0.26 0.25 0.25	6.05 6.05 6.05 6.04	-62.8 -62.7 -62.8 -62.8	(NTU)			
2 3	23.4 23.5 23.5	710 710 711	0.26 0.26 0.25	6.05 6.05 6.05	-62.8 -62.7 -62.8	· -			
2 3 4	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A	(uS/cm) 710 710 711 711 710.5 NALYSIS AI	0.26 0.26 0.25 0.26 0.3	6.05 6.05 6.04 6.0 CR BOTTLE	(mV) -62.8 -62.7 -62.8 -62.8 -62.8 TYPE (Circle ap	(NTU)	(ft)	(Fe II)	
2 3 4 Average:	23.4 23.5 23.5 23.5 23.5	(uS/cm) 710 710 711 711 710.5 NALYSIS AI	0.26 0.26 0.25 0.26 0.3	6.05 6.05 6.04 6.0 CR BOTTLE	(mV) -62.8 -62.7 -62.8 -62.8 -62.8 TYPE (Circle ap	#DIV/0!	(ft)	nalysis below)	Observations OR OR
2 3 4 Average:	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI () (8020) (10 (H) (NWTPI	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PENWTPH-G) (NWTPH-G) (NWTPH-	6.05 6.05 6.04 6.0 ER BOTTLE NWTPH-Gx	(mV) -62.8 -62.8 -62.8 -62.8 TYPE (Circle ago) (BTEX) H-HCID) (8081)	#DIV/0!	(ft)	nalysis below) WA WA WA	Observations
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (NAH) (NWTPH (intivity) (TD	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PENWTPH-G) (NWTFF-G) (NWTFF-G) (TSS) (E	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx. H-Dx) (TPH-OD) (Turbic	(mV) -62.8 -62.7 -62.8 -62.8 -62.8 TYPE (Circle ap) (BTEX) H-HCID) (8081) dity) (Alkalinity)	#DIV/0! plicable or write 1 (8141) (Oil & Gr (HCO3/CO3) (C	(ft)	nalysis below) WA WA WA	Observations OR OR
2 3 4 Average:	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu	(uS/cm) 710 711 711 710.5 NALYSIS AI (2) (8020) (1) (3H) (NWTPI (activity) (TD (C) (Total PO-	(mg/L) 0.26 0.25 0.26 0.3 CLOWED PENWTPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kiewana)	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger	(mV) -62.8 -62.8 -62.8 -62.8 TYPE (Circle ago) (BTEX) H-HCID) (8081)	#DIV/0! plicable or write 1 (8141) (Oil & Gr (HCO3/CO3) (C	(ft)	nalysis below) WA WA WA	Observations OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Too	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (b) (c) (NWTPI (ctivity) (TD (c) (Total PO-	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PE NWTPH-G) (NWTP S) (TSS) (E 4) (Total Kie vanide) (Free	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-GX, PH-Dx) (TPF DD) (Turbidahl Nitroger Cyanide)	(mV) -62.8 -62.7 -62.8 -62.8 -62.8 TYPE (Circle ago) (BTEX) H-HCID) (8081) dity) (Alkalinity) a) (NH3) (NO3/	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grid (HCO3/CO3) (Oil (NO2))	non-standard a	malysis below) WA WA ON O	Observations OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals)	(uS/cm) 710 711 711. 710.5 NALYSIS AI () (8020) (th) (NWTPI (ctivity) (TD (c) (Total PO- (e) (WAD Cy (dos) (Sb) ((mg/L) 0.26 0.25 0.26 0.3 LLOWED PE NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free //anide) (Free	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M	(uS/cm) 710 711 711. 710.5 NALYSIS AI (S) (8020) (IVAH) (NWTPI (Inctivity) (TD (IC) (Total PO- (E) (WAD Cy (IVAH) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PE NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free //anide) (Free	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (t) (c) (Total PO- (c) (Total PO- (c) (As) (Sb) (etals) (As) (Sl) (g short list)	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 710 711 711. 710.5 NALYSIS AI (S) (8020) (IVAH) (NWTPI (Inctivity) (TD (IC) (Total PO- (E) (WAD Cy (IVAH) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (t) (c) (Total PO- (c) (Total PO- (c) (As) (Sb) (etals) (As) (Sl) (g short list)	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (t) (c) (Total PO- (c) (Total PO- (c) (As) (Sb) (etals) (As) (Sl) (g short list)	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (Circle) (S081) (MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (NO3/MH3) (Cr) (Cu) (Fe) (Cu) (Fe) (Cu)	#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (t) (c) (Total PO- (c) (Total PO- (c) (As) (Sb) (etals) (As) (Sl) (g short list)	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
2 3 4 Average: QUANTITY 3	23.4 23.5 23.5 23.5 23.5 23.5 23.5 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	(uS/cm) 710 710 711 711. 710.5 NALYSIS AI (b) (8020) (t) (c) (Total PO- (c) (Total PO- (c) (As) (Sb) (etals) (As) (Sl) (g short list)	(mg/L) 0.26 0.25 0.26 0.3 LLOWED PF NWTPH-G) (NWTF S) (TSS) (E 4) (Total Kie //anide) (Free Ba) (Be) (Ca b) (Ba) (Be) (Ca	6.05 6.05 6.04 6.0 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger Cyanide) () (Cd) (Co)	(mV) -62.8 -62.7 -62.8 -62.8 TYPE (Circle aportion (#DIV/0! #DIV/0! pplicable or write in (8141) (Oil & Grant (HCO3/CO3) (Cinc (NO2)) (Pb) (Mg) (Mn) (1	non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR

Joe Marin

Date: 8/18/2022



Project Nam	e:	Boeing Renton			Project Number: 0025217.002.099.099			99.099	
Event:		Aug-22			Date/Time:	8/ 18 /2022@	1321		
Sample Num	nber:	RGW014S-	2208		Weather:	sunny			
Landau Repr	resentative:	Joe Marin			_	-			
WATED LEV	'EL/WELL/PU	IDCE DATA							
Well Condition		Secure (YES	!)	Damaged (N	(0)	Describe:			
		,				•		CW Matan No. (.112
DTW Before		4.7	Time:		Flow through cel			GW Meter No.(s	Heron2
	Date/Time:	=		End Purge:		8/18/2022 @ 1321		Gallons Purged:	
Purge water d	isposed to:	Ш	55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENTSYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	tore for three	(mV)	(NTU) lings within the fol	(ft)	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%		+/- 0.1 units		+/- 10%	< 0.3 ft	through cell	
	22.5	592	0.36	6.23	-12.8		4.86		
	· -						4.94		
	22.8	595	0.33	6.27	-20.5				
	22.9	597	0.32	6.28	-24.1		4.96		
	23.0	599	0.33	6.29	-26.8		4.98		
CAMPLECO	LLECTION D	A.T.A							
Sample Collection			Bailer		Pump/Pump Type	Bladder			
Made of:	cica wiiii.	Stainless Ste	_	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced					=		U Other	Dedicated	
Decon Proced									
(Pr. Numarica	_	Alconox Wa	sh 📋	Tap Rinse	DI Water	Dedicated			
(By Numerica	d Order)	Other			<u> </u>	Dedicated			
· •	_	Other			<u> </u>	Dedicated			
· •	d Order)	Other			<u> </u>	Dedicated	DTW	Ferrous iron	Comments/
Sample Descr	al Order)	Other curbidity, odo	r, sheen, etc.):	clear and col	orless		DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
Sample Descr	al Order) ription (color, r	Other curbidity, odo	r, sheen, etc.):	clear and col	orless	Turbidity			
Sample Descr Replicate	ription (color, Temp (°F/°C)	Other curbidity, odos Cond. (uS/cm)	D.O. (mg/L)	clear and col	ORP (mV)	Turbidity			
Replicate 1 2	Temp (°F/°C) 23.0	Other Curbidity, odos Cond. (uS/cm) 602	D.O. (mg/L) 0.32	pH 6.28	ORP (mV) -27.6 -28.0	Turbidity			
Replicate 1 2 3	Temp (°F/°C) 23.0 23.5	Cond. (uS/cm) 602 601	D.O. (mg/L) 0.32 0.32 0.33	clear and col pH 6.28 6.27	ORP (mV) -27.6 -28.0 -28.3	Turbidity			
Replicate 1 2	Temp (°F/°C) 23.0	Other Cond. (uS/cm) 602 601	D.O. (mg/L) 0.32	pH 6.28	ORP (mV) -27.6 -28.0	Turbidity			
Replicate 1 2 3	Temp (°F/°C) 23.0 23.5	Cond. (uS/cm) 602 601	D.O. (mg/L) 0.32 0.32 0.33	clear and col pH 6.28 6.27	ORP (mV) -27.6 -28.0 -28.3	Turbidity			
Replicate 1 2 3 4	Temp (°F/°C) 23.0 23.5 23.5 23.4	Cond. (uS/cm) 602 601 601 601.3	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3	clear and col pH 6.28 6.27 6.27 6.27 6.3	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1	Turbidity (NTU)	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A	Other Cond. (uS/cm) 602 601 601 601.3	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3	clear and col pH 6.28 6.27 6.27 6.27 6.3	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap	Turbidity (NTU) #DIV/0!	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AD () (8020) (1	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE	clear and col pH 6.28 6.27 6.27 6.30 CR BOTTLE NWTPH-GX	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apo) (BTEX)	Turbidity (NTU) #DIV/0!	(ft) on-standard a	(Fe II)	Observations
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010) (8270D) (PA	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (1	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PENWTPH-G) (H-D) (NWTP	6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-Gx;	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081)	Turbidity (NTU) #DIV/0! pplicable or write n	on-standard a	nalysis below)	Observations OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (I CH) (NWTPI ctivity) (TD C) (Total PO	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PENWTPH-G) (H-D) (NWTPH-G) (BH-D) (BH-D	clear and col pH 6.28 6.27 6.27 6.27 6.3 CR BOTTLE NWTPH-Gx; PH-Dx) (TPH-GOD) (Turbidahl Nitroger	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081)	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Green (HCO3/CO3) (C)	on-standard a	nalysis below) WA WA WA	Observations OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (COD) (TOO (Total Cyanid	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (1 H) (NWTPI ctivity) (TD C) (Total PO e) (WAD Cy	D.O. (mg/L) 0.32 0.33 0.20 0.3 LLOWED PENWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kievanide) (Free	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-Gx, PH-Dx) (TPH-GX) CDD) (Turbidahl Nitroger Cyanide)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap () (BTEX) H-HCID) (8081) dity) (Alkalinity) dity) (NH3) (NO3/	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Green (HCO3/CO3) (Conditions)	on-standard a	malysis below) WA WA WA ON O	Observations OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (I SH) (NWTPI ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PENWTPH-G) (H-D) (NWTPH-G) (Free (Ba) (Be) (Ca)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (I AH) (NWTPI ctivity) (TD C) (Total PO e) (WAD Cy o) (As) (Sb) (etals) (As) (Sl)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PENWTPH-G) (H-D) (NWTPH-G) (Free (Ba) (Be) (Ca)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (the control of the control	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (I AH) (NWTPI ctivity) (TD C) (Total PO e) (WAD Cy o) (As) (Sb) (etals) (As) (Sl)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (the control of the control	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (the control of the control	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (the control of the control	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
Replicate Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL A (8260) (8010 (8270D) (PA (PH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI ()) (8020) (I (H) (NWTPI (C) (Total PO (e) (WAD C) () (As) (Sb) ((etals) (As) (S) (and Ethene A	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LLOWED PE NWTPH-G) (M-D) (NWTP S) (TSS) (B4) (Total Kie yanide) (Free (Ba) (Be) (Cab) (Ba) (Be) (Cab)	clear and col pH 6.28 6.27 6.27 6.3 CR BOTTLE NWTPH-GX H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle apple) (BTEX) H-HCID) (8081) (dity) (Alkalinity) (NH3) (NO3/4) (Cr) (Cu) (Fe) (Cr) (Cr) (Cu) (Fe) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr) (Cr	#DIV/0! #DIV/0! pplicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a ease) I) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR

Joe Marin

Date: 8/18/2022



Project Name	e:	Boeing Ren	ton		Project Number	:	0025217.002.0	99.099	
Event:		Aug-22		_	Date/Time:	8/ 18 /2022@	1322		
Sample Num	ber:	RGWDUP4	2208		Weather:	sunny			
Landau Repr	esentative:	Joe Marin							
WATER LEV	EL/WELL/PU	RGE DATA							
Well Conditio	n:	Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before I	Purging (ft)	4.7	Time:	1300	Flow through cell	l vol.		GW Meter No.(s	Heron2
Begin Purge:	Date/Time:	8/ 18/2022 @	1305	End Purge:	Date/Time:	8/18/2022 @ 1321		Gallons Purged:	1
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
-	Т	Comil	D.O.		OPP	Tk: 3:4	DTW	Internal Dance	Commontal
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	-					lings within the fol	-	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
	22.5	592	0.36	6.23	-12.8		4.86		
	22.8	595	0.33	6.27	-20.5		4.94		
	22.9	597	0.32	6.28	-24.1		4.96		
	23.0	599	0.33	6.29	-26.8		4.98		
			0.55	0.27			1.50		
								. =	
SAMPLE CO		ATA							
Sample Collec	cted With:		Bailer	_	Pump/Pump Type			. <u></u>	
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(D., N									
(By Numerica	l Order)	Other							
Sample Descri		-	, sheen, etc.):	clear and col	lorless				
Sample Descri	iption (color, t	turbidity, odor				Turbidity	DTW	Forrous iron	Commentel
•		-	D.O. (mg/L)	clear and col	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
Sample Descri Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	· -			
Sample Descri Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	рН 6.28	ORP (mV)	· -			
Replicate 1 2	Temp (°F/°C) 23.0 23.5	Cond. (uS/cm) 602	D.O. (mg/L) 0.32	pH 6.28 6.27	ORP (mV) -27.6 -28.0	· -			
Replicate 1 2 3	Temp (°F/°C) 23.0 23.5 23.5	Cond. (uS/cm) 602 601	D.O. (mg/L) 0.32 0.32	pH 6.28 6.27 6.27	ORP (mV) -27.6 -28.0 -28.3	· -			
Replicate 1 2	Temp (°F/°C) 23.0 23.5	Cond. (uS/cm) 602	D.O. (mg/L) 0.32	pH 6.28 6.27	ORP (mV) -27.6 -28.0	· -			
Replicate 1 2 3	Temp (°F/°C) 23.0 23.5 23.5	Cond. (uS/cm) 602 601	D.O. (mg/L) 0.32 0.32	pH 6.28 6.27 6.27	ORP (mV) -27.6 -28.0 -28.3	· -			
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4	Cond. (uS/cm) 602 601 601 601.3	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3	6.28 6.27 6.27 6.27 6.3	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1	(NTU)	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4	Cond. (uS/cm) 602 601 601 601.3	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PE	6.28 6.27 6.27 6.27 6.3	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap	(NTU) #DIV/0!	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI ()) (8020) (N	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWYPH-G) (1997)	6.28 6.27 6.27 6.27 6.3 CR BOTTLE (NWTPH-GX)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap	(NTU) #DIV/0!	(ft)	(Fe II)	Observations
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N AH) (NWTPH citivity) (TDS	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERMYPH-G) (M-D) (NWTF	6.28 6.27 6.27 6.27 6.3 CR BOTTLE (NWTPH-Gx) PH-Dx) (TPH-GOD) (Turbic	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap) (BTEX) H-HCID) (8081) dity) (Alkalinity)	#DIV/0! plicable or write n (8141) (Oil & Gre (HCO3/CO3) (C	on-standard a	nalysis below)	Observations OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI (0) (8020) (N (0) (NWTPH (ctivity) (TDS)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERMYPH-G) (M-D) (NWTFF-G) (TSS) (ES) (ES) (ES) (TSS) (TSS) (TSS) (ES) (TSS)	6.28 6.27 6.27 6.27 6.3 CR BOTTLE (NWTPH-Gx) PH-Dx) (TPH-GOD) (Turbidahl Nitroger	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap) (BTEX) H-HCID) (8081)	#DIV/0! plicable or write n (8141) (Oil & Gre (HCO3/CO3) (C	on-standard a	nalysis below) WA WA WA	Observations OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AN (8260) (8010 (8270D) (PA (pH) (Condu (COD) (TOC) (Total Cyanid	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N AH) (NWTPI- citivity) (TD: C) (Total PO- e) (WAD Cy	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PF WTPH-G) (NWTP 6) (TSS) (E 4) (Total Kie anide) (Free	6.28 6.27 6.27 6.27 6.3 CR BOTTLE NWTPH-GX PH-Dx) (TPF GOD) (Turbidahl Nitroger Cyanide)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/1)	#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C	on-standard a	malysis below) WA WA WA O WA O WA O WA O WA	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI (US/CM) 602 601 601 601 601.3 (US/CM) (US/C	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERMYPH-G) (MYTPH-G) (MYTPH-	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (TOC (Total Cyanid (Total Metals) (Dissolved Metals)	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N CH) (NWTPF lectivity) (TDS C) (Total PO2 e) (WAD Cy o) (As) (Sb) (etals) (As) (St)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERMYPH-G) (MYTPH-G) (MYTPH-	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Mo	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI () (8020) (N AH) (NWTPHetivity) (TD: (C) (Total POde) (WAD Cy () (As) (Sb) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Mo	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N CH) (NWTPF lectivity) (TDS C) (Total PO2 e) (WAD Cy o) (As) (Sb) (etals) (As) (St)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Mo	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI () (8020) (N AH) (NWTPHetivity) (TD: (C) (Total POde) (WAD Cy () (As) (Sb) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Mo	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI () (8020) (N AH) (NWTPHetivity) (TD: (C) (Total POde) (WAD Cy () (As) (Sb) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Methane Eth	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N H) (NWTPHetivity) (TDS C) (Total PO2 e) (WAD Cy o) (As) (Sb) (etals) (As) (St g short list) ane Ethene Ac	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3 1 Duplicate San	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Methane Eth	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI () (8020) (N AH) (NWTPHetivity) (TD: (C) (Total POde) (WAD Cy () (As) (Sb) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 23.0 23.5 23.5 23.4 TYPICAL AI (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved Methane Eth	Cond. (uS/cm) 602 601 601 601.3 NALYSIS AI 0) (8020) (N H) (NWTPHetivity) (TDS C) (Total PO2 e) (WAD Cy o) (As) (Sb) (etals) (As) (St g short list) ane Ethene Ac	D.O. (mg/L) 0.32 0.32 0.33 0.20 0.3 LOWED PERWITPH-G) (NWTPH-G) (NWTPH-G) (NWTPH-G) (Total Kieranide) (Free Ba) (Be) (Carbo) (Ba) (Be) (Carbo) (Ba) (Be) (Carbo)	6.28 6.27 6.27 6.3 ER BOTTLE (NWTPH-GX) PH-Dx) (TPH-DX) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) -27.6 -28.0 -28.3 -28.4 -28.1 TYPE (Circle ap o) (BTEX) H-HCID) (8081) dity) (Alkalinity) n) (NH3) (NO3/2) (Cr) (Cu) (Fe) (#DIV/0! plicable or write n (8141) (Oil & Gro (HCO3/CO3) (C) NO2)	on-standard a ease) l) (SO4) (NO	(Fe II) nalysis below) WA WA ON WA WA ON WA WA ON WA WA WA WA WA WA WA	Observations OR OR OR OR Graph Graph



Project Name:		Boeing Rento	on		Project Number:		0025217.002.09	9.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@ 120	00		
Sample Numb	er:	RGW031S-	220823		Weather:	Sunny			
Landau Repres	sentative:	BLH			-				
WATER LEVE	L/WELL/PURO	GE DATA							
Well Condition:		Secure (YES)		Damaged (NC	D)	Describe:			
DTW Before Pu	ırging (ft)	5.26	Time:	•	Flow through cell		200 ml	GW Meter No.(s)	Slone #2
Begin Purge:		8/ 23 /2022 @		End Purge:	•	8/ 23 /2022 @	1208	Gallons Purged:	2
Purge water dis			55-gal Drum		Storage Tank	Ground		SITE TREATME	
				_	-	_	_		
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
				eters for three	. ,	ngs within the follow		>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
1147	22.4	471.5	1.83	7.00	-101.3	8.94	5.26	~200ml/min	YSI calibration took tii
1152	22.7	459.4	1.59	6.15	-107.9		5.25		
1158	22.6	452.2	1.88	5.87	-100.9		5.25		
SAMPLE COLI	LECTION DAT	ΓA							
Sample Collecte	ed With:		Bailer		Pump/Pump Type	Peristaltic			
Made of:		Stainless Steel		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Procedur	re:	Alconox Wash		Tap Rinse	DI Water	Dedicated			
(By Numerical C	Order)	Other							
Sample Descrip	tion (color, turb	oidity, odor, she	en, etc.):	Colorless / Clo	ear / NO / NS				
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	, ,	, ,		5 92	, ,	(2120)	(11)	(1 0 11)	O DSCI VILLIONS
1	22.5	450.2	1.77	5.83	-98.7				
2	22.5	450.3	1.76	5.83	-98.4				
3	22.5	450.3	1.74	5.82	-98.2				
4	22.5	449.9	1.74	5.82	-98.2	10.17			
Average:	22.5	450.2	1.75	5.83	-98.4	10.17			
QUANTITY	TYPICAI AN	ALVSIS ALL	OWED DEB 1	ROTTLE TVD	E (Circle annlicab	le or write non-stand	dard analysis bol	(ow)	
<u> </u>		(8020) (NW			TEX)	or write non-stand	uni u ununysis DC	WA 🗆	OR 🗆
T					D) (8081) (8141)	(Oil & Grease)		WA □	OR 🗆
l le			1			03/CO3) (Cl) (SO4)) (NO3) (NO2)		
			(TSS) (BOD) (Turbluity)					
ı	(pH) (Conduc	tivity) (TDS)	` ' '	***	NH3) (NO3/NO2)	(23) (22)	, , , , , , , , , , , , , , , , , , ,		
1	(pH) (Conduc (COD) (TOC)	tivity) (TDS)	(Total Kiedah	l Nitrogen) (N	***	(27)		,	
1	(pH) (Conduc (COD) (TOC) (Total Cyanide)	tivity) (TDS) (Total PO4)) (WAD Cyani	(Total Kiedah de) (Free Cya	l Nitrogen) (Nanide)	NH3) (NO3/NO2)	Ig) (Mn) (Ni) (Ag)		Zn) (Hg) (K) (Na))
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Met	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I	(Total Kiedah de) (Free Cya (Be) (Ca) (C	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M		(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals) VOC (Boeing	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals) VOC (Boeing	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals) VOC (Boeing	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals) VOC (Boeing	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		
1	(pH) (Conduc (COD) (TOC) (Total Cyanide (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) als) (As) (Sb) (I short list)	(Total Kiedah de) (Free Cya (Be) (Ca) (CBa) (Be) (Ca) (Ca)	l Nitrogen) (Nanide) Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (M	Ig) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z		



Project Na	mar	Boeing Rento	2		Project Num	hor	0025217.00	2 000 000	
Event:		Aug-22	11		Date/Time:		@ 1453	2.099.099	
Sample Nu	ımber:	RGW033S-	2208		Weather:	0/1/ /2022			
	presentative:	Joe Marin			_				
	1								
WATER LI	EVEL/WELL/PU	RGE DATA							
Well Condi	tion:	Secure (YES)		Damaged (No	O)	Describe:			
DTW Befor	re Purging (ft)	5.29	Time:	1440	Flow through	cell vol.		GW Meter No	Heron 2
Begin Purge	e: Date/Time:	8/17 /2022 @	1441	End Purge:	Date/Time:	8/17 /2022	@ 1453 Ga	allons Purged:	0.5
Purge water	disposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREAT!	MENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(° F /° C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
				limits				through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	vol.	
	22.2	541	0.41	6.14	-37.2				
	23.2	537	0.46	6.16	-43.2				
	23.4	535	0.46	6.16	-46.3				
	23.6	529	0.54	6.16	-51.5		-	,	
	23.6	524	0.61	6.16	-52.4				
	23.6	519	0.67	6.13	-53.7				
	23.6	518	0.72	6.14	-53.8				
								<u> </u>	
SAMPLE C	COLLECTION D.	ΔΤΔ							
	lected With:	1171	Bailer	р	Pump/Pump Typ	n Bladder			
-	lected with.		Danci						
Made of:		Stainless Steel		PVC	Teflon 1	Polyethylene	Other	Dedicated	
Decon Proc	edure:	Alconox Wash		Tap Rinse	DI Water	Dedicated			
(By Numeri	cal Order)	Other							
Sample Des	scription (color, t	urbidity, odor, sh	een, etc.):	clear and colo	orless				
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	iron (Fe	Comments/
перисис	(°F/°C)	(uS/cm)	(mg/L)	PII	(mV)	(NTU)	(ft)	II)	Observations
1	23.7	517	0.75	6.11	-53.3	(1,10)	(20))	0.0001 (4.0010)
2	23.6	517	0.72	6.10	-53.3			 ·	
3	23.7	517	0.70	6.10	-53.3			 -	
4	23.7	517	0.70	6.09	-53.2			· —— ·	
Average:	23.7	517	0.72	6.10	-53.3	#DIV/0!			
TIA NITTEN	TVDICAL AND	LYSIS ALLOV	ED DED DO	TTI F TVDF (Circle applicat	hle or write	m_ctandand	analysis helew)	1
5 5		(8020) (NWTP				ore or write no	stanuaru i		OR
		(NWTPH-D) (1				(Oil & Grass	2)		OR OR
		vity) (TDS) (T							
1	_	(Total PO4) (T					(304) (14	O3) (NO2) (F)	'
		(WAD Cyanide			, (1.00/1.02)				
		As) (Sb) (Ba) ('11) (Fe) (Ph) (Mg) (Mn) (Ni	i) (Aσ) (Se)	(Tl) (V) (Zn) (Hg) (K) (Na)
		ls) (As) (Sb) (Ba)							
	VOC (Boein		, (BC) (Ca) (CC	, (CO) (CI) (CI	, (1 c) (1 b) (WIE	5) (1 111 1) (1 11) (A	6/ (DC) (11) (· , (Zii) (11g) (K)	(14a) (11aruness)
		ane Ethene Acety	rlene						
	came Dui	2010110 7 10013							
	others								
Duplicate S	ample No(s):								
•	_								
Comments:						В.	0/17/2022		
Signature:	J Marin					Date:	8/17/2022		



Project Na	me:	Boeing Rentor			Project Num		0025217.00		011 1 01111
Event:		Aug-22			Date/Time:	8/17 /2022	2@ 1455		
Sample Nu	mber:	RGWDUP2-2	2208		Weather:				
Landau Re	presentative:	Joe Marin							
WATER LE	EVEL/WELL/PU	RGE DATA							
Well Condit	ion:	Secure (YES)		Damaged (N	O)	Describe:			
DTW Befor	e Purging (ft)	5.29	Time:	1440	Flow through	cell vol.		GW Meter No	Heron 2
Begin Purge	e: Date/Time:	8/17 /2022 @	1441	End Purge:	Date/Time:	8/17 /2022	@ 1453 Ga	allons Purged:	0.5
Purge water	disposed to:	•	55-gal Drum		Storage Tank	Ground	Other	SITE TREAT	MENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	1::40	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	+/- 3%	+/- 10%	limits +/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
	22.2	541	0.41	6.14	-37.2	17-1070	\ 0.5 It	VOI.	
	23.2	537	0.46	6.16	-43.2				
	23.4	535	0.46	6.16	-46.3				
	23.6	529	0.54	6.16	-51.5				
	23.6	524	0.61	6.16	-52.4				
	23.6	519	0.67	6.13	-53.7			<u> </u>	
	23.6	518	0.72	6.14	-53.8				
SAMPLE C	OLLECTION D	АТА							
Sample Coll			Bailer	F	Pump/Pump Typ	n Bladder			
Made of:		Stainless Steel	Duner	PVC			Other	- Dedicated	
						Polyethylene	Other	Dedicated	
Decon Proce		Alconox Wash		Tap Rinse	DI Water	Dedicated			
(By Numerio		Other							
Sample Des	cription (color, t	urbidity, odor, sh	een, etc.):	clear and col	orless				
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	iron (Fe	Comments/
	(° F /° C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	II)	Observations
1	23.7	517	0.75	6.11	-53.3				
2	23.6	517	0.72	6.10	-53.3				
3	23.7	517	0.70	6.10	-53.3				
4	23.7	517	0.70	6.09	-53.2				
Average:	23.7	517	0.72	6.10	-53.3	#DIV/0!	-	· ——	
		ALYSIS ALLOV				ble or write n	on-standard		
		(8020) (NWTP						WA	OR
		(NWTPH-D) (N						WA	OR
		(Total PO4) (T					l) (SO4) (N	O3) (NO2) (F))
		(Total PO4) (Total PO4) (WAD Cyanide)			(NO3/NO2)				
		(WAD Cyanide) (As) (Sb) (Ba) (•		'u) (Ea) (Ph) (Mg) (Mn) (N	(i) (Ag) (Se)	(T1) (V) (Zn) (Hg) (K) (Na)
		ds) (As) (Sb) (Ba)							
	VOC (Boein		(Be) (ea) (ee	1) (00) (01) (01	1) (1 0) (1 0) (111)	5) (11111) (111) (2	15) (50) (11) ((211) (116) (11)	(14a) (Hardiness)
		ane Ethene Acety	lene						
	others								
Duplicate Sa	ample No(s):	RGW033S							
Comments:	_								
Signature:	J Marin					Date:	8/17/2022		
-									

	Project Name: Boeing Renton Event: Aug-22				Project Number: 0025217.002.099.099 Date/Time: 8/17 /2022@ 1359				
Sample Nu	ımber:	RGW034S-	2208		Weather:	0/17 /2022	@ 1339		
-	epresentative:	SJL/AHA	2200						
WATER LI	EVEL/WELL/PU	RGE DATA							
Well Condi	ition:	Secure (YES)		Damaged (N	O)	Describe:			
DTW Befor	re Purging (ft)	5.4	Time:	1345	Flow through	cell vol.		GW Meter No	.(s)
Begin Purg	e: Date/Time:	8/ 17 /2022 @	2 1345	End Purge:	Date/Time:	8/ 17/2022 @	1359 G	allons Purged:	
Purge water	r disposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREAT	MENT SYSTEM
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Time	(F / C)	(us/cm)	(IIIg/L)	limits	(111 V)	(1110)	(11)	through cell	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	vol.	
	23.6	327.3	0.29	6.36	-42.2				
	25.1	329.0	0.26	6.33	-54.7				
	25.9	329.5	0.27	6.35	-61.4				
	26.4	330.4	0.31	6.34	-64.8				
	26.7	330.6	0.29	6.34	-69.1				
	26.8	329.7	0.34	6.34	-71.1				
	26.9	329.0	0.43	6.34	-72.1				
	COLLECTION D.	ATA							
Sample Col	llected With:		Bailer	F	Pump/Pump Typ	p Bladder			
Made of:		Stainless Steel		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proc	edure:	Alconox Wash		Tap Rinse	DI Water	Dedicated			
(By Numeri	ical Order)	Other							
Sample Des	scription (color, t	urbidity, odor, sh	neen, etc.):	clear and col	orless				
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	iron (Fe	Comments/
	(° F /° C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	II)	Observations
1	26.9	329.0	0.43	6.34	-72.3				
2	26.9	328.9	0.40	6.34	-72.6				
3	26.9	328.8	0.39	6.34	-72.8				
4 Average:	26.9	328.7 328.9	0.40	6.34	-72.9 -72.7	#DIV/0!			
riverage.	20.9	320.7	0.11	0.51	, 2.,	#B1170.			
DI LA NITETTA	TYPICAL ANA	ALVOIC ALLOY	VED DED DO	TTI E TYDE (Cinala amplica	bla an muita na		amalusia halam)	
5		(8020) (NWTI				ble of write no	ii-stanuaru		OR
		(NWTPH-D) ((Oil & Grease	<u>-)</u>		OR
								O3) (NO2) (F)	
1		(Total PO4) (T							
		(WAD Cyanide							
								(Tl) (V) (Zn) (
	,	, , , , , ,	(Be) (Ca) (Co	d) (Co) (Cr) (Cu	ı) (Fe) (Pb) (Mg	g) (Mn) (Ni) (A	g) (Se) (Tl) ((V) (Zn) (Hg) (K)	(Na) (Hardness)
	VOC (Boein		.1						
	Methane Eth	ane Ethene Acet	yiene						
	others								
Duplicate S	Sample No(s):								·
Comments:	_ · · · · · _								
Signature:	J Marin					Date:	8/17/2022).	
orginature:	J MIGHIN					Date.	0/1//2022	•	



Project Nam	e:	Boeing Ren	ton		Project Number	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 17 /2022@	1408		
Sample Num	nber:	RGW143S-	220817		Weather:	Sunny, 90s			
Landau Repr	resentative:	SJL/AHA			•				
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	5.36	Time:	1339	Flow through ce	l vol.		GW Meter No.(s	Heron #4
Begin Purge:	Date/Time:	8/ 17/2022 (1340	End Purge:	Date/Time:	8/ 17 /2022 @	1404	Gallons Purged:	0.25
Purge water d	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMI	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	4 6 41	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units		lings within the fo +/- 10%	< 0.3 ft	>/= 1 flow through cell	
1343	22.5	349.8	0.02	6.44	50.3		5.36		
1346	23.1	364.6	0.02	6.43	51.2		5.36		
1349	24.9	416.3	0.02	6.41	53.7		5.36		
1352	26.3	447.2	0.01	6.41	54.2				
1355	26.9	461.3	0.01	6.41	54.4				
1358	27	465.8	0.01	6.41	54.4				
1401	27.2	474.2	0.01	6.41	54.7				
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Wa	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	ıl Order)	Other							
Sample Descr	ription (color,	turbidity, odoi	, sheen, etc.)	Clear, colorl	ess, no/ns				
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
	(° F /° C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	(Fe II)	Observations
1	27.2	474.4	0.01	6.41	54.8		· 		
2	27.2	474.4	0.01	6.41	54.9		· 		
3	27.2	476.2	0.01	6.41	54.9				
4	27.2	476.3	0.01	6.4	55				
Average:	27.2	475.3	0.0	6.4	54.9	#DIV/0!			
QUANTITY	TYPICAL A					plicable or write	non-standard a	nalysis below)	
5	(8260) (801	/ / / /	WTPH-G) (`				WA 🗆	OR 🗌
	` / `					8141) (Oil & Gre		WA 🗆	OR 🗆
		• • • • • • • • • • • • • • • • • • • •				(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
1	· · · ·				n) (NH3) (NO3/	NO2)			
	` .	le) (WAD Cy			(Cr.) (Cr.) (T-)	(Db.) (Ma) (Ma) (N:) (A =) (C=) /	T) (V) (7-) (II	-) (V) (M-)
	,					(Pb) (Mg) (Mn) (Na) (Hardness) (Silic
	VOC (Boein) (Ба) (Бе) (C	za) (Cu) (Co)	(CI) (Cu) (Fe) (F	b) (Mg) (MII) (M)	(Ag) (Se) (11) (V	(Zii) (Hg) (K) (I	va) (Hardness) (Sinc
	1	ane Ethene A	cetylene						
		Janono II	,						
	others								
Dunlianta C	nnle No(a):								
Duplicate San Comments:	iipie ivo(s).								



