# 2021 Annual Report
# Remedial Action
# Enhanced Anaerobic Bioremediation
# Boeing Developmental Center
# Tukwila, Washington

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Prepared for

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# 2021 Annual Report
# Remedial Action
# Enhanced Anaerobic Bioremediation
# Boeing Developmental Center

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# TABLE OF CONTENTS

Page

1.0 INTRODUCTION ..... 1-1
1.1 Site Description ..... 1-1
1.2 Background ..... 1-1
1.2.1 AOC-05 ..... 1-2
1.2.2 SWMU-17 ..... 1-2
1.2.3 SWMU-20 ..... 1-2
2.0 AOC-05 ..... 2-1
2.1 Remedial Approach ..... 2-1
2.2 Summary of Prior Work and Findings ..... 2-1
2.2.1 Pilot Testing ..... 2-2
2.2.2 Well Installation and Baseline Sampling ..... 2-2
2.2.3 Full-Scale Bioremediation and Performance Results ..... 2-2
2.3 2020 Activities ..... 2-4
2.4 2020 Results and Discussion ..... 2-4
3.0 SWMU-17 ..... 3-1
3.1 Remedial Approach ..... 3-1
3.2 Summary of Prior Work and Findings ..... 3-1
3.2.1 Pilot Testing ..... 3-2
3.2.2 Well Installation and Baseline Sampling ..... 3-2
3.2.3 Full-Scale Electron Donor Injections ..... 3-3
3.2.4 Summary of Prior Results ..... 3-3
3.3 2020 Activities ..... 3-4
3.4 2020 Results and Discussion ..... 3-4
3.4.1 Reductive Dechlorination of VOCs ..... 3-4
3.4.2 TOC and Redox Conditions ..... 3-6
3.4.3 Copper and Arsenic ..... 3-6
4.0 SWMU-20 ..... 4-1
4.1 Remedial Approach ..... 4-1
4.2 Summary of Prior Work and Findings ..... 4-1
4.2.1 Groundwater Pump and Treat ..... 4-1
4.2.2 Bioremediation ..... 4-2
4.2.3 Groundwater Monitoring ..... 4-2
4.2.4 Indoor Air Evaluation and Sampling ..... 4-3
4.3 2020 Activities ..... 4-4
4.4 2020 Results and Discussion ..... 4-4
5.0 PLANNED ACTIONS AND SCHEDULE ..... 5-1
6.0 USE OF THIS REPORT ..... 6-1
7.0 REFERENCES ..... 7-1

# FIGURES


| Figure | Title |
|---|---|
| 1 | Vicinity Map |
| 2 | Facility Boundary |
| 3 | Site Plan |
| 4 | Groundwater Elevation Contours—May 2021 |
| 5 | Groundwater Elevation Contours—November 2021 |
| 6 | AOC-05: Groundwater Elevations |
| 7 | AOC-05: BDC-103 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing |
| 8 | AOC-05: BDC-104 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing |
| 9 | SWMU-17: PCE/TCE in Groundwater, November 2021 |
| 10 | SWMU-17: VC in Groundwater, November 2021 |
| 11 | SWMU-17: Average Molar Fraction and Average Chlorinated Ethenes |
| 12 | SWMU-20: PCE November 2021 Groundwater Concentrations |
| 13 | SWMU-20: TCE November 2021 Groundwater Concentrations |
| 14 | SWMU-20: cDCE November 2021 Groundwater Concentrations |
| 15 | SWMU-20: VC November 2021 Groundwater Concentrations |
| 16 | Performance Monitoring Locations |


# TABLES


| Table | Title |
|---|---|
| 1 | AOC-05 Clean-Up Action Data Summary |
| 2 | AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations |
| 3 | SWMU-17 Groundwater Data Cleanup Action Summary |
| 4 | SWMU-20 Cleanup Action Summary, Source Zone |
| 5 | SWMU-20 Cleanup Action Summary, Non-Source Zone |
| 6 | Performance Monitoring Matrix |


# APPENDICES


| Appendix | Title |
|---|---|
| A | Laboratory Reports |
| B | Cumulative Groundwater Level Measurements |
| C | SWMU-17 Time Plots: VOC Concentrations |
| D | SWMU-17 Time Plots: VOC Molar Concentrations of VOCs and Breakdown Products |
| E | SWMU-17 Time Plots: Redox Parameters and TOC |
| F | SWMU-17 Time Plots: Copper and Arsenic |
| G | SWMU-20 Concentration Trend Charts |

# LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| µg/L | micrograms per liter |
| µmoles/L | micromoles per liter |
| AMEE | acetylene, methane, ethane, ethene |
| AOC | Area of Concern |
| ARI | Analytical Resources, Inc. |
| Boeing | The Boeing Company |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| cDCE | cis-1,2-dichloroethene |
| $CO_2$ | carbon dioxide |
| DC | Developmental Center |
| DO | dissolved oxygen |
| Ecology | Washington State Department of Ecology |
| EPA | US Environmental Protection Agency |
| $FeCl_2$ | ferrous chloride |
| ft | feet, foot |
| IA | interim action |
| IAWP | interim action work plan |
| Landau | Landau Associates, Inc. |
| mg/L | milligrams per liter |
| mg-N/L | milligrams per liter as nitrogen |
| MNA | monitored natural attenuation |
| MTCA | Model Toxics Control Act |
| NAPL | non-aqueous phase liquid |
| ORP | oxidation-reduction potential |
| ORC® | Oxygen Release Compound |
| PCE | tetrachloroethene |
| PCUL | proposed cleanup level |
| RCRA | Resource Conservation and Recovery Act |
| redox | reduction-oxidation |
| RFA | RCRA Facility Assessment |
| SWMU | Solid Waste Management Unit |
| TCE | trichloroethene |
| TOC | total organic carbon |
| TPH | total petroleum hydrocarbons |
| TPH-G | gasoline-range total petroleum hydrocarbons |
| UST | underground storage tank |
| VC | vinyl chloride |

VCP.....voluntary cleanup program
VOC ..... volatile organic compound
WAC ..... Washington Administrative Code

# 1.0 INTRODUCTION

This document presents a 2021 annual report for the interim actions (IAs) underway at The Boeing Company's (Boeing) Developmental Center (DC) in Tukwila, Washington (Figure 1). The DC is a regulated facility under the Resource Conservation and Recovery Act (RCRA) with a facility identification number of WAD-09363-9946. The Washington State Department of Ecology (Ecology) is authorized by the US Environmental Protection Agency (EPA) to implement RCRA corrective action through its Model Toxics Control Act (MTCA) regulations.

IAs are underway at Area of Concern (AOC)-05, Solid Waste Management Unit (SWMU)-17, and SWMU-20. Boeing has performed these IAs at the DC under Ecology's Voluntary Cleanup Program (VCP), and this work will continue under Agreed Order No. DE 16275 signed July 23, 2019, and per the information presented in the Interim Action Work Plan (IAWP; Landau Associates, Inc. [Landau] 2019b). Beginning with the 2018 report, annual reporting for the three IAs was combined into a single report (Landau 2019a).

## 1.1 Site Description

The DC site is located at 9725 East Marginal Way South in Tukwila, Washington near Boeing Field and the Military Flight Center (now called the Military Delivery Center; Figure 2). The site is bounded by the Duwamish Waterway on the west and East Marginal Way South on the east. Boeing has been operating on portions of this site since 1956 (SAIC 1994), and the site currently consists of more than 30 buildings on approximately 117 acres. The DC is an aircraft and aerospace research and development complex, primarily supporting projects for the US Department of Defense. Activities that have occurred at the DC facility include research and development programs and manufacturing (Boeing 2009, SAIC 1994). The DC facility continues to be the primary research and development center for carbon fiber composite structures.

## 1.2 Background

Under its RCRA corrective action authority, the EPA conducted a RCRA Facility Assessment (RFA) in 1994 and identified 157 SWMUs and five AOCs at the DC (SAIC 1994). Each of these SWMUs and AOCs was evaluated in a comprehensive Summary Report prepared for Boeing by Landau (2002). Based on this initial evaluation and the demonstration that they did not pose a threat to human health or the environment, Ecology approved the exclusion of most SWMUs and AOCs from further investigation.

After approving the Summary Report (Landau 2002), Ecology determined that only two SWMUs (SWMU-17 and SWMU-20) and three AOCs (AOC-01/02, AOC-03/04, and AOC-05) remained subject to continued monitoring and evaluation. Following additional groundwater monitoring at AOC-01/02 and AOC-03/04 (Boeing 2002, 2003), Ecology agreed that no further monitoring or other remedial action was required.

IAs are underway at three areas requiring further remedial action (AOC-05, SWMU-17, and SWMU-20), as described in the following sections. A facility boundary map showing the locations of these three areas within the DC facility is presented on Figure 2. A site plan showing the specific IA areas, including monitoring wells and facility buildings of interest, is presented on Figure 3. Groundwater elevation contours in the vicinity of the three areas for May and November 2021 are presented on Figures 4 and 5, respectively.

### 1.2.1 AOC-05

AOC-05 is located in the vicinity of Building 9-61 (Figure 3). This AOC consists of a former 1,000-gallon steel underground storage tank (UST) designated as DC-01 and former associated pump island, which were located approximately 25–30 feet (ft) south of the southwest corner of Building 9-61. UST DC-01 contained unleaded gasoline and was removed in 1985 after it was punctured by a measuring rod and released approximately 830 gallons of unleaded gasoline (Landau 2004). Contaminants targeted by IA in AOC-05 are gasoline-range total petroleum hydrocarbons (TPH-G) and benzene, toluene, ethylbenzene, and xylenes (BTEX).

### 1.2.2 SWMU-17

SWMU-17 is located west of Building 9-64 (Figure 3). This SWMU consists of a former 67-gallon sump and former 4,000-gallon steel UST designated DC-05. Waste oil generated by the hydraulic testing shops, automotive maintenance shops, and other operations at the DC was poured into the sump, which drained to the UST. Periodically, waste oil was pumped from the UST for offsite treatment and disposal. Both the sump and UST were removed in 1986 (Landau 2004). Contaminants targeted by IA in SWMU-17 are volatile organic compounds (VOCs), arsenic, and copper. The specific VOCs of concern are tetrachloroethene (PCE) and its breakdown products (trichloroethene [TCE], cis-1,2-dichloroethene [cDCE], and vinyl chloride [VC]).

### 1.2.3 SWMU-20

SWMU-20 is located at the northwest corner of Building 9-101 (Figure 3). This SWMU consists of a former vapor degreaser located in the northwest corner of Building 9-101. PCE and TCE were reportedly used during the operation of the degreaser from 1956 to 1984. The vapor degreaser, associated piping, and other equipment were removed in 1984 and all openings through walls and floor slabs were plugged. The concrete-lined degreaser pits and sumps were backfilled with compacted sand material and capped with 10 inches of concrete slab (Landau 2004). Contaminants targeted by IA in SWMU-20 are VOCs resulting from a suspected solvent leak from the former vapor degreaser pit. Specific VOCs of concern are PCE, TCE, and breakdown products (cDCE and VC), as well as benzene and naphthalene.

# 2.0 AOC-05

This section describes the IA underway in AOC-05. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2021 reporting period.

## 2.1 Remedial Approach

Anaerobic bioremediation is performed as the IA at AOC-05 through stimulation of microorganisms present in the aquifer to degrade petroleum hydrocarbons. The addition of nitrate (electron acceptor) allows native bacteria to utilize total petroleum hydrocarbons (TPH; electron donors) as a source of energy. Biodegradation of TPH can occur under both aerobic and anaerobic conditions and is the result of microbially mediated reduction-oxidation (redox) reactions. In these redox reactions, TPH are used as the electron donor, while various other compounds are utilized as electron acceptors when available (e.g., oxygen, nitrate, manganese [IV], iron [III], sulfate, carbon dioxide [$CO_2$]). Bacteria gain the most energy by utilizing oxygen as an electron acceptor because it is a highly oxidized compound, meaning it can more readily accept electrons from electron donors, like TPH. When oxygen is depleted, microorganisms preferentially use less oxidized electron acceptors in the following order, based on energy gained: nitrate, manganese (IV), iron (III), sulfate, and $CO_2$.

In aquifers that are naturally anaerobic, with low dissolved oxygen (DO) and high natural organic carbon, it may be more effective to stimulate anaerobic bioremediation instead of aerobic bioremediation. Naturally anaerobic aquifers, like at the DC, have a high natural oxygen demand that make oxygen addition ineffective for stimulation of aerobic bioremediation. Nitrate is the ideal electron acceptor to stimulate anaerobic bioremediation.