Project Nam	e:	Boeing Ren	ton		Project Number	:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 19 /2022@	1527		
Sample Num	ber:	RGW147S-	220819		Weather:				
Landau Repi	resentative:	JAM							
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	IO)	Describe:			
DTW Before	Purging (ft)	4.27	Time:	1453	Flow through cel	l vol.	200 mL	GW Meter No.(s	Heron 2
Begin Purge:	Date/Time:	8/ 19 /2022 @	1455	End Purge:	Date/Time:	8/ 19 /2022 @	1515	Gallons Purged:	
Purge water d	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	P	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	Purge Goal	ls: Stablizatio +/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units		lings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1450						+/- 10 70		uirougii cen	
1458	21.8	325.3	1.04	4.69	49.4		4.29		
1501	22.6	330.4	1.58	4.65	47.0		4.29		
1504	23.4	335.9	1.57	4.64	44.8		4.29		
1507	24.0	340.6	1.65	4.62	43.1				
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	ıl Order)	Other							
Sample Descr	ription (color,	turbidity, odor	, sheen, etc.):	Sheen / stron	ng odor / medium	turbidity / some su	spended solids /	brownish	
D 1' '		- C 1	D.O.	**	ODD	m 1:14	DOW		
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	24.1	341.3	1.72	4.62	42.8				
2	24.2	341.4	1.74	4.62	42.6				
3	24.2	341.5	1.73	4.62	42.5				
4	24.2	341.8	1.74	4.62	42.4		· 		
Average:	24.2	341.5	1.73	4.62	42.6				
QUANTITY					_	plicable or write	non-standard a		or \square
3		0) (8020) (N				(8141) (Oil & G	rassa)		OR □ OR □
						(HCO3/CO3) (*		OK L
1	· ,	• • • • • • • • • • • • • • • • • • • •			n) (NH3) (NO3/	, , ,	ci) (50 i) (1 to	(1,02) (1)	
	(Total Cyanid	le) (WAD Cy	anide) (Free	Cyanide)					
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca	a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg	g) (K) (Na)
	(Dissolved M	etals) (As) (Sb) (Ba) (Be) (C	Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	o) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Zn) (Hg) (K) (N	Na) (Hardness) (Silic
	VOC (Boein	•							
	Methane Eth	ane Ethene A	cetylene						
1									
	others								
	others								
Duplicate San									
Duplicate San Comments:									



JAM

Groundwater Low-Flow Sample Collection Form

Project Nam	e:	Boeing Ren	ton		Project Number		0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 22/2022@	1223		
Sample Num	ber:	RGW150S-	220822		Weather:				
Landau Repi	resentative:	JAM			•				
WATER LEV	EL/WELL/PU	IRGE DATA							
Well Condition	n:	Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	4.78	Time:	1157	Flow through cel	l vol.	200mL	GW Meter No.(s	Heron 2
Begin Purge:	Date/Time:	8/ 22 /2022	1159	End Purge:	Date/Time:	8/ 22 /2022 @		Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	+/- 3%		+/- 0.1 units		lings within the fo +/- 10%	< 0.3 ft	>/= 1 flow through cell	
1202	21.0	407.6	0.98	5.83	-58.8		4.78		
1205	22.1	409.9	0.86	5.84	-64.7		4.78		
1208	23.0	414.5	1.11	5.85	-67.4		4.78		
1211	23.8	421.0	1.40	5.85	-69.7				
1214	24.5	427.2	2.74	5.86	-71.8				
1217	25.1	432.4	2.94	5.88	-73.9				
1220	26.3	447.0	2.39	5.89	-75.8				
1220	20.3	447.0	2.37	3.07	-75.0				
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Wa	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	iption (color,	turbidity, odoi	, sheen, etc.):	colorless / no	odor / no sheen /	low turbidity			
Replicate	Temp	Cond.	D.O.	pH	ORP	Turbidity	DTW	Ferrous iron	Comments/
перисис	(°F/°C)	(uS/cm)	(mg/L)	PII	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	26.3	441.7	2.43	5.89	-76.1				
2	26.4	442.1	2.26	5.89	-76.2				_
3	26.4	442.2	2.19	5.89	-76.5				
4	26.4	442.5	2.16	5.89	-76.7				
Average:	26.4	442.1	2.26	5.89	-76.4				
	TVDICAL A			D ROTTI E	TVDF (Circle or	plicable or write	non standard a	nolycic holow)	
1	(8260) (8010				(BTEX) (8260)		non-standard a		OR 🗌
	(8270) (PAI	I) (NWTPH-	D) (NWTPH	-Dx) (TPH-	HCID) (8081) (8141) (Oil & Gre	ase)		or \square
	(pH) (Condu	ctivity) (TD	S) (TSS) (B	OD) (Turbi	dity) (Alkalinity)	(HCO3/CO3) (0	Cl) (SO4) (NC	03) (NO2) (F)	
1	(COD) (TOO	C) (Total PO	4) (Total Kie	dahl Nitroger	n) (NH3) (NO3/	NO2)			
	•	e) (WAD Cy		•					
						(Pb) (Mg) (Mn) (-	
			o) (Ba) (Be) (C	.a) (Cd) (Co)	(Cr) (Cu) (Fe) (P	o) (Mg) (Mn) (Ni)	(Ag) (Se) (TI) (V	() (Zn) (Hg) (K) (N	Va) (Hardness) (Silic
	VOC (Boein Methane Eth	ane Ethene A	cetylene						
		Zuielle A	- 50,10110						
	others								
Duplicate San	nple No(s):								

Date: 8/22/2022



Project Name	e:	Boeing Rent	on		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1635		
Sample Num	ber:	RGW152S-	220824		Weather:	Sunny			· · · · · · · · · · · · · · · · · · ·
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Conditio	n:	Secure (YES)		Damaged (N	IO)	Describe:			
OTW Before l	Purging (ft)	9.87	Time:	1609	Flow through ce	ll vol.	200 mL	GW Meter No.(s) Heron
Begin Purge:	Date/Time:	8/ 24 /2022 @	1610		_	8/ 24 /2022 @	1633	Gallons Purged:	*
Purge water d	isposed to:		55-gal Drum	-	Storage Tank	Ground		SITE TREATME	ENT SYSTEM
Time	Temp	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	. ,	` /	, ,	ters for three	· , ,	dings within the fo	. ,	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1613	25.9	5095	0.42	5.01	13.5		10.10		
1616	25.8	5080	0.33	5.01	13.3		10.10		
1619	25.6	5057	0.26	5.00	13.0		10.10		
1622	25.5	5013	0.18	5.00	12.4				
1625	25.0	4976	0.12	5.00	9.3		-		
1628	24.9	4854	0.03	5.00	9.2	-			
1631	24.9	4841	0.02	5.00	8.8				
	LLECTION D								
Sample Collec	eted With:		Bailer		Pump/Pump Type	_			
Made of:	Ш	Stainless Stee	1 <u> </u>	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	h 🔲	Tap Rinse	DI Water	Dedicated			
By Numerica	l Order)	Other					-		
Sample Descr	iption (color,	turbidity, odor,	sheen, etc.):	sour odor / s	heen / yellow / me	edium turbidity			
Replicate	Тетр	Cond.	D.O.	pH	ORP	Turbidity	DTW	Farmana inan	Comments/
Replicate	(°F/°C)	(uS/cm)	(mg/L)	рп	(mV)	(NTU)	(ft)	Ferrous iron (Fe II)	Observations
1	24.9	4839	0.02	5.00	8.7				
2	24.9	4833	0.02	5.00	8.6	-			
					-	-	·	·	
3	24.9	4833	0.02	5.00	8.5				
4	24.9	4831	0.02	5.01	8.3		·		
Average:	24.9	4834	0.02	5.00	8.5				
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PI	ER BOTTLE	TYPE (Circle a	pplicable or write	non-standard a	nalysis below)	
3	(8260-SIM)	(8010) (8020)) (NWTPH-	-G) (NWTPI	H-Gx) (BTEX)	-		WA 🗆	OR 🗌
	(8270D) (PA	AH) (NWTPH	-D) (NWTI	PH-Dx) (TPI	H-HCID) (8081)	(8141) (Oil & G	rease)	WA □	or 🗆
	(pH) (Condu	ictivity) (TDS) (TSS) (E	BOD) (Turbi	dity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
1	(COD) (TOO	C5310C) (Tot	al PO4) (To	otal Kiedahl N	litrogen) (NH3)	(NO3/NO2)			
	` ,	le) (WAD Cya	/ \	, ,					
1						(Pb) (Mg) (Mn)			
			(Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	(b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Y) (Zn) (Hg) (K) (N	Na) (Hardness) (Sil
	VOC (Boein								
	Methane Eth	ane Ethene Ac	etylene						
	others								
	others								
Ouplicate San	nple No(s):								
Comments:	No Dup take	en as ran dry wi	th low recha	rge rate. D.O.	has been reading	very low today			
Signature:	IAM					Date:	8/24/2022		



Project Nam	e:	Boeing Ren	ton		Project Number	<u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1510		
Sample Num	ber:	RGW153S-	220824		Weather:	Sunny ~80 F			
Landau Repr	resentative:	BLH							
WATER LEV	EL/WELL/PI	IRGE DATA							
Well Condition		Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before		10.41	Time:		Flow through cel		200 mL	GW Meter No.(s	Slope #2
	0 0 ,	8/ 24 /2022 0		End Purge:		8/ 24 /2022 @		Gallons Purged:	·
Purge water d		0/21/2022 (55-gal Drum	Ě	Storage Tank	Ground		SITE TREATM	
Turge water a	isposed to.	₩	-	_	-	_	<u> </u>		
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O.	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge	Comments/ Observations
Time	. ,	. ,	(mg/L) on of Parame	ters for three	. ,	(N1U) lings within the fo	. ,	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1457	18.9	271.8	0.57	5.97	1.2		10.63	yes	
1500	18.1	258.1	0.41	6.03	-23.5		10.62	·	
							-		
1503	18.1	250.2	0.39	6.06	-39.6		10.65		
1506	18.1	241.8	0.34	6.06	-56.9				
1509	18.1	234.7	0.32	6.06	-64.0				
SAMPLE CO	LI ECTION D	<u> </u>							
Sample Collection			Bailer		Pump/Pump Type	Byladder			
Made of:		Stainless Stee	_	PVC	Teflon	Polyethylene	Other	Dedicated	
				Tap Rinse			U outer	Dedicated	
Decon Proced		Alconox Was	sn 📋	rap Kinse	DI Water	Dedicated			
(By Numerica		Other	•				(37 1 (3)		
Sample Descr	iption (color,	turbidity, odor	, sheen, etc.):	initially gray	ish tint, with pum	ping Colorless / Cl	ear / No odor / N	lo sheen	
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
	(°F/°C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	18.1	234.1	0.32	6.06	-64.9				
2	18.1	233.9	0.33	6.06	-65.3				
3	18.2	233.2	0.33	6.06	-65.8				
4	18.1	232.9	0.33	6.06	-66.2				
Average:	18.1	233.5	0.33	6.06	-65.6		-		
OUANTITY	TYPICAL A	NALYSIS AI	LOWED PE	R BOTTLE	TYPE (Circle ar	plicable or write	non-standard a	nalvsis below)	
3	(8260-SIM)	(8010) (8020)) (NWTPH-	G) (NWTPI	H-Gx) (BTEX)	•		WA 🗆	OR 🗌
	(8270D) (PA	AH) (NWTPH	H-D) (NWTF	H-Dx) (TPH	I-HCID) (8081)	(8141) (Oil & G	rease)		OR 🗆
	(pH) (Condu	ctivity) (TDS	S) (TSS) (E	OD) (Turbio	dity) (Alkalinity)	(HCO3/CO3) (C	Cl) (SO4) (NC	03) (NO2) (F)	
1		C5310C) (To	tal PO4) (To	tal Kiedahl N	itrogen) (NH3)	(NO3/NO2)			
	(COD) (TOO	23310C) (10							
	(Total Cyanid	le) (WAD Cy	, ,						
1	(Total Cyanid	le) (WAD Cy	, ,		(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) ((Tl) (V) (Zn) (H	g) (K) (Na)
1	(Total Cyanid (Total Metals (Dissolved M	le) (WAD Cy) (As) (Sb) (etals) (As) (Sb	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	g) (K) (Na) Na) (Hardness) (Silica
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	le) (WAD Cy) (As) (Sb) (etals) (As) (Sb	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,
1 Duplicate San Comments:	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	de) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	Ba) (Be) (Ca	ı) (Cd) (Co)	· · · · · · ·	, , , , , ,	, , , , ,	· / · / · / · · ·	,



Project Name	e:	Boeing Rente	on		Project Number	:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1531		
Sample Num	ber:	RGW172S-	220824		Weather:	Sunny			
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Conditio	n:	Secure (YES)		Damaged (N	(O)	Describe:			
DTW Before I	Purging (ft)	9.84	Time:	1501	Flow through cel	l vol.	200 mL	GW Meter No.(s) heron 4
Begin Purge:	Date/Time:	8/ 24 /2022 @	1504	End Purge:	Date/Time:	8/ 24 /2022 @	1528	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	ENT SYSTEM
	Т		-		OPP	T	DTW	Internal Dunce	Commental
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	_					lings within the fo	-	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1507	25.78	801	0.09	6.59	-87.5		10.32		
1510	25.79	803	0.09	6.59	-98.0		10.36		
1513	25.79	800	0.09	6.59	-108.5		10.36		
1516	25.80	798	0.09	6.59	-115.1		10.36		
1519	25.53	787	0.01	6.69	-116.2		10.37	-	
1522	25.40	786	0.00	6.68	-116.2		10.37		
1525	25.20	781	0.00	6.68	-118.5		10.38		
SAMPLE CO			D 11		D D T	DI 11			
Sample Collec	cted With:		Bailer	_	Pump/Pump Type	_			
Made of:		Stainless Stee		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	_	Alconox Wash	n 📋	Tap Rinse	DI Water	Dedicated			
(By Numerica	((lvdov)								
•		Other		G 1 1 /6					
•		-	sheen, etc.):	Colorless / C	lear / No odor / N	o sheen			
•		-	D.O. (mg/L)	Colorless / C	Clear / No odor / N ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
Sample Descr	Temp	turbidity, odor,	D.O.		ORP	Turbidity			
Sample Descri Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity			
Replicate 1 2	Temp (°F/°C) 25.20	Cond. (uS/cm) 783	D.O. (mg/L) 0.00	pH 6.68 6.67	ORP (mV) -115.5	Turbidity			
Replicate 1 2 3	Temp (°F/°C) 25.20 25.20	Cond. (uS/cm) 783 780 773	D.O. (mg/L) 0.00 0.00	pH 6.68 6.67 6.68	ORP (mV) -115.5 -115.4 -115.2	Turbidity			
Replicate 1 2 3 4	Temp (°F/°C) 25.20 25.20 25.20 25.20	Cond. (uS/cm) 783 780 773	D.O. (mg/L) 0.00 0.00 0.00	pH 6.68 6.67 6.68	ORP (mV) -115.5 -115.4 -115.2	Turbidity			
Replicate 1 2 3 4 Average:	Temp (°F/°C) 25.20 25.20	Cond. (uS/cm) 783 780 773	D.O. (mg/L) 0.00 0.00	pH 6.68 6.67 6.68	ORP (mV) -115.5 -115.4 -115.2	Turbidity			
Replicate 1 2 3 4 Average:	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20	Cond. (uS/cm) 783 780 773 778 779	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE	pH	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap	Turbidity	(ft)	(Fe II)	Observations
Replicate 1 2 3 4 Average:	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 TYPICAL A (8260-SIM)	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE	6.68 6.67 6.68 6.67 6.68 ER BOTTLE	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap	Turbidity (NTU)	(ft)	nalysis below)	Observations OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 74 PICAL A (8260-SIM) (8270D) (PA	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF 0 (NWTPH-D) (NWTF	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPH	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081)	Turbidity (NTU) pplicable or write (8141) (Oil & G	(ft)	nalysis below) WA WA WA	Observations
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH- ictivity) (TDS	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF 0 (NWTPH-D) (NWTF) 1 (TSS) (E	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPP	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity)	Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) (6	(ft)	nalysis below)	Observations OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA(pH) (Conduction) (COD) (TOC)	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH- activity) (TDS C5310C) (Total	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPH-D) (N	6.68 6.67 6.68 6.67 6.68 CR BOTTLE G) (NWTPH PH-Dx) (TPH BOD) (Turbi stal Kiedahl N	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081)	Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) (6	(ft)	nalysis below) WA WA WA	Observations OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Conduction) (TOC (Total Cyanid)	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH lectivity) (TDS C5310C) (Total	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF 0 (NWTPH-D) (NWTPH-D) (NWTPH-D) (NWTPH-D) (NWTPH-D) (NWTPH-D) (TSS) (Eal PO4) (Tounide) (Free	6.68 6.67 6.68 6.67 6.68 CR BOTTLE G) (NWTPF PH-Dx) (TPF BOD) (Turbi stal Kiedahl N	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle applementation of the company of	Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) (6	non-standard and rease) CI) (SO4) (NO	malysis below) WA WA WA O NO2) (F)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Conduction (COD) (Total Cyanida (Total Metals)	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH loctivity) (TDS C5310C) (Totale) (WAD Cyale) (As) (Sb) (E	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF 0 (NWTPH-D) (NWTFH) (TSS) (Eal PO4) (Tounide) (Free Ba) (Be) (Cal	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Conduction (COD) (Total Cyanida (Total Metals)	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH- lectivity) (TDS C5310C) (Tota (e) (WAD Cya (d) (As) (Sb) (Eetals) (As) (Sb) (Eetals) (As) (Sb)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF 0 (NWTPH-D) (NWTFH) (TSS) (Eal PO4) (Tounide) (Free Ba) (Be) (Cal	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH- lectivity) (TDS C5310C) (Tota (e) (WAD Cya (d) (As) (Sb) (Eetals) (As) (Sb) (Eetals) (As) (Sb)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPHD) (NWTPHD) (NWTPHD) (TSS) (Eal PO4) (Tounide) (Free Ba) (Ba) (Be) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba)	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH activity) (TDS C5310C) (Tota (e) (WAD Cya (b) (As) (Sb) (E etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPHD) (NWTPHD) (NWTPHD) (TSS) (Eal PO4) (Tounide) (Free Ba) (Ba) (Be) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba)	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M. VOC (Boein Methane Eth	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH activity) (TDS C5310C) (Tota (e) (WAD Cya (b) (As) (Sb) (E etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPHD) (NWTPHD) (NWTPHD) (TSS) (Eal PO4) (Tounide) (Free Ba) (Ba) (Be) (Call (Ba) (Ba) (Be) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba)	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH activity) (TDS C5310C) (Tota (e) (WAD Cya (b) (As) (Sb) (E etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPHD) (NWTPHD) (NWTPHD) (TSS) (Eal PO4) (Tounide) (Free Ba) (Ba) (Be) (Call (Ba) (Ba) (Be) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba)	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M. VOC (Boein Methane Eth	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH activity) (TDS C5310C) (Tota (e) (WAD Cya (b) (As) (Sb) (E etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PE 0 (NWTPHD) (NWTPHD) (NWTPHD) (TSS) (Eal PO4) (Tounide) (Free Ba) (Ba) (Be) (Call (Ba) (Ba) (Be) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Call (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba)	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 25.20 25.20 25.20 25.20 25.20 25.20 (Separate of the control of the	Cond. (uS/cm) 783 780 773 778 779 NALYSIS ALI (8010) (8020) AH) (NWTPH activity) (TDS C5310C) (Tota (e) (WAD Cya (b) (As) (Sb) (E etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.00 0.00 0.00 0.00 0.00 LOWED PF (NWTPH-D) (NWTF) (TSS) (Eal PO4) (Tounide) (Free Ba) (Be) (Cande) (Ba) (Ba) (Ba) (Be) (Cande) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba) (Ba	6.68 6.67 6.68 6.67 6.68 ER BOTTLE G) (NWTPI PH-Dx) (TPF BOD) (Turbi otal Kiedahl N Cyanide) a) (Cd) (Co)	ORP (mV) -115.5 -115.4 -115.2 -115.2 -115.3 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3) (Cr) (Cu) (Fe) (Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) ((NO3/NO2)	non-standard and rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR



Project Name	e:	Boeing Rent	on		Project Numbe	er:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1620		
Sample Num	nber:	RGW173S-	220824		Weather:	Sunny ~83 F			
Landau Repr	resentative:	BLH							
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES))	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	9.99	Time:	1558	Flow through ce	ll vol.	200 mL	GW Meter No.(s)Slope #2
		8/ 24 /2022 @	9 1600	End Purge:	_	8/ 24 /2022 @	1710	Gallons Purged:	<u>* </u>
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
	T		-		-	T1:1:4-	DTW	T., 4	Commental
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	-		n of Parame			dings within the fo	ollowing limits	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1603	19.7	356.2	0.37	5.85	1.1		10.42	Yes	YSI in sun. Initiallyme g
1607	19.8	354.4	0.29	6.01	-37.7		10.35		
1610	19.7	349.9	0.27	6.07	-59.8		10.35		
1615	20.0	345.9	0.26	6.12	-78.3		10.51		
					-		10.31		
1618	19.8	341.4	0.32	6.12	-81.7	· 	-		
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Was	h 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	ription (color,	turbidity, odor	, sheen, etc.):	Colorless / C	Clear / No odor / N	No sheen			
			•						_
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	19.8	340.7	0.33	6.12	-82.5				
2	19.8	339.1	0.34	6.12	-82.8	·			
3	19.8	339.4	0.34	6.12	-83.1				
4	19.8	339.7	0.34	6.12	-83.5				
Average:	19.8	339.7	0.34	6.12	-83.0				
						pplicable or write	non-standard a	nalysis below)	
9		(8010) (8020						WA 🗆	OR 🗆
	, , ,					(8141) (Oil & G		WA 🗆	OR 🗆
	•) (HCO3/CO3) (Cl) (SO4) (NO	03) (NO2) (F)	
3					fitrogen) (NH3)	(NO3/NO2)			
	,	le) (WAD Cy			(Cr) (C·) (E-)	(Pb) (Mg) (Mn) (Ni) (Ac) (Sc)	(Tl) (V) (7n) (U	Ig) (K) (Na)
3		, , , , , ,				· / · · · /	, , , ,	. , , , , , ,	
	VOC (Boein		у (Ба) (Ве) (ca) (Cu) (Co)	(C1) (Cu) (Fe) (F	o) (Mig) (Mill) (Mi)	(Ag) (Se) (11) (V	() (ZII) (Hg) (K) (Na) (Hardness) (Silica)
		nane Ethene Ac	etvlene						
	camane Ett	Zuielle At	,						
	others								
.									
Duplicate San	nple No(s):	MSMSD Loc	ation						
Comments:									
Signature:		BLH				Date:	8/24/2022		



Project Name	:	Boeing Rento	on		Project Number:		0025217.002.09	9.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1510		
Sample Numb	per:	RGW176S-	220823		Weather:	Sunny 70's			
Landau Repre	esentative:	BLH			•				
WATERIEVE	EL/WELL/PUR	GE DATA							
Well Condition		Secure (YES)		Damaged (NO))	Describe:			
			Tima				200mL	GW Motor No.(s)	Slone #2
DTW Before P		5.55	Time:	End Purge:	Flow through cell	8/ 23 /2022 @		GW Meter No.(s)	Slope #2
Begin Purge:		8/ 23/2022 @	1454 55-gal Drum	End Furge.			1510		NT CNOTEM
Purge water dis	sposed to:	-	55-gai Drum		Storage Tank	Ground	Otner	SITE TREATME	NI SYSIEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm) Goals: Stabliza	(mg/L) tion of Param	eters for three	(mV)	(NTU) ings within the follo	(ft) wing limits	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
1458	16.9	566	2.26	5.80	-72.6		5.77	200 mL/min	
							-		
1501	16.8	557	2.66	5.83	-87.7		5.77		
1504	16.9	553	2.71	5.85	-95.4				
1507	16.9	548	2.79	5.86	-99.5				
1510	17.1	547	2.98	5.86	-101.9				
CAMPLE COL	LECTION DAT								
Sample Collect			Bailer		Pump/Pump Type	Bladder			
Made of:	Cu Willi.	Stainless Steel	_	PVC	Teflon	Polyethylene	Other	. Dedicated	
			_				U Other	Dedicated	
Decon Procedu		Alconox Wash	ı 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerical		Other			/37 1 /37	-			
Sample Descrip	otion (color, turl	oidity, odor, sne	en, etc.):	Colorless / Cl	ear / No odor / No s	neen			
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
•	(°F/°C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	17.0	547	2.94	5.86	-102.1				
2	17.0	547	2.90	5.86	-102.2				
							-		
3	17.0	546	2.90	5.86	-102.3				
4	17.0	546	2.90	5.86	-102.4		-	·	
Average:	17.0	547	2.91	5.86	-102.3				
QUANTITY	TYPICAL AN	ALYSIS ALL	OWED PER I	BOTTLE TYP	E (Circle applicab	le or write non-stan	dard analysis be	low)	
3	(8260) (8010)	(8020) (NW	TPH-G) (NW	TPH-Gx) (B	TEX)			wa 🗆	OR 🗌
	(8270D) (PAI	H) (NWTPH-I) (NWTPH-I	Ox) (TPH-HC	ID) (8081) (8141) (Oil & Grease)		wa □	or □
	(pH) (Conduc	tivity) (TDS)	(TSS) (BOD) (Turbidity)	(Alkalinity) (HCC	03/CO3) (Cl) (SO4	4) (NO3) (NO2)) (F)	
	(COD) (TOC	(Total PO4)	(Total Kiedah	l Nitrogen) (N	NH3) (NO3/NO2)				
	(Total Cyanide) (WAD Cyan	ide) (Free Cya	anide)					
	(Total Metals)	(As) (Sb) (Ba	(Be) (Ca) (Ca)	Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (N	Mg) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (Z	Zn) (Hg) (K) (Na)	ı
	(Dissolved Me	tals) (As) (Sb) (Ba) (Be) (Ca)	(Cd) (Co) (Cr)	(Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se)	(Tl)(V)(Zn)(Hg)	g) (K) (Na) (Hardne	ss) (Silica)
	VOC (Boeing	short list)							
	Methane Etha	ne Ethene Acet	ylene						
x2	DUP								
	others								
Duplicate Sam	ple No(s):	DUP5-220823	@ 930						
Comments:									
Signature:	BLH					Date:	8/23/2022		
orgnature.	DET					Date:	0/23/2022		_

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Project Name	:	Boeing Rente	on		Project Number:		0025217.002.09	9.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	930		
Sample Numb	per:	RGWDUP5-	220823		Weather:				
Landau Repre	esentative:	BLH							
WATER LEVE	EL/WELL/PUR	GE DATA							
Well Condition	1:	Secure (YES)		Damaged (NO	D)	Describe:			
DTW Before P	urging (ft)		Time:		Flow through cell	vol.		GW Meter No.(s)	
Begin Purge:		8/ /2022 @		End Purge:		8/ /2022 @		Gallons Purged:	
Purge water dis	sposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	pm	(mV)	(NTU)	(ft)	Volume (gal)	Observations
						ngs within the follow	0	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
	·	DI.	DI IC	лте т	O RGW	/176 C			
			<u>FLIC</u>	AIL	U KU W	/1/03			
					· 				
SAMPLE COL	LECTION DA	TA							<u> </u>
Sample Collect			Bailer		Pump/Pump Type				
Made of:		Stainless Steel		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Procedu	ıre:	Alconox Wash	n 🗇	Tap Rinse	DI Water	Dedicated		_	
(By Numerical	Order)	Other		-					
Sample Descrip	ption (color, tur	bidity, odor, she	en, etc.):						
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	(- , -)	(42, 511)	(g)		(,)	(= - = -)	(=-)	(= 1 ==)	
2									
3									
4									
Average:	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
QUANTITY	TYPICAL AN	NALYSIS ALL	OWED PER I	BOTTLE TYP	PE (Circle applicab	le or write non-stand	dard analysis be	low)	
3	(<mark>8260</mark>) (8010) (8020) (NW	TPH-G) (NW	VTPH-Gx) (B	STEX)			wa □	OR 🗌
					CID) (8081) (8141			WA □	OR 🗆
						03/CO3) (Cl) (SO4)) (NO3) (NO2)	(F)	
1	, , ,	(1 otal PO4) (WAD Cyan	`	, ,	NH3) (NO3/NO2)				
	•	<u> </u>			(Cu) (Fe) (Ph) (N	Mg) (Mn) (Ni) (Ag)	(Se) (Tl) (V) (7	Zn) (Hg) (K) (Na)
) (Mn) (Ni) (Ag) (Se)			
	VOC (Boeing								
	Methane Etha	nne Ethene Acet	ylene			-		·	
	others								
Duplicate Sam	ple No(s):	Duplicate to R	GW176S						
Comments:	-								
Signature:		BLH				Date:	8/23/2022		

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Landau Associates



Project Nam	e:	Boeing Ren	ton		Project Numbe	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1105		
Sample Num	nber:	RGW178S-	2208		Weather:	Sunny ~75 F			
Landau Repr	resentative:	BLH			•	-			
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition		Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	8.06	Time:	1043	Flow through ce	ll vol.	200 mL	GW Meter No.(s	Slope #2
Begin Purge:	Date/Time:	8/ 24 /2022	1045	End Purge:	Date/Time:	8/ 24 /2022 @	1107	Gallons Purged:	0.75
Purge water d	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
	Purge Goal	ls: Stablizatio +/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units		dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1050	16.7	361.8	0.57	5.53	11.6	17 1070	8.14		
1055	16.4	339.1	0.37	5.66	-30.4		8.18	-200 IIIL/IIIII	
							0.10		
1058		335.7	0.55	5.69	-41.2		0.14		
1101	16.3	335.6	0.68	5.71	-49.9		8.14		
SAMPLE CO									
Sample Colle	cted With:		Bailer		Pump/Pump Type				
Made of:		Stainless Ste		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced		Alconox Wa	sh 📙	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other	1	0.1.1/6	X1 / C : . 1 :	11 1 /37 1			
Sample Descr	iption (color,	turbiaity, odoi	, sneen, etc.):	Coloriess / C	lear / faint chemi	cally odor / No she	en		
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	(Fe II)	Observations
1	16.3	337.4	0.87	5.78	-48.6				
2	16.2	336.8	0.80	5.76	-48.6				
3	16.2	336.0	0.79	5.76	-48.7				
4	16.1	335.4	0.79	5.75	-48.9				
Average:	16.2	336.4	0.81	5.76	-48.7				
_	TYDICALA			D DOTTLE		unliaahla au uusita	non standard a		
QUANTITY 3		0) (8020) (N				pplicable or write	non-standard a		OR 🗌
						(8141) (Oil & G	rease)		OR 🗆
) (HCO3/CO3) (O3) (NO2) (F)	-
	(COD) (TO	C) (Total PO	1) (Total Kie	dahl Nitroger	n) (NH3) (NO3)	/NO2)			
		le) (WAD Cy		•					
						(Pb) (Mg) (Mn) (-	
			o) (Ba) (Be) (0	Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	(b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Y) (Zn) (Hg) (K) (N	Va) (Hardness) (Silic
	VOC (Boein	g short list) nane Ethene A	cetylene						
	iviculane Etr	ane Eulelle A	cctyrene						
	others								
Duplicate Sar	nple No(s):								
Comments:									

Date: 8/24/2022



Project Nam	e:	Boeing Ren	ton		Project Number	::	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1436		
Sample Num	nber:	RGW188S-	220823		Weather:	Sunny, 80s			
Landau Repr	resentative:	SJL/AHA			•				
WATER LEV	'EL/WELL/PU	RGE DATA							
Well Condition		Secure (YES)	Damaged (N	(O)	Describe:	Flush		
DTW Before		5.35	Time:		Flow through cel			GW Meter No.(s	Heron Yellow
	Date/Time:		1409	End Purge:	_	8/ 23 /2022 @	1432	Gallons Purged:	0.25
Purge water d		<u> </u>	55-gal Drum	Ě	Storage Tank	Ground		SITE TREATME	
Turge water d	isposed to.	-	55-gai Diulii		Storage Tank	Ground	Other	SITE TREZITIVI	SALDIBLEM
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Time	` ′	. ,	, , ,	ters for three	` ′	lings within the fo		>/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1412	18.2	393.4	0.87	6.38	72.8		5.42		
1415	20.5	442.8	0.39	6.37	71.3		5.42		
1418	20.8	452.2	0.31	6.37	69.6		5.42		
							3.42		
1421	21.0	459.2	0.28	6.37	67.9				
1424	21.2	467.2	0.28	6.38	63.4				
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	ıl Order)	Other							
Sample Descr	ription (color,	urbidity, odor	, sheen, etc.):	Gray cloudy	color, floating par	ticulates, no/ns			
			_	b					
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O.	pН	ORP (mV)	Turbidity	DTW	Ferrous iron (Fe II)	Comments/ Observations
		, ,	(mg/L)			(NTU)	(ft)	(Fe II)	Observations
1	21.1	465.6	0.28	6.38	62.5				
2	21.2	465.7	0.23	6.38	62.2				
3	21.3	465.7	0.28	6.38	62.0				
4	21.2	466.0	0.28	6.38	61.7				
Average:	21.2	465.8	0.27	6.38	62.1	_			_
ON A NUMBER	TEXT CALL	NIAT VOTO AT	I OWED DE	D DOTTEL	TOWNER (Ct. 1	Y 11 4			
QUANTITY 3	(8260) (8010				_	plicable or write	non-standard a	WA	OR 🗆
3						(8141) (Oil & G	rasca)		OR
						(HCO3/CO3) (C			OK I
		•			n) (NH3) (NO3/		01) (001) (110	(1,02)	
					. , , ,				
	(Total Cyanid	e) (WAD Cy			(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hs	g) (K) (Na)
			Ba) (Be) (Ca	<u>a) (Cd) (</u> Co)				() (-) ()	<i></i>
	(Total Metals	(As) (Sb) ((Ag) (Se) (Tl) (V		Na) (Hardness) (Silic
	(Total Metals	(As) (Sb) (etals) (As) (Sb)					(Ag) (Se) (Tl) (V		
	(Total Metals (Dissolved M VOC (Boein	(As) (Sb) (etals) (As) (Sb)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		
	(Total Metals (Dissolved M VOC (Boein	(As) (Sb) (etals) (As) (Sbg short list)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		
	(Total Metals (Dissolved M VOC (Boein	(As) (Sb) (etals) (As) (Sbg short list)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		
	(Total Metals (Dissolved M VOC (Boein	(As) (Sb) (etals) (As) (Sbg short list)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		
Duplicate San	(Total Metals (Dissolved M VOC (Boein Methane Eth others	(As) (Sb) (etals) (As) (Sbg short list)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		
Duplicate San	(Total Metals (Dissolved M VOC (Boein Methane Eth others	(As) (Sb) (etals) (As) (Sbg short list)	b) (Ba) (Be) (C				(Ag) (Se) (Tl) (V		

Date: 8.23.22

Samantha Lindstrom



Project Nam	e:	Boeing Ren	ton		Project Number	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 24 /2022@	948		
Sample Num	ber:	RGW189S-	220824		Weather:	Sunny ~69 F			
Landau Repr	esentative:	BLH			•	-			
WATER LEV	FI /WFI I /PI	IRGE DATA							
Well Condition		Secure (YES)	Damaged (N	(0)	Describe:			
DTW Before		6.33	Time:		Flow through cel		200 mL	GW Meter No.(s Slope #2
		8/ 24 /2022		End Purge:	C	8/ 24 /2022 @		Gallons Purged:	2 Slope π2
Purge water d		<u>6/ 24/2022 (</u>	55-gal Drum		Storage Tank	Ground		SITE TREATM	ENT SYSTEM
rurge water a	isposed to.			_	-	_	_	BITE TREATING	
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Time		, ,		ters for three	. ,	dings within the fo	. ,	>/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
935	18.0	295.4	1.82	5.40	26.2		6.92	Yes	
938	17.9	272.4	1.79	5.30	13.0	10.77	8.08	Yes	Slowed flow rate
942	18.0	262.8	2.39	5.26	4.4		7.83		
945	18.0	256.6	2.20	5.25	-0.7	10.71	7.74		
743	16.0	230.0	2.20	5.23	-0.7	10.71	7.74		
						-			
	-								
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	iption (color,	turbidity, odor	, sheen, etc.):	Colorless / C	Clear / No odor / N	o sheen			
D1'	T	C1	D.O.	77	ODD	T1: 124	DTW	т .	
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	(ft)	Ferrous iron (Fe II)	Comments/ Observations
1	18.0	254.4	2.19	5.25	-2.1				
2	18.0				-2.5				
	-	254.0	2.14	5.24					
3	18.0	254.0	2.12	5.24	-2.8				
4	18.0	254.0	2.13	5.24	-3.2				
Average:	18.0	254.1	2.15	5.24	-2.7				
QUANTITY	TYPICAL A	NALYSIS AI	LOWED PE	R BOTTLE	TYPE (Circle at	pplicable or write	non-standard a	nalysis below)	
7	(8260) (8010	0) (8020) (N	WTPH-G) (NWTPH-Gx) (BTEX)			wa 🗆	OR 🗌
1	(8270D) (PA	AH) (NWTPI	H-D) (NWTF	H-Dx) (TPI	H-HCID) (8081)	(8141) (Oil & G	rease)	wa □	OR 🗆
	(pH) (Condu	ctivity) (TD:	S) (TSS) (E	OD) (Turbi	dity) (Alkalinity)	(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
1					n) (NH3) (NO3/	NO2)			
	<u> </u>	le) (WAD Cy							
						(Pb) (Mg) (Mn) (
			o) (Ba) (Be) (.a) (Cd) (Co)	(Cr) (Cu) (Fe) (P	D) (Mg) (Mn) (Ni)	(Ag) (Se) (TI) (V	(Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boein	g short list) nane Ethene A	cetylene						
	Michigane Ell	anc Eulelle A	ceryiche						
x 3	MSMSD								
	others								
Duplicate San	nple No(s):	MSMSD Loc	cation						
Comments:									
						Date:	8/24/2022		



Project Name	:	Boeing Rento	on		Project Number:		0025217.002.09	9.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1435		
Sample Numb	er:	RGW207S-	220823		Weather:	Sunny 70's			
Landau Repre	sentative:	BLH			•				
WATER LEVE	EL/WELL/PUR	GE DATA							
Well Condition		Secure (YES)		Damaged (NO	D)	Describe:			
DTW Before P	urging (ft)	6.45	Time:	-	Flow through cell		200 mL	GW Meter No.(s)	Slope #2
Begin Purge:		8/ 23 /2022 @	1417	End Purge:		8/ 23 /2022 @	1437	` '-	1.5
Purge water dis			55-gal Drum		Storage Tank	Ground		SITE TREATMEN	
r argo water are	•		_	_		_			
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
11111	. ,	, ,			. ,	ings within the follow		>/= 1 flow	O DOSCI VIII I VIII
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
1421	16.1	416.0	1.67	5.69	-39.4	16.77		>200 mL/min	
1424	16.2	417.1	1.82	5.77	-64.5	8.74	6.80		
1427	16.3	419.8	1.52	5.83	-79.6		6.78		
1430	16.3	418.9	1.82	5.84	-86.6		6.78		
								. ——	
1433	16.2	418.6	1.95	5.87	-90.6		6.78	,	
SAMPLE COL	LECTION DAT	ГА							
Sample Collect	ed With:		Bailer		Pump/Pump Type	Bladder		. <u> </u>	
Made of:		Stainless Steel		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Procedu	re:	Alconox Wash	ı 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerical	Order)	Other							
Sample Descrip	otion (color, turl	oidity, odor, she	en, etc.):	Colorless / Cl	ear / No odor / No s	sheen			
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
перисис	(°F/°C)	(uS/cm)	(mg/L)	pii	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	16.2	417.6	1.87	5.86	-79.7				
2	16.2	417.3	1.91	5.87	-82.4				
	-	-		-					
3	16.3	417.5	2.03	5.87	-83.7			· ——	
4	16.3	417.1	2.14	5.88	-84.6				
Average:	16.3	417.4	1.99	5.87	-82.6				
QUANTITY	TYPICAL AN	ALYSIS ALL	OWED PER I	BOTTLE TYP	PE (Circle applicat	ole or write non-stan	dard analysis be	low)	
3	(<mark>8260</mark>) (8010)	(8020) (NW	TPH-G) (NW	VTPH-Gx) (E	BTEX)			wa 🗆	OR 🗌
	(8270D) (PAI	H) (NWTPH-E	O) (NWTPH-I	Dx) (TPH-HC	CID) (8081) (8141	l) (Oil & Grease)		wa 🗆	OR 🗆
				•	•	O3/CO3) (Cl) (SO4	(NO3) (NO2)) (F)	
					NH3) (NO3/NO2)				
	•	(As) (Sh) (Ba		•	(Cu) (Ea) (Dh) (I	(As) (Ma) (NE) (As)	(Ca) (Tl) (V) (7) (H.a.) (V.) (N.a.)	
						Mg) (Mn) (Ni) (Ag) (Mn) (Ni) (Ag) (Se)			ss) (Silica)
	VOC (Boeing		Da) (De) (Ca)	(Cu) (Co) (C1)	(Cu) (Pe) (Fb) (Mg) (WIII) (NI) (Ag) (Se)	(11) (V) (ZII) (11 <u>8</u>	g) (K) (Na) (Hardiles	ss) (Sinca)
		ne Ethene Acet	ylene						
			•						
	others								
D	-1- N-(-)								
Duplicate Samp	ne no(s):								
Comments:									
Signature:	BLH					Date:	8/23/2022		

\\woodplc.net\Wood\US\SEA\SEA2-FS1-projects\8888 - Boeing Renton\9.0 Field & Lab Data Mgmt\2022\August\Field Data\SCFs_Renton_AOC-090_8.23.22