In 2002, an attempt to stimulate aerobic bioremediation of TPH-G at AOC-05 through injection of Oxygen Release Compound (ORC®; Landau 2004) was unsuccessful because of the high oxygen demand in the naturally anaerobic aquifer. As a result, the IA has stimulated anaerobic bioremediation through injection of nitrate as an electron acceptor. Nitrate amendment to enhance anaerobic biodegradation has been successfully implemented on other full-scale remediation projects for gasoline-range and fuel oil-range TPH, both nationally (Lozier and Hicks 2005, Wasserman et. al. 2005) and in Washington State (Landau 2012).

## 2.2 Summary of Prior Work and Findings

Prior to the reporting period, work at AOC-05 included bioremediation pilot testing, monitoring and injection well installation, baseline sampling, full-scale treatment, and performance groundwater monitoring. Pilot testing of nitrate injection in 2007 using a single injection well (BDC-103; Landau 2006a) was expanded to full-scale treatment in 2008 utilizing existing injection well BDC-103 and new injection well BDC-104. Eleven full-scale nitrate injections have been performed through the last

injection in December 2016. Injection events are detailed in the IAWP (Landau 2019b) and prior annual reports for AOC-05.

### 2.2.1 Pilot Testing

Bioremediation pilot testing in 2007 demonstrated degradation of petroleum hydrocarbons resulting from a one-time addition of ammonium nitrate (Landau 2007a). Post-injection monitoring showed that concentrations of TPH-G decreased by about 50 percent, compared to baseline, over 4 months of post-injection monitoring. BTEX compounds decreased as much as 98 percent (Landau 2007a). As expected, contaminant concentrations rebounded upon depletion of injected nitrate as groundwater returned to equilibrium with sorbed mass and non-aqueous phase liquid (NAPL) mass remaining in the aquifer. Based on these promising pilot test results, full-scale anaerobic bioremediation was implemented as described below.

### 2.2.2 Well Installation and Baseline Sampling

Full-scale implementation of anaerobic bioremediation began in February 2008 with the installation of one additional injection well (BDC-104) and baseline sampling of all four AOC-05 wells (BDC-101, BDC-102, BDC-103, and BDC-104). The new injection well (BDC-104) was installed upgradient (east) and crossgradient (north) of existing injection well BDC-103, located within the former UST tank pit. BDC-104 is located near the known upgradient edge of contamination associated with the former UST (Landau 2004). Injection of both wells allowed for groundwater transport of injected nitrate solution to the area of highest contamination.

Baseline sampling was performed prior to full-scale treatment to determine initial contaminant concentrations and aquifer redox conditions at the four AOC-05 wells (BDC-101, BDC-102, BDC-103, and BDC-104). Baseline results indicated nitrate- to sulfate-reducing conditions at source zone wells BDC-103 and BDC-104, nitrate- to iron-reducing conditions at downgradient well BDC-102, and aerobic to nitrate-reducing conditions at downgradient well BDC-101. The same conditions were indicated by pre-pilot test monitoring (Landau 2006a). Baseline TPH-G concentrations at both source zone wells (BDC-103 and BDC-104) were in excess of the preliminary screening level, and baseline benzene concentrations at BDC-103 exceeded the preliminary screening level (preliminary screening levels in use at that time were developed in the Summary Report [Landau 2002]). TPH-G and BTEX were not detected at downgradient wells BDC-101 and BDC-102 during baseline sampling but had been during prior sampling. Baseline sampling results and proposed cleanup levels (PCULs) are included in the data summary presented in Table 1.

### 2.2.3 Full-Scale Bioremediation and Performance Results

Eleven full-scale nitrate injections to stimulate bioremediation have been performed to date; the most recent injection was performed in December 2016. Performance monitoring results from 2008 through 2018 indicated effective treatment of TPH-G and BTEX at source zone wells BDC-103 and BDC-104, while maintaining relatively low or non-detect contaminant levels at downgradient wells

BDC-101 and BDC-102. As was observed during the pilot test, contaminant concentrations have demonstrated some degree of rebound at well BDC-103 following the depletion of injected nitrate, prompting additional nitrate injection. Rebound will continue to occur as long as contaminant mass remains in the sorbed-phase or as NAPL within the aquifer or in upper portions of the smear zone that are periodically contacted by the water table. The historical timeline of AOC-05 bioremediation is summarized as follows:[1]

- Nitrate solution was injected to both wells BDC-103 and BDC-104 a total of five times during 2008 and 2009. Post-injection monitoring results demonstrated that concentrations had declined below PCULs at BDC-104 following the fifth injection. As a result, injection was discontinued at BDC-104.
- Following the sixth injection in September 2010, contaminant concentrations at BDC-103 decreased to historical lows in February 2011.
- Repeated cycles of nitrate depletion and contaminant rebound prompted a seventh and an eighth injection in 2012 and a ninth injection in November 2013.
- In February 2013, contaminant concentrations at all wells declined below the PCULs for the first time since treatment began.
- In May 2014, contaminant concentrations at all wells declined to below their reporting limits for the first time since treatment began.
- The 2013 injection was followed by a period of slow nitrate consumption and a tenth injection was not needed until March 2016. Slower utilization of nitrate between 2013 and 2016 is indicative of decreased TPH mass remaining in the source.
- Contaminant concentrations rebounded once again in August and November 2016 at BDC-103, which prompted the eleventh nitrate injection in December 2016.

TPH concentration rebound in 2016 followed a period of higher groundwater levels. The higher water table caused groundwater to contact higher portions of the contaminant smear zone not treated by prior injection events, resulting in increased TPH concentrations in groundwater. Groundwater elevations over time at AOC-05 are shown on Figure 6. The highest groundwater elevations recorded in AOC-05 occurred in spring of 2016 and 2018. Cumulative performance monitoring results are presented in Table 1.

As indicated in the AOC-05 Work Plan (Landau 2007b), Ecology required an action level for nitrate of 10 milligrams nitrogen per liter (mg-N/L) for IA at AOC-05. Detection of nitrate above the action level at either of the two nearest downgradient wells (BDC-101 or BDC-102) for two consecutive sampling events triggers implementation of additional groundwater monitoring at four wells (BDC-05-04, MW-17A, MW-18A, and MW-21A) located farther downgradient (Figure 3). Semiannual monitoring for nitrate is required to continue at these four downgradient wells for 1 year after nitrate at wells BDC-101 and BDC-102 decreases below 10 mg-N/L. Based on continued periodic exceedances of the action level at wells BDC-101 and BDC-102, semiannual nitrate monitoring has been performed at the

[1] Additional details of each injection are provided in the footnotes to Table 1.

four downgradient wells since November 2009. Nitrate has not been detected above the 10 mg-N/L action level at the four furthest downgradient wells (BDC-05-04, MW-17A, MW-18A, and MW-21A). Cumulative downgradient nitrate results are included in Table 2.

## 2.3 2021 Activities

Activities in AOC-05 for 2021 included two semiannual monitoring events. Monitoring events were conducted at the four AOC-05 wells and also included measurement of nitrate at further downgradient wells. No nitrate injections were performed.

Bioremediation progress was evaluated through monitoring performed in May and November 2021. Groundwater levels were measured during both events. In accordance with the AOC-05 Work Plan (Landau 2007b) and the IAWP (Landau 2019b), samples were analyzed for contaminant concentrations (TPH-G and BTEX) and parameters indicative of aquifer redox conditions (DO, oxidation-reduction potential [ORP], nitrate, ferrous iron, sulfate, and pH). Samples were also analyzed for nitrite, a short-lived intermediary product of nitrate reduction. TPH-G, BTEX, nitrate, nitrite, and sulfate were analyzed in the laboratory, while other parameters (DO, ORP, ferrous iron, and pH) were measured in the field. All laboratory analyses were performed by Analytical Resources, Inc. (ARI) in Tukwila, Washington. Cumulative monitoring results for the four AOC-05 wells (BDC-101 through BDC-104) are presented in Table 1. Laboratory reports for the reporting period are presented in Appendix A. Groundwater elevation contours for May and November 2021 are presented on Figures 4 and 5, respectively. Cumulative groundwater levels are presented in Appendix B.

Semiannual monitoring for nitrate continued in May and November 2021 at the four monitoring wells located farther downgradient of AOC-05 (MW-17A, MW-18A, MW-21A, and BDC-05-04). Monitoring well analytical results are presented in the following tables and figures: Cumulative monitoring results for wells BDC-101 through BDC-104 are presented in Table 1, with results compared to PCULs (Landau 2013b). Cumulative monitoring results for downgradient nitrate monitoring are presented in Table 2. Groundwater elevations are presented on Figure 6. Concentrations of TPH-G and BTEX compounds at BDC-103 and BDC-104 over time are presented on Figures 7 and 8, respectively.

## 2.4 2021 Results and Discussion

Monitoring results through 2021 continue to suggest that bioremediation of TPH-G and BTEX is nearing completion in AOC-05, but additional nitrate injection may be required to complete treatment of residual contaminant mass. This is indicated by the extended period of contaminant concentrations below the PCULs followed by slight rebounds and depleted nitrate in November 2019, 2020, and 2021. Highlights from 2021 results are as follows:

- Contaminant Reduction: Contaminant concentrations at all four AOC-05 wells remained below the PCULs and/or below the laboratory reporting limits for 3 years from November 2016 until November 2019. At BDC-103, TPH-G and BTEX concentrations rebounded slightly in November 2019, while concentrations at the other three AOC-05 wells remained below PCULs

and/or below reporting limits. In May 2020, TPH-G and BTEX concentrations at all four AOC-05 wells were below PCULs and/or reporting limits. Ethyl benzene was above the PCUL again in November 2001.

The above illustrates a pattern of slight rebound in one or more constituents at BDC-103 in November for 3 years running (2019, 2020, and 2021) and concentrations below PCULs/reporting limits in May of the same years. The reason for this fluctuation is not yet understood, but evaluation of this phenomena will continue as groundwater monitoring data is collected during 2022. The groundwater elevation at BDC-103 was highest in May 2019 and 2020, and in November of 2021, demonstrating that the periodic rebound in contaminant concentration is not always tied to the high water table condition.

- Nitrate: Nitrate at BDC-103 remained elevated for 3 years after the last injection in December 2016. Nitrate reached an all-time maximum of 215 mg-N/L in May 2017, approximately 5 months post-injection, and persisted at 113 mg-N/L in May 2019, 29 months post-injection. Since May 2019, nitrate concentrations have fluctuated between non-detect and approximately 62 mg-N/L (May of 2021 and 2022). Very low or non-detect nitrate concentrations are coincident with the slight rebounds in TPH-G and BTEX concentrations observed in 2019, 2020, 2021, while elevated nitrate concentrations are coincident with non-detect TPH-G and BTEX concentrations. As with the contaminant concentrations, this prominent fluctuation in nitrate concentrations is not fully understood but may be caused by periodic fluctuations in groundwater flow direction through BDC-103. Additional nitrate injection may be needed to address periodic TPH and BTEX rebound.
- Groundwater Elevations: The May and November 2021 groundwater elevations in AOC-05 were lower than their respective 2016–2018 elevations, which was a period of time when groundwater elevations were high. Historically, outside of a few anomalous years, groundwater elevations in AOC-5 are lower in November than in May; however, this was not the case in 2021 when the November groundwater elevations were higher than May 2021 (May 2021 was also higher than November 2020). This increase in the groundwater elevations from November 2020 through November 2021 is likely a response to higher-than-average rainfall totals, as occurred in September, October, and November 2021 where rainfall totals ranged from approximately 32 percent to 47 percent above their respective monthly averages (National Weather Service 2022, Seattle Weather Blog 2022).
- Downgradient Monitoring: Nitrate concentrations at BDC-101, BDC-102, and BDC-103 exceeded the action level during the May 2021 monitoring event but were below the 10-mg-N/L action level in November 2021. Based on these results, semiannual nitrate monitoring will continue at the four downgradient wells in May 2022.
- Nitrite: Detection of low levels of nitrite is a result of nitrate reduction. Nitrite is a highly reactive, short-lived compound that is further reduced to nitrous oxide, nitric oxide, and finally nitrogen gas (Environment Agency 2005). Nitrite has been commonly detected at injection wells since the start of full-scale injection activities but has not persisted. Nitrite was not detected at any well during 2021. This data confirms that nitrite continues to be further reduced in the treatment area.

# 3.0 SWMU-17

This section describes the IA in SWMU-17. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2020 reporting period.

## 3.1 Remedial Approach

IA at SWMU-17 consists of anaerobic bioremediation, which is accomplished through stimulation of microorganisms present in the aquifer to enhance reductive dechlorination of chlorinated ethenes. The addition of electron donor substrates stimulates the required reduced aquifer conditions and the biological reductive dechlorination of PCE and its breakdown products TCE, cDCE, and VC.