Landau Associates



Project Nam	e:	Boeing Ren	ton		Project Numbe	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1145		
Sample Num	ber:	RGW208S-	220824		Weather:	Sunny ~75 F			
Landau Repi	esentative:	BLH			•				
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	n:	Secure (YES)	Damaged (N	(O)	Describe:	6 ft into road		
DTW Before	Purging (ft)	7.88	Time:	1124	Flow through ce	ll vol.	200	GW Meter No.(s	Slope #2
Begin Purge:	Date/Time:	8/ 24 /2022	1125	End Purge:	Date/Time:	8/ 24 /2022 @	1150	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	pii	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	Purge Goal	ls: Stablizatio +/- 3%		ters for three +/- 0.1 units		dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1127						T/- 10 /0		O	
1137	21.1	486.8	0.47	5.58	-3.00		7.91	Yes	
1140	20.7	489.4	0.38	5.69	-49.0		7.92		
1143	20.7	488.6	0.71	5.75	-73.1		7.97		
`									
							-		
								-	_
SAMPLE CO	LI ECTION D	ΔΤΔ							
Sample Collection			Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	_	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Wa		Tap Rinse	DI Water	Dedicated			
(By Numerica		Other	·· •	rup remse	□ Di Water	Bedreated			
		₩	:, sheen, etc.):	Colorless / C	Clear / No odor / S	light sheen	•		
1	. ,	•	· · · · ·			<u> </u>			
Replicate	Temp	Cond.	D.O						
	(° F /° C)		D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
1		(uS/cm)	(mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
	20.7			рН 5.76		•			
2	20.7	(uS/cm)	(mg/L)	•	(mV)	•			
2	-	(uS/cm) 489.3	(mg/L)	5.76	(mV)	•			
	20.7	(uS/cm) 489.3 489.1	(mg/L) 0.78 0.80	5.76	(mV) -75.5 -76.5	•			
3	20.7 20.7 20.8	(uS/cm) 489.3 489.1 488.9 489.0	0.78 0.80 0.82 0.87	5.76 5.76 5.76 5.76	(mV) -75.5 -76.5 -77.2 -77.9	•			
3 4 Average:	20.7 20.7 20.8 20.7	(uS/cm) 489.3 489.1 488.9 489.0 489.1	0.78 0.80 0.82 0.87	5.76 5.76 5.76 5.76 5.76	(mV) -75.5 -76.5 -77.2 -77.9 -76.8	(NTU)	(ft)	(Fe II)	
3 4 Average:	20.7 20.7 20.8 20.7 TYPICAL A	(uS/cm) 489.3 489.1 488.9 489.0 489.1	0.78 0.80 0.82 0.87 0.82	5.76 5.76 5.76 5.76 5.76	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle a)	•	(ft)	(Fe II)	Observations
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8010	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1	0.78 0.80 0.82 0.87 0.82 LLOWED PE	5.76 5.76 5.76 5.76 5.76 R BOTTLE	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle a) (BTEX)	(NTU)	(ft)	nalysis below)	Observations OR
3 4 Average:	20.7 20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1) (H) (NWTPI	0.78 0.80 0.82 0.87 0.82 LLOWED PE	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-GX H-Dx) (TPH	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle applement) (BTEX) H-HCID) (8081)	oplicable or write	non-standard a	nalysis below) WA WA WA	Observations
3 4 Average:	20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1) (AH) (NWTPH activity) (TD	0.78 0.80 0.82 0.87 0.82 LOWED PENWTPH-G) (NWTPF-G) (NWTPF-G) (NWTPF-G) (TSS) (B	5.76 5.76 5.76 5.76 5.76 S.R BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle applement) (BTEX) H-HCID) (8081)	(NTU) pplicable or write (8141) (Oil & G) (HCO3/CO3) (0	non-standard a	nalysis below)	Observations OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1) (AH) (NWTPH activity) (TD	0.80 0.82 0.87 0.82 CLOWED PE WYTPH-G) (NWTP S) (TSS) (B 4) (Total Kie	5.76 5.76 5.76 5.76 5.76 CR BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbidahl Nitroger	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle ap) (BTEX) H-HCID) (8081) dity) (Alkalinity)	(NTU) pplicable or write (8141) (Oil & G) (HCO3/CO3) (0	non-standard a	nalysis below) WA WA WA	Observations OR
3 4 Average:	20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PF (pH) (Condu (COD) (TOd (Total Cyanid	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (the control of the c	0.78 0.80 0.82 0.87 0.82 CLOWED PE NWTPH-G) (NWTP S) (TSS) (B 4) (Total Kie ranide) (Free	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPF OD) (Turbi dahl Nitroger Cyanide)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (Alk	(NTU) pplicable or write (8141) (Oil & G) (HCO3/CO3) (0	non-standard a rease) Cl) (SO4) (NO	malysis below) WA WA ON O	Observations OR OR OR
3 4 Average:	20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (N AH) (NWTPI (1ctivity) (TD (C) (Total PO- (le) (WAD C) () (As) (Sb) (0.78 0.80 0.82 0.82 0.82 LLOWED PE WTPH-G) (NWTP S) (TSS) (B 4) (Total Kie	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
3 4 Average:	20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1) (AH) (NWTPI (activity) (TD (C) (Total PO- (de) (WAD Cy (de) (As) (Sb) (etals) (As) (Sb)	0.78 0.80 0.82 0.82 0.82 LLOWED PE WTPH-G) (NWTP S) (TSS) (B 4) (Total Kie	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (TOtal Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (1) (AH) (NWTPI (activity) (TD (C) (Total PO- (de) (WAD Cy (de) (As) (Sb) (etals) (As) (Sb)	0.80 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.80 0.80 0.80 0.80 0.80 0.80 0.80	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (TOtal Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (f AH) (NWTPI (1ctivity) (TD (2) (Total PO- (e) (WAD Cy (detals) (As) (Sb) (g short list)	0.80 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.80 0.80 0.80 0.80 0.80 0.80 0.80	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8014 (8270D) (PA (pH) (Condu (COD) (TOtal Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (f AH) (NWTPI (1ctivity) (TD (2) (Total PO- (e) (WAD Cy (detals) (As) (Sb) (g short list)	0.80 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.80 0.80 0.80 0.80 0.80 0.80 0.80	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8010 (8270D) (PA (pH) (Condu (COD) (TOtal Cyanid (Total Metals (Dissolved M VOC (Boein	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (f AH) (NWTPI (1ctivity) (TD (2) (Total PO- (e) (WAD Cy (detals) (As) (Sb) (g short list)	0.80 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.80 0.80 0.80 0.80 0.80 0.80 0.80	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR
3 4 Average:	20.7 20.8 20.7 20.8 20.7 TYPICAL A (8260) (8014 (8270D) (PA (pH) (Condu (COD) (TOtal Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	(uS/cm) 489.3 489.1 488.9 489.0 489.1 NALYSIS AI (0) (8020) (f AH) (NWTPI (1ctivity) (TD (2) (Total PO- (e) (WAD Cy (detals) (As) (Sb) (g short list)	0.80 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.87 0.82 0.80 0.80 0.80 0.80 0.80 0.80 0.80	5.76 5.76 5.76 5.76 5.76 ER BOTTLE NWTPH-Gx H-Dx) (TPH OD) (Turbi dahl Nitroger Cyanide) () (Cd) (Co)	(mV) -75.5 -76.5 -77.2 -77.9 -76.8 TYPE (Circle aportion (BTEX) H-HCID) (8081) dity) (Alkalinity (h) (NH3) (NO3) (Cr) (Cu) (Fe)	(NTU) Oplicable or write (8141) (Oil & G) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a rease) CI) (SO4) (NC	(Fe II) nalysis below) WA WA ON O	Observations OR OR OR OR OR OR OR OR OR OR

Date: 8/24/2022



Project Name	e:	Boeing Rent	on		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 19 /2022@	1207		
Sample Num	ber:	RGW211S-	220819		Weather:				
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	n:	Secure (YES))	Damaged (N	(O)	Describe:	Flush Mount		
DTW Before	Purging (ft)	10.66	Time:	1140	Flow through cel	ll vol.	200 mL	GW Meter No.(s)	Heron 2
Begin Purge:	Date/Time:	8/ 19 /2022 @	1142	End Purge:	Date/Time:	8/ 19 /2022 @	1205	Gallons Purged:	
Purge water d			55-gal Drum		Storage Tank	Ground	Other	SITE TREATMEN	NT SYSTEM
	Тоши				ODD	T	DTW	Internal Dunce	Commontal
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	-					dings within the fo	-	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1145	19.1	587.0	0.45	6.10	-175.0		10.66		
1148	20.5	413.5	0.37	6.28	-183.3		10.66		
1151	20.6	39839	0.36	6.26	-184.3		10.66		
1154	20.7	376.5	0.35	6.27	-184.5				
1157	20.7	368.6	0.37	6.27	-184.6				
1200	20.7	350.7	0.40	6.27	-184.9				_
1203	20.6	340.9	0.40	6.27	-184.0				
SAMPLE CO	LI ECTION D								
Sample Collection			Bailer		Pump/Pump Type				
Made of:		Stainless Stee	_	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure.	Alconox Was		Tap Rinse	DI Water	Dedicated	e outer	Bedieuted	
(By Numerica		Other	"	rap Kinse	□ DI Water	Dedicated			
· -			sheen etc.):	High turbidi	ty / sheen / brown	/ netroleum odor			
Sumple Beser	iption (color,	turbiuity, odor,	, sneen, etc.) <u>.</u>	Tilgii taroiai	ty / sheen / brown	7 petroleum odor			
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	20.6	340.7	0.44	6.26	-184.0				
2	20.6	339.6	0.45	6.26	-183.4				
3	20.6	339.3	0.45	6.26	-183.7				
4	20.6	337.4	0.45	6.26	-183.7				
Average:	20.6	339.3	0.45	6.26	-183.7				_
	•								
QUANTITY						oplicable or write	non-standard a		, n
2	, , ,	0) (8020) (N				H-HCID) (8081)	(8141) (Oil 18)		OR OR OR
						(HCO3/CO3) (C			ж
		• • • • • • • • • • • • • • • • • • • •			n) (NH3) (NO3/		ci) (50 i) (110	3) (1.02) (1)	
	(Total Cyanid	le) (WAD Cya	anide) (Free	Cyanide)		•			
	(Total Metals) (As) (Sb) (I	Ba) (Be) (Ca	a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	(K) (Na)
	(Dissolved M	etals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Y) (Zn) (Hg) (K) (Na	a) (Hardness) (Silica
	VOC (Boein								
	Methane Eth	ane Ethene Ac	etylene						
	others								
	onicis								
Duplicate San									
	nple No(s):								
Comments:		ge in flowcell, o	lid not sink ii	n water imme	diately				



Project Name	e:	Boeing Ren	ton		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 19 /2022@	1317		
Sample Num	ber:	RGW221S-	220819		Weather:				
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	n:	Secure (YES)	Damaged (N	(O)	Describe:	Flush Mount		
DTW Before	Purging (ft)	10.72	Time:	1247	Flow through cel	ll vol.	200 mL	GW Meter No.(s)	Heron 2
Begin Purge:		8/ 19 /2022 0	@ 1249	End Purge:	_	8/ 19 /2022 @	1310	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMEN	NT SYSTEM
	Тоши	Cond.	D.O.		ORP	Tb.: J:4	DTW	Internal Purge	Commontal
Time	Temp (°F/°C)	(uS/cm)	(mg/L)	pН	(mV)	Turbidity (NTU)	(ft)	Volume (gal)	Comments/ Observations
	- C					dings within the fo	- C	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1252	20.7	235.8	0.93	5.48	-28.7		10.72		
1255	21.3	235.9	0.70	5.49	-33.4		10.72		
1258	21.9	234.2	0.89	5.50	-32.0		10.72		
1301	22.5	232.2	0.93	5.49	-31.2				
1501									
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type			_	
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	iption (color,	turbidity, odor	, sheen, etc.):	sheen / medi	um turbidity / bro	wn / no odor			
					0.00				
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	22.5	232.2	0.93	5.49	-30.8				
2	22.6	232.2	0.92	5.49	-30.7				
3	22.7	232.1	0.92	5.49	-30.7				_
4	22.7	232.0	0.93	5.49	-30.7				
Average:	22.6	232.1	0.93	5.49	-30.7				
QUANTITY	TYPICAL A	NALYSIS AI	LOWED PI	ER BOTTLE	TYPE (Circle ap	oplicable or write	non-standard a	nalysis below)	
	(8260) (8010	0) (8020) (N	WTPH-G)	(NWTPH-Gx) (BTEX)			WA □ C	OR 🗌
2			D) (MW/TDI	I-Dx) for TPH	I-Jet fuel/Dx (TP	H-HCID) (8081)	(8141) (Oil &	OSNA □	or 🗆
	(pH) (Condu	ctivity) (TDS	S) (TSS) (I	BOD) (Turbi		(HCO3/CO3) (C	Cl) (SO4) (NC	93) (NO2) (F)	
	(pH) (Condu	ctivity) (TDS	S) (TSS) (E	3OD) (Turbi edahl Nitroger	dity) (Alkalinity) n) (NH3) (NO3/		Cl) (SO4) (NC	03) (NO2) (F)	
	(pH) (Condu (COD) (TOO (Total Cyanid	ctivity) (TDSC) (Total PO-	S) (TSS) (E 4) (Total Kie ranide) (Free	BOD) (Turbi edahl Nitroger e Cyanide)	n) (NH3) (NO3/	NO2)			(V) (Na)
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals	(TDS) (Total PO4) (WAD Cy) (As) (Sb) (S) (TSS) (Fall (Total Kiestanide) (Free Ba) (Be) (Call	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb	S) (TSS) (Fall (Total Kiestanide) (Free Ba) (Be) (Call	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	(K) (Na) a) (Hardness) (Silica
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
Duplicate San	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	
Duplicate San Comments: Signature:	(pH) (Condu (COD) (TOO (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	ctivity) (TDS C) (Total PO4 le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	S) (TSS) (E 4) (Total Kie ranide) (Free Ba) (Be) (C b) (Ba) (Be) (G	BOD) (Turbi edahl Nitroger e Cyanide) a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg)	



Project Name	e:	Boeing Rent	on		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 19/2022@	1107		
Sample Num	ber:	RGW224S-	220819		Weather:	70, clouds			
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	IRGE DATA							
Well Conditio	n:	Secure (YES))	Damaged (N	(O)	Describe:			
DTW Before I	Purging (ft)	11.17	Time:	1043	Flow through cel	l vol.	200 mL	GW Meter No.(s)	Heron 2
Begin Purge:	Date/Time:	8/ 19 /2022 @	1043	End Purge:	Date/Time:	8/ 19 /2022 @		Gallons Purged:	
Purge water di	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMEN	NT SYSTEM
	Т	Cond.	D.O.		ORP	Turbidity	DTW	Internal Purge	Comments/
Time	Temp (°F/°C)	(uS/cm)	(mg/L)	pН	(mV)	(NTU)	(ft)	Volume (gal)	Observations
						lings within the fo	- C	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1046	19.9	204.6	6.86	5.75	-31.4		11.21		
1049	20.0	214.4	6.02	5.59	-40.8		11.21		
1052	20.6	199.4	5.23	5.50	-43.4		11.21		
1055	21.0	191.8	4.89	5.44	-41.6				
1058	21.2	190.9	4.72	5.40	-39.2				
1101	21.3	193.4	4.64	5.37	-36.4				
1104	21.5	190.5	4.49	5.35	-33.5				
0 + 1 my F 00	V ECTION D								
SAMPLE COL			Bailer		Pump/Pump Type	Dladdan			
Made of:	ted Willi.	Stainless Stee	_	PVC	Teflon	Polyethylene	Other	Dedicated	
							<u></u>	Dedicated	
Decon Proced	_	Alconox Was	n 📙	Tap Rinse	DI Water	Dedicated			
		Othor							
(By Numerical		Other	shoon ata):		Colorless / low tr	urbidity / no odor /	no shoon		
		Other turbidity, odor,	, sheen, etc.):		Colorless / low to	urbidity / no odor /	no sheen		
			D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
Sample Descri	Temp	turbidity, odor,	D.O.		ORP	Turbidity	DTW		
Sample Descri	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	рН	ORP (mV)	Turbidity	DTW		
Sample Descri	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	рН 5.35	ORP (mV)	Turbidity	DTW		
Replicate 1 2	Temp (°F/°C) 21.5 21.5	Cond. (uS/cm) 190.1 189.9	D.O. (mg/L) 4.42 4.39 4.38	pH 5.35 5.35 5.35	ORP (mV) -33.2 -33.1 -32.6	Turbidity	DTW		
Replicate 1 2 3 4	Temp (°F/°C) 21.5 21.5 21.5	Cond. (uS/cm) 190.1 189.9 189.6	D.O. (mg/L) 4.42 4.39 4.38	pH 5.35 5.35 5.35 5.35	ORP (mV) -33.2 -33.1 -32.6 -32.5	Turbidity	DTW		
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5	Cond. (uS/cm) 190.1 189.9 189.6 189.9	D.O. (mg/L) 4.42 4.39 4.38 4.38	5.35 5.35 5.35 5.35 5.35	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9	Turbidity (NTU)	DTW (ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5	Cond. (uS/cm) 190.1 189.9 189.6 189.9	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF	5.35 5.35 5.35 5.35 5.35 6R BOTTLE	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ap	Turbidity	DTW (ft)	(Fe II)	Observations
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.5	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF	5.35 5.35 5.35 5.35 5.35 6R BOTTLE (NWTPH-Gx)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle apple) (BTEX)	Turbidity (NTU)	DTW (ft)	nalysis below)	Observations OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 (8260) (8010) (8270) (PAE	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL 0) (8020) (N	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PE WTPH-G) (NWTPH	5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle approximately continuous of the continuous o	Turbidity (NTU) pplicable or write H-HCID) (8081)	DTW (ft) non-standard a	(Fe II) nalysis below) WA CONA CONA	Observations
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 (8260) (8010) (8270) (PAF(pH) (Conductive)	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (b) (8020) (N (c) (NWTPH-I	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (ESS) (ESS) (ESS)	5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx, I-Dx) for TPH-GOD) (Turbic	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ap (BTEX) I-Jet fuel/Dx (TP dity) (Alkalinity)	Turbidity (NTU) pplicable or write to the H-HCID) (8081) (HCO3/CO3) (600)	DTW (ft) non-standard a	(Fe II) nalysis below) WA CONA CONA	Observations OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 (8260) (8010 (8270) (PAF- (pH) (Conduction)	Cond. (uS/cm) 190.1 189.9 189.6 189.9 NALYSIS AL (2)) (8020) (N) (4) (NWTPH-Lectivity) (TDS) (C) (Total PO4)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (NWTPH-G) (TSS) (E	5.35 5.35 5.35 5.35 5.35 6R BOTTLE (NWTPH-Gx; H-Dx) for TPH-BOD) (Turbio dahl Nitroger	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle approximately continuous of the continuous o	Turbidity (NTU) pplicable or write to the H-HCID) (8081) (HCO3/CO3) (600)	DTW (ft) non-standard a	(Fe II) nalysis below) WA CONA CONA	Observations OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 (8260) (8010 (8270) (PAF (pH) (Condu (COD) (TOC (Total Cyanid	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (0) (8020) (N I) (NWTPH-I (ctivity) (TDS) (C) (Total PO4 (e) (WAD Cy.)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic- ddhl Nitroger Cyanide)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle approximately Company of the Company o	Turbidity (NTU) pplicable or write H-HCID) (8081) (HCO3/CO3) (0	DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA CONA CONA	Observations OR OR OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 (8260) (8010 (8270) (PAF (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 190.1 189.9 189.6 189.9 NALYSIS AL (i) (8020) (N) (i) (NWTPH-Inctivity) (TDS) (ii) (Total PO4) (iii) (As) (Sb) (I	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PE WTPH-G) (NWTPH-G) (TSS) (ES) (Total Kielanide) (Freelanide) (Freelanide) (Freelanide) (Called Control of the control of	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	malysis below) WA CON)A C	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.6 (8260) (8010 (8270) (PAF (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (MYTPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) () (As) (Sb) (Inctals) (As) (Sb) (g short list)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E) (Total Kie anide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca)	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.6 (8260) (8010 (8270) (PAF (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (WYPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) (As) (Sb) (Inctals) (As) (Sb)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E) (Total Kie anide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca)	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average:	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.6 (8260) (8010 (8270) (PAF (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (MYTPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) () (As) (Sb) (Inctals) (As) (Sb) (g short list)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E) (Total Kie anide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca)	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 TYPICAL A (8260) (8010 (8270) (PAH (PH) (Condu (COD) (TOCI (Total Cyanid (Total Metals) (Dissolved M. VOC (Boein Methane Eth	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (MYTPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) () (As) (Sb) (Inctals) (As) (Sb) (g short list)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E) (Total Kie anide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca)	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.6 (8260) (8010 (8270) (PAF (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (MYTPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) () (As) (Sb) (Inctals) (As) (Sb) (g short list)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E) (Total Kie anide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca)	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx) I-Dx) for TPH- BOD) (Turbic dahl Nitroger Cyanide) a) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.5 (8260) (8010 (8270) (PAH (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 190.1 189.9 189.6 189.9 189.9 NALYSIS AL (MYTPH-Inctivity) (TDS) (C) (Total PO4) (e) (WAD Cya) () (As) (Sb) (Inctals) (As) (Sb) (g short list)	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E c) (Total Kielanide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca) (Ba) (Be) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx, I-Dx) for TPH- BOD) (Turbic codahl Nitroger codahl Nitroger codahl (Cd) (Co) Ca) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY	Temp (°F/°C) 21.5 21.5 21.5 21.5 21.5 21.5 (8260) (8010 (8270) (PAH (PH) (Condu (COD) (TOtal Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 190.1 189.9 189.6 189.9 NALYSIS AL (WYPH-Inctivity) (TDS (C) (Total PO4 e) (WAD Cya) (As) (Sb) (Iletals) (As) (Sb g short list) nane Ethene Ac	D.O. (mg/L) 4.42 4.39 4.38 4.38 4.39 LOWED PF WTPH-G) (NWTPH-G) (TSS) (E c) (Total Kielanide) (Free Ba) (Be) (Ca) (Ba) (Be) (Ca) (Ba) (Be) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca	pH 5.35 5.35 5.35 5.35 5.35 ER BOTTLE (NWTPH-Gx, I-Dx) for TPH- BOD) (Turbic codahl Nitroger codahl Nitroger codahl (Cd) (Co) Ca) (Cd) (Co)	ORP (mV) -33.2 -33.1 -32.6 -32.5 -32.9 TYPE (Circle ago) (BTEX) I-Jet fuel/Dx (TP) dity) (Alkalinity) a) (NH3) (NO3/	Turbidity (NTU) pplicable or write and the H-HCID (8081) (HCO3/CO3) (ONO2) (Pb) (Mg) (Mn) (DTW (ft) non-standard a (8141) (Oil & Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR



E	ne:	Boeing Rer	nton		Project Number	er:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 19 /2022@	1108		
Sample Nun	nber:	RGWDUP:	3-220819		Weather:				
Landau Rep	resentative:	JAM							
WATER LEV	/EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES	S)	Damaged (N	(O)	Describe:	Flush Mount		
DTW Before	Purging (ft)		Time:		Flow through ce	ell vol.		GW Meter No.(s	s)
	Date/Time:	8/ /2022 @	D	End Purge:	_	8/ /2022 @	•	Gallons Purged:	
Purge water of	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
	Tomn	Cond.	D.O.	»H	ORP	Turbidity	DTW	Internal Dunge	Comments/
Time	Temp (°F/°C)	(uS/cm)	(mg/L)	pН	(mV)	(NTU)	(ft)	Internal Purge Volume (gal)	Observations
	Purge Goal	ls: Stablizatio	on of Parame			dings within the fo	_	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
						<u></u>			
		_							
	·]	DUPL	JCAT	E TO I	RGW224	4S		
CAMDLE CO	DLLECTION D) A T A				·			
Sample Colle		DATA	Bailer		Pump/Pump Typ	2			
-	cted with.	_		_				□ D . 3:1	
Made of:		Stainless Ste		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Procee	dure:	Alconox Wa	ısh 🔲	Tap Rinse	DI Water	☐ Dedicated			
(By Numerica	ıl Order)	Other							
Sample Descr	ription (color,	turbidity, odo	r, sheen, etc.)						
Replicate									
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
керпсан	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	рН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	-			рН		-			
·	-			рН		-			
1 2	-			р Н		-			
1 2 3	-			р Н		-			
1 2	-			pH		-			
1 2 3	-			pH#DIV/0!		-			
1 2 3 4 Average:	(°F/°C) #DIV/0!	(uS/cm) #DIV/0!	#DIV/0!	#DIV/0!	(mV) #DIV/0!	(NTU) #DIV/0!	(ft)	(Fe II)	
1 2 3 4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	(NTU)	(ft)	(Fe II)	Observations
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801)	#DIV/0! NALYSIS A: 0) (8020) (1	#DIV/0! LLOWED PI	#DIV/0! ER BOTTLE (NWTPH-Gx)	#DIV/0! TYPE (Circle a) (BTEX)	#DIV/0!	(ft)	nalysis below)	Observations OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAR	#DIV/0! **NALYSIS A: 0) (8020) (1 H) (NWTPH:	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH	#DIV/0! ER BOTTLE (NWTPH-Gx) H-Dx) (TPH-	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081)	#DIV/0! pplicable or write (8141) (Oil & Gre	non-standard a	nalysis below) WA WA WA	Observations
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAI (pH) (Condu	#DIV/0! **NALYSIS AI 0) (8020) (I H) (NWTPH- activity) (TD	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (F	#DIV/0! ER BOTTLE (NWTPH-Gx, H-Dx) (TPH-	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (0	non-standard a	nalysis below) WA WA WA	Observations OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (pH) (Condu	#DIV/0! **NALYSIS A: 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) (4) (Total Kie	#DIV/0! ER BOTTLE (NWTPH-Gx.) H-Dx) (TPH-BOD) (Turbic edahl Nitroger	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (0	non-standard a	nalysis below) WA WA WA	Observations OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAF (pH) (Condu	#DIV/0! NALYSIS Al 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO le) (WAD C)	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (F) 4) (Total Kies yanide) (Free	#DIV/0! ER BOTTLE (NWTPH-Gx, H-Dx) (TPH- BOD) (Turbic edahl Nitroger e Cyanide)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity a) (NH3) (NO3	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2)	non-standard a ase) C1) (SO4) (NO	malysis below) WA WA WA O NO (NO (F)	Observations OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAI (pH) (Cond) (COD) (Total Cyanic) (Total Metals	#DIV/0! **NALYSIS AI 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO de) (WAD C)) (As) (Sb)	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (H 4) (Total Kie yanide) (Free (Ba) (Be) (C.	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (PH) (Condu (COD) (TOd (Total Cyanic (Total Metals (Dissolved M	#DIV/0! NALYSIS A: 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO de) (WAD C) (etals) (As) (Sb)	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (H 4) (Total Kie yanide) (Free (Ba) (Be) (C.	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2)	non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (pH) (Condu (COD) (TOO (Total Cyanic (Total Metals (Dissolved M VOC (Boein	#DIV/0! NALYSIS A: 0) (8020) (IH) (NWTPH- cuctivity) (TDC) (Total PO) cle) (WAD C: 1) (As) (Sb) (etals) (As) (S	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) 4) (Total Kie yanide) (Free (Ba) (Be) (C) b) (Ba) (Be) (G)	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (pH) (Condu (COD) (TOO (Total Cyanic (Total Metals (Dissolved M VOC (Boein	#DIV/0! NALYSIS A: 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO de) (WAD C) (etals) (As) (Sb)	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) 4) (Total Kie yanide) (Free (Ba) (Be) (C) b) (Ba) (Be) (G)	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (pH) (Condu (COD) (TOO (Total Cyanic (Total Metals (Dissolved M VOC (Boein	#DIV/0! NALYSIS A: 0) (8020) (IH) (NWTPH- cuctivity) (TDC) (Total PO) cle) (WAD C: 1) (As) (Sb) (etals) (As) (S	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) 4) (Total Kie yanide) (Free (Ba) (Be) (C) b) (Ba) (Be) (G)	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! #TYPICAL A (8260) (801) (8270) (PAI (PH) (Cond) (COD) (Total Cyanic) (Total Metals (Dissolved M VOC (Boein Methane Eth	#DIV/0! NALYSIS A: 0) (8020) (IH) (NWTPH- cuctivity) (TDC) (Total PO) cle) (WAD C: 1) (As) (Sb) (etals) (As) (S	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) 4) (Total Kie yanide) (Free (Ba) (Be) (C) b) (Ba) (Be) (G)	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbical Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAH (pH) (Condu (COD) (TOO (Total Cyanic (Total Metals (Dissolved M VOC (Boein	#DIV/0! NALYSIS A: 0) (8020) (IH) (NWTPH- cuctivity) (TDC) (Total PO) cle) (WAD C: 1) (As) (Sb) (etals) (As) (S	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH PS) (TSS) (F) 4) (Total Kie yanide) (Free (Ba) (Be) (C) b) (Ba) (Be) (G)	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbic edahl Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 2	#DIV/0! TYPICAL A (8260) (801) (8270) (PAI (pH) (Condu (COD) (Total Cyanic (Total Metals (Dissolved M VOC (Boein Methane Eth	#DIV/0! NALYSIS A: 0) (8020) (IH) (NWTPH- cuctivity) (TDC) (Total PO) cle) (WAD C: 1) (As) (Sb) (etals) (As) (S	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (H 4) (Total Kie yanide) (Free (Ba) (Be) (C b) (Ba) (Be) (C	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbic edahl Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	#DIV/0! TYPICAL A (8260) (801) (8270) (PAI (pH) (Condu (COD) (Total Cyanic (Total Metals (Dissolved M VOC (Boein Methane Eth	#DIV/0! **NALYSIS AI 0) (8020) (I H) (NWTPH- activity) (TD C) (Total PO de) (WAD C)) (As) (Sb) etals) (As) (S ag short list) nane Ethene A	#DIV/0! LLOWED PI NWTPH-G) -D) (NWTPH S) (TSS) (H 4) (Total Kie yanide) (Free (Ba) (Be) (C b) (Ba) (Be) (C	#DIV/0! ER BOTTLE (NWTPH-Gx, 1-Dx) (TPH- 3OD) (Turbic edahl Nitroger e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle a) (BTEX) HCID) (8081) dity) (Alkalinity n) (NH3) (NO3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (6/NO2) (Pb) (Mg) (Mn) (non-standard a ase) CI) (SO4) (NO	(Fe II) nalysis below) WA WA ON ONE OF THE CONTROL OF THE CO	Observations OR OR OR OR OR OR OR OR OR OR



Project Nam	e:	Boeing Rent	ton		Project Numbe	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1414		
Sample Num	ber:	RGW226S-	220824		Weather:	Sunny, high 70s			
Landau Repr	esentative:	BLH							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES))	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	8.57	Time:	1353	Flow through ce	ll vol.	200	GW Meter No.(s)	Slope #2
		8/ 24 /2022 @	2 1353	End Purge:	_	8/ 24/2022 @	1439	Gallons Purged:	0.75
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Тоши		D.O.			T	DTW	Internal Druge	Commental
Time	Temp (°F/°C)	Cond. (uS/cm)	(mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	- C		n of Parame	ters for three		dings within the fo	llowing limits	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1402	20.5	327.8	0.54	6.01	-56.6		9.91		
1405	21.7	335.6	0.45	6.02	-65.7		9.81		
1408	24.0	348.4	0.40	6.02	-73.6		9.83		
1411	24.7	354.6	0.52	6.02	-79.9		9.82		
							,,,,,		
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type				
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	ription (color,	turbidity, odor	, sheen, etc.):	Colorless / C	Clear / No odor / N	lo sheen			
Danlianta	Т	Cond.	D.O.		ORP	Tanaki dita	DTW	Earners in an	Comments/
Replicate	Temp (°F/°C)	(uS/cm)	(mg/L)	pН	(mV)	Turbidity (NTU)	(ft)	Ferrous iron (Fe II)	Observations
1	24.8	345.9	0.56	6.01	-81.2				
2	24.8	356.4	0.58	6.01	-81.4				
3	24.9	355.4	0.55	6.01	-82.0				
4	24.9	355.5	0.55	6.01	-82.3				
Average:	24.9	353.3	0.56	6.01	-81.7	#DIV/0!			
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PE	ER BOTTLE	TYPE (Circle a)	pplicable or write i	non-standard a	nalysis below)	
3		(8010) (8020							OR 🗌
	(8270D) (PA	AH) (NWTPH	I-D) (NWTF	PH-Dx) (TPH	H-HCID) (8081)	(8141) (Oil & Gr	rease)	WA 🗆 💢	OR 🗆
	(pH) (Condu	ctivity) (TDS	S) (TSS) (E	BOD) (Turbi	dity) (Alkalinity)) (HCO3/CO3) (C	Cl) (SO4) (NC	3) (NO2) (F)	
1	(COD) (TOO	C5310C) (Tot	tal PO4) (To	otal Kiedahl N	itrogen) (NH3)	(NO3/NO2)			
		le) (WAD Cy							
1						(Pb) (Mg) (Mn) (I		•	
) (Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	(b) (Mg) (Mn) (Ni) ((Ag) (Se) (Tl) (V	(Y) (Zn) (Hg) (K) (N	a) (Hardness) (Silica
	VOC (Boein	,	estuleno						
	Memane Eth	ane Ethene Ac	ctylene						
	others								
	others								
Duplicate San									
Duplicate San Comments:									



Project Name	e:	Boeing Ren	ton		Project Numbe	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 17 /2022@	1532		
Sample Num	ber:	RGW230I-	220817		Weather:	Sunny, 90s			
Landau Repr	esentative:	SJL/AHA							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	7.65	Time:	1506	Flow through ce	ll vol.		GW Meter No.(s)	Heron #4
		8/ 17 /2022	@ 1507	End Purge:	•	8/ 17 /2022 @	1530	Gallons Purged:	0.5
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Т		D.O.		-	T	DTW	Internal Druge	Commontal
Time	Temp (°F/°C)	Cond. (uS/cm)	(mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	0					dings within the fo	- C	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1510	22.3	393.6	0.14	6.13	66.4		7.66		
1513	24.2	426.5	0.15	6.14	58.0		7.68		
1516	24.5	431.7	0.15	6.14	56.3		7.67		
1519	26.3	462.5	0.10	6.20	32.8			,	
1522	27.0	475.0	0.10	6.22	28.7				
1525	27.6	483.2	0.10	6.22	27.6				
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	_			
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	ription (color,	turbidity, odor	, sheen, etc.)	Cloudy, colo	rless, floating par	ticulates (off-white	colored), no/ns		_
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
Керпсан	(°F/°C)	(uS/cm)	(mg/L)	pm	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	27.8	485.2	0.1	6.22	26.7				
2	27.8	485.9	0.1	6.22	26.4				
3	27.9	486.4	0.1	6.22	25.9				
4	27.9	487.3	0.1	6.22	25.4				
Average:	27.9	486.2	0.1	6.22	26.1				
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PI	ER BOTTLE	TYPE (Circle a)	pplicable or write	non-standard a	nalysis below)	
3	(8260C SIM	VC) (8010)	(8020) (NW	TPH-G) (N	WTPH-Gx) (BT	EX)		WA 🗆 💢	OR 🗌
	(8270) (PAI	H) (NWTPH-	D) (NWTPH	H-Dx) (TPH-	HCID) (8081)	(8141) (Oil & Great	ase)	WA □ (OR 🗆
	* ' '	• • • • • • • • • • • • • • • • • • • •	, , , ,			(HCO3/CO3) (C	Cl) (SO4) (NC	3) (NO2) (F)	
					hl Nitrogen) (NI	H3) (NO3/NO2)			
		le) (WAD Cy							
						(Pb) (Mg) (Mn) (Mg) (Mg) (Mg) (Mg)			
	VOC (Boein) (ва) (ве) (Ca) (Ca) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (N1) ((Ag) (Se) (11) (V	(Zn) (Hg) (K) (N	a) (Hardness) (Silica
		nane Ethene A	cetylene						
	c.iiane Ett	e Bulette At	,10110						
	others								
Desti : C									
Duplicate San									
Duplicate San Comments: Signature:							8.17.22		



Project Name	e:	Boeing Rent	ton		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24/2022@	1351		
Sample Num	ber:	RGW232S-	220824		Weather:	Sunny			
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PI	IRGE DATA							
Well Condition		Secure (YES))	Damaged (N	(O)	Describe:			
DTW Before		7.41	Time:		Flow through cel		200 mL/min	GW Meter No.(s)	Heron 2
	0 0 . ,	8/ 24 /2022 @		End Purge:	_	8/ 24 /2022 @		Gallons Purged:	Ticion 2
Purge water d			55-gal Drum	Ě	Storage Tank	Ground		SITE TREATME	NT SVSTEM
Turge water u	isposed to.	_	-			_	<u> </u>		
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O.	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge	Comments/ Observations
Time	` /	` /	(mg/L) n of Parame	ters for three	` /	dings within the fo	. ,	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%		+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1327	21.5	561	2.29	5.74	-68.6		7.85		
1330	23.2	581	2.51	5.79	-80.9		7.95		
					•			·	
1333	24.4	595	2.93	5.83	-88.5		8.03	-	
1336	24.9	600	2.90	5.84	-92.1		8.09		
1339	24.8	600	3.14	5.85	-93.3		8.15		
SAMPLE CO	LI ECTION D								
Sample Collection			Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Stee	_	PVC	Teflon	Polyethylene	Other	Dedicated	
				Tap Rinse			D Outer	Bedicated	
Decon Proced	_	Alconox Was	sn U	rap Kinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	iption (color,	turbidity, odor	, sheen, etc.):	low to medit	im turbidity / no o	odor / no sheen / sli	ghtly brownish		
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
	(° F /° C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	(Fe II)	Observations
1	24.8	599	3.35	5.85	-93.7				
2	24.8	599	3.17	5.85	-93.9				
3	24.8	599	3.13	5.85	-94.0				
4	24.8	599	3.11	5.86	-94.2				
	•								
Average:	24.8	599	3.19	5.85	-94.0				
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PE	ER BOTTLE	TYPE (Circle ap	oplicable or write	non-standard a	nalysis below)	
3	(8260-SIM)	(8010) (8020) (NWTPH-	G) (NWTPI	H-Gx) (BTEX)				OR 🗌
	, , ,	, ,	, ,	, ,		(8141) (Oil & G	· · · · · · · · · · · · · · · · · · ·		OR 🗆
	· .		, , , ,	- ' '		(HCO3/CO3) (0	Cl) (SO4) (NC	(NO2) (F)	
1	, , ,	, ,	, ,		itrogen) (NH3)	(NO3/NO2)			
,		e) (WAD Cy			(C ₂) (C ₂) (T ₂)	(Db) (Ma) (Ma) (Ni) (Ag) (Ca)	Tl) (V) (Zn) (Hg)	(K) (Na)
1	`	. , , , , ,				· , , O, , , ,	, , , ,	, , , , , , , , ,	` ' ' ' '
	VOC (Boein		, (Da) (Be) (C	.a) (Cu) (C0)	(CI) (CU) (Fe) (P	o) (wig) (will) (Ml)	(Ag) (St) (11) (V) (ДП) (ПВ) (К) (N	a) (Hardness) (Silica
	,	ane Ethene Ac	retylene						
	Michigane Ell	and Ethelle At	CLYICIIC						
	others								
Duplicate San	nple No(s):								
	•								
Comments:	* ` ` `								