Reductive dechlorination of PCE and TCE occurs through microbially mediated (biotic) reactions, whereby microorganisms obtain energy through redox reactions. Anaerobic conditions are required for reductive dechlorination of PCE/TCE and breakdown products. Electron donors (natural organic carbon or injected substrates) are used by microbes to sequentially reduce the natural electron acceptors (oxygen, nitrate, manganese [IV], iron [III], sulfate, and $CO_2$), resulting in successively more reduced aquifer conditions. When oxygen is depleted, bacteria sequentially use the less-oxidized electron acceptors in the following order: nitrate, manganese (IV), iron (III), sulfate, and $CO_2$.

Chlorinated ethenes can also be used as electron acceptors by dechlorinating microorganisms. In this process, PCE and its breakdown products are used as electron acceptors and degraded to less chlorinated breakdown products. Degradation occurs sequentially from PCE through TCE, cDCE, and VC, to innocuous end products ethene and ethane. PCE is the most oxidized electron acceptor in typical groundwater systems after oxygen and, therefore, can be reduced as soon as oxygen is depleted (Vogel et al. 1987). TCE, cDCE, and VC, however, require successively more reducing aquifer conditions for degradation. Depletion of natural electron acceptors (e.g., oxygen, iron, sulfate, $CO_2$) creates the highly reducing aquifer conditions (sulfate-reducing to methanogenic conditions) required for complete reductive dechlorination of PCE and breakdown products.

Reductive dechlorination is enhanced through the injection of fermentable substrates (e.g., vegetable oil and lactate) as a source of electron donors for aquifer microorganisms. Substrates are injected into the contaminated aquifer, where a consortium of indigenous bacteria first ferment the substrate to volatile fatty acids and hydrogen. Other bacteria in this consortium then use these fermentation products to reduce natural electron acceptors and chlorinated ethenes.

## 3.2 Summary of Prior Work and Findings

Prior to 2019, field activities consisted of pilot testing, installation of injection and monitoring wells, baseline sampling, full-scale injections to stimulate anaerobic bioremediation, and performance groundwater monitoring. Two full-scale electron donor injection events were performed in 2011 and

2017; injection events and other IA work previously performed in SWMU-17 are described in detail in the IAWP (Landau 2019b) and prior annual reports.

### 3.2.1 Pilot Testing

A pilot test was performed in October 2008 to determine if electron donor (sodium lactate and vegetable oil) and ferrous sulfate amendments could successfully enhance anaerobic biodegradation of PCE and immobilization of copper and arsenic. One monitoring well (BDC-05-02) received injection solution containing the electron donor and ferrous sulfate amendments.

Monitoring results demonstrated that bioremediation of PCE at SWMU-17 was successfully stimulated by the electron donor pilot test injection. However, the relatively limited extent of PCE and TCE treatment observed during the pilot test indicated that the radius of injection created was smaller than anticipated and that the downgradient transport of electron donor was slow (Landau 2010b). Over the course of the pilot test, PCE and TCE concentrations decreased substantially at SWMU-17, but the lack of substantial VC, ethene, or ethane production indicated that the process of reductive dechlorination was incomplete. Copper and arsenic concentrations remained within the range of pre-injection results (Landau 2010b). Based on pilot test results, full-scale bioremediation of PCE and breakdown products was undertaken as described below.

### 3.2.2 Well Installation and Baseline Sampling

Full-scale IA began with installation of additional groundwater wells. Sixteen additional wells (BDC-05-09 through BDC-05-24) were installed for injection and/or monitoring in July 2011. This supplemented six existing wells (BDC-05-02 through BDC-05-05, BDC-05-07, and BDC 05-08) for a total of 22 wells utilized for IA in SWMU-17. Well locations are presented on Figure 3.

Baseline sampling was performed immediately following new well installation in July 2011, followed by quarterly (10 wells) and semiannual (22 wells) post-injection sampling through 2017 in accordance with the SWMU-17 Work Plan (Landau 2011). In 2018, monitoring transitioned to a semiannual frequency. Samples were analyzed for target contaminants and breakdown products (PCE, TCE, cDCE, and VC); non-toxic end products (ethene and ethane); parameters indicative of aquifer redox conditions (DO, ORP, nitrate,[2] ferrous iron, sulfate, and methane); total organic carbon (TOC) and pH indicative of electron donor; and total and dissolved copper and arsenic. Laboratory analysis of acetylene, methane, ethane, and ethene (AMEE)[3] was performed at select wells.

[2] Nitrate, which was consistently not detected, was determined to not be useful for evaluation of aquifer redox conditions at SWMU-17, and nitrate analysis was discontinued beginning in May 2012 (Landau 2013a).

[3] AMEE was added to wells BDC-05-03, BDC-05-21, and BDC-05-24 beginning with the May 2013 semiannual sampling event to improve evaluation of treatment progress (Landau 2013a).

### 3.2.3 Full-Scale Electron Donor Injections

Two full-scale electron donor injections were performed through 2017. Various electron donor substrates have been used to stimulate treatment of PCE and TCE; additional amendments have also been added to the injection solution to provide secondary benefits. The injection timeline for this area is as follows:

- The first full-scale electron donor injection was performed at 11 wells in August 2011. Each of the 11 wells (BDC 05-02, BDC-05-07, and BDC-05-09 through BDC-05-17) was injected with injection solution containing LactOil®, a combination donor substrate containing both soluble (fast-release) ethyl lactate and insoluble (slow-release) soybean oil.
- A second, focused electron donor injection was performed at five wells in November 2017. The purpose of this injection was to address PCE and/or TCE concentrations that were greater than 1 microgram per liter (µg/L) within the source area. Injection solution containing molasses was delivered to each of the five wells (BDC-05-02, BDC-05-03, BDC-05-04, BDC-05-07, and BDC-05-10); molasses was used as the soluble (fast-release) electron donor instead of LactOil. Each well was also injected with ferrous chloride ($FeCl_2$) solution to provide ferrous iron for formation of iron sulfides. Iron sulfides are produced as a reactive coating on aquifer minerals when sulfate present in the molasses is reduced to sulfide and the sulfide complexes with ferrous iron. PCE, TCE, and cDCE are degraded abiotically on contact with iron sulfides to short-lived and non-toxic acetylene compounds without the production of VC. This favorable abiotic destruction mechanism is complementary and occurs simultaneously with biotic reductive dechlorination of TCE (Landau 2017).

### 3.2.4 Summary of Prior Results

Post-injection monitoring results through November 2020 (about 10 years after the first injection) indicated that bioremediation was substantially enhanced by the electron donor injection. Evidence of biodegradation consisted of elevated TOC; more highly reduced aquifer redox conditions; and changes in concentrations of PCE, TCE, breakdown products, and end products. Continued production of end products ethene and ethane indicated complete reductive dechlorination through to non-toxic end products (Landau 2020).

Baseline data showed conditions conducive to limited biodegradation of PCE and TCE. The highest baseline concentrations of PCE and TCE were 39 µg/L (BDC-05-10) and 28 µg/L (BDC-05-15), respectively. cDCE, the first reductive dechlorination sequential breakdown product, was commonly detected (detections ranged from 0.2 to 58 µg/L), but VC and end products ethene and ethane were not detected. Baseline aquifer redox conditions were variable, with more highly reducing conditions (sulfate-reducing to methanogenic) occurring at source zone wells BDC-05-02 and BDC-05-07 because of prior pilot testing, and predominantly mild to moderately reducing conditions (nitrate- to iron-reducing) occurring elsewhere in the plume. TOC concentrations were below 10 milligrams per liter (mg/L) at most wells, which is a threshold generally considered to represent sufficient electron donor to support substantial reductive dechlorination (Major et al. 2003). Enhanced natural attenuation of lower chlorinated VOC concentrations can be supported by lower TOC concentrations.

## 3.3 2021 Activities

Activities in 2021 consisted of two semiannual performance monitoring events at all 22 wells to evaluate ongoing treatment and included measurement of groundwater elevations. No injections were performed in 2021.

Samples collected during monitoring events were analyzed for target contaminants and breakdown products (PCE, TCE, cDCE, and VC); parameters indicative of aquifer redox conditions (DO, ORP, ferrous iron, and sulfate); TOC and pH indicative of electron donor; and total and dissolved copper and arsenic. Laboratory analysis of AMEE was also performed at all wells except four (BDC-05-05, BDC-05-08, BDC-05-22, and BDC-05-23). Laboratory analysis of contaminant and breakdown products, sulfate, TOC, metals, and AMEE was performed by ARI in Tukwila, Washington. Parameters DO, ORP, ferrous iron, and pH were measured in the field. Groundwater monitoring data are presented in Table 3. Laboratory reports for the reporting period are presented in Appendix A.

Groundwater elevations were measured during the May and November 2021 semiannual sampling events. Consistent with previous measurements, groundwater flow is generally west-southwesterly in direction. These groundwater flow directions are consistent with the alignment of the contaminant plume. Groundwater elevation contours for May and November 2021 are presented on Figures 4 and 5, respectively. Cumulative groundwater elevations for SWMU-17 wells are presented in Appendix B.

## 3.4 2021 Results and Discussion

This section presents discussion and interpretation of data collected during 2021. Groundwater monitoring results show that aquifer conditions continue to be enhanced for anaerobic bioremediation, as indicated by TOC concentrations that increased after the 2017 injection and remain above baseline and by highly reducing (sulfate-reducing to methanogenic) aquifer redox conditions. Detections of end products ethene and/or ethane demonstrate continued complete reductive dechlorination of the toxic parent and breakdown products to non-toxic end products. November 2021 data were collected 124 months (about 10 years) following the first electron donor injection in August 2011 and about 4 years from the focused second injection in November 2017.

Monitoring results, including VOC molar fractions, are summarized in a cumulative data table (Table 3), presented on various figures and appendices, and discussed further in the following sections. Appendix C presents time plots of VOC concentrations at representative injection wells and monitoring wells. Time plots for molar concentrations of VOCs and breakdown products for the same representative wells are presented in Appendix D. Time plots of redox parameters (methane and sulfate) and TOC for the representative wells are presented in Appendix E.

### 3.4.1 Reductive Dechlorination of VOCs

Enhanced reductive dechlorination following the August 2011 and November 2017 donor injections has resulted in substantially decreased PCE/TCE concentrations, with conversion through intermediary

breakdown products cDCE and VC to end products ethene and ethane. During 2021, PCE, TCE, cDCE, and VC concentrations were below PCULs at all wells except BDC-05-18. TCE was detected at BDC-05-18 at 1.80 µg/L in May and at 1.54 µg/L in November; both concentrations are only slightly above the PCUL of 1.4 µg/L for TCE. Neither cDCE nor VC was detected above their respective PCULs in 2021, indicating continued effective biodegradation of chlorinated compounds to non-toxic end products. PCE/TCE concentrations in groundwater are presented on Figure 9 for November 2021. November 2021 VC concentrations in groundwater are presented on Figure 10.

At well BDC-05-10, which had the highest baseline concentration of PCE and the second highest TCE concentration, PCE and TCE have remained persistently less than the reporting limit from May 2012 through 2021; this represents a concentration reduction of greater than 99 percent.

Complete reductive dechlorination resulting from bioremediation treatment has been evidenced by occurrence and molar predominance of the innocuous end products ethene and ethane. Ethene+ethane represented just 1.7 percent of the total ethenes (i.e., 1.7 percent molar fraction) during baseline sampling in July 2011. Because of biodegradation stimulated by the 2011 injections, the ethene+ethane molar fraction increased to a maximum level of 91.5 percent in November 2016. Ethane was detected in both May and November 2021. The number of wells where ethene+ethane is detected has generally decreased over time, as treatment results in more wells that are low to non-detect for PCE, TCE, cDCE, and VC. However, during 2021, ethene and/or ethane were detected at eight of the 18 wells where analyzed; this compares to ethene and/or ethane detected at just one well in 2020 and at 15 wells in 2016.

Figure 11 presents the percentage (average molar fraction) of total ethenes contributed by PCE, TCE, cDCE, VC, and ethene+ethane over time for all 18 wells in SWMU-17 where ethene and ethane are analyzed; the shift from parent product and breakdown product predominance to predominance of non-toxic ethene+ethane is readily apparent from November 2012 to May 2019. In May 2019, ethene+ethane constituted just more than 50 percent of total ethenes detected on a molar basis. Following two sampling events showing VC predominance (November 2019 and May 2020) as a result of enhanced desorption and treatment following the 2017 injection, ethene+ethane has remained predominant. In November 2021, ethene+ethane constituted an average of 86 percent of total ethenes at the eight wells, where detected. The continued predominance of ethene+ethane from November 2020 through November 2021 confirms continued complete reductive dechlorination through to these non-toxic end products.

The succession of chlorinated ethene conversion to innocuous end products results in a decrease in total chlorinated ethenes concentrations (micromoles per liter [µmoles/L]) over time. Total chlorinated ethenes is the molar sum of PCE + TCE + cDCE + VC. A decrease in the concentration of total chlorinated ethenes demonstrates mass destruction, not just conversion to a less-chlorinated breakdown product (e.g., TCE to VC). Initial periods of increased total chlorinated ethenes commonly indicate enhanced desorption of contaminant mass that was partitioned to the aquifer soil matrix and

liberated by surfactant properties of the injected donor solution and by biosurfactants released by stimulated bacteria. Decreasing concentrations of total chlorinated ethenes reflects the final conversion step from VC to non-chlorinated end products ethene and ethane. Total chlorinated ethenes are tabulated in Table 3 and are shown on time plots for representative wells in Appendix D. Figure 11 presents a time plot of average total chlorinated ethenes for all SWMU-17 wells. As shown on Figure 11, the average total chlorinated ethenes increased through May 2012 due to enhanced desorption; it then decreased substantially through 2021. Average total chlorinated ethenes through November 2021 show a substantial reduction (approximately 97 percent) compared to baseline and a 98 percent reduction compared to the May 2012 peak.

In summary, data show that PCE and its associated breakdown products have been effectively converted to non-toxic end products by bioremediation in SWMU-17. Comparison of current contaminant concentrations to PCULs indicates that treatment is in its final stages. As of November 2021, PCE, TCE, cDCE, and VC concentrations were below PCULs at 21 wells, with the exception of a minor exceedance for TCE at BDC-05-18. Ongoing detection and long-term predominance of ethene+ethane has confirmed complete reductive dechlorination to these non-toxic end products. No additional electron donor injections are needed at this time.

### 3.4.2 TOC and Redox Conditions

Monitoring results indicate aquifer TOC and/or redox conditions have been enhanced throughout the core of the contaminant plume and at many of the crossgradient and downgradient monitoring wells following the August 2011 and November 2017 electron donor injections. These results indicate conditions conducive to continued enhanced bioremediation of PCE,TCE, and breakdown products. As a result of the November 2017 injection, TOC increased from near baseline levels (5.3 to 33 mg/L) at the five injected wells (BDC-05-02, BDC-05-03, BDC 05-04, BDC-05-07, and BDC-05-10) to a range of 627–9,629 mg/L in May 2018. As of November 2021, TOC remains greater than 10 mg/L (14.6–604 mg/L) at all five wells injected in 2017.

Highly reducing conditions required for reductive dechlorination persist throughout the core of the plume, as indicated by persistently low concentrations of sulfate and elevated concentrations of methane in all injection wells through November 2020. These enhanced redox conditions also continue at three monitoring wells which were not injected. At other downgradient and crossgradient monitoring wells, redox changes were minor (e.g., decreased DO or increased ferrous iron) or short-lived (e.g., a brief decrease in sulfate followed by a rebound to baseline levels) following the two injection events.

### 3.4.3 Copper and Arsenic

Total and/or dissolved copper concentrations were above the PCUL (0.008 mg/L) at four of 22 wells as of the November 2021 sampling event. These are four of the five wells injected in 2017. A similar

increase in copper concentrations was observed at many of the wells injected in 2011, followed by a decrease to below the PCUL.

As of November 2021, total and/or dissolved arsenic concentrations remained above the PCUL (0.008 mg/L) at 15 of 22 sampled wells, compared to 16 of 22 wells above the PCUL in November 2017. Concentrations at these 15 wells have been consistently near or above the PCUL for arsenic since the first injection, except for BDC-05-04 which, had been below the PCUL from May 2014 to until November 2017. The highest detections in November 2021 were total and dissolved arsenic results of 0.064 mg/L and 0.056 mg/L, respectively, at BDC-05-15.

Reducing conditions may cause mobilization of naturally occurring arsenic (along with manganese and iron) as a localized and temporary phenomenon within the portion of the aquifer that has been artificially reduced through donor amendment. Once the injected donor has been consumed and natural conditions are re-established, these metals will precipitate as the less soluble forms that existed prior to donor amendment (Solutions-EIS 2006, Suthersan et al. 2003). However, because of elevated natural background concentrations of arsenic commonly observed within the Duwamish area because of naturally reduced aquifer conditions, arsenic concentrations are not expected to achieve the PCUL at project completion. Final cleanup levels for arsenic and copper will need to consider appropriate background concentrations in accordance with Washington Administrative Code (WAC) 173-340-720 (7)(c).

Time plots for total copper and arsenic are presented for injection wells and monitoring wells in Appendix F.

# 4.0 SWMU-20

This section describes the IA underway at SWMU-20. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2021 reporting period.

## 4.1 Remedial Approach

IA in SWMU-20 has consisted of groundwater pump-and-treat followed by bioremediation for the treatment of PCE and TCE in groundwater. Anaerobic bioremediation of VOCs like PCE and TCE relies on reductive dechlorination—the microbially mediated process by which these compounds are reduced to transformation products, cDCE and VC, and non-toxic end products, ethene and ethane. Microorganisms gain energy through reductive dechlorination by utilizing PCE, TCE, and breakdown products as electron acceptors and hydrogen as an electron donor. Fermentable substrates like sodium lactate and vegetable oil can serve as sources of electron donor for this process. The reductive dechlorination process is described in more detail in Section 3.1.

Full-scale implementation of anaerobic bioremediation through addition of fermentable substrates has been successful. Treatment methods and performance results are summarized in the following section. The details of the pump-and-treat system shutdown and indoor air modeling and sampling are also provided in the following section.

## 4.2 Summary of Prior Work and Findings

Prior to the reporting period, work at SWMU-20 included groundwater pump-and-treat, bioremediation injections, indoor air evaluations and sampling, and performance groundwater monitoring. Five full-scale electron donor injections for bioremediation have been performed to date; all events are detailed in the IAWP (Landau 2019b) and prior annual reports for SWMU-20.

### 4.2.1 Groundwater Pump and Treat

Following soil and groundwater investigations around the former degreaser location, a groundwater treatment system was installed to remove chlorinated VOCs from groundwater for source area treatment and for the prevention of further contaminant migration. The treatment system, consisting of two extraction wells (E-1 and E-2) and a sieve tray aerating treatment system, operated from Fall 1993 to December 2001 (approximately 8 years). The system was shut down in December 2001 to allow the groundwater to equilibrate for evaluation of potential rebound and evaluation of natural attenuation as a remedial alternative to achieve site PCULs (Landau 2004).

Substantial contaminant concentration rebound was observed within 2 years following the shutdown of the groundwater treatment system. Enhanced reductive dechlorination through electron donor amendment (i.e., bioremediation) was recommended to address the rebound in VOC concentrations observed following groundwater treatment system shutdown (Landau 2002).

The groundwater treatment system in SWMU-20 was decommissioned in June 2014. Ecology agreed that the treatment system was not likely to be needed in the future because of effective bioremediation treatment. The air stripper was relocated to another Boeing site for reuse. Submersible pumps were removed from extraction wells and system piping was disconnected and capped. The treatment building remained at the site for future use or later removal.

### 4.2.2 Bioremediation

A series of five bioremediation injection events were performed to address contaminant concentrations near the former degreaser, downgradient, and ultimately at peripheral wells not affected by the earlier injections. Iterative full-scale bioremediation was implemented without pilot testing. These injections are described in detail in the IAWP (Landau 2019b) and summarized below:

- Injection solution containing sodium lactate and vegetable oil emulsion was injected at six monitoring wells (MW-6A, MW-6B, MW-6C, MW-9A, MW-9B, and MW-9C) during the first injection in June 2004 using groundwater from two extraction wells (E-1 and E-2). Post-injection monitoring results indicated that the first injection was successful at establishing more reducing redox conditions and enhancing reductive dechlorination.
- A second injection was performed in December 2004, just 6 months after the first injection to maintain elevated TOC concentrations for continued bioremediation. Four monitoring wells (MW-6A, MW-6B, MW-9A, and MW-9B) were injected with injection solution containing sodium lactate and vegetable oil; the mixture of the two substrates was intended to maximize the extent and longevity of treatment. Groundwater extracted from two extraction wells (E-1 and E-2) was used in the injection solution.
- One monitoring well (MW-14A) was used for the third injection in March 2005. Injection solution containing groundwater from extraction wells (E-1 and E-2), sodium lactate, and vegetable oil was injected at MW-14A only in order to extend the treatment zone downgradient of the source and to treat relatively high concentrations of VC observed at the well following prior injections nearer the source zone. Two additional monitoring wells (MW-22A and MW-23A) were installed to monitor the effects of the third injection and to monitor treatment progress farther downgradient.
- The fourth injection in August 2008 utilized groundwater from two extraction wells (E-1 and E-2) and solution was injected at three monitoring wells (MW-6A, MW-9A, and MW-10A) to provide additional source zone treatment. Injection solution contained sodium lactate and vegetable oil emulsion mixed with groundwater.
- Nine monitoring wells (MW-6A, MW-6B, MW-10C, MW-15C, MW-16A, MW-16C, MW-17A, MW-20C, and MW-22A) were injected during the fifth injection in October and November 2015 to target residual contaminant mass at source zone wells and additional wells located on the fringes of the treatment area. Injection solution contained sodium lactate mixed with tap water.

### 4.2.3 Groundwater Monitoring

Quarterly to semiannual monitoring began in January 1994. After reviewing long-term monitoring data at SWMU-20 wells, sampling reductions were proposed in April 2010 and again in March 2015.

The 2010 sampling reduction discontinued semiannual monitoring at 11 of the 29 existing SWMU-20 monitoring wells, where VOCs of concern (PCE, TCE, cDCE, and VC) had been below reporting limits for 2 years or more (Landau 2010a). Ecology approved additional sampling reduction in 2015, which discontinued semiannual monitoring at four of the 18 sampled wells.[4] The 14 wells retained for ongoing sampling were all wells where PCE, TCE, or VC was detected at a concentration of more than half of the PCUL in May 2014 or were of continued interest for Ecology. Semiannual monitoring at these 14 wells will continue during 2022 to evaluate ongoing monitored natural attenuation (MNA) in SWMU-20 (Landau 2015a, b). Wells not included in the current monitoring program have not yet been decommissioned.

### 4.2.4 Indoor Air Evaluation and Sampling

Indoor air evaluations were performed in the vicinity of SWMU-20 using the Johnson-Ettinger model to estimate potential human health risks associated with exposure to indoor air because of VOCs in the underlying shallow groundwater. These evaluations were performed for Building 9-101, a manufacturing building which overlies the source, and Building 9-90, an office building located hydraulically downgradient of the source (Figure 3). The model concluded that the associated risk levels for occupational inhalation of potentially impacted indoor air were at, or below, the regulatory criteria (Landau 2005a).

Further evaluation of indoor air followed increased VC concentrations in groundwater at MW-14A in October 2004 (Landau 2005a). Recognizing that ongoing SMWU-20 source zone treatment (i.e., bioremediation injections) could result in higher VC concentrations at downgradient well MW-14A, the model was run to identify the threshold average groundwater VC concentration beneath Building 9-90. Above this threshold, a potential would exist for unacceptable risks to human health from inhalation of indoor air. The model output estimated that the threshold VC groundwater concentration protective of human health was 43 µg/L. Ecology comments to this additional evaluation resulted in indoor air sampling in Building 9-90 (Landau 2005b).

Three indoor air samples were collected in January 2006 in the north portion of Building 9-90 and along the estimated axis of the VOC groundwater plume in order to characterize potential vapor intrusion. This sampling event occurred as the result of VC concentrations increasing as high as 1,000 µg/L at upgradient well MW-14A as a result of source zone bioremediation. A concurrent ambient air sample was collected outdoors near ground level to assess possible background contributions to any indoor air detections. Low levels of PCE and TCE were detected in all three indoor air samples and in the outdoor ambient air sample. cDCE and VC were not detected in any sample.

[4] Ecology approved discontinued sampling at four of 18 sampled wells and not nine, as previously stated (Landau 2019b). This section has been updated to reflect that sampling is performed at 14 wells in SWMU-20. The correct number of wells has been sampled for SWMU-20 since the 2015 sampling reduction.

The detected concentrations of corrected indoor air results for PCE and TCE were below the MTCA Method B cleanup levels (Landau 2006b).

## 4.3 2021 Activities

Activities in 2021 consisted of two semiannual performance monitoring events at 14 wells in SWMU-20 to evaluate the progress of MNA following the bioremediation injection in 2015. No injections were performed in 2021.

All samples collected during monitoring events were analyzed for VOCs and several aquifer redox parameters (DO, ORP, and pH). Four wells (MW-6A, MW-6B, MW-9A, and MW-22A) were also analyzed for parameters indicative of MNA performance (methane, ethane, ethene, TOC, and sulfate). Laboratory analysis for VOCs, methane, ethane, ethene, TOC, and sulfate was performed by ARI in Tukwila, Washington. Aquifer redox parameters DO, ORP, and pH were measured in the field.