Project Name	e:	Boeing Rent	on		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1435		
Sample Num	ber:	RGW234S-	220824		Weather:	Sunny			
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	IRGE DATA							
Well Condition	n:	Secure (YES))	Damaged (N	O)	Describe:			
DTW Before l	Purging (ft)	8.29	Time:	1410	Flow through cel	ll vol.	200 mL	GW Meter No.(s)	Heron 2
		8/ 24 /2022 @	9 1410	End Purge:	_	8/ 24 /2022 @	1430	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMEN	NT SYSTEM
	То		D.O.			Tk: 1:4	DTW	Internal Dunce	Commental
Time	Temp (°F/°C)	Cond. (uS/cm)	(mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	0		n of Parame	ters for three		dings within the fo	ollowing limits	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1413	24.00	691	0.25	6.45	-70.1		8.32		
1416	24.50	699	0.23	6.45	-71.0		8.32		
1419	25.68	718	0.21	6.45	-72.5		8.32		
1422	26.70	734	0.22	6.45	-72.5				
	27.10	731	-	6.44	-71.5				
1428	27.10	/31	0.22	0.44	-/1.3				
	-								
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer	_	Pump/Pump Type				
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	h 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	intion (color t	1 1 11 11 1		3 7 11 1					
	iption (color,	turbidity, odor	, sheen, etc.):	Medium turt	oidity/ sheen / Gra	yish brown / sharp	odor		
Danligata			·-					Earnoug inon	Commental
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
·	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	рН	ORP (mV)	Turbidity	DTW		
1	Temp (°F/°C) 27.1	Cond. (uS/cm)	D.O. (mg/L)	рН 6.44	ORP (mV)	Turbidity	DTW		
1 2	Temp (°F/°C) 27.1 27.1	Cond. (uS/cm) 723 727	D.O. (mg/L) 0.20	pH 6.44 6.44	ORP (mV) -71.5	Turbidity	DTW		
1	Temp (°F/°C) 27.1	Cond. (uS/cm) 723 727 726	D.O. (mg/L) 0.20 0.20	рН 6.44	ORP (mV) -71.5 -71.5	Turbidity	DTW		
1 2	Temp (°F/°C) 27.1 27.1	Cond. (uS/cm) 723 727	D.O. (mg/L) 0.20	pH 6.44 6.44	ORP (mV) -71.5	Turbidity	DTW		
1 2 3	Temp (°F/°C) 27.1 27.1 27.0	Cond. (uS/cm) 723 727 726	D.O. (mg/L) 0.20 0.20	pH 6.44 6.44 6.44	ORP (mV) -71.5 -71.5	Turbidity	DTW		
1 2 3 4 Average:	Temp (°F/°C) 27.1 27.1 27.0 27.0 27.1	Cond. (uS/cm) 723 727 726 724 725	D.O. (mg/L) 0.20 0.20 0.19 0.19	6.44 6.44 6.45 6.44	ORP (mV) -71.5 -71.5 -71.5 -71.5	Turbidity	DTW (ft)	(Fe II)	
1 2 3 4 Average:	Temp (°F/°C) 27.1 27.1 27.0 27.0 27.1 TYPICAL A	Cond. (uS/cm) 723 727 726 724 725	D.O. (mg/L) 0.20 0.20 0.19 0.19 0.20	pH 6.44 6.44 6.45 6.44 ER BOTTLE	ORP (mV) -71.5 -71.5 -71.5 -71.5 TYPE (Circle ap	Turbidity (NTU)	DTW (ft)	(Fe II)	
1 2 3 4 Average:	Temp (°F/°C) 27.1 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM)	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AI (8010) (8020)	D.O. (mg/L) 0.20 0.20 0.19 0.20 0.19 0.20	pH 6.44 6.44 6.45 6.44 ER BOTTLE	ORP (mV) -71.5 -71.5 -71.5 -71.5 TYPE (Circle appled)	Turbidity (NTU)	DTW (ft)	(Fe II)	Observations
1 2 3 4 Average:	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH	D.O. (mg/L) 0.20 0.20 0.19 0.19 0.20 LOWED PF (NWTPH-1-1) (NWTPH-1-1) (NWTFH-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	6.44 6.44 6.45 6.44 ER BOTTLE G) (NWTPP	ORP (mV) -71.5 -71.5 -71.5 -71.5 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081)	Turbidity (NTU)	DTW (ft) non-standard a	(Fe II)	Observations OR OR
1 2 3 4 Average:	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH activity) (TDS	D.O. (mg/L) 0.20 0.20 0.19 0.19 0.20 0.19 0.19 0.19 0.19 0.20 LOWED PF 0 (NWTPH-I-D) (NWTFH-I-D) (NWTF	6.44 6.44 6.45 6.44 ER BOTTLE G) (NWTPH PH-Dx) (TPH-DX) (TPH-DX)	ORP (mV) -71.5 -71.5 -71.5 -71.5 TYPE (Circle ap H-Gx) (BTEX) H-HCID) (8081)	Turbidity (NTU) pplicable or write (8141) (Oil & G (HCO3/CO3) (0	DTW (ft) non-standard a	(Fe II) nalysis below) WA WA O	Observations OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (C5310C) (Total	D.O. (mg/L) 0.20 0.20 0.19 0.19 0.20 LOWED PF 0. (NWTPH-C) (NWTPH-C) (NWTPH-C) (NWTPH-C) (NWTPH-C) (Total PO4) (Total P	6.44 6.44 6.45 6.44 ER BOTTLE G) (NWTPP PH-Dx) (TPPBOD) (Turbio tal Kiedahl Ne Cyanide)	ORP (mV) -71.5 -71.5 -71.5 -71.5 TYPE (Circle applement) H-HCID) (8081) dity) (Alkalinity) itrogen) (NH3)	Turbidity (NTU) oplicable or write (8141) (Oil & G (HCO3/CO3) (6) (NO3/NO2)	non-standard a	malysis below) WA WA (S3) (NO2) (F)	Observations OR OR OR
1 2 3 4 Average: QUANTITY 3	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (activity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f)	D.O. (mg/L) 0.20 0.20 0.19 0.20 LOWED PF 0. (NWTPH-I-D) (NWT	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (activity) (TDS) (25310C) (Tot (e) (WAD Cy) (As) (Sb) (detals) (As) (Sb) (Sb)	D.O. (mg/L) 0.20 0.20 0.19 0.20 LOWED PF 0. (NWTPH-I-D) (NWT	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.20 0.19 0.19 0.20 CLOWED PI 0.10 (NWTPH-ID) (N	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (activity) (TDS) (25310C) (Tot (e) (WAD Cy) (As) (Sb) (detals) (As) (Sb) (Sb)	D.O. (mg/L) 0.20 0.19 0.19 0.20 CLOWED PI 0.10 (NWTPH-ID) (N	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.20 0.19 0.19 0.20 CLOWED PI 0.10 (NWTPH-ID) (N	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.20 0.19 0.19 0.20 CLOWED PI 0.10 (NWTPH-ID) (N	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1 1	Temp (°F/°C) 27.1 27.0 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.20 0.19 0.19 0.20 CLOWED PI 0.10 (NWTPH-ID) (N	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1 1 Duplicate San	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 723 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy) (As) (Sb) (detals) (As) (Sb (g short list) Lane Ethene Ac	D.O. (mg/L) 0.20 0.19 0.19 0.20 0.19 0.19 0.20 LOWED PI 0.10 (NWTPH-	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 3 1	Temp (°F/°C) 27.1 27.0 27.0 27.1 TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals) (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 723 727 726 724 725 NALYSIS AL (8010) (8020 AH) (NWTPH (ctivity) (TDS) (25310C) (Tot (e) (WAD Cy (f) (As) (Sb) (f) (etals) (As) (Sb) (g short list)	D.O. (mg/L) 0.20 0.19 0.19 0.20 0.19 0.19 0.20 LOWED PI 0.10 (NWTPH-	6.44 6.44 6.45 6.44 ER BOTTLE -G) (NWTPH-DA) (TPH-DA) (TPH-DA) (TPH-DA) (TURB)	ORP (mV) -71.5 -71.5 -71.5 -71.5 -71.5 TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity) (itrogen) (NH3) (Cr) (Cu) (Fe)	Turbidity (NTU) oplicable or write (8141) (Oil & G) (HCO3/CO3) (G) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard at rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA	Observations OR OR OR OR OR OR OR OR OR OR



Project Name	e:	Boeing Rent	ton		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 22/2022@	1541		
Sample Num	ber:	RGW235I-	220822		Weather:				
Landau Repr	esentative:	JAM							
WATER LEV	EL/WELL/PU	RGE DATA							
Well Condition	n:	Secure (YES))	Damaged (N	O)	Describe:			
DTW Before l	Purging (ft)	7.7	Time:	1508	Flow through cel	ll vol.	200 mL	GW Meter No.(s)	Heron 2
Begin Purge:		8/ 22 /2022 @	D 1512		_	8/ 22 /2022 @	1539	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Т		D.O.		ODD	T	DTW	Internal Druge	Commontal
Time	Temp (°F/°C)	Cond. (uS/cm)	(mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	0					dings within the fo	- C	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1518	26.1	225.5	2.21	6.13	-50.00		7.70		
1521	27.0	223.7	2.10	6.13	-50.4		7.70		
1524	27.4	223.9	1.02	6.13	-62.4		7.70		
1527	27.6	223.4	0.54	6.14	-66.6			,	
1530	27.6	221.3	0.57	6.16	-70.2				
1533	27.6	220.5	0.78	6.17	-71.4				
1536	27.6	220.1	0.63	6.17	-71.4				
SAMPLE CO	LLECTION D	ATA							
Sample Collec	cted With:		Bailer	_	Pump/Pump Type				
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	iption (color,	urbidity, odor	, sheen, etc.):	Sulfur odor /	low turbidity / co	olorless / no sheen			_
Replicate	Тетр	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
Керпсан	(°F/°C)	(uS/cm)	(mg/L)	pm	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	27.6	220.0	0.64	6.17	-71.6				
2	27.6	220.1	0.79	6.17	-71.7				
3	27.6	220.1	0.92	6.17	-71.7				
4	27.6	220.0	0.98	6.17	-71.8				
Average:	27.6	220.1	0.83	6.17	-71.7				
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PE	ER BOTTLE	TYPE (Circle ap	oplicable or write	non-standard a	nalysis below)	
3	(8260-SIM)	(8010) (8020) (NWTPH-	-G) (NWTPI	H-Gx) (BTEX)			WA 🗆 💢	OR 🗌
	(8270D) (PA	H) (NWTPH	I-D) (NWTF	PH-Dx) (TPH	H-HCID) (8081)	(8141) (Oil & Gi	rease)	WA □ (OR 🗆
	(pH) (Condu	ctivity) (TDS	/ / / /	/ \	37 \ 37	(HCO3/CO3) (C	Cl) (SO4) (NC	3) (NO2) (F)	
1	<i>u</i> , ,		-1 DO(1) (T-	tal Kiedahl N	itrogen) (NH3)	(NO3/NO2)			
									ī
	(Total Cyanid	e) (WAD Cy	anide) (Free	Cyanide)	(C) (C) (E)		N" (A) (G) ((II) (AL)
1	(Total Cyanid (Total Metals	e) (WAD Cy (As) (Sb) (I	anide) (Free Ba) (Be) (Ca	Cyanide) a) (Cd) (Co)		(Pb) (Mg) (Mn) (_	
1	(Total Cyanid (Total Metals (Dissolved M	e) (WAD Cy) (As) (Sb) (I etals) (As) (Sb	anide) (Free Ba) (Be) (Ca	Cyanide) a) (Cd) (Co)		<u> </u>		_	(K) (Na) (Hardness) (Silica
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	e) (WAD Cy (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	e) (WAD Cy) (As) (Sb) (I etals) (As) (Sb	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	e) (WAD Cy (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
1	(Total Cyanid (Total Metals (Dissolved M VOC (Boein	e) (WAD Cy (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	e) (WAD Cy) (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
Duplicate San	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	e) (WAD Cy) (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	
	(Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	e) (WAD Cy) (As) (Sb) (letals) (As) (Sb g short list)	anide) (Free Ba) (Be) (Ca) (Ba) (Be) (G	Cyanide) a) (Cd) (Co)		<u> </u>		_	



Project Nam	e:	Boeing Rent	ton		Project Number	r <u>:</u>	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1316		
Sample Num	ber:	RGW236S-	220824		Weather:	Sunny 70's			
Landau Repr	resentative:	BLH							
WATER LEV	EL/WELL/PI	IRGE DATA							
Well Condition		Secure (YES))	Damaged (N	(O)	Describe:			
DTW Before		8.39	Time:		Flow through cel		200 mL	GW Meter No.(s)	Slope #2
	0 0 ,	8/ 24 /2022		End Purge:		8/ 24 /2022 @	-	Gallons Purged:	1.5
Purge water d		$\overline{}$	55-gal Drum	Č	Storage Tank	Ground		SITE TREATME	
Turge water a	isposed to.	_	-				_		
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Time	. ,	. ,	, ,	ters for three	. ,	dings within the f	. ,	>/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1258	18.7	356.1	0.70	6.05	-15.3		8.41	yes	
1301	18.8	344.9	0.46	6.10	-46.2		8.40		
1304	18.9		0.42	6.12					
		338.8			-59.6	•			
1307	19.1	334.7	0.38	6.13	-65.6		8.52		
1310	19.1	330.5	0.36	6.12	-67.9		8.59		
1313	19.0	326.4	0.65	6.11	-67.9		8.51		
SAMPLE CO	LLECTION D	OATA				<u>,</u>			
Sample Collec			Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Stee	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure:	Alconox Was	h 🗖	Tap Rinse	DI Water	Dedicated	_	_	
(By Numerica		Other							
· •		-	. sheen. etc.):	: Colorless / C	Clear / No odor / N	o sheen	-		
1	1		, , , , <u>.</u>						
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	19.0	324.7	0.93	6.11	-67.2				
2	19.1	324.4	0.91	6.10	-67.4				
3	19.1	324.4	0.89	6.10	-67.5				
4	19.1	324.5	0.72	6.10	-67.5				
Average:	19.1	324.5	0.86	6.10	-67.4				
QUANTITY	TYPICAL A	NALYSIS AL	LOWED PI	ER BOTTLE	TYPE (Circle ap	oplicable or write	non-standard a	nalysis below)	
3	(8260-SIM)	(8010) (8020) (NWTPH-	-G) (NWTPI	H-Gx) (BTEX)				OR 🗌
	, , ,					(8141) (Oil & G			OR 🗆
	· .	• • • • • • • • • • • • • • • • • • • •		, ,	• • • • • • • • • • • • • • • • • • • •	(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
1					itrogen) (NH3)	(NO3/NO2)			
1		le) (WAD Cy			(Cr) (Cu) (Eo)	(Dh) (Mg) (Mn)	(Ni) (Ag) (Sa)	(Tl) (V) (Zn) (Hg) (K) (Na)
1						, , , , ,	, , , , ,	, , , , , , , , ,	a) (Hardness) (Silica
	VOC (Boein) (Ba) (Be) (ca) (Cu) (Co)	(CI) (Cu) (Fe) (F	b) (Mg) (MII) (M)	(Ag) (Se) (11) (V	(Zii) (Tig) (K) (IV	a) (Hardness) (Sinca
	,	nane Ethene Ac	etylene						
		Zalono / K	,						
	others								
									,
Duplicate San	nple No(s):								
Comments:									
Signature:		BLH				Date:	8/24/2022		



Project Nam	e:	Boeing Ren	ton		Project Number	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 17 /2022@	1258		
Sample Num	ber:	RGW237S-	220817		Weather:	Sunny, 80s			
Landau Repr	esentative:	SJL/AHA			•				
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition		Secure (YES))	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	4.38	Time:		Flow through cel			GW Meter No.(s	Heron #4
		8/ 17 /2022	1232	End Purge:	_	8/ 17 /2022 @	1255	Gallons Purged:	0.25
Purge water d			55-gal Drum	Ě	Storage Tank	Ground		SITE TREATME	ENT SYSTEM
	Т.	Cond.	D.O.		ORP	Turbidity	DTW	Internal Dunce	Commental
Time	Temp (°F/°C)	(uS/cm)	(mg/L)	pН	(mV)	(NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	- C					dings within the fo		>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1235	23.1	356.6	0.02	6.11	68.5		4.38		
1238	22.0	348.2	0.02	6.19	64.6		4.40		
1241	23.1	346.3	0.02	6.24	58.4		4.38		
1244	23.8	348.1	0.02	6.25	53.2				
1247	23.9	347.1	0.02	6.26	51.2				
			-						
							· 		
			-				· 		
SAMPLE CO	I I ECTION D	<u> </u>							
Sample Collection			Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Stee		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	ure.	Alconox Was		Tap Rinse	DI Water	Dedicated	<u> </u>		
(By Numerica	_	Other	"·	rap Kinse	□ Di Water	Dedicated			
•		-	. sheen, etc.):	Cloudy, no c	olor, bioinjection	material odor, no s	heen		
		•	· · · · · ·			•			
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	24.0	348.7	0.02	6.27	50.2				
2	24.1	348.2	0.02	6.27	49.8				
3	24.1	348.1	0.02	6.27	49.3				
4	24.1	349.4	0.01	6.28	48.0				
Average:	24.1	348.6	0.02	6.27	49.3	#DIV/0!			
	•								
QUANTITY					-	oplicable or write	non-standard a		OD [
5		0) (8020) (N				(8141) (Oil & Gre	aca)	WA □	OR OR
						(HCO3/CO3) (OK 🗆
1	*	• • • • • • • • • • • • • • • • • • • •			n) (NH3) (NO3/		ci) (BO i) (110	(1102) (1)	
	(Total Cyanid	le) (WAD Cy	anide) (Free	Cyanide)					
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca	a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg	g) (K) (Na)
	(Dissolved M	etals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Zn) (Hg) (K) (N	Na) (Hardness) (Silic
	VOC (Boein	•							
	Methane Eth	ane Ethene A	cetylene						
	others								
<u> </u>	others								
Duplicate San Comments:	nple No(s):								
Signature:		ndstrom				Ditti	8.17.22		



Event:	ie:	Boeing Ren	iton		Project Number	r <u>:</u>	0025217.002.0	99.099	
		Aug-22			Date/Time:	8/ 17 /2022@	1338		
Sample Nun	nber:	RGW240D	- 220817		Weather:	Sunny, 90s			
Landau Repr	resentative:	SJL/AHA							
WATER LEV	/EL/WELL/PU	IRGE DATA							
Well Condition		Secure (YES	5)	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	7.1	Time:	1310	Flow through cel	ll vol.		GW Meter No.(s Heron #4
	Date/Time:			End Purge:	_	8/ 17 /2022 @	. 1336	Gallons Purged:	0.25
Purge water d			55-gal Drum	Ě	Storage Tank	Ground		SITE TREATM	
	Т	Cond	D.O.		ODD	Tk: d:4	DTW	Internal Dunce	Commontal
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	-					dings within the fo	-	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	
1315	22.6	328.2	1.36	6.39	54.8		6.63		Pressurized well, wa
1318	25.1	337.4	0.73	6.36	44.0		6.12		
1321	25.7	343.3	0.22	6.35	40.6		6.05		
1324	26.0	351.2	0.59	6.36	35.0		5.98		
1327	26.8	355.2	0.84	6.37	29.2		6.85		
1330		358.2	0.88	6.38	24.9		5.74		
1333	27.7	363.7	0.96	6.39	16.9				
CAMPLE CO	DLLECTION D								
Sample Colle		AIA	Bailer		Pump/Pump Type	· Bladder			
Made of:		Stainless Ste	_	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced		Alconox Wa				Dedicated	<u> </u>	Bearearea	
	_		sn 📋	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Desci			1	C11	.1		1		
	ription (color,	turbidity, odo	r, sheen, etc.):	Cloudy, no c	color, bioinjection	material odor, no s	sheen		
Replicate	Temp	Cond.	r, sheen, etc.):	Cloudy, no c	color, bioinjection ORP	material odor, no s	heen DTW	Ferrous iron	Comments/
Replicate		·	-		-			Ferrous iron (Fe II)	Comments/ Observations
Replicate 1	Temp	Cond.	D.O.		ORP	Turbidity	DTW		
•	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity	DTW		
1 2	Temp (°F/°C) 28.2 28.2	Cond. (uS/cm) 368.4 366.4	D.O. (mg/L)	pH 6.39 6.39	ORP (mV) 12.8	Turbidity	DTW		
1 2 3	Temp (°F/°C) 28.2 28.2 28.2	Cond. (uS/cm) 368.4 366.4	D.O. (mg/L) 1.11 1.11	pH 6.39 6.39 6.39	ORP (mV) 12.8 11.7 10.8	Turbidity	DTW		
1 2 3 4	Temp (°F/°C) 28.2 28.2 28.2 28.3	Cond. (uS/cm) 368.4 366.4 367.0	D.O. (mg/L) 1.11 1.11 1.11 1.09	pH 6.39 6.39 6.39 6.40	ORP (mV) 12.8 11.7 10.8 10.4	Turbidity (NTU)	DTW		
1 2 3	Temp (°F/°C) 28.2 28.2 28.2	Cond. (uS/cm) 368.4 366.4	D.O. (mg/L) 1.11 1.11	pH 6.39 6.39 6.39	ORP (mV) 12.8 11.7 10.8	Turbidity	DTW		
1 2 3 4	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2	D.O. (mg/L) 1.11 1.11 1.09 1.11	6.39 6.39 6.39 6.40 6.39	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle a)	Turbidity (NTU)	DTW (ft)	(Fe II)	
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PE	6.39 6.39 6.39 6.40 6.39 CR BOTTLE NWTPH-Gx	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle apple) (BTEX)	Turbidity (NTU) #DIV/0! oplicable or write	DTW (ft)	nalysis below)	Observations OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010) (8270) (PAF	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (1) () (NWTPH-	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (6.39 6.39 6.40 6.39 CR BOTTLE (NWTPH-GX)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle apple) (BTEX) HCID) (8081) (#DIV/0! pplicable or write (8141) (Oil & Gre	DTW (ft) non-standard a	(Fe II) malysis below) WA WA WA	Observations
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI 0) (8020) (I	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (NWTPH-G) (NWTPH-G) (S) (TSS) (E	6.39 6.39 6.40 6.39 6.40 CR BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbic	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle ap) (BTEX) HCID) (8081) (dity) (Alkalinity)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (0	DTW (ft) non-standard a	(Fe II) malysis below) WA WA WA	Observations OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI 0) (8020) (I I) (NWTPH- activity) (TDC) (Total PO	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (NWTPH-G) (NWTPH-G) (S) (TSS) (E) (4) (Total Kie	6.39 6.39 6.40 6.39 CR BOTTLE (NWTPH-Gx) 1-Dx) (TPH-BOD) (Turbidahl Nitroger	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle apple) (BTEX) HCID) (8081) (#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (0	DTW (ft) non-standard a	(Fe II) malysis below) WA WA WA	Observations OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAH (pH) (Condu (COD) (Too (Total Cyanid	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI 0) (8020) (tH) (NWTPH- dictivity) (TD C) (Total PO e) (WAD Cy	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (NWTPH-S) (TSS) (Ed.) (Total Kiewanide) (Free	6.39 6.39 6.40 6.39 CR BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle ap.) (BTEX) HCID) (8081) (dity) (Alkalinity) (NO3/2)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Green (HCO3/CO3) (MV)	non-standard a	nalysis below) WA WA O WA O WA O WA O WA O WA O WA O WA	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI (0) (8020) (1) (NWTPHactivity) (TD (C) (Total PO (e) (WAD C) (As) (Sb) (D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (CD) (NWTPH-G) (CD) (NWTPH-G) (CD) (Total Kietyanide) (Free (Ba) (Be) (Ca)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II) nalysis below) WA WA O WA O O O O O O O O O O O O O	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu (COD) (Total Cyanid (Total Metals)	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI (NWTPH-activity) (TD (Total PO C) (Total PO C) (As) (Sb) (etals) (As) (Sl)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (CD) (NWTPH-G) (CD) (NWTPH-G) (CD) (Total Kietyanide) (Free (Ba) (Be) (Ca)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II) nalysis below) WA WA O WA O O O O O O O O O O O O O	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAH (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI (NWTPH-activity) (TD (Total PO) (Total PO) (e) (WAD Cy) (As) (Sb) (etals) (As) (Sl)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAH (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (I I) (NWTPH- (ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (setals) (As) (Sl g short list)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAH (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (I I) (NWTPH- (ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (setals) (As) (Sl g short list)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAH (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (I I) (NWTPH- (ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (setals) (As) (Sl g short list)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average:	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (I I) (NWTPH- (ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (setals) (As) (Sl g short list)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR
1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 28.2 28.2 28.2 28.3 28.2 TYPICAL A (8260) (8010 (8270) (PAF (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	Cond. (uS/cm) 368.4 366.4 367.0 367.1 367.2 NALYSIS AI () (8020) (I I) (NWTPH- (ctivity) (TD C) (Total PO e) (WAD C) () (As) (Sb) (setals) (As) (Sl g short list)	D.O. (mg/L) 1.11 1.11 1.09 1.11 LLOWED PENWTPH-G) (ED) (NWTPH-G) (Free (Ba) (Be) (Cab)	6.39 6.39 6.40 6.39 6.WER BOTTLE (NWTPH-Gx) (I-Dx) (TPH-GOD) (Turbidahl Nitroger Cyanide) (1) (Cd) (Co)	ORP (mV) 12.8 11.7 10.8 10.4 11.4 TYPE (Circle aportion of the content of t	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gree) (HCO3/CO3) (e/NO2) (Pb) (Mg) (Mn) (non-standard a sase) CI) (SO4) (NC	(Fe II)	Observations OR OR OR OR OR OR OR OR OR OR

Date: 8.17.22

Samantha Lindstrom



Project Name:		Boeing Rento	n		Project Number:		0025217.002.09	9.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1255		
Sample Numb	er:	RGW-244S-	2208		Weather:				
Landau Repres	sentative:	BLH			_				
WATER LEVE	L/WELL/PUR	GE DATA							
Well Condition:		Secure (YES)		Damaged (NO))	Describe:			
DTW Before Pu	arging (ft)	5.08	Time:	1224	Flow through cell	vol.	200 ml	GW Meter No.(s)	Slope #2
Begin Purge:	0 0 . ,	8/ 23 /2022 @	1224	End Purge:	•	8/ 23 /2022 @	1300	` '-	1.5
Purge water dis			55-gal Drum	Ď	Storage Tank	Ground		SITE TREATME	
	1			_	-	_	_	<u> </u>	
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	Purge (Goals: Stablizat	ion of Param		consecutive readi	ngs within the follow	ving limits	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell vol.	
1243	18.0	443.9	1.15	5.77	-64.8	51.38	5.07	200ml/min	
1246	18.0	443.4	1.32	5.83	-73.7	42.57	5.08		
1249	18.0	446.4	1.69	5.88	-80.8	49.41	5.09		
1252	18.0	448	1.84	5.92	-86.4				
SAMPLE COLI									
Sample Collecte	ed With:	_	Bailer		Pump/Pump Type	Peristaltic			
Made of:		Stainless Steel		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Procedur		Alconox Wash		Tap Rinse	DI Water	Dedicated			
(By Numerical 6	Order)	Other		installed dedic	noted tubing				
Sample Descrip			en, etc.):	Colorless / Clo					
	tion (color, turb	pidity, odor, shee	•	Colorless / Clo	ear / NO / NS	Turbidity	DTW	Ferrous iron	Comments/
Sample Descrip Replicate			D.O. (mg/L)			Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
	Temp	Cond.	D.O.	Colorless / Clo	ear / NO / NS ORP				
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH 5.92	ORP (mV)				
Replicate 1 2	Temp (°F/°C) 18.0	Cond. (uS/cm) 442.9	D.O. (mg/L) 1.91	pH 5.92 5.93	ORP (mV) -87.2				
Replicate 1 2 3	Temp (°F/°C) 18.0 18.0	Cond. (uS/cm) 442.9 448.4 448.9	D.O. (mg/L) 1.91 1.89	pH 5.92 5.93 5.92	ORP (mV) -87.2 -87.7 -88.0				
Replicate 1 2 3 4	Temp (°F/°C) 18.0 18.0 18.0	Cond. (uS/cm) 442.9 448.4 448.9	D.O. (mg/L) 1.91 1.89 1.92	pH 5.92 5.93 5.92 5.92	ORP (mV) -87.2 -87.7 -88.0 -88.3	(NTU)			
Replicate 1 2 3	Temp (°F/°C) 18.0 18.0	Cond. (uS/cm) 442.9 448.4 448.9	D.O. (mg/L) 1.91 1.89	pH 5.92 5.93 5.92	ORP (mV) -87.2 -87.7 -88.0				
Replicate 1 2 3 4 Average:	Temp (°F/°C) 18.0 18.0 18.0 18.0	Cond. (uS/cm) 442.9 448.4 448.9 448.9	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91	5.92 5.93 5.92 5.92 5.92	ORP (mV) -87.2 -87.7 -88.0 -87.8	(NTU)	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 TYPICAL AN	Cond. (uS/cm) 442.9 448.4 448.9 448.9	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I	5.92 5.92 5.92 5.92 5.92 5.92	ORP (mV) -87.2 -87.7 -88.0 -87.8	(NTU) #DIV/0!	(ft)	(Fe II)	Observations OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALLYSIS ALLO (8020) (NW)	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER H TPH-G) (NW (NWTPH-D)	5.92 5.92 5.92 5.92 7TPH-GX) (B	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX)) (8081) (8141)	#DIV/0!	(ft)	(Fe II)	Observations
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduction)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALLYSIS ALLO (8020) (NWTPH-D) (tivity) (TDS)	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD	5.92 5.93 5.92 5.92 5.92 7PH-GX) (B	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 (E (Circle applicab) TEX) (O) (8081) (8141) (Alkalinity) (HCC)	#DIV/0!	(ft)	(Fe II)	Observations OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduction (COD) (TOC)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4)	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER H TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah	5.92 5.93 5.92 5.92 5.92 7PH-Gx) (B	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX)) (8081) (8141)	#DIV/0!	(ft)	(Fe II)	Observations OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conductor) (COD) (TOC) (Total Cyanide	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) de) (Free Cyz	5.92 5.93 5.92 5.92 5.92 7PH-Gx) (Base) (Turbidity) (Nuirogen) (Nunide)	ear / NO / NS ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC WH3) (NO3/NO2)	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel	(Fe II)	Observations OR OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conductor) (COD) (TOC) (Total Cyanide) (Total Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALVSIS ALLO (8020) (NWTPH-D) tivity) (TDS) (Total PO4) (MSD Cyani (As) (Sb) (Ba)	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER H TPH-G) (NW (NWTPH-Dx) (TSS) (BOD (Total Kiedah) de) (Free Cya (Be) (Ca) (6	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conductor) (COD) (TOC) (Total Cyanide) (Total Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALLYSIS ALLC (NWTPH-D) (tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) (als) (As) (Sb) (I	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER H TPH-G) (NW (NWTPH-Dx) (TSS) (BOD (Total Kiedah) de) (Free Cya (Be) (Ca) (6	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALLYSIS ALLC (NWTPH-D) (tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) (als) (As) (Sb) (I	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide) (Total Metals) (Dissolved Metals)	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 TYPICAL AN (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 TYPICAL AN (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	dard analysis bel (NO3) (NO2)	(Fe II)	Observations OR OR OR
Replicate 1 2 3 4 Average: QUANTITY 5 1 Duplicate Samp	Temp (°F/°C) 18.0 18.0 18.0 18.0 18.0 18.0 TYPICAL AN (8260) (8010) (8270) (PAH) (pH) (Conduc (COD) (TOC) (Total Cyanide (Total Metals) (Dissolved Met VOC (Boeing Methane Etha	Cond. (uS/cm) 442.9 448.4 448.9 447.3 ALYSIS ALLO (8020) (NW (NWTPH-D) tivity) (TDS) (Total PO4) (WAD Cyani (As) (Sb) (Ba) tals) (As) (Sb) (Is	D.O. (mg/L) 1.91 1.89 1.92 1.93 1.91 DWED PER I TPH-G) (NW (NWTPH-Dx) (TSS) (BOD) (Total Kiedah) (de) (Free Cya) (Be) (Ca) (Ga) (Ga) (Ga)	pH 5.92 5.93 5.92 5.92 5.92 TPH-Gx) (Base) (TPH-HCIII) (Turbidity) I Nitrogen) (Namide) Cd) (Co) (Cr)	ORP (mV) -87.2 -87.7 -88.0 -88.3 -87.8 E (Circle applicab TEX) D) (8081) (8141) (Alkalinity) (HCC (H3) (NO3/NO2) (Cu) (Fe) (Pb) (M	#DIV/0! le or write non-stand (Oil & Grease) 03/CO3) (Cl) (SO4	(ft) dard analysis bel (NO3) (NO2) (Se) (Tl) (V) (Z (Tl) (V) (Zn) (Hg	(Fe II)	Observations OR OR OR



Project Name	e:	Boeing Rent	on		Project Numbe	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1400		
Sample Num	ber:	RGW247S-	2208		Weather:	Sunny, 70s			
Landau Repr	resentative:	SJL/AHA							
WATER LEV	'EL/WELL/PU	IRGE DATA							
Well Condition	on:	Secure (YES))	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	6.48	Time:	1336	Flow through ce	ll vol.		GW Meter No.(Heron Yellow
Begin Purge:	Date/Time:	8/ 23 /2022	1337	End Purge:	Date/Time:	8/ 23 /2022 @	1359	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	+/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units	+/- 10 mV	dings within the fo +/- 10%	< 0.3 ft	>/= 1 flow through cell	
1340	21.7	448.6	0.46	6.42	67.0		6.68		
1343	22.5	459.4	0.39	6.44	66.6		6.68		
1346	24.2	499.2	0.20	6.50	62.4		6.69		
							0.09		
1349	25.5	534	0.23	6.53	54.5				
1352	27.0	557	0.23	6.54	47.5				
1355	27.2	563	0.24	6.55	45.7				
SAMPLE CO									
Sample Collec	cted With:		Bailer	_	Pump/Pump Type				
Made of:		Stainless Stee	1 📙	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	_	Alconox Was	h 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	iption (color,	turbidity, odor	sheen, etc.):	Gray/brown	color, very cloudy	, no/ns			
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	27.2	564	0.24	6.55	45.3				
2	27.2	564	0.23	6.55	44.9				
3	27.2	565	0.22	6.55	44.6				
4	27.5	565	0.22	6.55	44.3				
Average:	27.3	565	0.23	6.55	44.8				
	-								
		NALYSIS AL (1) (8020) (N				oplicable or write	non-standard a		OR \square
3						(8141) (Oil & G	rease)	WA □	OR OR
						(HCO3/CO3) (•		OK L
	*	•			n) (NH3) (NO3		, , , ,	, , , , ,	
	(Total Cyanid	e) (WAD Cy	anide) (Free	Cyanide)					
	(Total Metals	(As) (Sb) (l	Ba) (Be) (Ca	a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (H	g) (K) (Na)
) (Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Y) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boein	•							
	Methane Eth	ane Ethene Ac	etylene						
	others								
Duplicate San Comments:	nple No(s):								
Signature:	Samantha Li	ndstrom				Date:	8.23.22		



Project Nam	e:	Boeing Ren	ton		Project Numbe	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1328		
Sample Num	ber:	RGW248I-	220823		Weather:	Sunny, 70s			
Landau Repr	resentative:	SJL/AHA							
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	4.78	Time:	1305	Flow through ce	ll vol.		GW Meter No.(s	Heron Yellow
Begin Purge:	Date/Time:	8/ 23 /2022	1306	End Purge:	Date/Time:	8/ 23 /2022 @	1327	Gallons Purged:	0.25
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMI	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	+/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units		dings within the fo +/- 10%	< 0.3 ft	>/= 1 flow through cell	
1309	20.2	451	1.39	6.28	69.2		4.88		
1312	21.4	464.1	0.90	6.31	71.1		4.90		
1315	22.9	498.6	0.74	6.33	69.5		4.90		
	. ———						4.90		
1318	21.8	479.8	0.64	6.33	68.7				
1321	21.8	473.4	0.62	6.33	68.7				
1324	21.5	470.2	0.60	6.33	67.7				
							-		
SAMPLE CO			D 11		D D T	D1 11			
Sample Collec	cted With:		Bailer		Pump/Pump Type			D. F	
Made of:		Stainless Stee		PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced (By Numerical	_	Alconox Was	sh 📋	Tap Rinse	DI Water	Dedicated			
•		turbidity, odor	cheen etc.):	Clear colorl	ess no/ns				
Sample Descr	iption (color,	turbianty, odor	, sileeii, etc.).	Cicar, colori	C35, 110/115				
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	21.5	469.1	0.62	6.33	67.5		· 		
2	21.6	469.2	0.61	6.33	67.4				
3	21.5	468.8	0.62	6.33	67.3				
4	21.5	468.9	0.62	6.33	67.2				
Average:	21.5	469.0	0.62	6.33	67.4				
QUANTITY	TVPICAL A	NALVSIS AI	LOWED PE	R ROTTLE	TVPE (Circle a	oplicable or write	non-standard a	nalysis helow)	
3		0) (8020) (N				spireusic of write		WA 🗆	OR 🗌
	(8270D) (PA	AH) (NWTPI	I-D) (NWTF	PH-Dx) (TPH	H-HCID) (8081)	(8141) (Oil & G	rease)	wa 🗆	OR □
	(pH) (Condu	ctivity) (TDS	S) (TSS) (E	OD) (Turbi	dity) (Alkalinity)	(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
					n) (NH3) (NO3)	NO2)			
	•	le) (WAD Cy			(0) (0) (7)		3777 (4.3) (6.3)	T) (T) (A)
						(Pb) (Mg) (Mn) (b) (Mg) (Mn) (Ni)			g) (K) (Na) Na) (Hardness) (Silic
	VOC (Boein) (Ба) (Бе) ((za) (Cu) (Co)	(CI) (Cu) (Fe) (F	b) (Mg) (MIII) (MI)	(Ag) (Se) (11) (V	(ZII) (Hg) (K) (I	(Na) (Hardness) (Sinc
		ane Ethene A	cetylene						
			<u> </u>						
		<u> </u>							
	others								
Duplicate San	nple No(s):								
Comments:	r 10(0).								
		ndstrom				Ditti	8.23.22		



Project Nam	e:	Boeing Ren	ton		Project Numbe	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1839		
Sample Num	ıber:	RGW249S-	220824		Weather:				
Landau Repr	esentative:	JAM							
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	3.99	Time:	1613	Flow through cel	ll vol.	200 mL	GW Meter No.(s	Heron 4
Begin Purge:	Date/Time:	8/ 24 /2022 (1614	End Purge:	Date/Time:	8/ 24 /2022 @	1835	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)		(mV)	(NTU)	(ft)	Volume (gal)	Observations
	+/- 3%	ls: Stablizatio +/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units		dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1817	20.3	946	0.03	6.08	-50.0			o .	
1820	20.4	946	0.00	6.14	-69.9				
1823	21.3	949	0.00	6.17	-80.0				
1826	21.9	947	0.00	6.20	-86.1				
					-				
1829	21.9	944	0.00	6.19	-88.1				
SAMPLE CO Sample Collection			Bailer		Pump/Pump Type	Pladdar			
Made of:	cied with.	Stainless Ste	_	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced		Alconox Was		Tap Rinse	_		i Other	Dedicated	
(By Numerica		Other	sn 🔲	rap Kinse	DI Water	Dedicated			
		-	sheen etc.):	Colorless / C	Clear / No odor / N	o sheen			
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,, <u>.</u>						
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	22.0	945	0.00	6.20	-88.7				
2	22.0	945	0.00	6.20	-88.8				
3	22.0	942	0.00	6.20	-89.1				
4	22.0	946	0.00	6.20	-89.0				
Average:	22.0	945	0.00	6.20	-88.9				
QUANTITY	TYPICAL A	NALYSIS AI	LOWED PE	R BOTTI F	TYPE (Circle 21	oplicable or write	non-standard a	nalysis helow)	
3		0) (8020) (N				pheable of write	non-standard a		OR 🗌
-						(8141) (Oil & G	rease)		OR 🗆
	(pH) (Condu	ctivity) (TD	S) (TSS) (E	OD) (Turbi	dity) (Alkalinity)	(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
	(COD) (TOO	C) (Total PO	(Total Kie	dahl Nitroger	n) (NH3) (NO3/	NO2)			
	•	le) (WAD Cy		•					
						(Pb) (Mg) (Mn) (
	VOC (Boein		у (Ба) (Ве) (.a) (Ca) (Co)	(Cr) (Cu) (Fe) (P	o) (Mg) (Mn) (N1)	(Ag) (Se) (11) (V) (ZII) (Hg) (K) (N	(a) (Hardness) (Silic
		ane Ethene A	cetylene						
	others				-				
Duplicate San	nnle No(e):								
•	•	y very low toda	ıv						
Signature:		JAM	•			Date:	8/24/2022		



Project Nam	e:	Boeing Ren	ton		Project Number	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 23 /2022@	1538		
Sample Num	nber:	RGW250S-	220823		Weather:	Sunny, 80s			
Landau Repr	resentative:	SJL/AHA			•	-			
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES)	Damaged (N	(O)	Describe:	Flush		
DTW Before	Purging (ft)	3.78	Time:	1509	Flow through ce	ll vol.		GW Meter No.(s	Heron Yellow
Begin Purge:	Date/Time:	8/ 23 /2022	1510	End Purge:	Date/Time:	8/ 23 /2022 @	1532	Gallons Purged:	0.25
Purge water d	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATMI	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(° F /° C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	Purge Goal	ls: Stablizatio +/- 3%		ters for three +/- 0.1 units		dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1513	19.2	118.3	0.35	6.98	69.5	17 1070	3.94	un ough cen	
1516	·	135.1	0.33	6.76	69.1		4.01		
							4.05		
1519	20.7	137.0	0.32	6.80	69.2		4.03		
1522	20.9	137.8	0.30	6.82	68.1				
SAMPLE CO									
Sample Colle	cted With:		Bailer	_	Pump/Pump Type	Bladder		_	
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced		Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Descr	ription (color,	turbidity, odor	, sheen, etc.):	Pale yellow	color, turbid, no/n	S			
Replicate	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
•	(° F /° C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	(Fe II)	Observations
1	20.9	137.8	0.31	6.82	67.8				
2	20.9	137.9	0.3	6.82	67.7				
3	21.0	137.9	0.3	6.83	67.5		·		
4	21.0	137.9	0.3	6.83	67.4				
Average:	21.0	137.9	0.3	6.83	67.6				
Average.									
QUANTITY						oplicable or write	non-standard a		
	(8260) (8010 (8270) (BAI		WTPH-G) ((9141) (0:1 % Ст		WA □	OR OR
						(8141) (Oil & Gre (HCO3/CO3) (WA □ 03) (NO2) (F)	OK L
		•			n) (NH3) (NO3/		, (551) (110	-, (1.02) (1)	
		e) (WAD Cy			, , , , , , , , , , , , , , , , , , , ,				
1	(Total Metals	(As) (Sb) (Ba) (Be) (Ca	(Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se)	(Tl) (V) (Zn) (H	g) (K) (Na)
	(Dissolved M	etals) (As) (St	b) (Ba) (Be) (C	Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Zn) (Hg) (K)	Na) (Hardness) (Silic
	VOC (Rooin	g short list)							
		-							
		ane Ethene A	cetylene						
		ane Ethene A	cetylene						
	Methane Eth	ane Ethene A	cetylene						
		ane Ethene A	cetylene						
Duplicate Sar	Methane Eth	ane Ethene A	cetylene						

Date: 8.23.22

Samantha Lindstrom



JAM

Groundwater Low-Flow Sample Collection Form

Project Nam	e:	Boeing Ren	iton		Project Numbe	r:	0025217.002.0	99.099	_
Event:		Aug-22			Date/Time:	8/ 22 /2022@	1141		
Sample Num	ıber:	RGW253I-	220822		Weather:	75 and sunny			
Landau Repr	esentative:	JAM							
WATER LEV	'EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES	5)	Damaged (N	(O)	Describe:			
DTW Before	Purging (ft)	4.69	Time:	1116	Flow through ce	ll vol.	200mL	GW Meter No.(s	Heron 2
Begin Purge:	Date/Time:	8/ 22 /2022	1119	End Purge:	Date/Time:	8/ 22/2022@	1138	Gallons Purged:	
Purge water d	isposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATME	NT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(° F /° C)	(uS/cm)	(mg/L)	•	(mV)	(NTU)	(ft)	Volume (gal)	Observations
	Purge Goal	ls: Stablizatio +/- 3%	on of Parame +/- 10%	ters for three +/- 0.1 units	e consecutive read +/- 10 mV	dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow through cell	
1122	21.4	414.4	1.18	5.97	-92.2	17-1070	4.69	tiir ougir ceir	
	-						·		
1125	21.7	405.7	1.02	5.88	-92.6		4.69		
1128	21.5	403.6	0.91	5.86	-94.5		4.69		
1131	21.4	400.7	0.96	5.87	-96.9				
SAMPLE CO	LLECTION D	OATA							
Sample Collec	cted With:		Bailer		Pump/Pump Type	Bladder		_	
Made of:		Stainless Ste	el	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Wa	sh	Tap Rinse	DI Water	Dedicated			
(By Numerica	l Order)	Other							
Sample Descr	ription (color,	turbidity, odo	r, sheen, etc.)	Colorless / le	ow turbididty / no	odor / no sheen			
Danlingto	Т.	Cond	D.O.		ODD	Toubidie.	DTW	T	G
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	21.3	400.00	1.00	5.87	-97.0				
2	21.4	399.4	1.02	5.87	-97.3				
3	21.3	399.9	1.01	5.87	-97.6				
4	21.4	398.6	1.00	5.87	-98.0				
Average:	21.4	399.5	1.01	5.87	-97.5				
QUANTITY	TYPICAL A	NALYSIS AI	LLOWED PE	ER BOTTLE	TYPE (Circle a)	oplicable or write	non-standard a	nalysis below)	
3	(8260) (8010	0) (8020) (1	NWTPH-G) (NWTPH-Gx) (BTEX)			WA □	OR 🗌
						(8141) (Oil & G			OR 🗆
	*	•			•	(HCO3/CO3) (Cl) (SO4) (NC	03) (NO2) (F)	
1			4) (Total Kie yanide) (Free	<u>-</u>	n) (NH3) (NO3)	INO2)			
	•	•		•	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg	(K) (Na)
									a) (Hardness) (Silic
	VOC (Boein		, , , , , , , , , , , , , , , , , , , ,	, ()	. , (, (, (, (, (, (, (, (, (5) (-) (-4)	. 5, 4-7 (-7 (-	, (, (6, () (1)	, ,
		nane Ethene A	cetylene						
					-				
	others								
Duplicate San	nple No(s):								

Date: 8/22/2022



Project Nam	e:	Boeing Ren	iton		Project Numbe	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022 @	1835		
Sample Num	nber:	RGW264S-	220824		Weather:	Sunny ~80's			
Landau Repr	resentative:	BLH							
WATER LEV	EL/WELL/PU	JRGE DATA							
Well Condition	on:	Secure (YES	5)	Damaged (N	IO)	Describe:	Flush Mount		
DTW Before	Purging (ft)	6.47	Time:	18.11	Flow through ce	ll vol.	200 mL	GW Meter No.(s Slope #2
Begin Purge:	Date/Time:	8/ 24/2022 @	1814	End Purge:	Date/Time:	8/ 24/2022 @	1832	Gallons Purged:	
Purge water d	lisposed to:		55-gal Drum		Storage Tank	Ground	Other	SITE TREATM	ENT SYSTEM
	Temp	Cond.	D.O.	pН	ORP	Turbidity	DTW	Internal Purge	Comments/
Time	(°F/°C)	(uS/cm)	(mg/L)	tona fon thuo	(mV)	(NTU)	(ft)	Volume (gal) >/= 1 flow	Observations
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units		dings within the fo +/- 10%	< 0.3 ft	through cell	
1819	20.7	2531	3.14	4.64	-61.1		7.18	Yes	Extremely stinky. B
1824	19.8	2363	4.59	4.66	55.9		8.11		Slowed pump rate. I
1827	20.7	2385	4.03	4.68	53.1		8.21		
1830	. ———	2308	5.68	4.69	51.3		7.59		
1630	19.0	2308	3.08	4.09	31.3		1.39		
	LLECTION D								
Sample Colle	cted With:		Bailer		Pump/Pump Type				
Made of:	Ų	Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced		Alconox Wa	sh 🔲	Tap Rinse	DI Water	Dedicated			
(By Numerica		Other							
Sample Desci	ription (color,	turbidity, odo	r, sheen, etc.):	Colorless / C	Clear / Very strong	odor / no sheen / t	oubbles forming	in purge bucket	
Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	19.8	2296	5.77	4.70	49.2				
2	19.7	2297	5.37	4.70	48.9		_		
3	19.6	2298	5.03	4.74	48.7				
4	19.6	2287	5.71	4.74	48.4				-
Average:	19.7	2295	5.47	4.7	48.8				
QUANTITY 3		0) (8020) (I				oplicable or write	non-standard a	WA	OR 🗆
3						(8141) (Oil & G	rease)	WA 🗆	OR 🗆
	(pH) (Condu					(HCO3/CO3) (•	03) (NO2) (F)	
1	(COD) (TO	•			n) (NH3) (NO3)				
	(Total Cyanic	le) (WAD Cy	yanide) (Free	Cyanide)					
	(Total Metals	(As) (Sb)	(Ba) (Be) (Ca	a) (Cd) (Co)	(Cr) (Cu) (Fe)	(Pb) (Mg) (Mn) (Ni) (Ag) (Se)	(Tl) (V) (Zn) (F	Ig) (K) (Na)
			b) (Ba) (Be) (Ca) (Cd) (Co)	(Cr) (Cu) (Fe) (P	b) (Mg) (Mn) (Ni)	(Ag) (Se) (Tl) (V	(Zn) (Hg) (K)	Na) (Hardness) (Silic
	VOC (Boein	•							
	Methane Eth	nane Ethene A	cetylene						
x2	Duplicate								
x2	others								
	odiei5								
Duplicate Sar	nple No(s):	DUP-1-2208	324 at 1215						
Comments:	Well monun	nent full of rec	ldish-brown w	ater, has putr	rid odor.				
Signature:	BLH					Date:	8/24/2022		



Project Nam	ie:	Boeing Ren	ton		Project Numbe	r:	0025217.002.0	99.099	
Event:		Aug-22			Date/Time:	8/ 24 /2022@	1215		
Sample Nun	nber:	RGWDUP-	1-220824		Weather:				
Landau Rep	resentative:	SJL/AHA			•				
WATERIEV	/EL/WELL/PU	IRGE DATA							
Well Condition		Secure (YES)	Damaged (N	(O)	Describe:			
DTW Before		Secure (TES	Time:	Dumagea (1	Flow through ce		-	GW Meter No.(e)
	Date/Time:	8/ /2022 @		End Purge:	_	8/ /2022 @		Gallons Purged:	5)
		8/ /2022 @		Ě		Ground	Othor		ENT CVCTEM
Purge water d	iisposed to:		55-gal Drum	<u>"</u>	Storage Tank	□ Ground	Other	SITE TREATM	ENI SISIEM
Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pН	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
	Purge Goal	ls: Stablizatio +/- 3%	n of Parame +/- 10%	ters for three +/- 0.1 units	e consecutive read +/- 10 mV	dings within the fo +/- 10%	ollowing limits < 0.3 ft	>/= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 m v	+/- 10%	< 0.3 11	through cell	
		DIII				X/O < 40			,
		DUI	PLICA	AIEI	O RGV	V 264S			
SAMPLE CO	LLECTION D	OATA							
Sample Colle	cted With:		Bailer		Pump/Pump Type	Bladder			
Made of:		Stainless Ste	el 🔲	PVC	Teflon	Polyethylene	Other	Dedicated	
Decon Proced	lure:	Alconox Was	sh 🔲	Tap Rinse	DI Water	Dedicated			
(D 17 ·									
(By Numerica	ıl Order)	Other							
	al Order) ription (color,	₩	, sheen, etc.):						
Sample Descr	ription (color,	turbidity, odor	· -						
	ription (color,	turbidity, odor	D.O.	pН	ORP	Turbidity	DTW	Ferrous iron	Comments/
Sample Descri Replicate	ription (color,	turbidity, odor	· -		ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
Sample Descr	ription (color,	turbidity, odor	D.O.			-			
Sample Descri Replicate	ription (color,	turbidity, odor	D.O.			-			
Sample Descri Replicate	ription (color,	turbidity, odor	D.O.			-			
Replicate 1 2	ription (color,	turbidity, odor	D.O.			-			
Replicate 1 2 3	ription (color,	turbidity, odor	D.O.			-			
Replicate 1 2 3 4 Average:	Temp (°F/°C) #DIV/0!	turbidity, odor Cond. (uS/cm) #DIV/0!	D.O. (mg/L) #DIV/0!	pH	(mV) #DIV/0!	(NTU) #DIV/0!	(ft)	(Fe II)	
Replicate 1 2 3 4 Average:	Temp (°F/°C) #DIV/0!	turbidity, odor Cond. (uS/cm) #DIV/0!	D.O. (mg/L) #DIV/0!	pH #DIV/0! ER BOTTLE	#DIV/0!	(NTU)	(ft)	(Fe II)	Observations
Replicate 1 2 3 4 Average:	Temp (°F/°C) #DIV/0! TYPICAL A	#DIV/0! NALYSIS AI (8010) (8020	#DIV/0! LOWED PE	#DIV/0! ER BOTTLE -G) (NWTPF	#DIV/0! TYPE (Circle apl-Gx) (BTEX)	#DIV/0!	(ft)	nalysis below)	Observations OR
Replicate 1 2 3 4 Average:	#DIV/0! TYPICAL A (8260-SIM) (8270D) (P	#DIV/0! NALYSIS AI (8010) (8020	#DIV/0! LOWED PE () (NWTPH-I-D) (NWTF	#DIV/0! ER BOTTLE G) (NWTPH PH-Dx) (TPH	#DIV/0! TYPE (Circle a) H-Gx) (BTEX) H-HCID) (8081)	#DIV/0! pplicable or write to (8141) (Oil & Gr	non-standard a	nalysis below) WA WA WA	Observations
Replicate 1 2 3 4 Average: QUANTITY 3	#DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu	#DIV/0! **BOIV/0! **POIV/0! **	#DIV/0! LOWED PE () (NWTPH-H-D) (NWTF	#DIV/0! ER BOTTLE G) (NWTPP PH-Dx) (TPP SOD) (Turbi	#DIV/0! TYPE (Circle aplender) H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity	#DIV/0! #DIV/0! pplicable or write: (8141) (Oil & Gro) (HCO3/CO3) (0	non-standard a	nalysis below) WA WA WA	Observations OR
Replicate 1 2 3 4 Average:	#DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (PH) (Condu	#DIV/0! **NALYSIS AI* (8010) (8020 AH) (NWTPHetivity) (TD: C5310C) (To	#DIV/0! LOWED PE () (NWTPH-H-D) (NWTPH-H-D) (NWTPH-H-D) (TSS) (Extra PO4) (To	#DIV/0! ER BOTTLE G) (NWTPH PH-Dx) (TPH BOD) (Turbional Kiedahl N	#DIV/0! TYPE (Circle a) H-Gx) (BTEX) H-HCID) (8081)	#DIV/0! #DIV/0! pplicable or write: (8141) (Oil & Gro) (HCO3/CO3) (0	non-standard a	nalysis below) WA WA WA	Observations OR
Replicate 1 2 3 4 Average: QUANTITY 3	#DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (COD) (TOO	#DIV/0! #DIV/0! NALYSIS AI (8010) (8020 AH) (NWTPH lectivity) (TD: C5310C) (To	#DIV/0! LOWED PP (NWTPH-D) (NWTPH-D) (NWTPS) (TSS) (Et al PO4) (To anide) (Free	#DIV/0! ER BOTTLE G) (NWTPP PH-Dx) (TPP BOD) (Turbiotal Kiedahl N C Cyanide)	#DIV/0! TYPE (Circle a) H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity (itrogen) (NH3)	#DIV/0! #DIV/0! pplicable or write (8141) (Oil & Gro) (HCO3/CO3) (Oil (NO3/NO2)	non-standard a rease) CI) (SO4) (NO	nalysis below) WA WA ONE WA	Observations OR □ OR □
Replicate 1 2 3 4 Average: QUANTITY 3	#DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (PH) (Condu (COD) (Total Cyanid (Total Metals	#DIV/0! **NALYSIS AI* (8010) (8020 AH) (NWTPH **Ictivity) (TD: C5310C) (To: (WAD Cy.) (As) (Sb) (#DIV/0! #DIV/0! LOWED PE () (NWTPH-I-D) (NWTFI) (Total PO4) (Tot	#DIV/0! ER BOTTLE G) (NWTPI PH-Dx) (TPI BOD) (Turbi otal Kiedahl N e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity (itrogen) (NH3)	#DIV/0! #DIV/0! pplicable or write: (8141) (Oil & Gro) (HCO3/CO3) (Gro) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA OOO OOO OOO OOO (TI) (V) (Zn) (H	Observations OR OR OR OR OR OR OR OR OR OR
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Replicate 1 2 3 4 Average: QUANTITY 3	#DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (pH) (Condu (COD) (Total Cyanid (Total Metals (Dissolved M VOC (Boein	#DIV/0! #DIV/0! NALYSIS AI (8010) (8020 AH) (NWTPHetivity) (TD: C5310C) (To le) (WAD Cy) (As) (Sb) (etals) (As) (Sb g short list)	#DIV/0! #DIV/0! LOWED PE (I) (NWTPH-ID) (NWTFE) (TSS) (E) (TSS) (E) (E) (Total PO4) (Total PO4) (Total PO4) (Total PO4) (Ba) (Be) (Ca) (Ba) (Be) (Ca)	#DIV/0! ER BOTTLE G) (NWTPI PH-Dx) (TPI BOD) (Turbi otal Kiedahl N e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity (itrogen) (NH3)	#DIV/0! #DIV/0! pplicable or write: (8141) (Oil & Gro) (HCO3/CO3) (Gro) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA OOO OOO OOO OOO (TI) (V) (Zn) (H	Observations OR OR OR OR OR OR OR OR OR OR
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Replicate 1 2 3 4 Average: QUANTITY 3	#DIV/0! #DIV/0! TYPICAL A (8260-SIM) (8270D) (PA (PH) (Condu (Total Cyanid (Total Metals (Dissolved M VOC (Boein Methane Eth	#DIV/0! #DIV/0! NALYSIS AI (8010) (8020 AH) (NWTPF lectivity) (TD: C5310C) (To le) (WAD Cy) (As) (Sb) (etals) (As) (St) ag short list) hane Ethene Ac	#DIV/0! #DIV/0! LOWED PE (NWTPH-ID) (NWTP	#DIV/0! ER BOTTLE G) (NWTPI PH-Dx) (TPI BOD) (Turbi otal Kiedahl N e Cyanide) a) (Cd) (Co)	#DIV/0! TYPE (Circle and H-Gx) (BTEX) H-HCID) (8081) dity) (Alkalinity (itrogen) (NH3)	#DIV/0! #DIV/0! pplicable or write: (8141) (Oil & Gro) (HCO3/CO3) (Gro) (NO3/NO2) (Pb) (Mg) (Mn) (non-standard a rease) Cl) (SO4) (NO	(Fe II) nalysis below) WA WA OOO OOO OOO OOO (TI) (V) (Zn) (H	Observations OR OR OR OR OR OR OR OR OR OR

APPENDIX C

Data Validation Memos



Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 20, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

SWMU-168

ARI Work Order Number: 22H0340

This memo presents the summary data quality review of one primary groundwater sample and one trip blank sample collected on August 17, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were analyzed for the volatile organic compound vinyl chloride by U.S. Environmental Protection Agency (EPA) Method 8260D with selected ion monitoring.

The samples and the analyses conducted on the samples are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
RGW230I-220817	22H0340-01	vinyl chloride
Trip blanks	22H0340-02	vinyl chloride

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA guidance documents (EPA, 2014).

ARI received the samples on August 17, 2022. The temperature of the coolers was recorded upon receipt and the cooler was above the maximum acceptable temperature of 6 degrees Celsius.



Organic analyses

Samples were analyzed for vinyl chloride. Laboratory data were evaluated for the following parameters:

Samples were analyzed for vinyl chloride. Laboratory data were evaluated for the following parameters:

1. Preservation and Holding Times - Acceptable except as noted:

The temperature of the cooler upon receipt at ARI was above the maximum acceptable temperature, at 11.6 degrees Celsius. The vinyl chloride result for sample RGW230I-220817 is flagged with a "J."

One sampling vial contained a bubble upon arrival at ARI. We assume that the lab used another vial with acceptable preservation and the samples were able to be analyzed normally within acceptable results. The data is not qualified for use.

- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

6. Field Duplicates - Acceptable

Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.

7. Reporting Limits and Laboratory Flags - Acceptable.

Overall assessment of data

The table below summarizes the data assessment. The completeness of ARI work order number 22H0340 is 100 percent. The usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits.

Sample ID	Qualified Analyte	Qualified Analyte	Qualified Result (ng/L)
RGW230I-220817	vinyl chloride	Elevated cooler temperature	539
Trip Blanks	none	NA	none

Abbreviations:

NA = not applicable

ng/L = nanograms per liter

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.



U.S. Environmental Protection Agency (EPA), 2014, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 14, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

SWMU-172/174

ARI Work Order Number: 22H0442, 22H0495

This memo presents the summary data quality review of nine primary groundwater samples and one trip blank sample collected on August 22 and 24, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were analyzed for the following:

- Volatile organic compounds (VOCs) (cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride) by U.S. Environmental Protection Agency (EPA) Method 8260D with selected ion monitoring;
- Total organic carbon (TOC) by Standard Method 5310B; and
- Total metals (arsenic, copper, and lead) by EPA Method 6020A.

The samples and the analyses conducted on the samples are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
RGW232S-220822	22H0442-01	all
RGW235I-220822	22H0442-02	all
Trip Blanks	22H0442-03	VOCs
RGW 236S-220824	22H0495-01	all
RGW 226S-220824	22H0495-02	all
RGW 234S-220824	22H0495-03	all
RGW 153S-220824	22H0495-04	all
RGW 172S-220824	22H0495-05	all



Sample ID	Laboratory Sample ID	Requested Analyses
RGW 173S-220824	22H0495-06	all
Trip blanks	22H0340-02	vinyl chloride

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA guidance documents (EPA, 2014a and b).

ARI received the samples on August 22 and 26, 2022. The temperature of the coolers was recorded upon receipt and the coolers were below the maximum acceptable temperature of 6 degrees Celsius. The laboratory logged the samples with the time on the chain-of-custody (COC) and proceeded with analysis. The containers used for sample RGW 236S-220824 were incorrectly labelled. The sample ID on the containers with a sample time of 13:16 was labelled RGW 226S-220824, whereas the sample ID on the COC with a sample time of 13:16 was labelled RGW 236S-220824. The laboratory logged the sample per the sample ID on the COC and proceeded with analysis.

Organic analyses

Samples were analyzed for vinyl chloride. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable except as noted:
 - Three bottles were received at the laboratory with a pH greater than two. ARI added an acidic solution of sulfuric acid to lower the pH and proceeded with analysis.
- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

- 6. Field Duplicates Acceptable
 - Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.
- 7. Reporting Limits and Laboratory Flags Acceptable.



Inorganic analyses

Samples were analyzed for TOC and total metals. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

5. Laboratory Duplicates - Acceptable

The laboratory did not perform duplicate analyses on the samples reviewed in this report.

6. Field Duplicates - Acceptable

Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.

7. Reporting Limits and Laboratory Flags - Acceptable

Overall assessment of data

The table below summarizes the data assessment. The completeness of work order numbers 22H0442 and 22H0495 is 100 percent. The usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits. The data meet the project's data quality objectives.

Sample ID	Qualified Analyte
RGW232S-220822	none
RGW235I-220822	none
Trip Blanks	none
RGW 236S-220824	none
RGW 226S-220824	none
RGW 234S-220824	none
RGW 153S-220824	none
RGW 172S-220824	none
RGW 173S-220824	none
RGW 152S-220824	none



References

- Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.
- U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.
- EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 21, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

Building 478/79 SWMU/AOC Group

ARI Work Order Numbers: 22H0339, 22H0470

This memo presents the summary data quality review of two primary groundwater samples collected on August 17 and 23, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were analyzed for the following:

- Volatile organic compounds (VOCs) (limited suite: benzene, vinyl chloride, cis 1,2 dichloroethene, and trichloroethene) by U.S. Environmental Protection Agency (EPA) Method 8260D;
- Total petroleum hydrocarbons as gasoline (TPH G) by Washington State Department of Total organic carbon (TOC) by Standard Method 5310B 00.

The samples and the analyses conducted on the samples are listed below.

Sample ID ¹	Laboratory Sample ID	Requested Analyses
RGW237S-220817	22H0339-01	all
RGW240D-220817	22H0339-02	all
RGW143S-220817	22H0339-03	all
RGW034S-220817	22H0339-04	all
RGW033S-220817	22H0339-05	all
RGWDUP2-220817	22H0339-06	all
TRIP BLANKS	22H0339-07	VOCs, TPH-G
RGW031S-220823	22H0470-01	all



Sample ID ¹	Laboratory Sample ID	Requested Analyses
RGW-244S-220823	22H0470-02	all

Note:

 Samples RGW237S-220817, RGW143S-220817, RGW034S-220817, and RGW-033S-220817 were incorrectly logged as RGW2375-220817, RGW1435-220817, RGW0345-220817, and RGW0335-220817, respectively, in the report. Based on associated sample naming from previous sampling events, the samples are referred to as RGW237S-220817, RGW143S-220817, RGW034S-220817, and RGW033S-220817 in this memo.

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in EPA guidelines (EPA, 2014a and b).

ARI received the samples on August 17 and 23, 2022. The temperature of the coolers was recorded upon receipt and one cooler was above the maximum acceptable temperature of 6 degrees Celsius (°C), at 11.6°C. The laboratory logged the samples with the time on the chain of custody and proceeded with analysis.

Organic analyses

Samples were analyzed for VOCs and TPH G. Laboratory data were evaluated for the following parameters:

1. Preservation and Holding Times - Acceptable except as noted:

The temperature of the cooler for samples RGW237S-220817, RGW240D-220817, RGW143S-220817, RGW034S-220817, RGW033S-220817, and RGWDUP2-220817 upon receipt at ARI was above the maximum acceptable temperature, at 11.6°C. Detected results are flagged with a "J."

Two sample vials contained bubbles upon arrival at ARI. We assume that the laboratory used another vial with acceptable preservation for the associated samples and the samples were able to be analyzed normally with acceptable results. The data is not qualified for use.

- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

6. Field Duplicates - Acceptable

One field duplicate was submitted for each analysis during this sampling event, meeting the project frequency requirement of five percent, or one for every 20 samples.



Primary and duplicate results are summarized in the table below. The relative percent differences (RPDs) for the field duplicate are within the project specific control limit of 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. As shown in the table below, the field duplicate results are acceptable.

Sample ID/ Field Duplicate ID	Analyte	Primary Result (µg/L)	Duplicate Result (µg/L)	Reporting Limit (µg/L)	RPD (%)
RGW033S-220817/ RGWDUP2-220817	vinyl chloride	1.53	1.61	0.20	5
	cis-1,2-dichloroethene	0.45	0.48	0.20	NC
	benzene	14.2	15.2	0.20	7
	trichloroethene	ND	ND	0.20	NC
	TPH-G	300	304	100	NC
	TOC	14.33	14.41	0.50	1

Abbreviations

 μ g/L = micrograms per liter

NC = not calculated

ND = not detected

RPD = relative percent difference

TOC = total organic carbon

TPH-G = total petroleum hydrocarbons as gasoline

7. Reporting Limits and Laboratory Flags - Acceptable.

Inorganic analyses

Samples were analyzed for TOC. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

5. Laboratory Duplicates - Acceptable

The laboratory did not perform duplicate analyses on the samples reviewed in this report.

6. Field Duplicates - Acceptable

Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.

7. Reporting Limits and Laboratory Flags - Acceptable



Overall assessment of data

The table below summarizes the data assessment. The completeness of work order numbers 22H0339 and 22H0470 is 100 percent. Evaluation of the usefulness of these data is based on EPA guidance documents identified in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits. The data meet the project's data quality objectives.

Sample ID	Qualified Analyte	Qualifier Reason	Qualified Result ¹
RGW237S-220817	TOC	Elevated cooler temperature	7.55 J mg/L
RGW240D-220817	TOC	Elevated cooler temperature	6.36 J mg/L
RGW143S-220817	cis-1,2-dichloroethene	Elevated cooler temperature	0.76 J μg/L
	Trichloroethene	Elevated cooler temperature	0.53 J μg/L
	TOC	Elevated cooler temperature	4.65 J mg/L
RGW034S-220817	vinyl chloride	Elevated cooler temperature	0.72 J μg/L
	TOC	Elevated cooler temperature	9.04 J mg/L
RGW033S-220817	vinyl chloride	Elevated cooler temperature	1.53 J µg/L
	cis-1,2-dichloroethene	Elevated cooler temperature	0.45 J μg/L
	benzene	Elevated cooler temperature	14.2 J µg/L
	TPH-G	Elevated cooler temperature	300 J μg/L
	TOC	Elevated cooler temperature	14.33 J mg/L
RGWDUP2-220817	vinyl chloride	Elevated cooler temperature	1.61 J µg/L
	cis-1,2-dichloroethene	Elevated cooler temperature	0.48 J µg/L
	benzene	Elevated cooler temperature	15.2 J μg/L
	TPH-G	Elevated cooler temperature	304 J μg/L
	TOC	Elevated cooler temperature	14.41 J mg/L
TRIP BLANKS	none	NA	none
RGW031S-220823	none	NA	none
RGW-244S-220823	none	NA	none

Note:

Data qualifiers are as follows:
 J = The value is an estimate.

Abbreviations:

µg/L = micrograms per liter mg/L = milligrams per liter NA = not applicable TOC = total organic carbon

TPH-G = total petroleum hydrocarbons as gasoline

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.



- U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.
- EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.



Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 19, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

Former Fuel Farm AOC Group ARI Work Order Number: 22H0416

This memo presents the summary data quality review of three primary groundwater samples and one field duplicate collected on August 19, 2022. The samples were submitted to Analytical Resources Inc. (ARI), a Washington State Department of Ecology-accredited laboratory located in Tukwila, Washington. The samples were analyzed for total petroleum hydrocarbons as diesel (TPH-D), as motor oil (TPH-O) and as Jet A (TPH-Jet A) by Washington State Department of Ecology Method NWTPH-Dx.

The samples and the analyses conducted on the samples are listed below.

Sample ID ¹	Laboratory Sample ID	Requested Analyses
RGW224S-220819	22H0416-01	all
RGWDUP3-220819	22H0416-02	all
RGW211S-220819	22H0416-03	all
RGW221S-220819	22H0416-04	all

Note:

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with

Sample RGW224S-220819 was incorrectly logged as RGW2245-220819 in the report. Based on associated sample naming from previous sampling events, the sample is referred to as RGW224S-220819 in this memo.



applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in EPA guidelines (EPA, 2014).

ARI received the samples on August 19, 2022. The temperature of the coolers was recorded upon receipt and the cooler was below the maximum acceptable temperature of 6 degrees Celsius. Sample RGW224S 220819 was incorrectly logged as RGW2245-220819 in the report. Based on associated sample naming from previous sampling events, the sample is referred to as RGW224S-220819 in this memo.

Organic analyses

Samples were analyzed for TPH-D plus TPH-O and TPH-Jet A ranges. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

6. Field Duplicates - Acceptable:

One field duplicate was submitted for each analysis during this sampling event, meeting the project frequency requirement of 5 percent, or one for every 20 samples. Primary and duplicate results are summarized in the table below. The project-specific control limit for field duplicate relative percent differences (RPDs) is 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. The field duplicate RPDs were within control limits.

Sample ID/ Field Duplicate ID	Analyte	Primary Result (mg/L)	Duplicate Result (mg/L)	Reporting Limit (mg/L)	RPD (%)
_	TPH-D (C12-C24)	0.881	1.07	0.100	19
RGW224S-220819/ RGWDUP3-220819	TPH-O (C24-C38)	ND	ND	0.200	NC
	TPH-Jet A (C10-C18)	1.25	1.69	0.100	30

Abbreviations

mg/L = milligrams per liter NC = not calculated ND = not detected RPD = relative percent difference TPH-D = total petroleum hydrocarbons as diesel TPH-Jet A = total petroleum hydrocarbons as Jet A TPH-O = total petroleum hydrocarbons as motor oil

7. Reporting Limits and Laboratory Flags - Acceptable.

Overall assessment of data

The table below summarizes the data review. The completeness of ARI work order number 22H0416 is 100 percent. Evaluation of the usefulness of these data is based on EPA guidance



documents listed in the introduction to this report. No problems were identified, and analytical performance was within specified limits. The data meet the project's data quality objectives.

Sample ID	Qualified Analyte
RGW224S-220819	none
RGWDUP3-220819	none
RGW211S-220819	none
RGW221S-220819	none

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.

U.S. Environmental Protection Agency (EPA), 2014, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 21, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

AOC-001, -002, and -003

ARI Work Order Number: 22H0341, 22H0472, 22H0489

This memo presents the summary data quality review of five primary groundwater samples and two trip blank samples collected between August 17 and 24, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were analyzed for vinyl chloride (a volatile organic compound) by U.S. Environmental Protection Agency (EPA) Method 8260D with selected ion monitoring and total organic carbon (TOC) by Standard Method 5310B-00. The samples and the analyses conducted on the samples are listed below.

Sample ID ¹	Laboratory Sample ID	Requested Analyses
RGW249S-220817	22H0341-01	Vinyl chloride
Trip blanks	22H0341-02	Vinyl chloride
RGW248I-220823	22H0472-01	all
RGW247S-220823	22H0472-02	all
RGW188S-220823	22H0472-03	all
Trip blanks	22H0472-04	Vinyl chloride
RGW 249S-220824	22H0489-01	TOC

Note:

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control

^{1.} Sample RGW249S-220817 was incorrectly logged as RGW2495-220817 in the report. Based on associated sample naming from previous sampling events, the sample is referred to as RGW249S-220817 in this memo.



limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA guidance documents (EPA, 2014a and b).

ARI received the samples between August 17 and 26, 2022. The temperature of the coolers was recorded upon receipt and one of the coolers was below the minimum acceptable temperature of 2 degrees Celsius (°C) and one of the coolers was above the maximum acceptable temperature of 6°C. The laboratory logged the samples with the time on the chain-of-custody and proceeded with analysis.

Organic analyses

Samples were analyzed for vinyl chloride. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable except as noted:
 - The temperature of the cooler containing sample RGW249S-220817 was above the maximum acceptable temperature, at 11.6°C. The vinyl chloride result for sample RGW249S-220817 is flagged with a "J."
- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable
 - Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.
- 6. Field Duplicates Acceptable
 - Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.
- 7. Reporting Limits and Laboratory Flags Acceptable.

Inorganic analyses

Samples were analyzed for TOC. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

5. Laboratory Duplicates - Acceptable



The laboratory did not perform duplicate analyses on the samples reviewed in this report.

6. Field Duplicates - Acceptable

Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.

7. Reporting Limits and Laboratory Flags - Acceptable

Overall assessment of data

The table below summarizes the data assessment. The completeness of work order numbers 22H0341, 22H0472, and 22H0489 is 100 percent. The usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits.

Sample ID	Qualified Analyte	Qualifier Reason	Qualified Result ¹ (ng/L)
RGW249S-220817	vinyl chloride	Elevated cooler temperature	404 J
Trip blanks	none	NA	none
RGW248I-220823	none	NA	none
RGW247S-220823	none	NA	none
RGW188S-220823	none	NA	none
Trip blanks	none	NA	none
RGW 249S-220824	none	NA	none

Note:

Data qualifiers are as follows:
 J = The value is an estimate.

Abbreviations:

NA = not applicable ng/L = nanograms per liter

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.

U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.

EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.



Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 9, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

AOC-004

ARI Work Order Number: 22H0473

This memo presents the summary data quality review of one primary groundwater sample collected on August 23, 2022. The sample was submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The sample was analyzed for total lead by U.S. Environmental Protection Agency (EPA) Method 6020A.

The sample and the analyses conducted on the sample are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
RGW250S-220823	22H0473-1	total lead

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA guidance documents (EPA, 2014).