Groundwater elevations were measured during the May and November 2021 semiannual sampling events. Consistent with previous measurements, groundwater flow is generally to the west-southwest. These groundwater flow directions are consistent with the alignment of the contaminant plume. Groundwater elevation contours for May and November 2021 are presented on Figures 4 and 5, respectively. Cumulative groundwater elevations for SWMU-17 wells are presented in Appendix B.

## 4.4 2021 Results and Discussion

Groundwater monitoring data for wells in the source zone and non-source zone are summarized in Tables 4 and 5, respectively. Results for PCE, TCE, and breakdown products are also presented on Figures 12 through 15, with detections highlighted. Contaminant concentration trend charts are presented in Appendix G. Laboratory reports for analytical results are presented in Appendix A. Cumulative groundwater elevation data for SWMU-20 wells are presented in Appendix B.

Groundwater monitoring results indicate concentrations of PCE, TCE, and breakdown products were below the PCULs at all SWMU-20 monitoring wells except one (MW-09A) in November 2021. PCE, TCE, cDCE, and VC had remained below the PCULs at all wells for five consecutive events through November 2020, until cDCE and VC increased at well MW-09A in May 2021.

As shown in Table 4, November 2021 detections of cDCE (378 µg/L) and VC (949 µg/L) at MW-09A exceeded the proposed CULs. These substantial concentrations were preceded by smaller increases in cDCE and VC in November 2020 and May 2021. Ethene+ethane was also elevated in November 2021 (658 µg/L) confirming complete reductive dechlorination to these non-toxic end products; despite elevated cDCE and VC, ethene+ethane comprised 54 percent molar fraction.

The cause of increased cDCE and VC concentrations at MW-9A is unknown. The increases in May and November 2021 were preceded by direct-push drilling performed in March 2021 for collection of RI soil and groundwater samples; boring RISB-11 was located within 15 ft of MW-09A. It is possible that

the agitation associated with percussion drilling and soil sampling resulted in enhanced desorption of contaminant mass now detected and MW-9A. Future groundwater sampling results will help to evaluate the persistence and may shed light on the cause of the observed concentration increases.

Results for 2021 indicate that aquifer redox conditions remain conducive to continued bioremediation following the fifth electron donor injection in SWMU-20 in October and November 2015 (Landau 2019b). Sulfate-reducing to methanogenic aquifer conditions and ethene/ethane production continue at most wells. Additional electron donor injection is not planned at this time.

# 5.0 PLANNED ACTIONS AND SCHEDULE

Planned actions for 2022 consist of two site-wide semiannual (May and November) monitoring events and reporting. Site-wide monitoring will be conducted in accordance with the sampling matrix presented in the IAWP (Landau 2019b) and in Table 6. Monitoring locations are presented on Figure 16. Dependent on future monitoring results, additional nitrate injection may be conducted in AOC-05 in accordance with the November 2007 *AOC-05 Remedial Action Plan* (Landau 2007b) and subsequent September 2009 *Update on AOC-05 Full-Scale Bioremediatio*n *Results* (Landau 2009). Ecology will be notified of the reinjection schedule and will be provided additional details, as necessary.

Reporting will consist of monthly site-wide progress reports and one site-wide annual groundwater monitoring report submitted in early 2022. Boeing will present sampling data, once validated, with select tables and figures as an attachment to a monthly progress report. A brief discussion of semiannual sampling results would be included in the body of the monthly progress report, if necessary.

# 6.0 USE OF THIS REPORT

This annual evaluation report has been prepared for the exclusive use of The Boeing Company for specific application to the Developmental Center site in Tukwila, Washington. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

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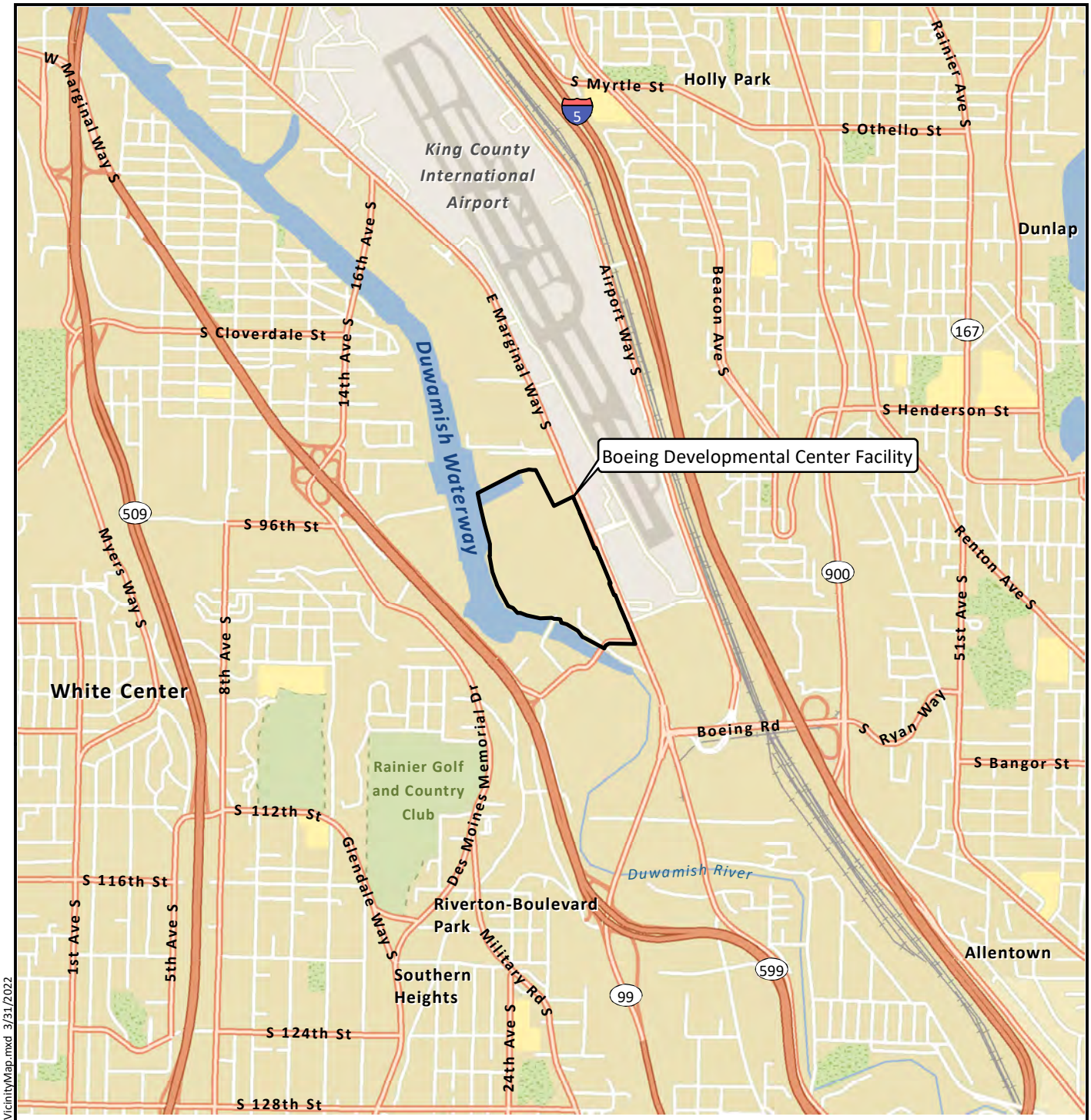


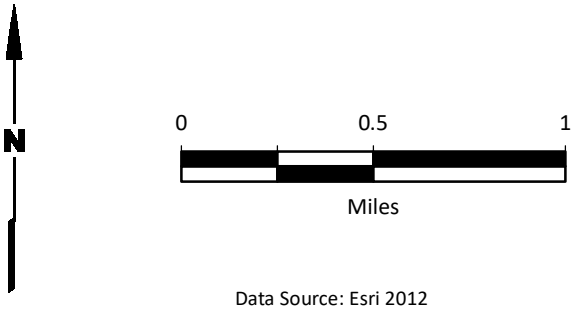

Data Source: Esri 2012

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| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **Vicinity Map** | Figure<br>1 |

G:\Projects\025\093\120\025\DC 2021 Annual Report\F02FacilityBoundary.mxd 3/31/2022

Notes

1. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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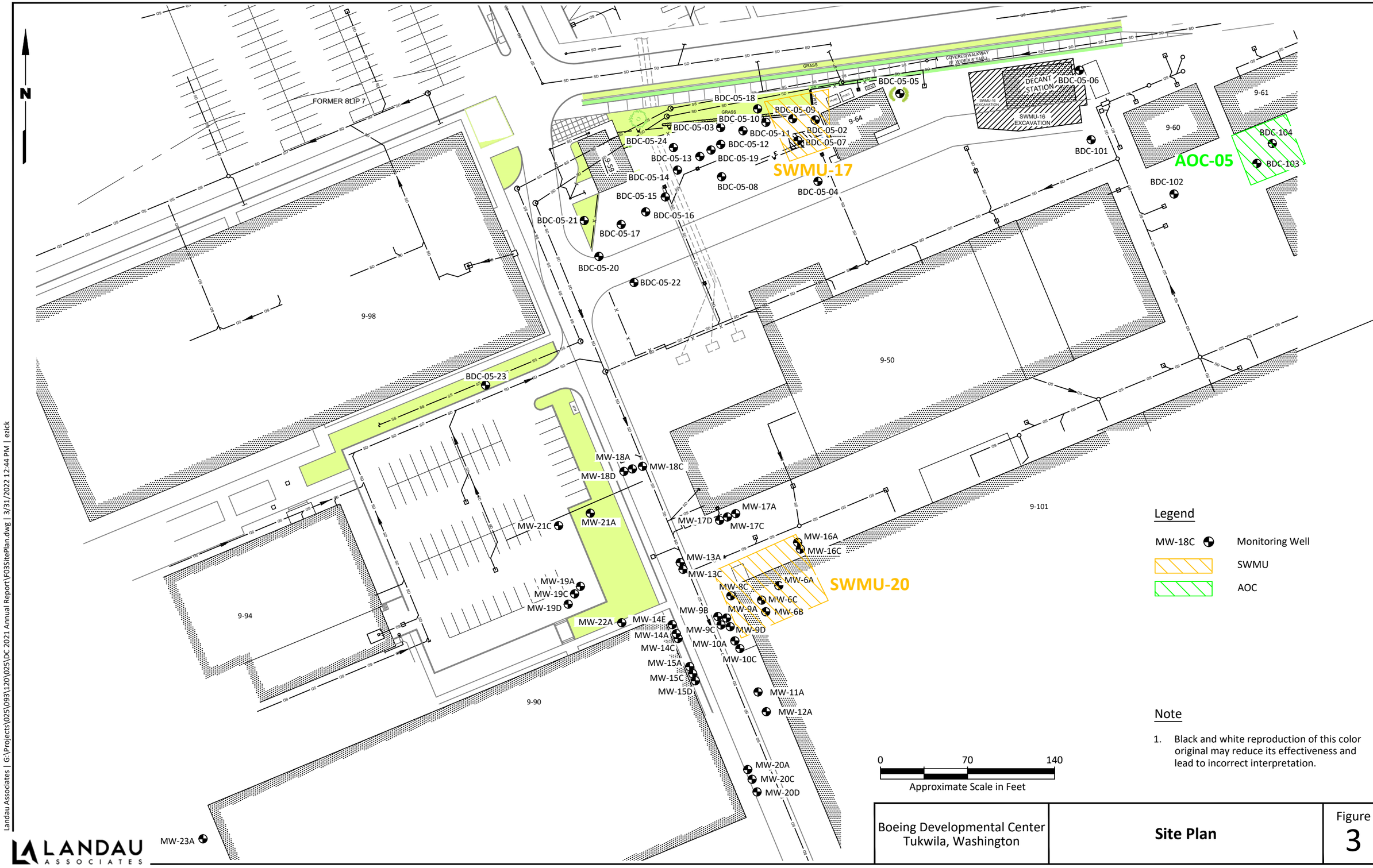
Data Sources: Boeing; Esri World Imagery.