ARI received the samples on August 23, 2022. The temperature of the coolers was recorded upon receipt; and were below the maximum acceptable temperature of 6 degrees Celsius (°C).



Inorganic analyses

Samples were analyzed for total lead. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable

Additional sample volume for MS/MSD analyses was not submitted with samples collected from this site. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

- 5. Field Duplicates Acceptable
 - Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.
- 6. Reporting Limits and Laboratory Flags Acceptable

Overall assessment of data

The table below summarizes the data assessment. The completeness of work order number 22H0473 is 100 percent. The usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. No problems were identified, and analytical performance was within specified limits.

Sample ID	Qualified Analyte
RGW250S-220823	none

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.

EPA, 2014, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 14, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

AOC-060

ARI Work Order Numbers: 22H0354, 22H0428, 22H0468

This memo presents the summary data quality review of six primary groundwater samples, one field duplicate, and three trip blank samples collected between August 18 and 22, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were selectively analyzed for the following:

- Volatile organic compounds (VOCs) (cis-1,2-dichloroethene, trichloroethene, and vinyl chloride) by U.S. Environmental Protection Agency (EPA) Method 8260D with selected ion monitoring; and
- Total organic carbon (TOC) by Standard Method 5310B-00.

The samples and the analyses conducted on the samples are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
RGW014S-220818	22H0354-01	all
RGWDUP4-220818	22H0354-02	all
RGW012S-220818	22H0354-03	all
Trip Blanks	22H0354-04	VOCs
RGW1475-220819	22H0428-01	all
RGW0095-220819	22H0428-02	all
Tripblanks	22H0428-03	VOCs
RGW253I-220822	22H0468-01	all
RGW150S-220822	22H0468-02	all
Trip Blanks	22H0468-03	VOCs



Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Hold times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in EPA guidelines (EPA, 2014a and b).

Samples were received by ARI between August 18 and 22, 2022. The temperature of the cooler was recorded upon receipt; one cooler was above the maximum acceptable temperature of 6 degrees Celsius (°C). Samples were received in good condition. The laboratory logged the samples with the time on the chain-of-custody and proceeded with analysis.

Organic analyses

Samples were analyzed for VOCs. Laboratory data were evaluated for the following parameters:

1. Preservation and Holding Times - Acceptable except as noted:

The cooler containing samples RGW014S-220818, RGWDUP4-220818, and RGW012S-220818 arrived at ARI at a temperature of 9.7°C, above the maximum acceptable temperature of 6°C. The detected VOC results from the associated samples are flagged with a "J."

Three sample vials contained bubbles upon arrival at ARI. We assume that the laboratory used another vial with acceptable preservation for the associated samples and the samples were able to be analyzed normally with acceptable results. The data is not qualified for use.

- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

6. Field Duplicates - Acceptable

One field duplicate was submitted for each analysis during this sampling event, meeting the project frequency requirement of five percent, or one for every 20 samples. Primary and duplicate results are summarized in the table below. The project-specific control limit for field duplicate relative percent differences (RPDs) is 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. The field duplicate RPDs were within the control limits.



Sample ID/ Field Duplicate ID	Analyte	Primary Result (ng/L)	Duplicate Result (ng/L)	Reporting Limit (ng/L)	RPD (%)
,	vinyl chloride	514	518	20.0	1
RGW014S-220818/ RGWDUP4-220818	cis-1,2-dichloroethene	134	132	20.0	2
	trichloroethene	24.6	22.1	20.0	NC

Abbreviations

ng/L = nanograms per liter NC = not calculated

RPD = relative percent difference

7. Reporting Limits and Laboratory Flags - Acceptable.

Inorganic analyses

Samples were analyzed for TOC. Laboratory data were evaluated for the following parameters:

1. Preservation and Holding Times - - Acceptable except as noted:

The cooler containing samples RGW014S-220818, RGWDUP4-220818, and RGW012S-220818 arrived at ARI at a temperature of 9.7°C, above the maximum acceptable temperature of 6°C. The detected TOC results from the associated samples are flagged with a "J."

- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable

Extra volume was not submitted for analysis of MS/MSD samples. The project frequency requirement was achieved with MS/MSD analysis conducted at other sites included in this sampling event.

5. Laboratory Duplicates - Acceptable

The laboratory did not perform duplicate analyses on the samples reviewed in this report.

6. Field Duplicates - Acceptable

One field duplicate was submitted for TOC analysis during this sampling event, meeting the project frequency requirement of five percent, or one for every 20 samples. Primary and duplicate results are summarized in the table below. The project-specific control limit for field duplicate RPDs is 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. The field duplicate RPD was within the control limits.

Sample ID/	Analyte	Primary Result	Duplicate Result	Reporting Limit	RPD
Field Duplicate ID		(mg/L)	(mg/L)	(mg/L)	(%)
RGW014S-220818/ RGWDUP4-228018	тос	4.74	4.69	0.50	1

Abbreviations

mg/L = milligrams per liter

RPD= relative percent difference

TOC = total organic carbon



7. Reporting Limits and Laboratory Flags - Acceptable

Overall assessment of data

A summary of the data assessment is presented in the table below. The completeness of work order numbers 22H0354, and 22H0428, and 22H0468 is 100 percent. Evaluation of the usefulness of these data is based on the EPA guidance document listed in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits. The data meet the project's data quality objectives.

Sample ID	Qualified Analyte	Reason for Qualifier	Qualified Result1
RGW014S-220818	vinyl chloride	Elevated cooler temperature	514 J ng/L
	cis-1,2-dichloroethene	Elevated cooler temperature	134 J ng/L
	trichloroethene	Elevated cooler temperature	24.6 J ng/L
	TOC	Elevated cooler temperature	4.74 J mg/L
RGWDUP4-220818	vinyl chloride	Elevated cooler temperature	518 J ng/L
	cis-1,2-dichloroethene	Elevated cooler temperature	132 J ng/L
	trichloroethene	Elevated cooler temperature	22.1 J ng/L
	TOC	Elevated cooler temperature	4.69 J mg/L
RGW012S-220818	vinyl chloride	Elevated cooler temperature	294 J ng/L
	cis-1,2-dichloroethene	Elevated cooler temperature	1,910 J ng/L
	trichloroethene	Elevated cooler temperature	1,020 J ng/L
	TOC	Elevated cooler temperature	10,260 J mg/L
Trip Blanks	none	NA	none
RGW1475-220819	none	NA	none
RGW0095-220819	none	NA	none
Tripblanks	none	NA	none
RGW253I-220822	none	NA	none
RGW150S-220822	none	NA	none
Trip Blanks	none	NA	none

Note:

Data qualifiers are as follows:
 J = The value is an estimate.

Abbreviations:

NA = not applicable mg/L = milligrams per liter ng/L = nanograms per liter TOC = total organic carbon



References

- Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.
- U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.
- EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 14, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

AOC-090

ARI Work Order Numbers: 22H0471, 22H0477

This memo summarizes the data quality review of five primary groundwater samples, one field duplicate, and two trip blank samples collected on August 23 and 24, 2022. The samples were submitted to Analytical Resources, Inc. (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology (Ecology). The samples were selectively analyzed for the following:

- Volatile organic compounds (VOCs) (acetone, methylene chloride, trans-1,2-dichlorethene, cis-1,2-dichloroethene, chloroform, carbon tetrachloride, benzene, toluene, and 1,1,2trichloroethane) by U.S. Environmental Protection Agency (EPA) Method 8260D);
- VOCs (vinyl chloride, 1,1-dichloroethene, trichloroethene, tetrachloroethene, and 1,1,2,2-tetrachloroethane) by EPA Method 8260D with selected ion monitoring;
- Total petroleum hydrocarbons in the gasoline range (TPH-G) by Ecology Method NWTPH Gx;
- Total petroleum hydrocarbons in the diesel and motor oil ranges (TPH-D and TPH-MO) by Ecology Method NWTPH-Dx (with silica gel cleanup); and
- Total organic carbon (TOC) by Standard Method 5310B-00.

The samples and the analyses conducted on the samples are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
DUP5-220823	22H0471-01	vinyl chloride
RGW207S-220823	22H0471-02	vinyl chloride
RGW176S-220823	22H0471-03	vinyl chloride
Trip Blank-220823	22H0471-04	vinyl chloride, TPH-G



Sample ID	Laboratory Sample ID	Requested Analyses
RGW 189S-220824	22H0477-01	All
RGW 178S-220824	22H0477-02	vinyl chloride
RGW 208S-220824	22H0477-03	vinyl chloride
TRIP BLANK	22H0477-04	VOCs, TPH-G

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan Addendum (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS), laboratory duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in EPA guidelines (EPA, 2014a and b).

ARI received the samples on August 23 and 26, 2022. The temperature of the coolers was recorded upon receipt and the coolers were below the maximum acceptable temperature of 6 degrees Celsius. The laboratory logged the samples with the time on the chain-of-custody and proceeded with analysis.

Organic analyses

Samples were analyzed for VOCs and TPH. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable except as noted:
 - 1,1,2-Trichloroethane was detected at a concentration of 0.57 micrograms per liter in the laboratory blank associated with samples RGW 189S-220824, RGW 178S-220824, and RGW 208S-220824. 1,1,2-Trichloroethane was not detected in the associated samples and no data is qualified for use.
- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable except as noted:

ARI performed MS and MSD analyses on sample RGW-189S-220824. Toluene recovery was low at 61.1 percent in the MSD performed on sample RGW-189S-220824. The concentration detected in the unspiked native sample was greater than the spike concentration and data usability could be assessed based on MS recoveries. No data were qualified.

- 6. Field Duplicates Acceptable
 - Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.
- 7. Reporting Limits and Laboratory Flags Acceptable.



Inorganic analyses

Samples were analyzed for TOC. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times - Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS Acceptable
- 5. Laboratory Duplicates Acceptable
- 6. Field Duplicates Acceptable

Field duplicates were not collected at this site during this sampling event. The project frequency requirement of one field duplicate for every 20 samples was achieved with field duplicate samples collected at other sites included in this sampling event.

7. Reporting Limits and Laboratory Flags - Acceptable

Overall assessment of data

The completeness of ARI work order numbers 22H0471 and 22H0477 is 100 percent. Evaluation of the usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. Few problems were identified, and analytical performance was generally within specified limits. The data meet the project's data quality objectives.

A summary of the data quality review is presented in the table below.

Sample ID	Qualified Analyte
DUP5-220823	none
RGW207S-220823	none
RGW176S-220823	none
Trip Blank-220823	none
RGW 189S-220824	none
RGW 178S-220824	none
RGW 208S-220824	none
TRIP BLANK	none

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.

U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.

EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.

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Memo

To: Kathleen Goodman, Project Manager Project: PS20203450.2022

From: Caitlin Riechmann c: Project File

Tel: 425-368-1000

Fax: 425-368-1001

Date: September 19, 2022

Re: Summary Data Quality Review

August 2022 Boeing Renton Groundwater Sampling

Apron A

ARI Work Order Number: 22H0488

This memo presents the summary data quality review of one primary groundwater sample and one field duplicate sample collected on August 24, 2022. The samples were submitted to Analytical Resources, Inc., (ARI), located in Tukwila, Washington, a laboratory accredited by the Washington State Department of Ecology. The samples were analyzed for the following:

- Volatile organic compounds (VOCs) (vinyl chloride and cis-1,2-dichloroethene) by U.S. Environmental Protection Agency (EPA) Method 8260D; and
- Total organic carbon (TOC) by Standard Method 5310B.

The samples and the analyses conducted on the samples are listed below.

Sample ID	Laboratory Sample ID	Requested Analyses
DUP-1-220824	22H0488-01	all
RGW264S-220824	22H0488-02	all

Data were reviewed in accordance with the appropriate method procedures and criteria documented in the Quality Assurance Project Plan (QAPP) (Amec Foster Wheeler, 2016). The control limits provided in the QAPP are advisory limits; therefore, the most current control limits provided by the laboratory were used to evaluate the quality control data. In cases where the laboratory did not track limits for an analyte, the limits in the QAPP were used.

Holding times, method/trip blanks, surrogate recoveries, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD), matrix spike/matrix spike duplicates (MS/MSD), field duplicates, and reporting limits were reviewed where available to assess compliance with applicable methods. If qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA guidance documents (EPA, 2014a and b).



ARI received the samples on August 26, 2022. The temperature of the coolers was recorded upon receipt and was below the maximum acceptable temperature of 6 degrees Celsius. The laboratory logged the samples with the time on the chain-of-custody and proceeded with analysis.

Organic analyses

Samples were analyzed for VOCs. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times Acceptable
- 2. Blanks Acceptable
- 3. Surrogates Acceptable
- 4. LCS/LCSD Acceptable
- 5. MS/MSD Acceptable except as noted:

Extra volume was not submitted for project specific MS/MSD analyses. Sample precision is evaluated based on LCS and LCSD recoveries. The MS/MSD project frequency requirement of one MS/MSD for every 20 samples was achieved with extra volume submitted at other sites included in this sampling event.

6. Field Duplicates - Acceptable

One field duplicate was submitted for each analysis during this sampling event, meeting the project frequency requirement of five percent, or one for every 20 samples. Primary and duplicate results are summarized in the table below. The project-specific control limit for field duplicate relative percent differences (RPDs) is 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. The field duplicate RPDs were within the control limits.

Sample ID/ Field Duplicate ID	Analyte	Primary Result (µg/L)	Duplicate Result (µg/L)	Reporting Limit (µg/L)	RPD (%)
RGW264S-220824/	vinyl chloride	1.41	1.57	0.20	11
DUP-1-220824	cis-1,2-dichloroethene	ND	ND	0.20	NC

Abbreviations

µg/L = micrograms per liter NC = not calculated ND = not detected

RPD = relative percent difference

7. Reporting Limits and Laboratory Flags - Acceptable

Inorganic analyses

Samples were analyzed for TOC. Laboratory data were evaluated for the following parameters:

- 1. Preservation and Holding Times - Acceptable
- 2. Blanks Acceptable
- 3. LCS Acceptable
- 4. MS/MSD Acceptable



Extra volume was not submitted for project specific MS/MSD analyses. Sample precision is evaluated based on LCS and LCSD recoveries. The MS/MSD project frequency requirement of one MS/MSD for every 20 samples was achieved with extra volume submitted at other sites included in this sampling event.

- 5. Laboratory Duplicates Acceptable
- 6. Field Duplicates Acceptable

Two field duplicates were submitted for each analysis during this sampling event, meeting the project frequency requirement of five percent, or one for every 20 samples. Primary and duplicate results are summarized in the table below. The project-specific control limit for field duplicate relative percent differences (RPDs) is 30 percent for concentrations greater than five times the reporting limit. The RPD is not calculated for results that are less than five times the reporting limit, as indicated on the table below by "NC." In these cases, the absolute value of the difference between the primary and duplicate result should not exceed the value of the reporting limit. The field duplicate RPDs were within the control limits.

Sample ID/	Analyte	Primary Result	Duplicate Result	Reporting Limit	RPD
Field Duplicate ID		(mg/L)	(mg/L)	(mg/L)	(%)
RGW264S-220824/ DUP-1-220824	TOC	2,189	2,224	23.065	2

Abbreviations

mg/L = milligrams per liter RPD = relative percent difference TOC = total organic carbon

7. Reporting Limits and Laboratory Flags - Acceptable

Overall assessment of data

The table below summarizes the data assessment. The completeness of work order number 22H0488 is 100 percent. The usefulness of these data was evaluated based on EPA guidance documents listed in the introduction to this report. No problems were identified, and analytical performance was within specified limits. The data meet the project's data quality objectives.

Sample ID	Qualified Analyte
DUP-1-220824	none
RGW264S-220824	none

References

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), 2016, Quality Assurance Project Plan, Boeing Renton Facility, Renton, Washington: Prepared for the Boeing Company, February.

U.S. Environmental Protection Agency (EPA), 2014a, U.S. EPA National Functional Guidelines for Superfund Organic Methods Data Review: EPA 540-R-014-002, August.

EPA, 2014b, U.S. EPA National Functional Guidelines for Inorganic Superfund Data Review: EPA 540-R-013-001, August.

APPENDIX D

Historical Groundwater Data Tables

TABLE D-1: SWMU-168 HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

					Wel	ll ID ³									
	Current		CPOC Area GW229S												
	Cleanup														
Analyte	Level⁴	11/7/2016	3/1/2017	8/14/2017	3/5/2018	8/13/2018	3/4/2019	8/12/2019	3/9/2020						
Volatile Organic Comp	ounds (μg/L)														
Vinyl Chloride	0.11	0.020 U	0.020 U	0.021	0.0273	0.020 U	0.0211	0.020 U	0.020 U						

					We	II ID ³									
	Current		CPOC Area GW230I												
	Cleanup														
Analyte	Level ⁴	3/4/2019	8/12/2019	3/9/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/17/2022						
Volatile Organic Compo	ounds (μg/L)														
Vinyl Chloride	0.11	0.0566	0.336	0.087	0.162	0.076	0.359 J	0.164	0.539 J						

					Wel	l ID³									
	Current		CPOC Area												
	Cleanup		GW231S												
Analyte	Level ⁴	11/7/2016	3/1/2017	8/14/2017	3/5/2018	8/13/2018	3/4/2019	8/12/2019	3/9/2020						
Volatile Organic Compo	unds (μg/L)		37 17 2020 37 17 2020 37 17 2020 37 17 2020 37												
Vinyl Chloride	0.11	0.020 U	0.020 U	0.020 U	0.0393	0.0326	0.0327	0.026	0.020 U						

Notes:

- 1. Data qualifiers are as follows:
 - U = The analyte was not detected at the reporting limit indicated.
- 2. Bolded values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

TABLE D-2: SWMU-172 AND SWMU-174 GROUP HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

	Current									Well ID ³ Source Are	a							
	Cleanup				GW	152S								GW153S				
Analyte	Level⁴	11/11/2019	3/9/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	2/21/2022	8/24/2022	8/12/2019	11/11/2019	3/9/2020	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022
Volatile Organic Compounds	(μg/L)																	
cis-1,2-Dichloroethene	0.03	0.530	0.892	1.66	0.144	1.330	1.57	1.59	0.877	0.278	0.204	0.0736	0.0789	0.0551	0.077	0.0582 J	0.0517	0.100
Tetrachloroethene	0.02	0.384	1.12	0.319	0.081	0.0872	1.84	1.71	1.05	0.0544	0.164	0.024	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0200 U
Trichloroethene	0.02	0.145	0.278	0.579	0.020 U	0.129	0.522	0.497	0.534	0.0326	0.131	0.02 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0525
Vinyl Chloride	0.11	0.0366	0.15	0.284	0.0378	0.506	0.200	0.219	0.346	0.153	0.0859	0.249	0.266	0.135	0.220	0.193 J	0.174	0.214
Total Metals (µg/L)																		
Arsenic	1.0	7.48	3.84	6.72	7.67	16.3	2.88	2.34	47.7	4.72	11.9	5.48	3.85	4.05	32.8	32.8	4.98	2.85
Copper	3.5	16.6	8.03	7.45 J	17.2 J	9.08 J	5.07	3.88	9.17	1.58	10.2	3.09	1.73	1.68	33.9	33.9	1.45	0.641
Lead	1.0	12.1	6.13	3.89	12.5 J	5.38 J	2.78 J	1.90 J	5.75	0.351	2.76	0.712	0.372	0.326	5.80	5.80	0.302	0.123

									١	Well ID ³							
	Current								Downgrad	dient Plume Area							
	Cleanup		GW172S GW173S														
Analyte	Level⁴	5/6/2019	8/12/2019	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022	11/11/2019	3/9/2020	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022
Volatile Organic Compounds (μg/L)																	
cis-1,2-Dichloroethene	0.03	0.0581	0.027	0.214	0.0561	0.108	0.0746	0.0532	0.0436	0.0378	0.0504	0.0488	0.0313	0.0505	0.0424 J	0.0280	0.168
Tetrachloroethene	0.02	0.020 U	0.0451	0.0625	0.0603	0.0624	0.020 U	0.0677	0.0200 U	0.0246	0.0224	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0200 U
Trichloroethene	0.02	0.020 U	0.020 U	0.028	0.020 U	0.020 U	0.020 U	0.0201	0.0200 U	0.0379	0.0305	0.0215	0.0239	0.020 U	0.020 UJ	0.0200 U	0.0496
Vinyl Chloride	0.11	0.0808	0.0376	0.369	0.0628	0.219	0.155	0.137	0.0887	0.072	0.144	0.126	0.0455	0.183	0.176 J	0.0696	0.175
Total Metals (μg/L)																	
Arsenic	1.0	7.71	10.6	7.03	10.8	10.8	7.18	11.2	4.86	15.6	11.8	6.72	7.00	9.94	11.4	13.8	6.04
Copper	3.5	2.13	3.86	2.2	6.12	3.89	2.86	2.86	1.52	4.68	1.51	0.875	3.19	3.11	5.96	2.58	1.54
Lead	1.0	0.991	1.02	1.07	2.58	1.98	1.33	1.37	1.32	1.36	0.442	0.215	0.470	0.850	1.65	0.788	0.468

									V	Vell ID ³							
	Current				Downgradie	nt Plume Area				CPOC Area							
	Cleanup		GW226S										GW2	232S			
Analyte	Level⁴	5/6/2019	8/12/2019	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022	11/11/2019	3/9/2020	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022
Volatile Organic Compounds	(μg/L)																
cis-1,2-Dichloroethene	0.03	0.0223	0.0259	0.0305	0.0218	0.020 U	0.0335 J	0.0363	0.0255	0.659	0.221	0.352	0.482	0.219	0.464 J	0.197	0.325
Tetrachloroethene	0.02	0.020 U	0.020 U	0.020 U	0.0279	0.020 U	0.0202 J	0.0200 U	0.0200 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0200 U
Trichloroethene	0.02	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0200 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.0200 U	0.0200 U
Vinyl Chloride	0.11	0.0459	0.029	0.0594	0.0415	0.0519	0.0516 J	0.0414	0.128	0.860	0.264	0.337	0.425	0.263	0.653 J	0.307	0.558
Total Metals (μg/L)																	
Arsenic	1.0	2.97	2.85	3.33	4.93	8.12	5.57	7.33	3.09	8.09	2.73	4.71	3.83	4.78	6.19	3.75	3.83
Copper	3.5	0.500 U	0.626	0.704	1.48	3.92	1.48	2.40	0.500 U	3.85	2.22	0.539	0.627	2.09	1.79	1.09	0.500 U
Lead	1.0	0.100 U	0.100 U	0.190	0.136	0.513	0.124	0.237	0.100 U	0.378	0.354	0.100 U	0.100 U	0.318	0.262	0.234	0.122

TABLE D-2: SWMU-172 AND SWMU-174 GROUP HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

	1									,							
									V	Vell ID ³							
	Current								CF	OC Area							
	Cleanup				GW	234\$							GW	2351			
Analyte	Level⁴	5/6/2019	8/12/2019	5/11/2020	8/10/2020	2/15/2021	8/10/2021	3/9/2020	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022			
Volatile Organic Compounds	(μg/L)																
cis-1,2-Dichloroethene	0.03	0.0630	0.0738	0.092	0.0914	0.020 U	0.0892	0.0591	0.134	0.109	0.127	0.156	0.104	0.128	0.179	0.175	0.227
Tetrachloroethene	0.02	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0200 U	0.0200 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0292	0.020 U	0.0200 U	0.0200 U
Trichloroethene	0.02	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0200 U	0.0200 U	0.0287	0.0336	0.031	0.0227	0.020 U	0.0285	0.0253	0.0250
Vinyl Chloride	0.11	0.0235	0.0252	0.032	0.0279	0.020 U	0.0497	0.0318	0.170	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.24	0.0259	0.0280
Total Metals (μg/L)																	
Arsenic	1.0	2.22	1.31	5.31	3.26	6.29	1.18	1.76	0.974	0.237	0.251	0.289	0.288	0.200 U	0.200 U	0.200 U	0.200 U
Copper	3.5	1.93	0.869	2.43	3.21	11.4	2.58	2.13	2.31	0.573	0.935	1.08	1.30	0.727	0.689	0.687	0.500 U
Lead	1.0	0.843	0.280	0.671	1.25	4.13	1.01	0.930	0.830	0.127	0.235	0.223	0.304	0.174	0.179	0.159	0.100 U

					Wel	II ID ³			
	Current				СРОС	C Area			
	Cleanup				GW	236S			
Analyte	Level⁴	5/6/2019	8/12/2019	5/11/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022
Volatile Organic Compounds	(μg/L)								
cis-1,2-Dichloroethene	0.03	0.0281	0.0468	0.036	0.0881	0.020 U	0.0791	0.0200 U	0.0572
Tetrachloroethene	0.02	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0206	0.0200 U
Trichloroethene	0.02	0.0206	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0200 U	0.0200 U
Vinyl Chloride	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0223	0.0200 U	0.0200 U
Total Metals (μg/L)									
Arsenic	1.0	2.10	3.70	2.10	10.1	2.89	5.49	1.97	0.995
Copper	3.5	2.17	0.893	4.24	10.8	9.70	2.47	5.27	1.22
Lead	1.0	1.90	1.53	2.61	10.8	6.31	1.79	3.32	0.798

<u>Notes</u>

- 1. Data qualifiers are as follows:
- U = The analyte was not detected at the reporting limit indicated.
- J = The value is an estimate.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

<u>Abbreviations</u>

 $\mu g/L$ = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

TABLE D-3: BUILDING 4-78/79 SWMU/AOC GROUP HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN 1, 2

Boeing Renton Facility, Renton, Washington

									Wel	l ID ³							
	Current								Sourc	e Area							
	Cleanup				GW	/031S							GW	033S			
Analyte	Level⁴	8/13/2019	019 11/12/2019 3/11/2020 5/11/2020 8/11/2020 2/15/2021 8/11/2021 8/23/2022 3/11/2020 5/11/2020 2/16/2021 8/11/2021 2/22/2022 2/22/2022 8/17												8/17/2022		
Volatile Organic Compounds	olatile Organic Compounds (μg/L)																
Benzene	0.80	3.47	4.77	37.1	17.6	1.72 J	18.8 J	1.08	0.20 U	10.2	9.75	12.5	11.0	14.5	8.41	8.57	14.2 J
cis-1,2-Dichloroethene	0.70	0.47	0.40	0.61	0.40 J	0.67 J	0.31 J	0.20 U	0.26	21.4	39.5	188	1.64	0.55	3.82	4.04	0.45 J
Trichloroethene	0.23	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	0.20 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.25	0.20 U	0.20 U	0.200 U	0.200 U	0.20 U
Vinyl Chloride	0.20	0.21	0.25	0.20 U	0.20 U	0.32 J	0.20 UJ	0.20 U	0.39	52.2	87.3	310	5.31	2.31	8.90	9.28	1.53 J
Total Petroleum Hydrocarbon	ıs (μg/L)																
TPH-G (C7-C12)	800	1390	1540	2,980	1,880	1,160	2,340	1,540	100 U	296	301	255	323	360	168	166	300 J

									Wel	l ID³							
	Current								Sourc	e Area							
	Cleanup				GV	/034S							GW:	244S			
Analyte	Level⁴	11/12/2019	/12/2019 3/11/2020 5/11/2020 8/11/2020 2/15/2021 8/11/2021 2/22/2022 8/17/2022 11/12/2019 3/11/2020 5/11/2020 8/11/2020 2/15/2021 8/11/2021												8/23/2022		
Volatile Organic Compounds																	
Benzene	0.80	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	1.47		0.87	0.52	0.46	0.43	0.46	0.20 U	0.25
cis-1,2-Dichloroethene	0.70	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	2.03		0.20 U	0.68	1.06	1.12	0.68	0.22	0.25
Trichloroethene	0.23	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U		0.20 U	0.23	0.20 U	0.20 U	0.29	0.20 U	0.20 U
Vinyl Chloride	0.20	0.39	0.20 U	0.21	0.41	0.25	1.20	0.330	1.45		0.35	0.7	0.85	0.98	0.64	0.37	0.46
Total Petroleum Hydrocarbon	s (μg/L)																
TPH-G (C7-C12)	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U		100 U	100 U	100 U	100 U	100 U	100 U	100 U

										II ID ³							
	Current								СРО	C Area							
	Cleanup				GW	V143S							GW2	237S			
Analyte	Level⁴	11/12/2019	12/2019 3/10/2020 5/11/2020 8/11/2020 2/15/2021 8/11/2021 2/22/2022 8/17/2022 11/12/2019 3/10/2020 5/11/2020 8/11/2020 2/16/2021 8/11/2021 2/22/2022 8/1												8/17/2022		
Volatile Organic Compounds	olatile Organic Compounds (µg/L)																
Benzene	0.80	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U	0.66	3.48	1.03	0.24	6.79 J	0.20 U	3.73	0.20 U
cis-1,2-Dichloroethene	0.70	0.20 U	0.21	0.20 U	1.17	0.26	0.65	0.430	0.76 J	0.22	1.00 U	0.20 U	0.20 U	0.20 UJ	0.20 U	0.200 U	0.20 U
Trichloroethene	0.23	0.20 U	0.20 U	0.20 U	0.23	0.20 U	0.20 U	0.200 U	0.53 J	0.20 U	1.00 U	0.20 U	0.20 U	0.20 UJ	0.20 U	0.200 U	0.20 U
Vinyl Chloride	0.20	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U	0.34	1.00 U	0.20 U	0.20 U	0.31 J	0.20	0.200 U	0.20 U
Total Petroleum Hydrocarbon	s (μg/L)																
TPH-G (C7-C12)	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	961	729	100 U	100 UJ	360	664	100 U

					We	ell ID³			
	Current				СРО	C Area			
	Cleanup				GW	/240D			
Analyte	Level⁴	11/12/2019	3/10/2020	5/11/2020	8/11/2020	2/15/2021	8/11/2021	2/22/2022	8/17/2022
Volatile Organic Compounds (μg/L)								
Benzene	0.80	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U
cis-1,2-Dichloroethene	0.70	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U
Trichloroethene	0.23	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.20 U
Vinyl Chloride	0.20	0.24	0.20 U	0.200 U	0.20 U				
Total Petroleum Hydrocarbon	s (μg/L)								
TPH-G (C7-C12)	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U

Votes

1. Data qualifiers are as follows:

U = The analyte was not detected at the reporting limit indicated.

UJ = The result is estimated and was not detected at the reporting limit indicated.

J = The value is an estimate.

2. Bolded values exceed the cleanup levels.

3. S = shallow well; D = deep well.

4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

Abbreviations

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

SWMU = solid waste management unit

TPH-G = total petroleum hydrocarbons as gasoline

TABLE D-4: FORMER FUEL FARM HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN¹

Boeing Renton Facility, Renton, Washington

									Wel	ll ID²							
									СРОС	Area							
			GW211S GW221S														
Analyte	Current Cleanup Level ³	5/7/2019															8/19/2022
Total Petroleum Hydrocarbo	ns (mg/L)																
TPH-D (C12-C24)	0.5	0.124	0.120	0.282	0.192	0.284	0.140	1.00 U	0.100 U	0.630	1.65	1.58	7.67	1.22	1.02	0.575	0.940
Jet A	0.5	0.117	0.117	0.267	0.155	0.262	0.100 U	1.00 U	0.100 U	0.397	1.09	1.09	5.70	0.89	0.718	0.460	0.562

					We	ll ID²									
					СРОС	Area									
			GW224S												
Analyte	Current Cleanup Level ³														
Total Petroleum Hydrocarbon	s (mg/L)														
TPH-D (C12-C24)	0.5	1.46	0.675	1.08	0.584	1.08	0.682	1.01	0.881						
Jet A	0.5	1.80	0.918 J	1.42	1.04	1.47	1.04	1.76	1.25						

- Notes

 1. Bolded values exceed the cleanup levels.
- 2. S = shallow well.
- 3. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

Abbreviations

AOC = area of concern

CPOC = conditional point of compliance

mg/L = milligrams per liter

SWMU = solid waste management unit

TPH-D = total petroleum hydrocarbons as diesel

TABLE D-5: AOC-003 HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

									Wel	ID ³							
					Source	e Area							Downgradier	nt Plume Area			
	Current Cleanup				GW:	2495							GW:	1885			
Analyte	Level⁴	3/5/2019	8/14/2019	3/12/2020	8/10/2020	2/16/2021	8/12/2021	2/23/2022	8/24/2022	3/5/2019	8/14/2019	3/12/2020	8/10/2020	2/16/2021	8/12/2021	2/22/2022	8/23/2022
Volatile Organic Compounds	(μg/L)																
cis-1,2-Dichloroethene	0.78	0.079	0.0526	0.0604	NA	NA	NA	NA	NA	0.0493	0.0361	0.0362	NA	NA	NA	NA	NA
Tetrachloroethene	0.02	0.0105	0.020 U	0.020 U	NA	NA	NA	NA	NA	0.0107	0.020 U	0.0244	NA	NA	NA	NA	NA
Trichloroethene	0.16	0.0157	0.020 U	0.020 U	NA	NA	NA	NA	NA	0.0125	0.020 U	0.020 U	NA	NA	NA	NA	NA
Vinyl Chloride	0.24	0.424	0.367	0.334	0.261	0.366	0.517	0.359 J	0.404 J	0.537	0.545	0.235	0.288	0.107	0.698	0.141 J	0.404

									Wel	I ID ³							
									СРОС	Area							
	Current Cleanup				GW:	247S							GW	2481			
Analyte	Level⁴	11/12/2019	3/12/2020	5/13/2020	8/10/2020	2/16/2021	8/11/2021	2/23/2022	8/23/2022	11/12/2019	3/12/2020	5/13/2020	8/10/2020	2/16/2021	8/11/2021	2/23/2022	8/23/2022
Volatile Organic Compounds	(μg/L)																
cis-1,2-Dichloroethene	0.78	0.0635	0.039	0.584	NA	NA	NA	NA	NA	0.020 U	0.02 U	0.020 U	NA	NA	NA	NA	NA
Tetrachloroethene	0.02	0.020 U	0.02 U	0.020 U	NA	NA	NA	NA	NA	0.020 U	0.020 U	0.020 U	NA	NA	NA	NA	NA
Trichloroethene	0.16	0.148	0.02 U	0.020 U	NA	NA	NA	NA	NA	0.0514	0.020 U	0.020 U	NA	NA	NA	NA	NA
Vinyl Chloride	0.24	0.504	0.305	0.409	0.392	0.405	0.678	0.127 J	0.379	0.62	0.499	0.546	0.383	0.426	0.711	0.598 J	0.742

<u>Notes</u>

1. Data qualifiers are as follows:

U = The analyte was not detected at the reporting limit indicated.

- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

<u>Abbreviations</u>

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

NA = not analyzed

TABLE D-6: AOC-004 HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN¹

Boeing Renton Facility, Renton, Washington

							We	II ID ²									
		Current					Sourc	e Area									
		Cleanup		GW250S													
	Analyte	Level ³	3/6/2018	8/15/2018	3/5/2019	8/14/2019	3/9/2020	8/12/2020	2/16/2021	8/12/2021	2/22/2022	8/23/2022					
N	letals (mg/L)																
	Lead	0.001	0.000941	0.00107	0.00154	0.000714	0.00119	0.000611	0.000564	0.000663	0.000588	0.00131					

Notes

- 1. Bolded values exceed the cleanup levels.
- 2. S = shallow well.
- 3. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

Abbreviations

mg/L = milligrams per liter

AOC = area of concern

CPOC = conditional point of compliance

TABLE D-7: AOC-060 HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

									Wel	ll ID ³							
	Current				Source	e Area							Downgradien	t Plume Area			
	Cleanup				GW	009S							GW)12S			
Analyte	Levels⁴	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/19/2022	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/18/2022
Volatile Organic Compounds	(μg/L)																
cis -1,2-Dichloroethene	0.08	0.107	0.127	0.093	0.124	0.139	0.368	0.15	0.229	1.23	0.798	0.482	0.508	1.260	2.210	0.693	1.91 J
Trichloroethene	0.02	0.0239	0.020 U	0.0242	0.0324	0.0294	0.0316	0.0284	0.0288	0.0546	0.0471	0.0505	0.0518	0.0454	0.0908	0.0506	1.02 J
Vinyl Chloride	0.26	0.285	0.300	0.183	0.219	0.300	0.160	0.434	0.570	1.35	0.893	0.603	0.387	0.180	0.795	1.57	0.294 J

									Wel								
	Current		Downgradient Plume Area														
	Cleanup		GW014S GW147S														
Analyte	Levels ⁴	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/18/2022	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/19/2022
Volatile Organic Compounds (μg/L)																
cis -1,2-Dichloroethene	0.08	0.119	0.143	0.151	0.0932	0.130	0.147	0.133	0.134 J	0.955	4.11	0.287	0.931	0.180	0.180	0.679	8.37
Trichloroethene	0.02	0.0254	0.020 U	0.0419	0.020 U	0.035	0.0227	0.020 U	0.0246 J	0.475	1.46	1.20	3.37	0.498	0.498	0.425	0.937
Vinyl Chloride	0.26	0.214	0.365	0.195	0.190	0.207	0.367	0.276	0.514 J	0.0514	0.215	0.020 U	0.0643	0.020 U	0.020 U	0.0623	3.39

			Well ID ³														
	Current		CPOC Area														
	Cleanup		GW150S GW253I														
Analyte	Levels ⁴	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/22/2022	3/5/2019	8/14/2019	3/10/2020	8/11/2020	2/17/2021	8/11/2021	2/22/2022	8/22/2022
Volatile Organic Compounds (μg/L)																
cis -1,2-Dichloroethene	0.08	0.0737	0.0824	0.0525	0.0935	0.0393	0.0991	0.0547	0.126	0.127	0.0917	0.0915	0.0879	0.140	0.106	0.0846	0.138
Trichloroethene	0.02	0.020 U	0.0228	0.02 U	0.0291	0.020 U	0.020 U	0.020 U	0.0212	0.0221	0.020 U	0.0212	0.0211	0.0272	0.0202	0.020 U	0.0205
Vinyl Chloride	0.26	0.103	0.020 U	0.0541	0.0619	0.0455	0.122	0.0969	0.100	0.143	0.131	0.184	0.100	0.243	0.146	0.177	0.255

Notes:

- 1. Data qualifiers are as follows:
- U = The analyte was not detected at the reporting limit indicated.
- J = The value is an estimate.
- 2. **Bolded** values exceed the cleanup levels.
- 3. S = shallow well; I = intermediate well.
- 4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

TABLE D-8: AOC-090 HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN^{1, 2}

Boeing Renton Facility, Renton, Washington

										-								
									Wel	l ID ³								
	Current				Sourc	e Area							Downgradier	nt Plume Area				
	Cleanup	GW1895 ⁵								GW176S								
Analyte	Levels ⁴	8/13/2018	3/5/2019	8/12/2019	8/12/2020	2/17/2021	8/12/2021	2/23/2022	8/24/2022	3/5/2019	8/12/2019	3/11/2020	8/12/2020	2/17/2021	8/17/2021	2/23/2022	8/23/2022	
Volatile Organic Compounds (μg/																		
1,1,2,2-Tetrachloroethane	0.17	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.24 U	0.158	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	
1,1,2-Trichloroethane	0.2	2.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	
1,1-Dichloroethene	0.057	0.020 U	0.020 U	0.020 U	0.0529	0.020 U	0.020 U	0.0200 U	0.0432	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	
Acetone	300	70	5.00 U	5.0 U	5.00 U	10.6 J	5.00 U	5.00 U	6.28	5.00 U	5.0 U	5.0 U	NM	NM	NM	NM	NM	
Benzene	0.8	2.42	0.20	0.49	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM						
Carbon Tetrachloride	0.23	2.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	
Chloroform	2	2.23	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	
cis-1,2-Dichloroethene	2.4	22.3	0.92	6.87	1.93	0.47	3.15	0.20 U	1.78	0.25	0.27	0.25	NM	NM	NM	NM	NM	
Methylene Chloride	2	10.9 UJ	1.00 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	NM	NM	NM	NM	NM	
Tetrachloroethene	0.05	0.20 U	0.028	0.020 U	0.020 U	0.0283	0.020 U	0.0200 U	0.0206	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	
Toluene	75	21.7	4.96	3.11	1.05	5.21	2.42	0.47 J	43.7	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	
trans-1,2-Dichloroethene	53.9	2.00 U	0.20 U	0.39	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM						
Trichloroethene	0.08	2.38	0.156	0.414	0.324	0.143	0.386	0.0505 UJ	0.43	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	
Vinyl Chloride	0.13	2.09 J	0.50	1.20	0.369	0.0405	0.575	0.0867 J	0.460	0.294	0.301	0.207	0.232	0.138	0.431	0.311 J	0.364	
Total Petroleum Hydrocarbons (μ	g/L)																	
TPH-G (C7-C12)	800	9,440	1,070	943	699	507	504	370 J	555	100 U	100 U	100 U	NM	NM	NM	NM	NM	
TPH-D (C12-C24)	500	4,120	362	432	150	2160	390	192 J	521	100 UJ	100 U	100 U	NM	NM	NM	NM	NM	
TPH-O (C24-C40)	500	2,000 U	522	853	379	3990	689	263 J	586	200 UJ	200 U	200 U	NM	NM	NM	NM	NM	

													Wel	II ID ³											
	Current												Shallow Zon	ne CPOC Area											
	Cleanup				GW	1785							GW	2075							GW	208S			
Analyte	Levels ⁴	8/13/2018	3/5/2019	8/12/2019	8/12/2020	2/17/2021	8/12/2021	2/23/2022	8/24/2022	3/5/2019	8/12/2019	3/11/2020	8/12/2020	2/17/2021	8/12/2021	2/23/2022	8/23/2022	3/5/2019	8/12/2019	3/11/2020	8/12/2020	2/17/2021	8/12/2021	2/23/2022	8/24/2022
Volatile Organic Compounds (μg/l	.)																								
1,1,2,2-Tetrachloroethane	0.17	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM
1,1,2-Trichloroethane	0.2	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
1,1-Dichloroethene	0.057	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM
Acetone	300	5.00 U	5.54	5.0 U	NM	NM	NM	NM	NM	5.00 U	5.0 U	5.0 U	NM	NM	NM	NM	NM	5.00 U	5.0 U	5.0 U	NM	NM	NM	NM	NM
Benzene	0.8	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
Carbon Tetrachloride	0.23	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
Chloroform	2	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
cis-1,2-Dichloroethene	2.4	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.21	0.20 U	0.20 U	NM	NM	NM	NM	NM
Methylene Chloride	2	1.00 U	1.00 U	1.00 U	NM	NM	NM	NM	NM	1.00 U	1.00 U	1.00 U	NM	NM	NM	NM	NM	1.00 U	1.0 U	1.0 U	NM	NM	NM	NM	NM
Tetrachloroethene	0.05	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.020 U	0.020 U	NM	NM	NM	NM	NM
Toluene	75	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
trans-1,2-Dichloroethene	53.9	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM	0.20 U	0.20 U	0.20 U	NM	NM	NM	NM	NM
Trichloroethene	0.08	0.0213	0.0213	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.0305	0.020 U	NM	NM	NM	NM	NM	0.020 U	0.0293	0.020 U	NM	NM	NM	NM	NM
Vinyl Chloride	0.13	0.378	0.392	0.3840	0.141	0.224	0.182	0.361 J	0.390	0.0692	0.020 U	0.020 U	0.377	0.066	0.232	0.356 J	0.326	0.437	0.245	0.419	0.343	0.349	0.313	0.404 J	0.400
Total Petroleum Hydrocarbons (μ	g/L)																								
TPH-G (C7-C12)	800	100 U	100 U	100 U	NM	NM	NM	NM	NM	100 U	100 U	100 U	NM	NM	NM	NM	NM	100 U	100 U	100 U	NM	NM	NM	NM	NM
TPH-D (C12-C24)	500	100 U	100 UJ	100 U	NM	NM	NM	NM	NM	100 UJ	100 U	100 U	NM	NM	NM	NM	NM	100 UJ	100 U	100 U	NM	NM	NM	NM	NM
TPH-O (C24-C40)	500	200 U	200 UJ	200 U	NM	NM	NM	NM	NM	200 UJ	200 U	200 U	NM	NM	NM	NM	NM	200 UJ	200 U	200 U	NM	NM	NM	NM	NM

Notes:

1. Data qualifiers are as follows:

U = The analyte was not detected at the reporting limit indicated.

J = The value is an estimate.

UJ = The analyte was not detected at the estimated reporting limit indicated.

2. **Bolded** values exceed the cleanup levels.

3. S = shallow well.

4. Current cleanup levels obtained from Table 2 of the Cleanup Action Plan and are based on each individual SWMU or AOC.

5. GW189S is the replacement well for GW168S.

Abbreviations:

μg/L = micrograms per liter

AOC = area of concern

CPOC = conditional point of compliance

NM = Analyte not measured

SWMU = solid waste management unit

TPH-D = total petroleum hydrocarbons as diesel

TPH-G = total petroleum hydrocarbons as gasoline

TPH-O = total petroleum hydrocarbons as oil

TABLE D-9: APRON A HISTORICAL CONCENTRATIONS OF CONSTITUENTS OF CONCERN¹

Boeing Renton Facility, Renton, Washington

				W	'ell ID ²							
		GW264S										
Analyte	5/7/2019	11/11/2019	5/12/2020	8/10/2020	2/15/2021	8/10/2021	2/21/2022	8/24/2022				
Volatile Organic Compounds	(μg/L)											
cis-1,2-Dichloroethene	0.20 U	0.20 U	0.20 U	0.52	0.20 U	0.20 U	0.200 U	0.200 U				
Vinyl Chloride	1.39	0.38	1.48	0.20 U	1.49	1.37	2.54	1.41				

Notes:

- 1. Data qualifiers are as follows:
- U = The analyte was not detected at the reporting limit indicated.
- 2. S = shallow well

Abbreviations:

μg/L = micrograms per liter

APPENDIX E

Summary of Remedial Actions

APPENDIX E

Summary of Remedial Actions at the Boeing Renton Facility May 2022 – October 2022

Boeing Renton Site Renton, Washington

Prepared for: The Boeing Company EHS Remediation

Prepared by: CALIBRE Systems, Inc. Project No. T0014538

November 22, 2022

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Acronyms

Building 4-78/79 Building 4-78/4-79 SWMU/AOC Group

CALIBRE Systems, Inc.

CMP Compliance Monitoring Plan EDR Engineering Design Report

ERD Enhanced Reductive Dechlorination

GAC granular activated carbon mg/L milligrams per liter

PCE Tetrachloroethene
PID Photoionization detector
SVE Soil Vapor Extraction

SWMU Solid Waste Management Unit

TCE Trichloroethene

Tech Memo Technical Memorandum VOCs Volatile Organic Compounds

VPC Vapor Phase Carbon

1.0 Introduction

CALIBRE Systems, Inc. (CALIBRE) prepared this Technical Memorandum (Tech Memo) for the Boeing Company to summarize remedial actions implemented at the Boeing Renton Facility between May 1, 2022 and October 31, 2022. The ongoing remedial actions include:

- 1. Operation of a soil vapor extraction (SVE) system located at Solid Waste Management Unit (SWMU) designated as SWMU-172/174;
- 2. Biological treatment to promote Enhanced Reductive Dechlorination (ERD) of volatile organic compounds (VOCs) in groundwater underway at several areas of concern (AOCs) located throughout the Renton Facility, and;
- 3. Anaerobic biodegradation of benzene by nitrate/sulfate injections at the Building 4-78/79.

CALIBRE completed the work described in this Tech Memo to support remedial activities described in the Engineering Design Report (EDR), (AMEC, 2014) as supplemented by a Tech Memo describing the remedial approach for *in-situ* biodegradation treatment of benzene in groundwater near the Building 4-78/79 (CALIBRE 2017).

1.1 Facility Location and Background

The Boeing Renton Facility is used for assembly of 737 airplanes and is located at the southern end of Lake Washington in Renton, Washington. The location of the Renton Facility and the location of SWMU-172/174 within the Facility is shown on Figure 1-1. The locations of the other AOCs and SWMUs where groundwater treatment is ongoing are also presented in Figure 1-1.

1.2 Objectives and Organization

The objective for this Tech Memo is to summarize work completed in accordance with the EDR during the reporting period stated above. This includes operation and monitoring activities for the SVE system located at SWMU-172/174 and a summary of the ongoing biological treatment and monitoring of groundwater at the following areas:

```
SWMU-172/174

Building 4-78/4-79 SWMU/AOC Group (Building 4-78/79)

AOC-001/002

AOC-003

AOC-060

AOC-090

Apron A
```

This Tech Memo is organized as follows:

Section 1 - Introduction and Background

Section 2 – SVE System Operation and Monitoring

Section 3 – Groundwater Treatment

Section 4 – Conclusions and Recommendations
Section 5 – References
Attachment A – Field Data Sheets
Attachment B - Laboratory Data Package

2.0 SVE Systems Operation and Monitoring

SVE systems were installed in the Building 4-78/79 and SWMU-172/174 areas and began operation in April 2015. During the last quarter of 2017 photoionization detector (PID) results from both systems had shown low-level VOC concentrations removed at asymptotically low levels. Rebound tests were conducted in early 2018 followed by collection of soil confirmation samples from both areas in June 2018. Ecology approved the recommended shutdown of the Building 4-78/79 SVE system on November 1, 2018 after review and evaluation of the soil confirmation results for that area (CALIBRE 2018a).

During the prior May 2021 to October 2021 operating period, PID monitoring results from the SWMU-172/174 SVE system had shown VOC concentrations removed at asymptotically low levels, therefore a rebound test for the system was completed in December 2021 to January 2022. The rebound results showed marginal increases in PCE concentrations and estimated mass removal after a 35-day rest period; with mass removal increasing from 0.003 lbs/day prior to rebound start to 0.005 lbs/day after the rest period. The slight increase in PCE mass removal was diminished back to prior asymptote levels after 16 days of operation. SVE system shutdown was recommended as the system continues to show asymptotic low level vapor concentrations following rebound testing. Ecology provided approval for the SWMU-172/174 system to be shut down on September 20, 2022 and the system was turned off on October 24, 2022. Groundwater monitoring and biostimulation for groundwater treatment will continue at the SWMU-172/174 area. The following sections summarize the SVE operation while the system was operating during the May to October 2022 monitoring period.

2.1 SWMU-172/174 SVE System

The SWMU-172/174 SVE system consists of three vapor extraction wells and a SVE equipment trailer as shown in Figure 2-1. The SVE system is equipped with two vapor-phase granular activated carbon (GAC) vessels, each filled with 1,800 pounds of carbon. The GAC vapor treatment system is configured to run in a lead-lag configuration with vapor from the outlet of the lead vessel passing through the lag vessel. The system historically included two smaller vessels each containing 200 pounds of zeolite impregnated with permanganate for vinyl chloride treatment. Permanganate for vapor treatment was originally included in the design to treat potential vinyl chloride that, if present, would not be effectively captured in the GAC. Monitoring data has demonstrated that vinyl chloride is not present in the inlet air stream and permanganate treatment is not required or providing any benefit. The lag permanganate drum became plugged during the fourth quarter 2019 and was taken offline. The lead permanganate drum has continued to operate within the treatment system and may be discontinued in the future.

The SWMU-172/174 SVE system operated without issue during this monitoring period. Routine maintenance including oil changes, drive-belt tensioning and inspection, inspection of the air filter, and

inspection of the moisture separator was completed per the Operations Manual (CALIBRE, 2014). System monitoring includes regular monitoring of total organic vapor concentrations with a calibrated PID. Table 2-1 summarizes the TO-15 detections for the SWMU-172/174 SVE system for prior TO-15 sampling events¹ that have been implemented since system startup. Table 2-2 shows the PID readings for the wells in the SWMU-172/174 SVE system and Table 2-3 shows an operational summary for the system. The operational logs are included in Attachment A.

2.1.1 TO-15 Laboratory Analysis of Vapor Samples

No samples for TO-15 analysis were collected during this operating period. Table 2-1 summarizes the TO-15 detections for the SWMU-172/174 SVE system for prior TO-15 sampling events that have been implemented since system startup.

2.1.2 Mass Removal Estimate

Between April 17, 2015 and October 24, 2022 the SWMU-172/174 SVE system has recovered an estimated 25.5 pounds of VOCs (primarily PCE), as shown in Table 2-3. Approximately 0.9 pounds of VOCs were removed during the current reporting period (May 2022 to October 2022) based on the PID measurements collected while the system was operating. The cumulative VOC mass removal for the SWMU-172/174 SVE system is shown in Figure 2-2. The change in SVE system influent concentrations since the time of system startup is presented in Figure 2-3.

3.0 Ongoing Groundwater Treatment

Groundwater treatment is being implemented at several AOCs/SWMUs at the Renton Facility. The primary remedy being implemented is ERD of chlorinated solvents in targeted areas. The ERD treatment involves substrate injection using sucrose/fructose as a carbon source to stimulate biological degradation of the chlorinated solvents and nitrate/sulfate to anaerobically degrade benzene. Continued treatment is evaluated on a semi-annual basis following review of groundwater sampling results. Site-wide groundwater sampling was conducted as part of the biannual monitoring program during this reporting period and the results are discussed in the main text of the summary report. Table 3-1 presents a summary of those groundwater monitoring results, by area, related to groundwater treatment/ERD implementation.

3.1 Groundwater Treatment Completed May 2022 – October 2022

Substrate injections were completed at selected wells during this reporting period in June 2022 at SWMU-172/174, Building 4-78/79, AOC-60, AOC-90, Apron A, and AOC-003. The list of wells by area including substrate volume and mass are summarized in Table 3-2.

Following substrate injections at the 4-78/79 area, well B78-16 was injected with 150 gallons of a diluted 6% solution containing water and Newman Zone 55 vegetable oil emulsion and then bio-augmented with a

¹ Multiple changes to SVE system operations have been implemented over the period where data are shown. Changes to extraction flow rates by SVE wells are used to maximize the VOC mass removal and the corresponding SVE influent concentration is highly dependent on the flow rate from selected wells.

TSI-DC® DHC Bio-Augmentation culture, a microbial culture containing species of Dehalococcoides. For the bio-augmentation process, tap water was mixed with sodium ascorbate following the manufacturer's recommendations to quench residual oxygen and chlorine in the water. A pre-determined amount of TSI-DC® was added to the de-oxygenated water and then transferred into the screen interval following the substrate addition for the well. The quantity of TSI-DC® added was based on a target abundance of 3×10^6 organisms/liter (in-situ after mixing), an estimated radius of influence, thickness of the water column, and estimated porosity of the surrounding soils. The bio-augmentation included six liters of TSI-DC® culture added to injection well B78-16.

Well GW264S, located within the Apron A area, was re-developed prior to substrate injections. Prior injections in this well have been limited due to very slow injection rate and marginal volumes injected. The development process included using a surge block to surge the length of the well screen followed by pumping to remove any fine sediments around the screen interval. This process was repeated three times, with the well pumping dry each time and a total volume of approximately 16 gallons of water removed from the well. The well- development water generated was transported and disposed of at the on-site Boeing Wastewater Treatment Facility. Subsequent injection at GW264S did not result in any increased volume and the substrate volume initially intended for this well was instead injected into nearby upgradient wells GW263S and GW265S.

Beginning in late 2017, anaerobic biodegradation of benzene using nitrate and sulfate injections was implemented for a small area at the Building 4-78/79 area. Boeing has continued additional nitrate/sulfate injections in the area; the most recent injection was completed in June 2022 (11th event). Boeing planned a removal action of fuel-contaminated soil at the Building 4-78/79 area in a work plan "Soil Excavation at Building 4-78/79 Area, Boeing Renton" submitted to the Washington Department of Ecology in January 2021 and approved on February 2, 2021 (CALIBRE 2021a). The removal action was completed in September 2021, in accordance with that work plan and summarized in a Tech Memo submitted to Ecology in October 2021 (CALIBRE 2021b). The soil excavation work required the decommissioning of wells previously used for benzene treatment in this area and two new horizontal injection wells were installed within the excavation footprint following completion of the removal action. The June 2022 injection event utilized the two new horizontal injection wells and upgradient well B78-11. Injections were completed with a target concentration of 1,600 mg/L for nitrate and 800 mg/L for sulfate per well (similar to prior events) to provide additional nitrate and sulfate to the impacted area. The injection volumes and mass of nitrate/sulfate are included in Table 3-3.

3.2 Building 4-78/79 Building Groundwater Monitoring Well Replacement

Two new replacement monitoring wells were installed at the Building 4-78/79 area on July 29, 2022. Cascade drilling completed the well installation utilizing a push-probe rig and installing two 2-inch PVC wells screened 10 to 20 feet below ground surface. The wells were named GW031S-R and GW244S-R as replacements for GW031S and GW244S which were decommissioned prior to the soil excavation work completed in September 2021. Following installation, Cascade Drilling completed well development at the two replacements wells by surging and pumping over the length of the well screen. All water generated

was transported and disposed of at the Boeing Wastewater Treatment Facility. The well locations are presented in Figure 3-1. The well logs are included in Attachment B.

4.0 Conclusions and Recommendations

Boeing received Ecology approval in September 2022 to shut down the SWMU 172/174 SVE system. The SVE system and associated equipment will remain on site subject to the results of Ecology-requested subslab vapor verification sampling and and related evaluations. The sub-slab vapor sampling is planned for Winter 2023. Results will be compared to CLARC Vapor Intrusion: screening levels for Method C as well as the soil cleanup levels established for this area.

Additional substrate injections were completed for the SWMU-172/174, Building 4-78/79, AOC-60, AOC-90, Apron A, and AOC-003 areas along with additional nitrate/sulfate injections for benzene treatment at the Building 4-78/79 area in June 2022. Two replacement monitoring wells, GW031S-R and GW244S-R were installed at the Building 4-78/79 area in July 2022.

4.1 Proposed Modifications to the Bioremediation Program

Based on evaluation of the biannual monitoring data (see Table 3-1), the following areas may be considered for continued ERD treatment of VOCs in groundwater: SWMU-172/174, Building 4-78/4-79 SWMU/AOC Group, AOC-060, and Apron A. The following areas, AOC-003 and AOC-090, will transition from the ERD program to Monitored Attenuation in accordance with the CAP.

Upon completion of the Apron R construction work estimated for mid 2023, the AOC 001/002 well monitoring network will be replaced and Boeing will evaluate if continued ERD treatment is needed for VOCs in groundwater in AOC 001/002.

Groundwater monitoring will continue in accordance with the EDR and approved updates to the Compliance Monitoring Plan (CMP), with supplemental VOC and TOC sampling at selected wells. The next sampling event is scheduled for May, 2023

5.0 References

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TABLES

System	

SVE System Inlet																								
			1]	, ,
															2-Butanone					1,3,5-	1,2,4-	TPH ref. to		in .
			cis-1,2-	trans-1,2-	Vinyl										(Methyl Ethyl		Ethyl	Propylbenze		Trimethylben	Trimethylben	Gasoline	Total	Total
Date	PCE	TCE	DCE	DCE	Chloride	1,1,1-TCA	1,1-DCA	Acetone	Toluene	m,p-Xylene	Chloroform	o-Xylene	Pentane	Hexane	Ketone)	Benzene	Benzene	ne	Cumene	zene	zene	(MW=100)	Chlorinated	VOCs
4/17/2015	1,500	130	120	ND	ND	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,763	1,763
10/13/2015	400	31	13	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	447	447
3/8/2016	82	5.4	3.1	ND	ND	ND	ND	ND	1.1	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	91	94
6/30/2016	230	18	10	ND	ND	1.8	ND	11	ND	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	260	273
9/12/2016	230	16	8.3	ND	ND	1.9	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	256	257
12/14/2016	100	6.2	3.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	110
5/30/2017 - 30 min	520	220	17	ND	ND	13	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	773	773
5/30/2017 - 100 min	530	200	17	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	761	761
5/30/2017 - 225 min	510	130	16	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	668	668
8/16/2017	180	16	7.8	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	206	206
12/8/2017 - Rebound																								
Start	99	7.6	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	110
5/22/2018	430	43	13	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	498	498
6/7/2018	160	13	5.4	ND	ND	1.8	ND	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	180	180
6/20/2018	170	14	5.7	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND ND	ND	ND ND	ND	ND	192	192
8/30/2018	110	8.6	3.7	NA.	ND	NA	NA	NA	NA	NA NA	NA	NA	NA	NA	NA NA	NA	NA	NA NA	NA	NA NA	NA.	NA	122	122
2/13/2019	32	2.2	1.6	NA.	ND	NA NA	NA.	NA NA	NA NA	NA NA	NA NA	NA NA	NA.	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	36	36
6/20/2019	74	6.2	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	84	84
3, 3, 3, 3																								
5/19/20 - Rebound Start	150	17	5.7	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	177	177
5/21/20 - Rebound 48	130		3.7	110	110		140	110	110			110	110	110	110	110	.,,			- 115	110	110	177	
Hrs	120	230	5	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	358	358
9/23/2020	110	11	3.7	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND ND	ND	ND ND	ND	ND	127	127
1/5/2021 (5-09-Influent	110		3.7	IND	IND	1.0	ND	ND	IVD	IVD	ND	IND	140	ND	IND	ND	IND	ND	ND	ND	IVD	ND	127	127
A)	83	9.8	3.4	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	98	98
1/5/2021 (5-09-Influent	- 03	5.0	3.4	IND	IND	1.4	ND	ND	IVD	IVD	ND	IND	140	ND	IND	ND	IND	ND	ND	ND	IVD	ND	50	50
R)	1.6	1.5	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2	5.2
1/7/2021 ((5-09-	1.0	1.3	2.1	IND	IND	ND	IND	IND	IND	ND	ND	IND	IND	ND	IND	ND	ND	ND	ND	ND	IND	IND	3.2	J.2
Influent C)	75	6.0	2.3	ND	ND	1.8	ND	92	73	23	ND	8.7	ND	22	14	47	12	4.9	2.4	4.5	18	2200	85	2,607
12/2/2021	. 39	3.3	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND ND	44	44
1/24/2022	58	4.9	1.6	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	66	66
1/25/2022	71	5.1	2.2	ND	ND	1.0	ND ND	ND	ND	ND ND	ND ND	ND	ND	ND	ND ND	ND	ND ND	ND ND	ND	ND ND	ND	ND	80	80
2/9/2022		2.7	1	ND	ND	ND	ND	9.6	ND	ND	ND ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	42	51
ZJJZOZZ	. 30	2.7		IND	IND	ND	NU	5.0	NU	ND	ND	ND	NU	ND	ND	ND	IND	ND	ND	ND	IVD	ND	72	
SVE-1																								
						l				l	l						l							
															2-Butanone					1,3,5-	1,2,4-	TPH ref. to		i
			cis-1,2-	trans-1,2-	Vinyl										(Methyl Ethyl		Ethyl	Propylbenze		Trimethylben	Trimethylben	Gasoline	Total	Total
Date	PCE	TCE	DCE	DCE	Chloride	1,1,1-TCA	1,1-DCA	Acetone	Toluene	m,p-Xylene	Chloroform	o-Xylene	Pentane	Hexane	Ketone)	Benzene	Benzene	ne	Cumene	zene	zene	(MW=100)	Chlorinated	VOCs
6/20/2019		1.4	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND ND	11	11
5,22,222																								
SVE-2																								
															2-Butanone					1,3,5-	1,2,4-	TPH ref. to		in .
			cis-1,2-	trans-1,2-	Vinyl					l	l				(Methyl Ethyl		Ethyl	Propylbenze		Trimethylben	Trimethylben	Gasoline	Total	Total
Date	PCE	TCE	DCE	DCE	Chloride	1,1,1-TCA	1,1-DCA	Acetone	Toluene	m,p-Xylene	Chloroform	o-Xylene	Pentane	Hexane	Ketone)	Benzene	Benzene	ne	Cumene	zene	zene	(MW=100)	Chlorinated	VOCs
8/30/2018	180	14	6.1	NA	ND	NA NA	NA NA	NA	NA	NA	NA	NA NA	NA	NA	ND ND	ND	ND	ND	ND	ND	ND	ND ND	200	200
2/13/2019	48	3.3	2.8	NA NA	ND	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	ND ND	ND	ND	ND	ND	ND ND	ND	ND	54	54
6/20/2019	100	9.6	5.1	ND	ND	1.4	ND ND	ND	1.4	ND ND	ND ND	ND ND	ND	ND	ND ND	ND	ND ND	ND	ND	ND	ND	ND	116	118
0/20/2013	100	5.0	3.1	140	140	1.7	IND	140	1.7	110	140	IND	140	140	IND	140	140	IVO	110	IND	140	IND	110	110
5/19/20 - Rebound Start	28	3.8	1.4	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	35	35
5/21/20 - Rebound 48	20	5.0	1.7	140	140	1.0	IND	140	140	110	140	IND	140	140	IND	140	140	IVO	110	IND	140	IND	33	
Hrs	20	3.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	26
9/23/2020		6.7	5.6	ND	ND	ND ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND ND	ND	ND	ND ND	ND	ND ND	ND	ND	54	56
5/23/2020	44	0.7	3.0	IND	IND	IND	IND	ND	IND	ND	1.7	NU	IND	NU	IND	NU	ND	IND	IND	NU	IND	NU	J4	JU

Table 2-1 TO-15 Analytical Results - SWMU-172/174 SVE System Project History

SVE-3

3VL-3				1											1					1	1			$\overline{}$
			cis-1,2-	trans-1,2-	Vinyl										2-Butanone (Methyl Ethyl		Ethyl	Propylbenze		1,3,5- Trimethylben	1,2,4- Trimethylben	TPH ref. to Gasoline	Total	Total
Date	PCE	TCE	DCE	DCE	Chloride	1,1,1-TCA	1,1-DCA	Acetone	Toluene	m,p-Xylene	Chloroform	o-Xylene	Pentane	Hexane	Ketone)	Benzene	Benzene	ne	Cumene	zene	zene	(MW=100)	Chlorinated	VOCs
5/30/2017 - 30 min	540	51	18	ND	ND	14	2.6	ND	2.2	ND	ND	ND	ND	ND	ND .	ND	ND	ND	ND	ND	ND	ND	626	628
5/30/2017 - 100 min	200	16	6.5	ND	ND	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	228	228
8/16/2017	350	30	15	ND	ND	3.5	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	399	400
12/8/2017 - Rebound																								
Start	170	13	5.8	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	191	191
1/19/2018 - 35-Day 60																								
Minute Sample	310	30	13	ND	ND	6.9	1.3	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	361	362
1/19/2018 - 35-Day 180																								
Minute Sample	310	28	12	ND	ND	7.9	1.1	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	359	360
3/6/2018 - 80-Day 60																								1 1
Min Sample	440	41	15	ND	ND	14	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	512	512
3/6/2018 - 80-Day 180																								1 1
Min Sample	410	33	13	ND	ND	13	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	471	471
5/22/2018	790	66	22	ND	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	900	900
6/7/2018	280	23	9.6	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	316	316
6/20/2018	310	24	11	ND	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	348	348
5/19/20 - Rebound Start	350	49	14	ND	ND	10	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	425	425
5/21/20 - Rebound 48																								
Hrs	290	240	9.8	ND	ND	5.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	546	546
9/23/2020	410	37	11	ND	ND	6.0	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	464	468
12/2/2021	70	5.7	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	79	79
1/24/2022	110	8.9	2.8	ND	ND	3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	125	125
1/25/2022	120	7.7	3.2	ND	ND	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	133	133
2/9/2022	68	4.5	1.8	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	74	76

VPC Outlet

VFC Outlet																								
			cis-1,2-												2-Butanone (Methyl Ethyl		Ethyl	Propylbenze		1,3,5- Trimethylben	1,2,4- Trimethylben	TPH ref. to Gasoline	Total	Total
Date	PCE	TCE	DCE	DCE	Chloride	1,1,1-TCA	1,1-DCA	Acetone	Toluene	m,p-Xylene	Chloroform	o-Xylene	Pentane	Hexane	Ketone)	Benzene	Benzene	ne	Cumene	zene	zene	(MW=100)	Chlorinated	VOCs
4/17/2015	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	5.1
10/13/2015	ND	ND	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11
3/8/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6/30/2016	ND	ND	ND	ND	ND	ND	ND	ND	15	1.6	ND	1.2	6.2	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	25
9/12/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/14/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/16/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

All results are in parts per billion by volume (ppbv).

ND = non-detect

NA = not analyzed

DCE = Dichloroethene

PCE = tetrachloroethene TCE = trichloroethene

Total Chlorinated = the sum of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1,1-TCA, and 1,1-DCA.

Table 2-2 PID Monitoring - SWMU-172/174 SVE System

	Days in Operation							
Date	Since Startup 1	SVE-01	SVE-02	SVE-03	VPC Inlet	VPC Mid	VPC Outlet	Notes
10/29/2021	2,157	Vent	27	304	236		0	2 gallons condensate
11/17/2021	2,176	Vent						Stopped by system to check oil and drain condensate, 7 gallons removed.
11/23/2021	2,182	Vent	81	253	247		0	Picked up new cal gas can from national safety, 2 gal condensate
12/2/2021	2,191	Vent	42	124	80		0	Collected TO-15 samples from influent and SVE-3.
12/13/2021	2,202	Vent	2	108	77		0	10 gal condensate removed
12/20/2021	2,209	Vent						Shut system down for Boeing Christmas break and rebound rest period.
5/13/2022	2,353	Vent	0	0	0		0	
5/18/2022	2,358	Vent	35	131	96		0	
5/24/2022	2,364	Vent	2	293	151		0	
6/17/2022	2,388	Vent	28	337	295		0	
7/26/2022	2,427	Vent	0	287	127		0	
8/11/2022	2,443	Vent	15	131	103		0	Added 1 oz oil to left blower lobe.
9/8/2022	2,471	Vent	9	97	80			System off on arrival. Added 2 oz oil to blower and restarted system. Took initial readings and rescreened after an hour of operation.
9/12/2022	2,475	Vent	29	177	170		0	Picked up new cal gas can from national safety
9/23/2022	2,486	Vent	26	357	327			System off on arrival. Changed blower oil. Took initial readings and rescreened after an hour of operation.
9/29/2022	2,492		0	196	175		0	•
10/5/2022	2,498		40	524	432		0	
10/24/2022	2,517	Vent	79	301	209		0	Turned system off after taking readings, 2 gal condensate.

Notes:

Blank cells - Not all wells were measured with the PID during each sampling event.

¹ Days in operation since system startup on April 17, 2015.

Table 2-3 VOC Mass Removal Estimate - SWMU 172/174 SVE System

Date	PID Reading (ppbv)	Corrected Value (PCE) (ppbv) ¹	System Flow (cfm)	Cumulative Runtime Hours	VOCs removed in Operating Period Between Monitoring Events (lbs) ²	Cumulative VOC Mass Removed Since Start of SVE Operations in April, 2015 (lbs)
5/13/2022	0	0	105	46,815	0.000	24.59
5/18/2022	96	55	105	46,931	0.016	24.61
5/21/2022	151	86	105	47,079	0.033	24.64
6/17/2022	295	169	105	47,651	0.247	24.89
7/26/2022	127	73	105	48,589	0.174	25.06
8/11/2022	103	59	105	48,972	0.058	25.12
9/8/2022	80	46	105	49,186	0.025	25.15
9/12/2022	170	97	105	49,280	0.023	25.17
9/23/2022	327	187	105	49,421	0.067	25.24
9/29/2022	175	100	105	49,563	0.036	25.27
10/5/2022	432	248	105	49,710	0.093	25.37
10/24/2022	209	120	105	50,166	0.139	25.50

Notes:

PID = photoionization detector ppbv = parts per billion by volume cfm = cubic feet per minute lbs = pounds

¹ A correction factor of 0.57 has been applied to the PID vapor measurement for VOCs based on the mixture of analytes detected in the TO-15 analysis at the influent sample point from 12/2/21. This number is much higher than the TO-15 results.

² These are based solely on the PID measurements collected this period; the prior TO-15 analyses indicates much lower mass. TO-15 analysis results showed Tetrachloroethene made up 89% of the total VOCs removed at the influent on 12/2/21.

Table 3-1 Groundwater Monitoring Results Summary August 2022 and Recommended ERD Treatment

GW Treatment Area	Source and down gradient MWs	CPOC wells	Treatment IWs	ERD Treatment Recommendation
SWMU-172/174	PCE and cis-1,2DCE showed decreases from prior monitoring at GW-152S; all results are below 1.1 ug/L.; VC at 0.35 ug/L.	All detections are at or below 0.60 ug/L	Prior data Feb 2022; North IW B172- 01 is ND for CVOCs, South IW B172- 08 near GW-152S show PCE at 1.6 ug/L and cisDCE at 0.3 ug/L. TOC near background.	Plan for additional injections in area of GW-152S which may continue driving CVOCs down.
Building 4-78/4-79 SWMU/AOC Group	TCE is nondetect, cis-1,2DCE is under 0.5 ug/L; VC reduced from 9.0 ug/L to under 1.5 ug/L. Benzene at 15 ug/L in GW033S; benzene less than 0.25 ug/L in benzene treatment area.	GW143S shows estimated TCE and cisDCE below 0.80 ug/L; all other wells are ND.	Prior data Feb 2022; B78-16 showed TCE less than 1.0 ug/L and elevated cisDCE at 300 ug/L and VC at 290 ug/L. This well was injected with sucrose, emulsified oil and bioaugmented in June 2022.	Plan for substrate injection in selected IWs/areas around GW033S for ERD, Nitrate/sulfate injections not recommended in two new injection galleries near former GW031S.
AOC-001/002	Prior data Mar 2020: Source MW: TCE is 0.03 ug/L, cisDCE is 0.49 ug/L and VC is 0.27 ug/L.	Prior data Aug 2019: All detections below 0.30 ug/L.	Prior data Mar 2018, detections at or below 0.30 ug/L.	Site still not accessible due to construction
AOC-003	VC estimated and below 0.43 ug/L.	VC less than 0.74 ug/L.	Prior data Feb 2022; B003-01 showed VC at <0.2 ug/L and TOC near background	End ERD and transition to MA per the CAP
AOC-60	Results are primarily cis-1,2DCE and VC. Treatment MWs with total CVOCs less than 13.5 ug/L, other MWs with total CVOCs less than 0.80 ug/L.	MW's with total CVOCs less than 0.42 ug/L, primarily as cis-1,2DCE and VC.	-	Plan for additional injections which may continue driving CVOCs down.
AOC – 90	Source with VC of 0.46 ug/L, total CVOCs of 2.7 ug/L; primarily cisDCE; down gradient well with VC at 0.36 ug/L.	VC less than 0.40 ug/L.	-	End ERD and transition to MA per the CAP
Apron A	cis-1,2DCE is nondetect and VC reduced to 1.57 ug/L	-	-	Consider for additional injections which may continue driving CVOCs down.
SWMU-168	-	VC estimated at 0.54 ug/L.	-	No action at this time.

Table 3-2 - June 2022 Injection Summary at Renton AOCs

				1
		Volume of Solution - ERD		Pounds Substrate
Area	Injection Well	(gallons)	Brix (°Bx)	in the Solution (lbs)
SWMU-172/174	B172-05	390	13.6	442
	B172-06	411	9.5	326
	B172-06	109	13.6	124
	B172-07	422	9.5	334
	B172-07	98	13.6	111
	B172-08	360	9.5	285
	B172-08	160	13.6	181
	B172-09	422	9.5	334
	B172-09	98	13.6	111
	B172-10	360	9.5	285
	B172-10	160	13.6	181
Building 4-78/79	B78-12	625	9.6	500
	B78-14	625	9.6	500
	B78-15	625	9.6	500
	B78-16*	625	9.6	500
AOC-060	GW012S	739	9.5	586
	GW147S	736	9.5	583
AOC-090	IPR3	558	13.6	633
	IPR4	550	13.6	624
	GW 189S	556	13.6	631
	GW 199S	550	13.6	624
	GW 200S	559	13.6	634
Apron A	GW 263S	247	13.6	280
	GW 264S	5	13.6	6
	GW 265S	239	13.6	271
AOC-003	B003-01	488	9.5	387
	B003-02	493	9.5	391
	B003-03	497	9.5	394
	B003-04	500	9.5	396
	Total (gal)	12.207	Total (lbs)	11.156

Total (gal)

12,207

Total (lbs)

11,156

Notes:

[°]Bx (degrees brix) is a measure of the sugar content in an aqueous solution. One degree Brix is 1 gram of sucrose in 100 grams of solution and represents the strength of the solution as percantage by mass.

^{*}Well B78-16 was injected with 150 gallons of Newman Zone 55 vegetable oil emulsion diluted to a 6% solution following sugar substrate injections and was then injected with 6 liters of TSI-DC DHC bioaugmentation culture following substrate injections.