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **Facility Boundary** | Figure<br>2 |




## Legend

- MW-18C — Monitoring Well
- SWMU
- AOC

## Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **Site Plan** | Figure<br>3 |

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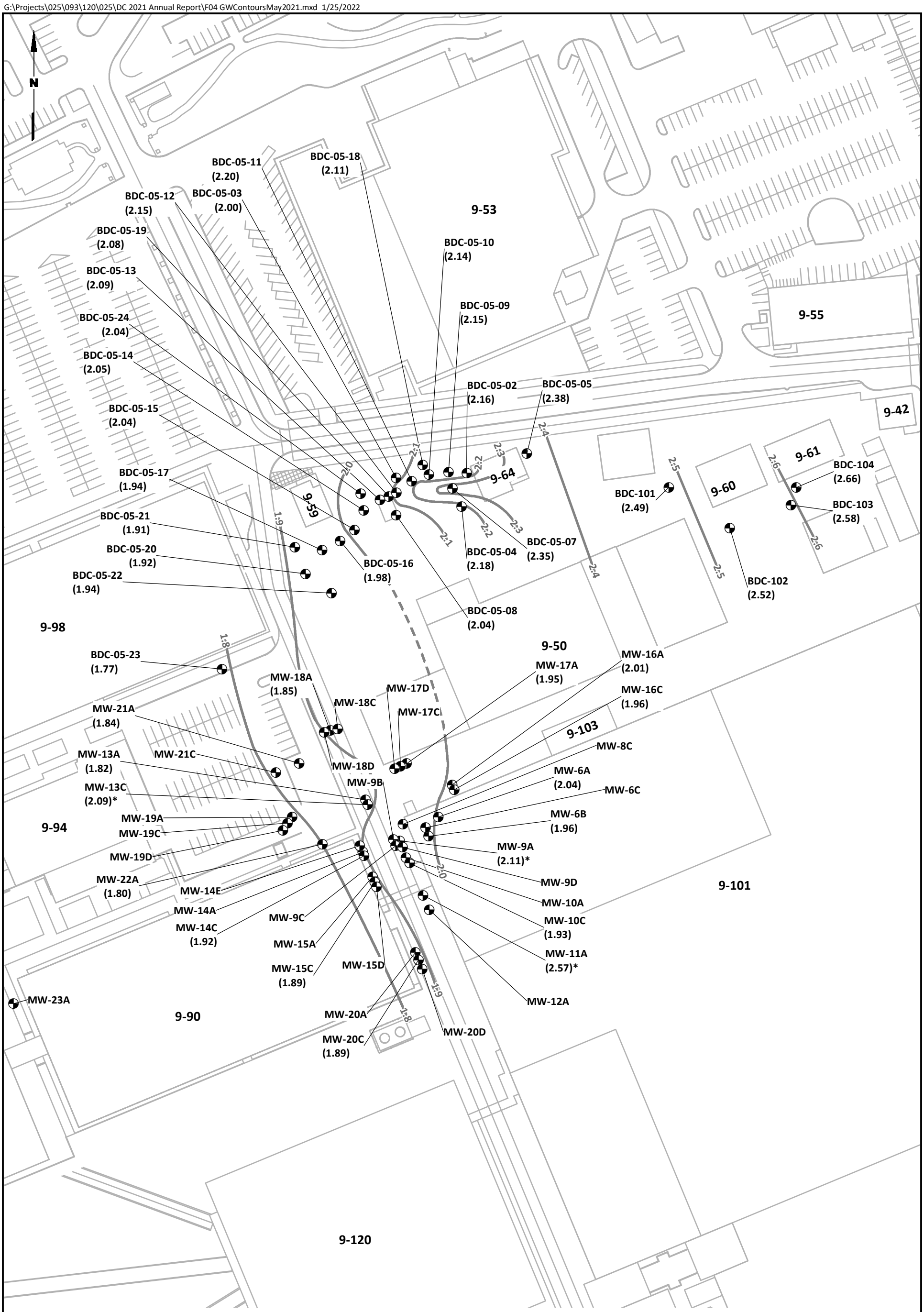
G:\Projects\025\093\120\025\DC 2021 Annual Report\F04 GWContoursMay2021.mxd 1/25/2022




Legend

- Monitoring Well
- Groundwater Contour
- Groundwater Contour (Approx.)

Notes

1. Contours based primarily on A-Zone wells.
2. * Anomalous groundwater not used.

0 100 200

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

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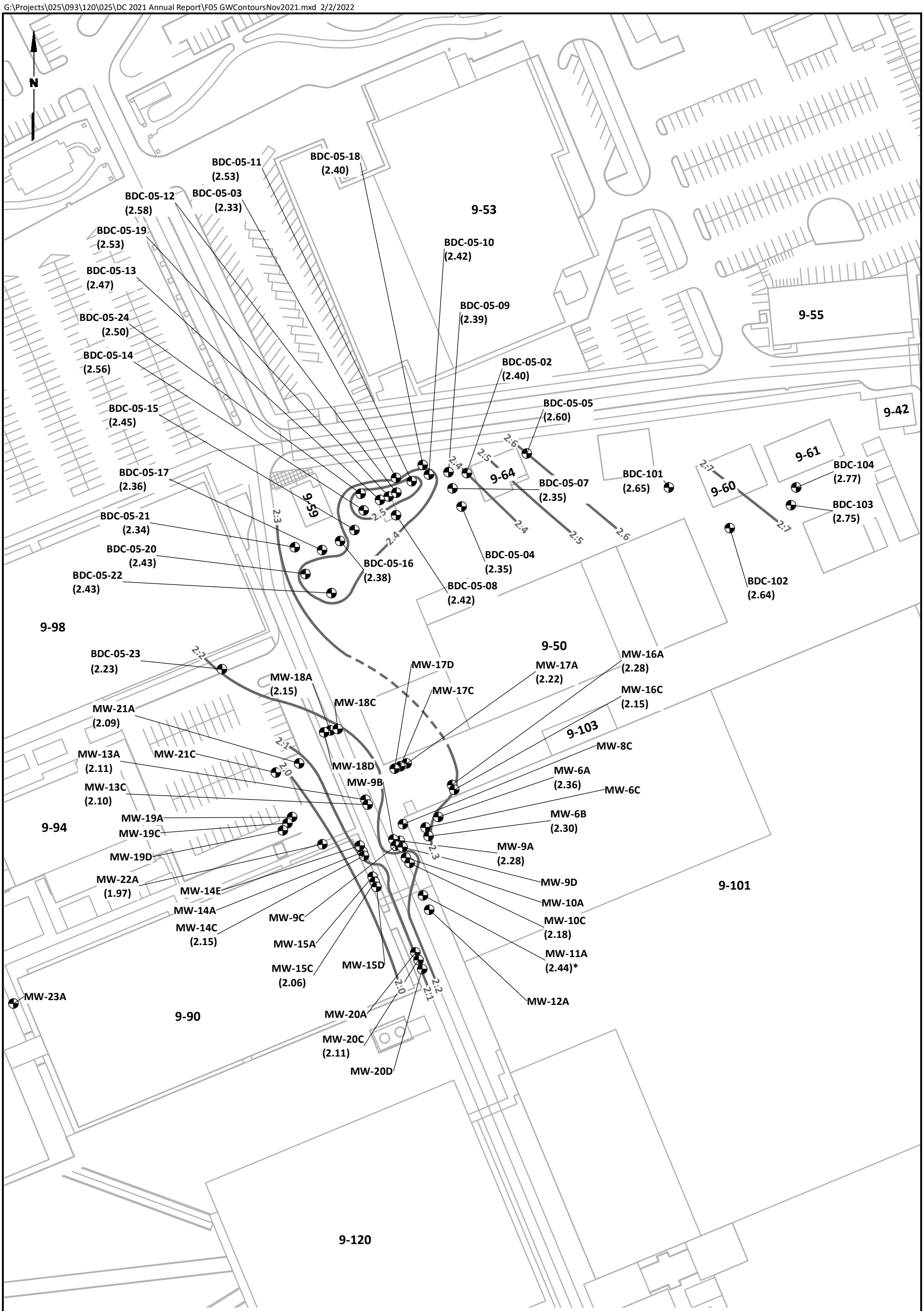
Boeing Developmental Center
Tukwila, Washington

**Groundwater Elevation Contours - May 2021**

Figure 4

G:\Projects\025\093\120\025\DC 2021 Annual Report\F05 GWContoursNov2021.mxd 2/2/2022




Legend

- Monitoring Well
- Groundwater Contour
- Groundwater Contour (Approx.)

Notes

1. Contours based primarily on A-Zone wells.
2. * Anomalous groundwater not used.

0 100 200

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

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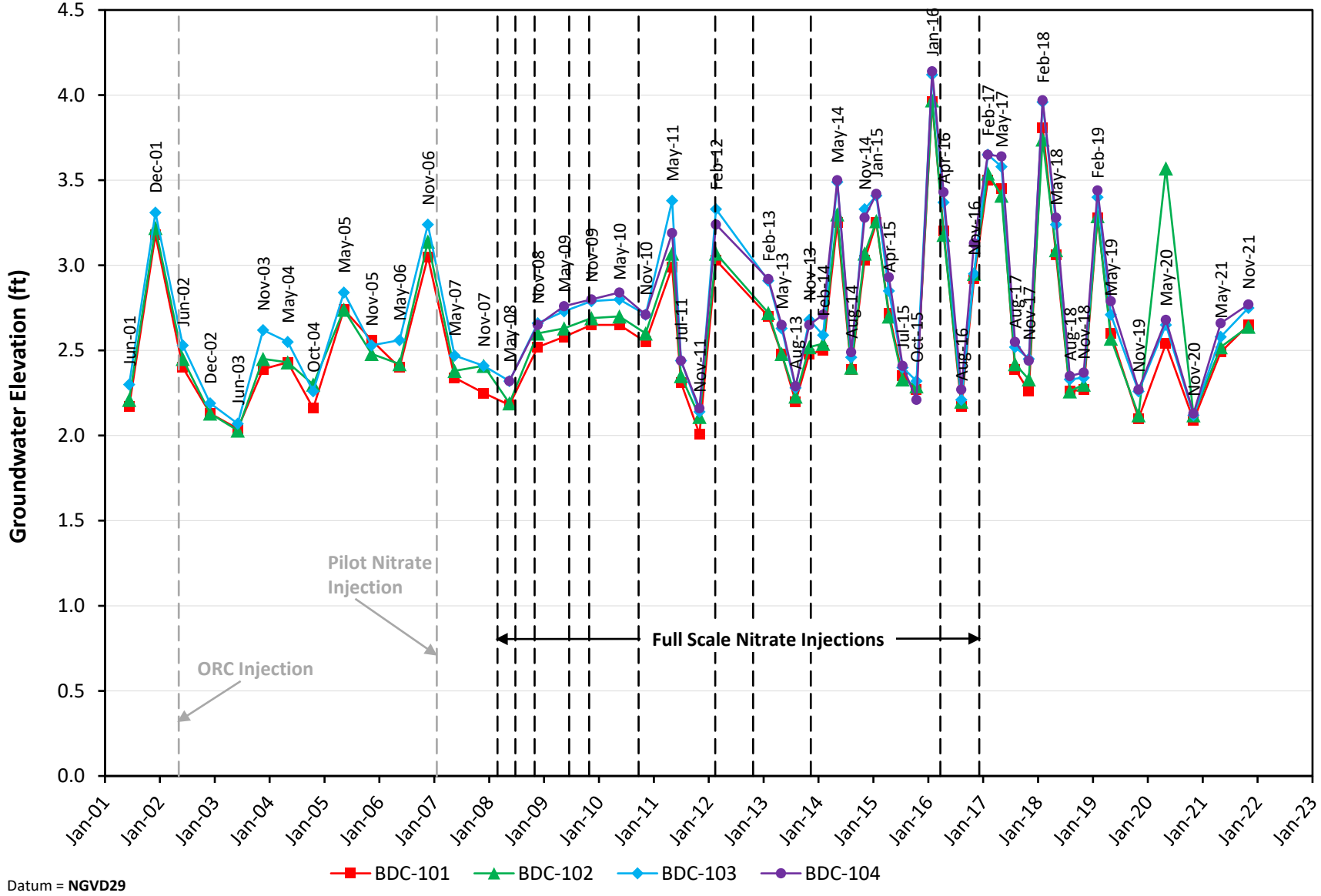
Tukwila, Washington

**Groundwater Elevation Contours - November 2021**

Figure 5

Source: P:\025\093\WIP\T\Data\Master Data Tables\GW Elevations\AOC-05 GW Elev Plot