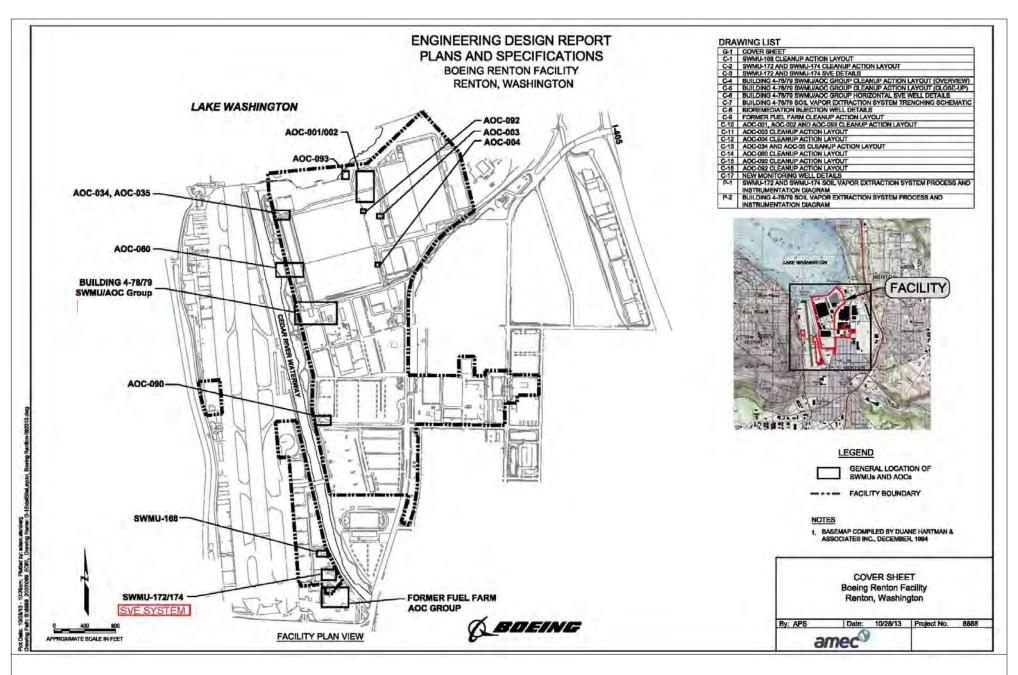
Table 3-3 - June 2022 Injection Volumes at 4-78/79 Benzene Treatment Wells

Area	Injection Well	Volume Total (gal)	NaNO3 (lbs)	MgSO4 (lbs)	DAP (lbs)	Concentration NO3 Injected (mg/L)	Concentration SO4 Injected (mg/L)
Building 4-78/79	Injection Gallery A	2000	36.5	16.7	21.4	1,599	803
	Injection Gallery B	1500	27.4	12.5	16.1	1,599	803
	B78-11	250	4.6	2.1	2.7	1,599	803

Notes:

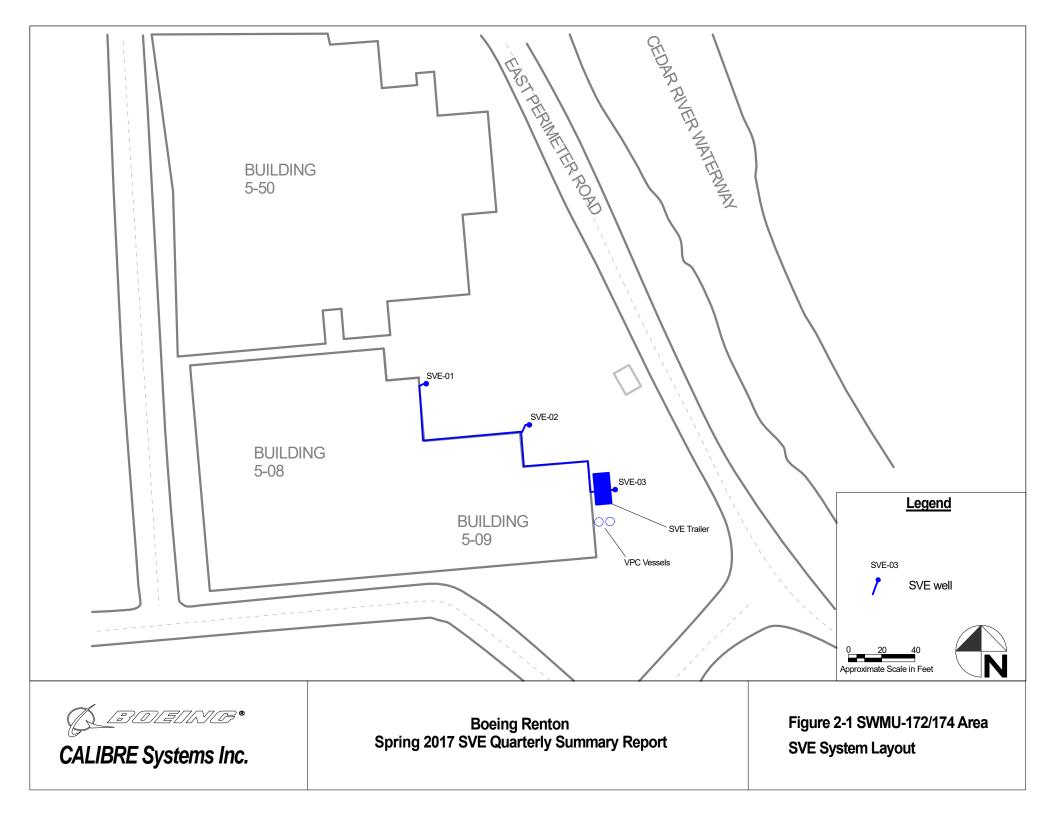
NaNO3 - Sodium Nitrate MgSO4 - Magnesium Sulfate DAP - Diammonium Phosphate

FIGURES



CALIBRE Systems, Inc.

Figure 1-1 Site Location/ AOC Outlines



28.0 SVE Shutdown (10/24/22) 26.0 Rebound testing 24.0 COVID-19 and 22.0 Carbon drying 20.0 18.0 VOCs Removed (lbs) Gap represents system 16.0 Rebound testing downtime for 14.0 blower/motor repair 12.0 10.0 8.0 6.0 4.0 2.0 0.0 Apr-15 Oct-15 Apr-16 Oct-16 Apr-17 Oct-17 Apr-18 Oct-18 Apr-19 Oct-19 Apr-20 Oct-20 Apr-21 Oct-21 Apr-22 Oct-22 Date —Operational Change -VOC Mass Removed ---Shut system down

Figure 2-2 Cumulative VOC Mass Removed - SWMU-172/174 SVE System

*SWMU 172/174 SVE system did not run Winter 2017 due to equipment failure.

Feb 2020 - System adjusted to dry carbon with hot ambient air due to condensate

Mar 2020 to May 2020 - System shut down due to Govenors Stay at Home order related to Covid-19

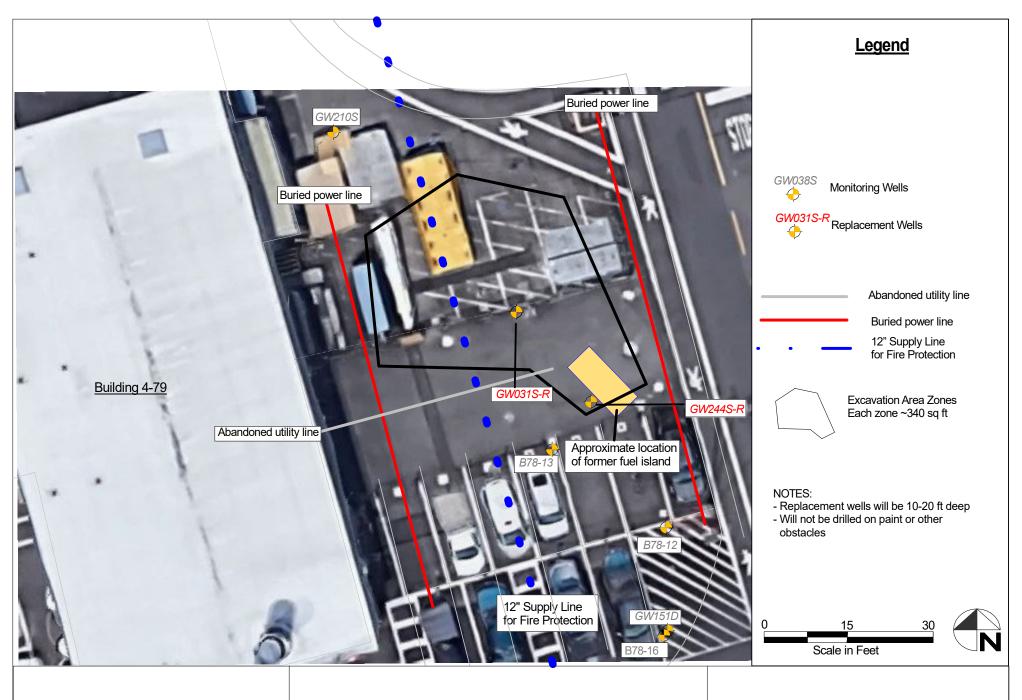
2,500 2,000 Influent PID Measurements (PPB) Intermittant high PID measurements here likely due to manufacturing 1,500 operations (adjacent paint booth) Gap represents system downtime for blower/motor repair 1,000 500 0

Figure 2-3 Influent PID Measurements - SWMU-172/174 SVE System

Apr-15 Oct-15 Apr-16 Oct-16 Apr-17 Oct-17 Apr-18 Oct-18 Apr-19 Oct-19 Apr-20 Oct-20 Apr-21 Oct-21 Apr-22 Oct-22 Date

Influent PID Measurements (Corrected)

^{*}SWMU 172/174 SVE system did not run Winter 2017 due to equipment failure





CALIBRE Systems Inc.

Boeing Renton 4-78/79 Soil Excavation Well Replacement Figure 3-1 4-78/79 Replacement Wells

Attachment A: Field Log Forms

Inspection Date: _	5/13/2	Date of last	inspection: 4/2H2Z	
During dia mentagen o	check:	oioturo congrator V	vater storage drums	
1) Check flowrate,	vacuum, pressure, m E well, VPC inlet, and	VPC OHIGH WITH PL		
2) Check each Svi	Opera	ational Parameter	s - Monitoring interval is variable.	<u> </u>
Inspection Time:		Motor Hours:	8034,4	
Blower	Current Value		Other Notes	
Vacuum gauge	32º 40			
Pressure gauge	5" Hro		D.	
System flow rate	110 SCFM			
Blower Temperature	114°F			
Temp.at lag VPC discharge		TEEC motor for	any unusual noise/vibration	
Other notes: ch	eck oil level, drive bel	IS, IEFO MOIOITAN	, any unusual noise/vibration	

PID Model: †	PPB PAE	3000	Details:	01	10.64 PP	n 	
Calibration time	/ date: 5/	13/22	PID chec	k after monitor	ring: 10.0) PPM	
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹
SVE-01	140	X					
SVE-02	1944	0	O				
SVE-03	1140	O	0				
VPC Inlet	1196	0	0				
VPC Midpoint		O	0				
VPC Outlet	1148	8	0				
Other vapor point							

^{1.} Flow rate calculated from the equation Flow Rate $(cfm) = 12.24 \times \sqrt{differential}$ pressure.

Questions? Call Justin Nes At the Completion of a mon	te @ (360) 981-5606 itoring event scan monitoring forms and	email to Justin Neste: Justin.Neste@	ocalibresys.com
Signature	Rine Lassen	Signature	5/13/w

Signature

	L 170m	inlet, and VPC out Operational P	aramete	ers - Monif	oring interval i	s variable.		
nspection Time	0730	Motor		\$150.				
	Current	Value		<i>3</i> 13		er Notes		
Blower Vacuum gauge								
vacuum gauge	33"/	126						
Pressure	5"H20)			*			
gauge	5 110							
System flow	105 5	cfm						
rate	10 5							
Blower Temperature	107°F							
Temp.at lag	101.							
					1 1 6 6	- ration		
Other notes: c	neck oil level	drive belts, TEFC	motor ta	an, any un	usuai noise/vii	Diation		
								
DID Model:		Y		Details:	Plini	7. 50km		
PID Model: Calibration time	PPBRAL date:				O/10.0	oz ppm ing:	T.	
Calibration time	<u> </u>	3000 8 77 0730 PID Reading (1)	PID R		and the second s		Differential Pressure	Flow Rate
Calibration time	date: 5/	8/77 <u>0 73</u> / PID Reading	PID R	PID check	after monitori	ng:		
Calibration time Sampling Point	date: 5/	8 2マ <u>0 73</u> PID Reading (1)	PID R	PID check	after monitori	ng:		
Calibration time Sampling Point SVE-01	Time		PID R	PID check	after monitori	ng:		
Calibration time Sampling Point SVE-01 SVE-02	o 742	9/22 0730 PID Reading (1) NA 34 PP5	PID R	PID check	after monitori	ng:		
Sampling Point SVE-01 SVE-02 SVE-03	oruge 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9/22 0730 PID Reading (1) NA 34 PP5 117 PP6	35; 145; 94;	PID check	after monitori	ng:		
Calibration time Sampling Point SVE-01 SVE-02 SVE-03 VPC Inlet	off 0742 0746	9/22 0730 PID Reading (1) NA 34 PP5 117 PP6	PID R	PID check	after monitori	ng:		

Lieia Obeige	iono neg	-	
Inspection Date: _	Japlar	Date of last inspection: 5/18/2 Z	
_ ' ''	haai.		
Charlefournto	vacuum pressure M	moisture separator, water storage drums	
1) Check llowiate,			
2) Check each Svi	C Well, VFC Illet, and	erational Parameters - Monitoring interval is variable.	
	Ореі	3.4.4 [Increase	
Inspection Time:	040	Motor Hours. 8298,4	
		Other Notes	
Blower	Current Value		
Vacuum gauge	32"Hw		
Pressure gauge	5'H20	,	
System flow rate	105 SCFM		
Blower Temperature	113° F		
Temp.at lag			
Other notes: ch	eck oil level, drive be	elts, TEFC motor fan, any unusual noise/vibration	
		D. L.T.	
	900 Audit	Details:	

PID Model:	PBRAF	3000	Details:		04 Ppm					
Calibration time	date: 3/	24/22 1145	PID check	PID check after monitoring:						
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹			
SVE-01	off	NA								
SVE-02		O pps	4APS							
SVE-03		341226	244 ppb							
VPC Inlet		146ppb	155 ppb		,					
VPC Midpoint		O PPS	Opp							
VPC Outlet										
Other vapor point										

^{1.} Flow rate calculated from the equation Flow Rate $(cfm) = 12.24 \times \sqrt{differential}$ pressure.

Questions? Call Justin Nes	ste @ (360) 981-5606 nitoring event scan monitoring forms and	email to Justin Neste: Justin.Nes	te@calibresys.com
At the completion of a more	Justin Nesa	Charles	5/24/22
Signature	Printed Name	Signature	Date

nspection Date:	(0///100	Date of last inspection: 5/24/22	
Periodic systems c	neck:	noisture separator, water storage drums	
) Check flowrate,			
Oneck each 3vi	Oper	rational Parameters - Monitoring interval is variable.	
Inspection Time:	0800	Motor Hours: 8870.6	
Blower	Current Value	Other Notes	
Vacuum gauge	32"H20	oil levelok	
Pressure gauge	5"H20	No condensate	
System flow rate	10550Fm		
Blower Temperature	112°F		
Temp.at lag VPC discharge		TESO attactor cay unusual poise/vibration	
Other notes: che	eck oil level, drive be	Its, TEFC motor fan, any unusual noise/vibration	

PID Model: PP	BRAE 300	00	Details:	0/10.00				
Calibration time	/ date: ///	122 0810	PID check after monitoring:					
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹	
SVE-01								
SVE-02	0830	22 ppb	34 APS					
SVE-03	0853	355 ppb	317ppb 297ppb					
VPC Inlet	0841	293,75	297ppb					
VPC Midpoint	0820	2 ppb	оррь					
VPC Outlet								
Other vapor point								

^{1.} Flow rate calculated from the equation Flow Rate $(cfm) = 12.24 \times \sqrt{differential}$ pressure.

i. Tion rate dates	10 No. 10		
Questions? Call Justin Nest	e @ (360) 981-5606 toring event scan monitoring forms and	email to Justin Neste: Justin Nes	ste@calibresys.com
Actio Complete	Justin Neste	gram .	6/17/22
Signature	Printed Name	Signature	<i>5</i> 4.5

Inspection Time:		Motor	Parameters - Mon Hours: 9808				
Plower	0953		9 80 8.		er Notes		
	Current						
Vacuum gauge	32"Ha)					
Pressure	5"Hw						
gauge							
System flow rate	1055cFm	^					
	126°F						
remperature	1261						
Temp.at lag VPC discharge							
Other notes: chec	k oil level,	drive belts, TEFC	motor fan, any u	nusual noise/vil	oration		
							
PID Model: 7	BRAE	3000	Details:	0/1	.02 ppn		
Calibration time/ da			PID chec	k after monitor	ing:		
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate
SVE-01	off						
	e y v	9 (7 - 1				
SVE-02	013	0 pgb	UPPB		<u> </u>	-	
SVE-03	1017	315 ppb	258 pp6		ļ		
VPC Inlet	1009	122776	0 ppb 258 ppb 131 ppb				<u> </u>
VPC Midpoint							
	605	0 PP6	0 225				

 Check flowrate, Check each SVE 	vacuum, pressure, m <u>well, VPC inlet, and</u>	t vet. omet willt	PID. ers - Monitoring in	_	variable.	
Inspection Time:	0925	Motor Hours:	10191			
Blower	Current Value			Other	Notes	
Vacuum gauge	32"420	Added	loz oil to	· Left	blower lobe	
Pressure gauge	5*420					
System flow rate	1055csm					
Blower Temperature	115°F					
Temp.at lag	eck oil level, drive be					

PID Model:	PB RAE	3000	Details: 1 ppb / 10.02 ppm							
		5 8/11/22	PID check after monitoring:							
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹			
SVE-01	off									
SVE-02	0945	12 ppb	18 PP5							
SVE-03	0950	126 ppb	136 pps							
VPC Inlet	6940	110 776	136 pp5 96 ppb							
VPC Midpoint										
VPC Outlet	0937	طوح 0	0 000							
Other vapor point										

1.	Flow rate calculated from th	e equation Flow Rate $(cfm) = 12.24 \times \sqrt{differ}$	ential pressure.	
Questi At the	ons? Call Justin Neste (Completion of a monitor Signature	(360) 981-5606 ing event scan monitoring forms and e	email to Justin Neste: Justin.Nest	te@calibresys.com

Inspection Date:		,	Date of I	ast inspecti	on: <u>8/1/</u> 3	22		
1) Chock flowrate	vacuum pre	essure, moisture	separate	or, water sto	orage drums			
2) Check each SV	/E well, VPC	inlet and VPC O	utiet wiu	i PID.	77.77.77	io variable		
383		Operational	Parame	fels - MOIII	toring interval	is variable.		
Inspection Time:	1100		r Hours:	10400		er Notes		
Blower	Current	Value			- Oui	ei Notes		
Vacuum gauge	32'42	o sy	Stem	off on	arrisa	- 01264.	red Sast	en.
Pressure gauge	5" H20	Add	lad 2	ozail	to blown	readings 4	rted Syst	ha.
System flow rate	105500		e inct	ial Cea	- 10-20 I			
Blower Temperature	9.7°F							
Temp.at lag VPC discharge	NA					h-ation	ē.	
Other notes: ch	neck oil level,	drive belts, TEF	C motor	tan, any un	usuai noise/vi	bration		
<u></u>			(7 <u>000) 18</u>					
PID Model:	PPBRAE	3000		Details:	0/10.0	roppm		
Calibration time		1 1		PID chec	k after monitor	ing:		
Sampling Point	Time	PID Reading (1)		Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate
SVE-01	off							<u> </u>
SVE-02	1120	0/0 800		-9/8 pp				
SVE-03	1175	64/63PPb	1250	-99/94	ppl			
VPC Inlet	רוון	52/6/PR	5 1242	8(/79	ppb			
VPC Midpoint								
VPC Outlet	1115	010269	, 12.39	-0/0ppb				
Other vapor point	1		<u> </u>					<u></u>
1. Flow rate	calculated from t	he equation Flow Ra	te (cfm) =	= 12. 24 × √ <i>dif</i>	ferential pressu	re.		
Questions? Call At the Completic	Justin Neste on of a monito	@ (360) 981-560 pring event scan	monitori		nd email to Jus	tin Neste: Justi	n.Neste@calibi	esys.com
Signatur	re	Just	in N		· - (Signature	<u></u>	Date
3					,			

i icia opoia					/ .		
Inspection Date:	gliller	Date of las	st inspecti	on: <u>9/</u>	8/22		
1) Check flowrate	vacuum, pressure, m	oisture separator	, water sto	orage drum	IS		
2) Check each S\	/E wall V/DC inlet and	VPC outlet with later are to a vicinity of the control of the cont	TID.				
- 300 	Opei		19 - IAICIT	toring inter	TO TO TOLIGORIS.		
Inspection Time	0933	Motor Hours:	10499		and a		<u> </u>
Blower	Current Value				Other Notes		
Vacuum gauge	32"420	Picked up	new o	coul gas	can from	Northoner)	Sodery.
Pressure gauge	1011420	oilok					
System flow rate	(05 scFm		1				
Blower Temperature	116°F			E .			
Temp.at lag VPC discharge					- A dibration		
Other notes: cl	heck oil level, drive be	Its, TEFC motor fa	an, any ur	iusuai nois	e/vibration		
		200 200 200 200 200 200 200 200 200 200					
PID Model:	PBRAE 3000		Details:	0 1	10.01 ppm		
			DID abox	k offer mor	NICTION:		

PID Model: D	PBRAE 30	noc)	Details:	0/10	101 ppm				
Calibration time		1/22 0935	PID check	PID check after monitoring:					
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹		
SVE-01	off								
SVE-02	0950	31 PP6	26 ppb						
SVE-03	0956	176 ppb	طج ج 178						
VPC Inlet	0947	171 ppb	168 ppb						
VPC Midpoint									
VPC Outlet	0943	0	0						
Other vapor point									

 Flow rate calculated from 	in the equation Flow Rate (cfm) = $12.24 \times \sqrt{diff}$	erential pressure.	
Questions? Call Justin Nest At the Completion of a mon	te @ (360) 981-5606 itoring event scan monitoring forms and	d email to Justin Neste: Justin.Nes	ste@calibresys.com
Signature	Justin Neste	Signature	9/11/27 Date

Field Operat	ions Log Form		
Inspection Date:	09/23/22	Date of last inspection: 69/12/22	
1) Check flowrate	vacuum, pressure, mo	bisture separator, water storage drums	
2) Check each SV	E wall VDC inlet and	VPC outlet with PID. Itional Parameters - Monitoring interval is variable.	
		tional Parameters - Montoring Interverse 1	
Inspection Time:	08 39	Motor Hours: 10 640	
Discor		Other Notes	
Blower	02:41	sichem off on agrical	
Vacuum gauge	33"400	- 900 Retwart	
Pressure	104/13	System off on arrival charge blome oil - 0900 Restrant Screen Q Stortup & al He after	
gauge	10"Hz	Screen a Startup T	
System flow rate	105 SCFM	·	
Blower	870F (1148FS		
Temperature	817 [1171		
Temp.at lag			
VPC discharge			
Other notes: ch	eck oil level, drive belt	s, TEFC motor fan, any unusual noise/vibration	
PID Model: p	PB 24E 3000	Details: 0 (10.04 ppm	
=		PID check after monitoring:	

PID Model:	TO EAT	5000		0/10.04			
Calibration time	/ date: 9/2	3/22 0850	PID checi	after monitori	ng:		70 m
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹
SVE-01							
SVE-02	5926-57	152ppb 191 2/279ppb 10 363ppb 1004	1383/36/F	1009-25/26	ppb		
SVE-03	0733-25	2/279PB 10	09-25/26005	1616-353/36	طوم		
VPC Inlet	6920-397	303,795 1004	-324/329 pab				
VPC Midpoint							
VPC Outlet	0916010	1000-010					
Other vapor point							

^{1.} Flow rate calculated from the equation Flow Rate $(cfm) = 12.24 \times \sqrt{differential}$ pressure.

Questions? Call Justin Neste	@ (360) 981-5606 oring event scan monitoring forms and e	email to Justin Neste: Justin.Neste	e@calibresys.com
At the completion of a more		۸ _	1 1
	Justin Naste	Sin	7/23/21
Signature	Printed Name	Signature	Date
		•	

I ICIG OPOIGE	.0			/ i	
Inspection Date: _	9/29/22	Date of la	st inspection:	9/23/22	
4) Check flourate	vacuum pressure M	oisture separato	r, water storag	ge arums	
2) Check each SV	CII V/D/C inlot and	I VAZI AHIMI WHILI	TILL.		
Z) Oncor oue:	Oper	ational Paramet	ers - Monitori	ng interval is variable.	
Inspection Time:		Motor Hours:	10782	8 B	
Blower	Current Value			Other Notes	
Vacuum gauge	33"420				
Pressure gauge	16"420 105 scen				
System flow rate	10.5 scien				
Blower Temperature	11405				
Temp.at lag VPC discharge				La tratile ation	
Other notes: ch	eck oil level, drive be	Its, TEFC motor f	an, any unusu	ual noise/vidration	
DID Model:			Details: p	La M. Dam	

Calibration time	date: 🍕	29 @ 0646	PID check	after monitor	ing:		
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹
SVE-01	off						
SVE-02	0700	0 pps	طوح 0		-		
SVE-03	0705	201 pps	190 226				
VPC Inlet	0654	201 pps	16/ PH				
VPC Midpoint		•					
VPC Outlet	0649	0 795	0 975				
Other vapor point							

^{1.} Flow rate calculated from the equation Flow Rate (cfm) = $12.24 \times \sqrt{differential}$ pressure.

Questions? Call Justin Net	ste @ (360) 981-5606 nitoring event scan monitoring forms a	nd email to Justin Neste: Justin.Nest	e@calibresys.com
At the completion of a mo			alacha
	(Si	Justin Nesra	9/29/22
Signature	Printed Name	Signature	Date

Renton Cleanup Action SVE System – SWMU 172/174 Field Operations Log Form Date of last inspection: 9/29/77

10/5/22

Inspection Time:	1023	Operational P Motor I	Hours:	10929		300e 975 20 5 X		
Blower	Current	Value		100 100	Othe	er Notes		
Vacuum gauge	32.42	ν .						
Pressure gauge	10"1120							
System flow rate	105 scer	^			er er		*	
Blower Temperature	11908							
Temp.at lag VPC discharge						- No.		
Other notes: ch	eck oil level,	drive belts, TEFC	motor	fan, any un	usuai noise/vii	oration		
PID Model:	PPB R	A£ 3000	SQUARE -	Details:	0/	10,00 ppm		
Calibration time	date: 10/	5 1027		PID check	after monitori	ng:		
Sampling Point	Time	PID Reading (1)	PID	Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated
SVE-01	off							
SVE-02	1035	37,495	47	495				
SVE-03	1041	547,725	500	وم و مام و				
VPC Inlet	1049	416 785	44	طوح (
VPC Midpoint								
VPC Outlet	1030	0	0					1
Other vapor point								
1. Flow rate of	calculated from t	he equation Flow Rate	e (cfm) =	$12.24 \times \sqrt{dif}$	ferential pressur	e.		
		@ (360) 981-5606	•					
		(A) 1.50111 90 1-0000	,			10 N N N N N N N N N N N N N N N N N N N	n.Neste@calibr	

spection Date:		Date of last inspection: 10/5/22 poisture separator, water storage drums
Check each SVE	Wall V/D(' inlat and	VPC. ORBEL WIG FID.
	Oper	ational Parameters - Monitoring Interval is Variable.
Inspection Time:	1004	Motor Hours: 11385
Blower	Current Value	Other Notes
Vacuum gauge	33"4-10	Turned system off ofter taking readings. 2 gal Condensate
Pressure gauge	10-1120	2 gal Condensorte
System flow rate	1055ci=m	
Blower Temperature	11234	
Temp.at lag VPC discharge		
Other notes: che	ck oil level, drive bel	ts, TEFC motor fan, any unusual noise/vibration

Calibration time	date: 10 i	0 10/24	PID check	cafter monitor	ing:		270 - C
Sampling Point	Time	PID Reading (1)	PID Reading (2)	Vacuum	Flow Rate (gauge)	Differential Pressure	Flow Rate Calculated ¹
SVE-01	off						
SVE-02	1020	16 pps	300 pps				
SVE-03	1026	30/ pps	300 775				
VPC Inlet	1016	218 796	199 pp				
VPC Midpoint					<u> </u>		
VPC Outlet	1012	0	0				
Other vapor point							

^{1.} Flow rate calculated from the equation Flow Rate $(cfm) = 12.24 \times \sqrt{differential}$ pressure.

Questions? Call Justin Neste	e @ (360) 981-5606 oring event scan monitoring forms and er	mail to Justin Neste: Justin.Ne	este@calibresys.com
At the Completion of a monte	oimig of one residual and of	Λ	0 1
	Justin Nate	12hre	10/24/22
Signature	Printed Name	Signature	Date
		V	

Attachment B: Building 4-78/79 Replacement Well Logs

Resource Protection Well Rep	ort	Notice of Intent N	o	RE23258	
Type of Work:		Type of Well:			
X Construction		X Resource Protecti	Resource Protection Well Injection Point		
Decommission → Original NOI No.		Remediation Wel	Remediation Well Grounding Well		
Ecology Well ID Tag No. BN	E 654	Geotechnical Soil Boring Ground Source Heat Pump			
Site Well Name		Environmental Boring Other			
Consulting Firm Calibre System	s / Boeing	Soil Vapo	_	Water Sampling	
Was a variance approved for this well/boring?	Yes X No	Property Owner		The Boeing Company	
If yes, what was the variance for?		Well Street Address		N 6th St & Logan Ave N	
		CityRen	ton	County King	
		Tax Parcel No.		072305-9001	
WELL CONSTRUCTION CERTIFICATION: 1 co	*	Location (see instruction		WWM EWM	
responsibility for construction of this well, and its comp well construction standards. Materials used and the int	-	1/4-1/4 N E 1/4	SE	Sec7	
to my best knowledge	and belief.				
X Driller Trainee		Latitude (Example: 4		<u> </u>	
	m Watson	Longitude (Example		· -	
Driller/Trainee Signature	Wax			'_inches Casing Diameter2" inches	
License No. 3203				_ ft below top of casing	
Company Name Cascade Drillin		Above-ground com	-	<u>—</u>	
If trainee box is checked, sponsor's license numbe	r:	⇒ Stick-up of top of	well ca	asingft above ground surface	
Sponsor's signature		Start Date7	/29/202	2 Completed Date 7/29/2022	
Construction Design	Well	Data 103-22-1279	<u> </u>	Formation Description	
	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal	2' 2" x 10' PVC	- FT - FT	0 - 3 FT Brown sand and gravel FT FT	
	Material _	Bentonite Chips	-	Fine gray silty sand	
•	Gravel Pack	11'	FT		
	Material	2/12 Sand			
	_				
	Screen (dia x dep)	2" x 10'	_	12 20 FT	
	Slot Size	.010	-	Gray sand and gravel FT	
	Material _	PVC	-		
•	Well Depth	20'	FT		
	Backfill	X	_		
	Material	x	_		
•	Total Hole Depth	20'	FT		
Scale 1" =	Page	of		ECY050-12 (07/2018)	

CALIE	_{BRE} C	alibre Syste	ems, Inc				BORING N	UMBEF	R GW 031S-R PAGE 1 OF 1
CLIEN.	T Boeir	ng					PROJECT NAME Boeing Renton		
PROJE	ECT NUM	MBER TOO	14118				PROJECT LOCATION Building 4-78/79 A	Area	
DATE	STARTE	D 7/29/22		CON	//PLETE	ED 7/29/22	GROUND ELEVATION	HOLE SIZE	3.75
1							GROUND WATER LEVELS:		
DRILLI	ING MET	THOD Geo	probe Dire	ct Push	DRILL	ER Tim Watson	AT TIME OF DRILLING		
							AT END OF DRILLING		
NOTES	S Ecolo	gy ID: BNE	654				_		
OEPTH (ft)	SAMPLE NUMBER RECOVERY(%)	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG		1	MATERIAL DESCRIPTION		VELL DIAGRAM pe: 2" PVC, with PPS
	2 50% 3 50%				13.0 15.0 16.0 18.0	CLAYEY SAND (SC wet, gray, Trace root Poorly-Graded SANI black. SILTY SAND (SM) Well-Graded GRAVI gravel; 10 % sand, w	D (SP) 100 % coarse, sand, wet, black.		Bentonite seal Blank casing Filter sand 10 Slot screen
	4			. ***	22.0	gravel; 5 % fine to m	EL (GW) 95 % fine to coarse, rounded nedium, sand, wet, black.		
							ottom of borehole at 22.00 feet.		

Resource Protection Well Rep	ort	Notice of Intent N	o	RE23258		
Type of Work:		Type of Well:				
X Construction		X Resource Protecti	on Well	Injection Point		
Decommission → Original NOI No.		Remediation Wel	l	Grounding Well		
Ecology Well ID Tag No. BN	E 655	Geotechnical Soil	Geotechnical Soil Boring Ground Source Heat Pump			
Site Well Name		Environmental Bo	oring	Other		
Consulting Firm Calibre System		Soil Vapo	r	Water Sampling		
Was a variance approved for this well/boring?	Yes X No	Property Owner		The Boeing Company		
If yes, what was the variance for?		Well Street Address		N 6th St & Logan Ave N		
		City Ren	ton	County King		
		Tax Parcel No.		072305-9001		
WELL CONSTRUCTION CERTIFICATION: 1 corresponsibility for construction of this well, and its comp		Location (see instruction	ons):	WWM		
well construction standards. Materials used and the inf	formation reported are true	¹ / ₄ - ¹ / ₄ NE ¹ / ₄	SE	Sec 7 Twn 23N R 5E		
to my best knowledge X Driller Trainee	and belief.	Latitude (Example: 4	7.12345	5) 47.49627		
Name (Print Last, First Name)Ti	m Watson	Longitude (Example	-120.12	2345) -122.21252		
Driller/Trainee Signature	Wax	Borehole Diameter	3.75"	inches Casing Diameter 2" inches		
License No. 3203		Static Water Level	n/a	_ft below top of casing		
Company Name Cascade Drillin	g - Seattle	Above-ground com	pletion w	v/bollards X Flush Monument		
If trainee box is checked, sponsor's license number	r:	Stick-up of top of	well cas	sing ft above ground surface		
Sponsor's signature				Completed Date 7/29/2022		
Construction Design	Well	Data 103-22-1279		Formation Description		
	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth Backfill Material Total Hole Depth	2' 2" x 10' PVC 7' Bentonite Chips 11' 2/12 Sand 2" x 10' .010 PVC 20' x x	FT FT FT FT	Brown sand and gravel 3 - 12 FT Fine gray silty sand 12 - 20 FT Gray sand and gravel		
Scale 1" =	Page	of		ECY050-12 (07/2018)		

CLIENT Bosing Renton PROJECT NAME Bosing Renton PROJECT LOCATION Building 4-78/79 Area COMPLETED 7/29/22 COMPLETED 7/29/22 COMPLETED 7/29/22 GROUND ELEVATION HOLE SIZE 3.75 DRILLING METHOD Geoprobe Direct Push DRILLER Tim Watson LOGGED BY Tom Mid-Keen CHECKED BY Rune Lassen NOTES Ecology ID: BNE 655 AT TIME OF DRILLING AT END OF DRILLING AT END OF DRILLING AT END OF DRILLING Cesting Type: 2' PVC , with PPS SILTY SAND (SM)—75 % fine to coarse, sand; 25 % fines, wet, gray, Trace grawed up to 1/2". SILTY SAND (SM)—75 % fine to coarse, sand, wet, black. SILTY SAND (SP)—100 % medium to coarse, sand, wet, black. Poorly-Graded SAND (SP)—100 % medium to coarse, rounded graws; 5 % sand, wet, black. Well-Graded GRAVEL (GW)—95 % fine to coarse, rounded graws; 5 % sand, wet, black. Bentonite seal Blank casing Filter sand 10 Slots screen black. Well-Graded GRAVEL (GW)—95 % fine to coarse, rounded graws; 5 % sand, wet, black. Bottom of borehole at 22 00 feet.	CALI	IBRE C	alibre Syste	ems, Inc			BORING NI	UMBER GW 244 PAGE 1	
DATE STARTED7/29/22	CLIEN	NT Boeir	ng				PROJECT NAME Boeing Renton		
DRILLING CONTRACTOR Cascade Drilling Services DRILLING METHOD Geoprobe Direct Push DRILLER Tim Watson LOGGED BY Tom McKeon CHECKED BY Rune Lassen NOTES Ecology ID: BNE 655 H G G G G G G G G G G G G G G G G G G	PROJ	ECT NUI	MBER TOO	14118			PROJECT LOCATION Building 4-78/79 A	vrea	
DRILLING CONTRACTOR Cascade Drilling Services DRILLING METHOD Geoprobe Direct Push DRILLER Tim Watson LOGGED BY Tom McKeon CHECKED BY Rune Lassen NOTES Ecology ID: BNE 655 H L H L H L H L H L H L H L H L H L H	DATE	STARTE	D 7/29/22		СОМ	PLETED 7/29/22	GROUND ELEVATION	HOLE SIZE 3.75	
NOTES Ecology ID: BNE 655 HULL STATE OF DRILLING NOTES Ecology ID: BNE 655 HULL STATE OF DRILLING NOTES Ecology ID: BNE 655 HULL STATE OF DRILLING NOTES Ecology ID: BNE 655 MATERIAL DESCRIPTION WELL DIAGRAM Casing Type: 2" PVC , with PPS No samples collected 0-10' bgs, in prior excavation, fill material. Bentonite seal Blank casing									
NOTES Ecology ID: BNE 655 H (4)	DRILL	ING ME	THOD Geo	probe Dire	<u>ct P</u> ush I	DRILLER Tim Watson	AT TIME OF DRILLING		
MATERIAL DESCRIPTION WELL DIAGRAM Casing Type: 2" PVC , with PPS No samples collected 0-10' bgs, in prior excavation, fill material. Bentonite seal Blank casing					CHEC	KED BY Rune Lassen	AT END OF DRILLING		
No samples collected 0-10' bgs, in prior excavation, fill material. Bentonite seal Blank casing	NOTE	S Ecolo	gy ID: BNE				-		
Bentonite seal Blank casing		SAMPLE NUMBER RECOVERY(%)	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	N	NATERIAL DESCRIPTION		PS
NVIRONMENTAL BH - GINT STI	C(DOCUMENTS\BENTLEY\GINT\PROJECTS\RENTON 1.GPJ 1	2 30%				10.0 SILTY SAND (SM) gray, Trace gravel up 12.0 Poorly-Graded SAND black. 17.5 Well-Graded GRAVE gravel; 5 % sand, wel 20.0 Poorly-Graded SAND black. Well-Graded GRAVE gravel; 5 % sand, wel 20.0 Well-Graded GRAVE sand, wet, black.	The second secon	Filter sand 10 Slot screen	