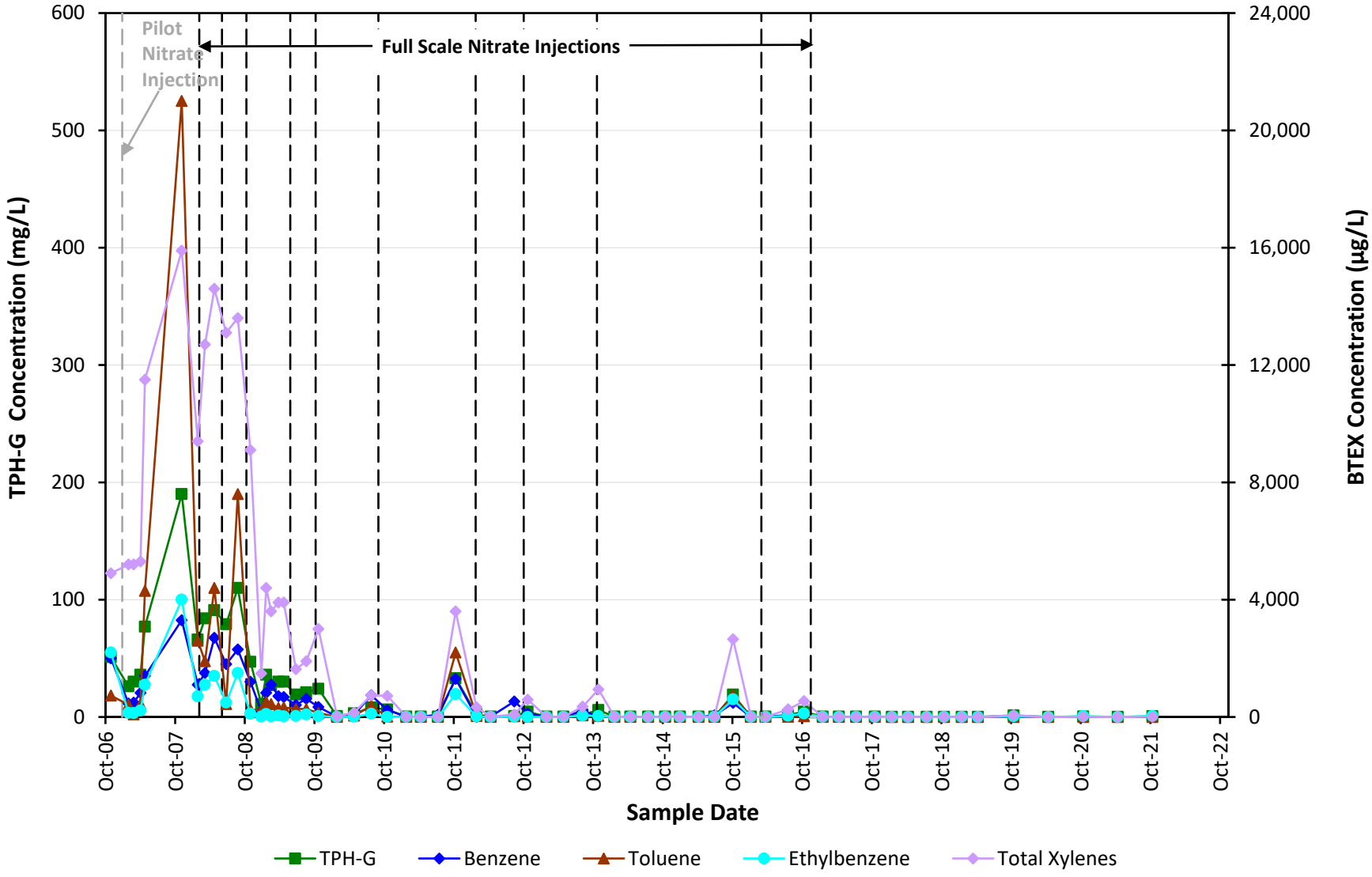



Datum = **NGVD29**

| | | |
|---|---|---|
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **AOC-05: Groundwater Elevations** |

Figure
6

Source: P:\025\093\WIP\T\Data\Master Data Tables\AOC-5\AOC-5 cleanup action tables MASTER.xlsx

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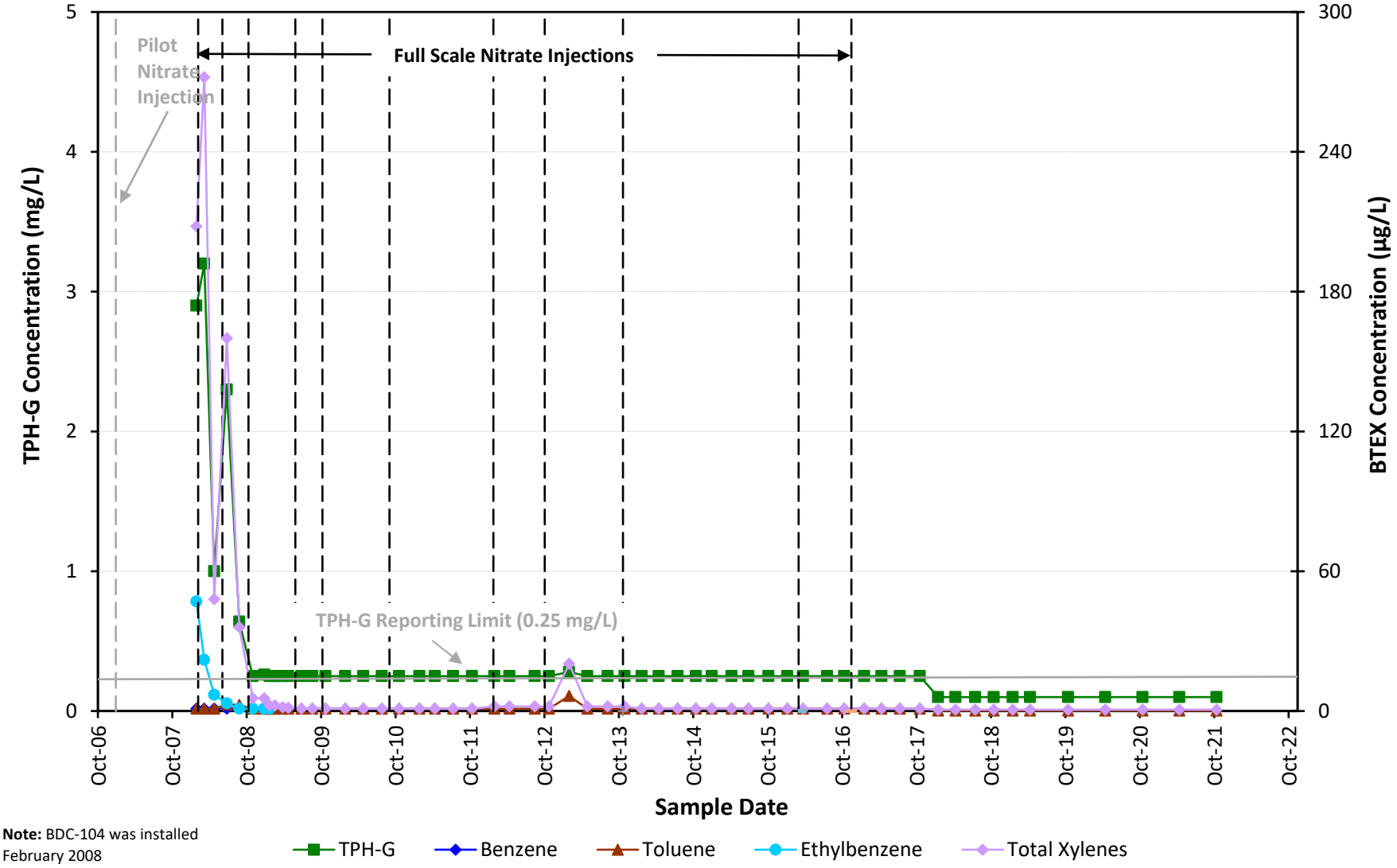
Boeing Developmental Center
Tukwila, Washington

**AOC-05: BDC-103 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing**

Figure
7

Source: P:\025\093\WIP\T\Data\Master Data Tables\AOC-5\AOC-5 cleanup action tables MASTER.xlsx




**Note:** BDC-104 was installed February 2008

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Tukwila, Washington

**AOC-05: BDC-104 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing**

Figure
8

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F09-F10 PCT-TCE-VC November2020.dwg | 1/27/2022 9:34 PM | ezick

N

FORMER SLIP 7

9-59

9-98

9-50

GRASS

COVERED WALKWAY (9' WIDE X 8' TALL)

WALL

HVAC

DECANT STATION

SWMU-16 EXCAVATION

SWMU-16 EXCAVATION

SWMU-17

ATM

Underground Power

BDC-05-18 (2.44/1.54)

BDC-05-03 (<2.0/<0.2)

BDC-05-10 (<0.2/<0.2)

BDC-05-09 (<0.2/<0.2)

BDC-05-02 (0.45/<0.2)

BDC-05-05 (0.8/1.27)

BDC-05-11 (<0.2/<0.2)

BDC-05-19 (<0.2/<0.2)

BDC-05-07 (<0.2/<0.2)

BDC-05-24 (<0.2/<0.2)

BDC-05-12 (<0.2/<0.2)

BDC-05-13 (<0.2/<0.2)

BDC-05-14 (<0.2/<0.2)

BDC-05-08 (<0.2/<0.2)

BDC-05-04 (<0.2/<0.2)

BDC-05-15 (<0.2/<0.2)

BDC-05-16 (<0.2/<0.2)

BDC-05-17 (<0.2/<0.2)

BDC-05-21 (<0.2/<0.2)

BDC-05-20 (<0.2/<0.2)

BDC-05-22 (<0.2/<0.2)

BDC-05-23 (<0.2/<0.2)

Legend

| | |
|---|---|
| BDC-05-05 | Monitoring Well |
| BDC-05-09 | August 2011 Injection Well |
| BDC-05-02 | November 2017 Injection Well |
| | SWMU |
| (<0.2/<0.2) | PCE/TCE Concentration (µg/L) |
| (3.41/1.42) | PCE/TCE Concentration Above PCUL (µg/L) |

Notes

1. The proposed cleanup levels (PCULs) for tetrachloroethene (PCE) and trichloroethylene (TCE) are 5.3 and 1.4 µg/L respectively.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80

Approximate Scale in Feet

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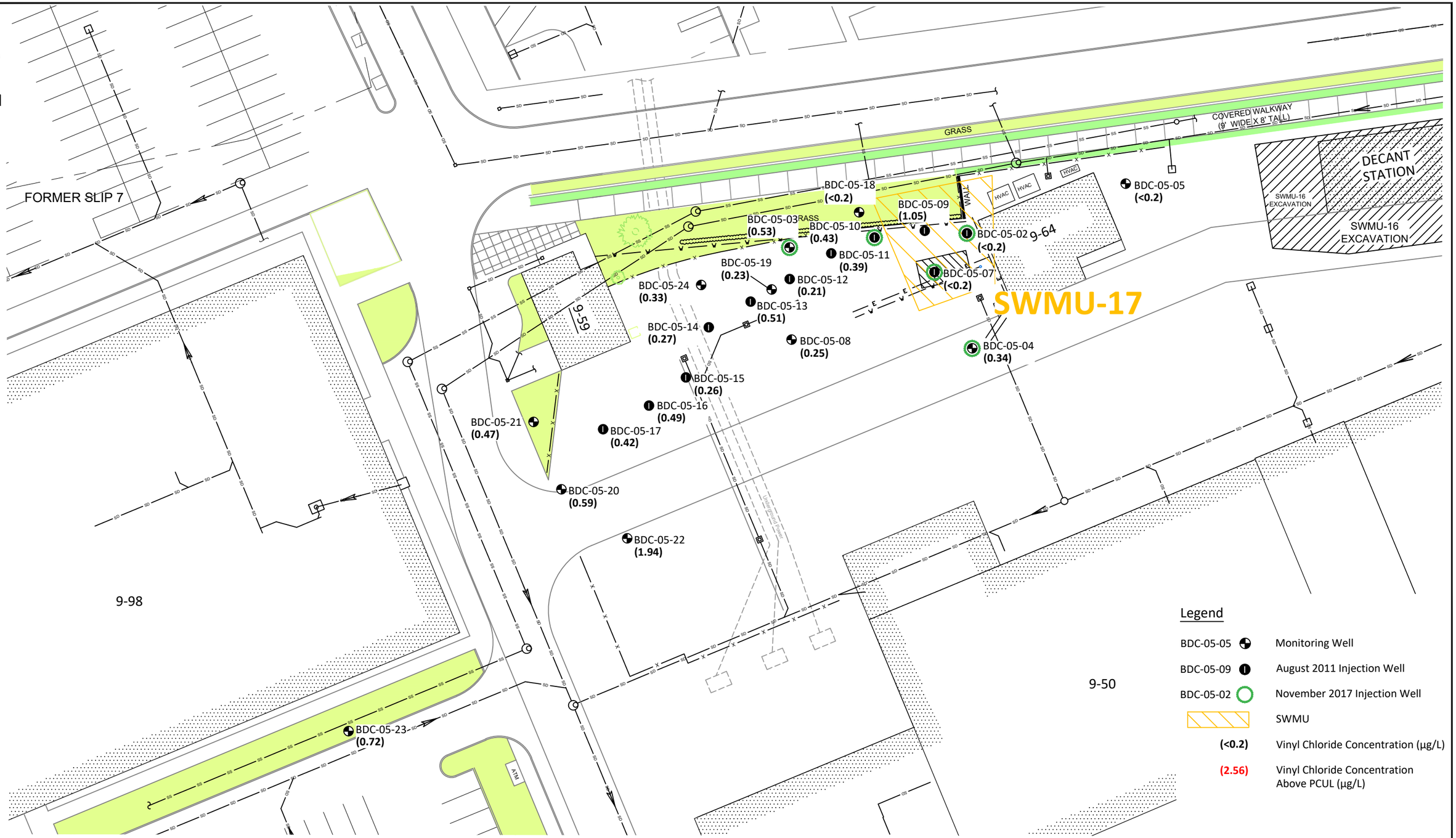
Tukwila, Washington

**PCE / TCE in Groundwater**
**November 2021**

Figure
9




Note

1. The proposed cleanup level for vinyl chloride is 2.4 µg/L.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80
Approximate Scale in Feet

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **Vinyl Chloride in Groundwater<br>November 2021** | Figure<br>10 |

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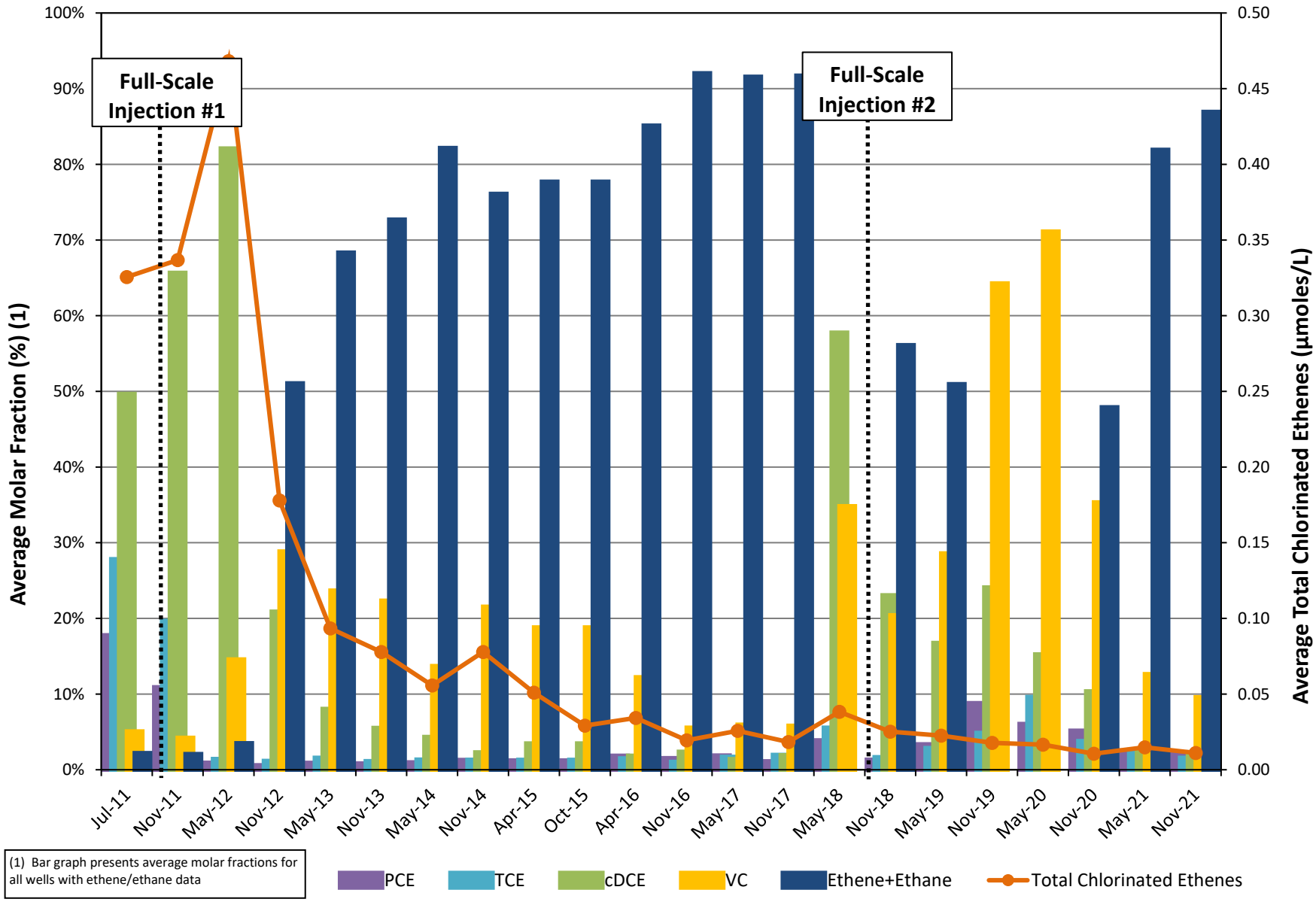
Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F09-F10 PCT-TCE-VC November2020.dwg | 1/27/2022 9:34 PM | ezick

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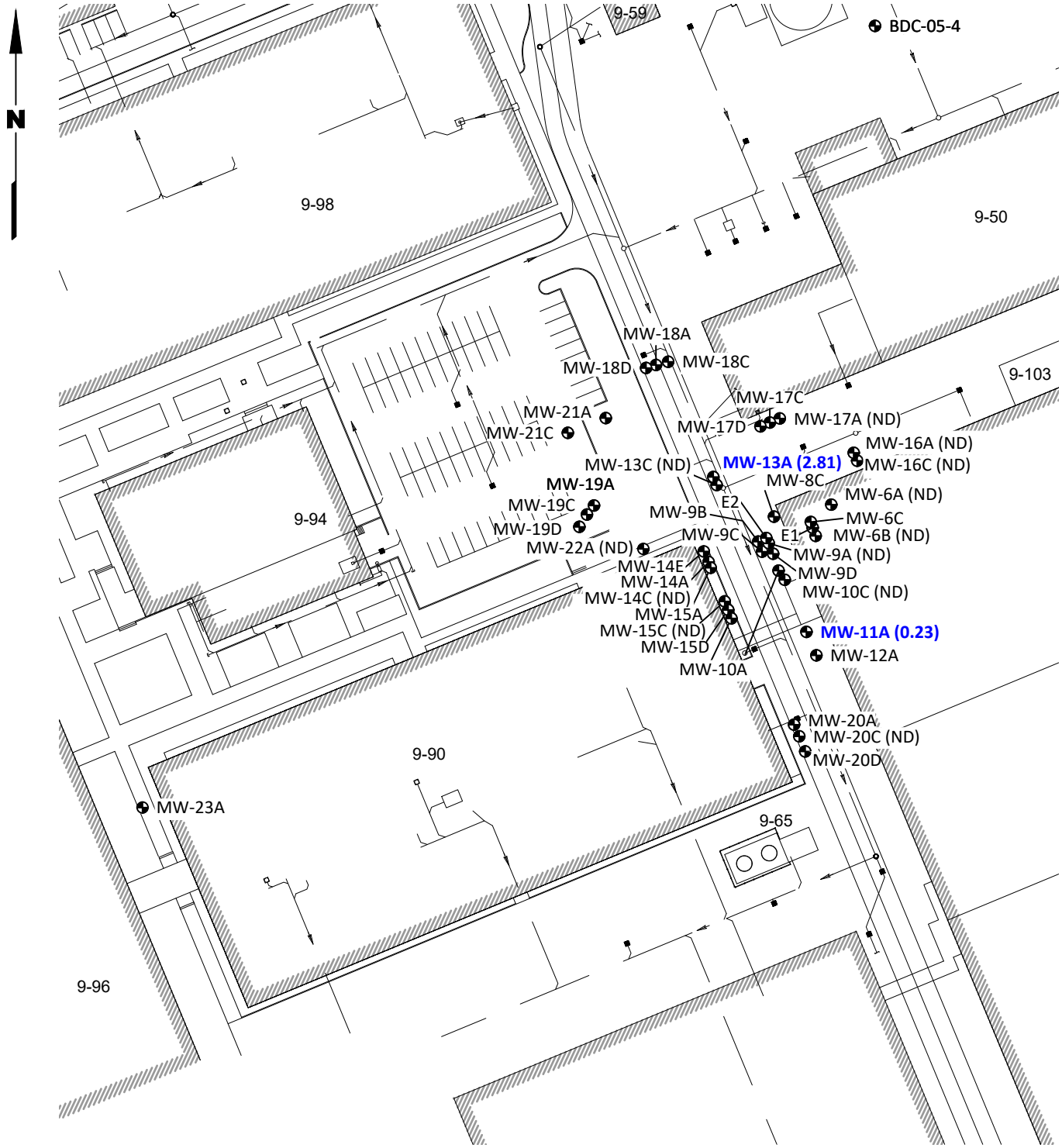
Boeing Developmental Center
Tukwila, Washington

**SWMU-17: Average Molar Fraction and Average Chlorinated Ethenes**

Figure
11

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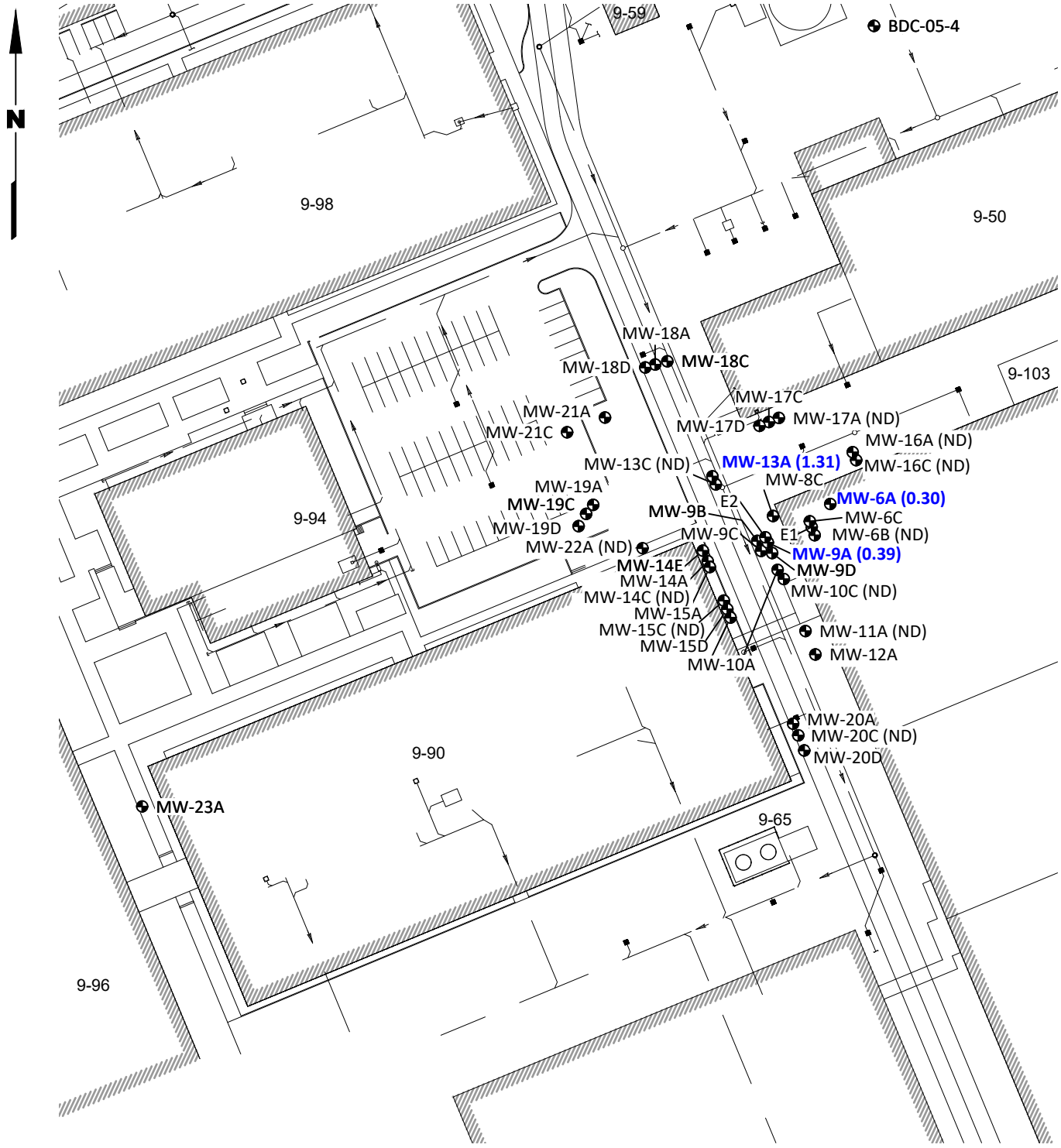
| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20 PCE<br>November 2021<br>Groundwater Concentrations** | Figure<br>12 |

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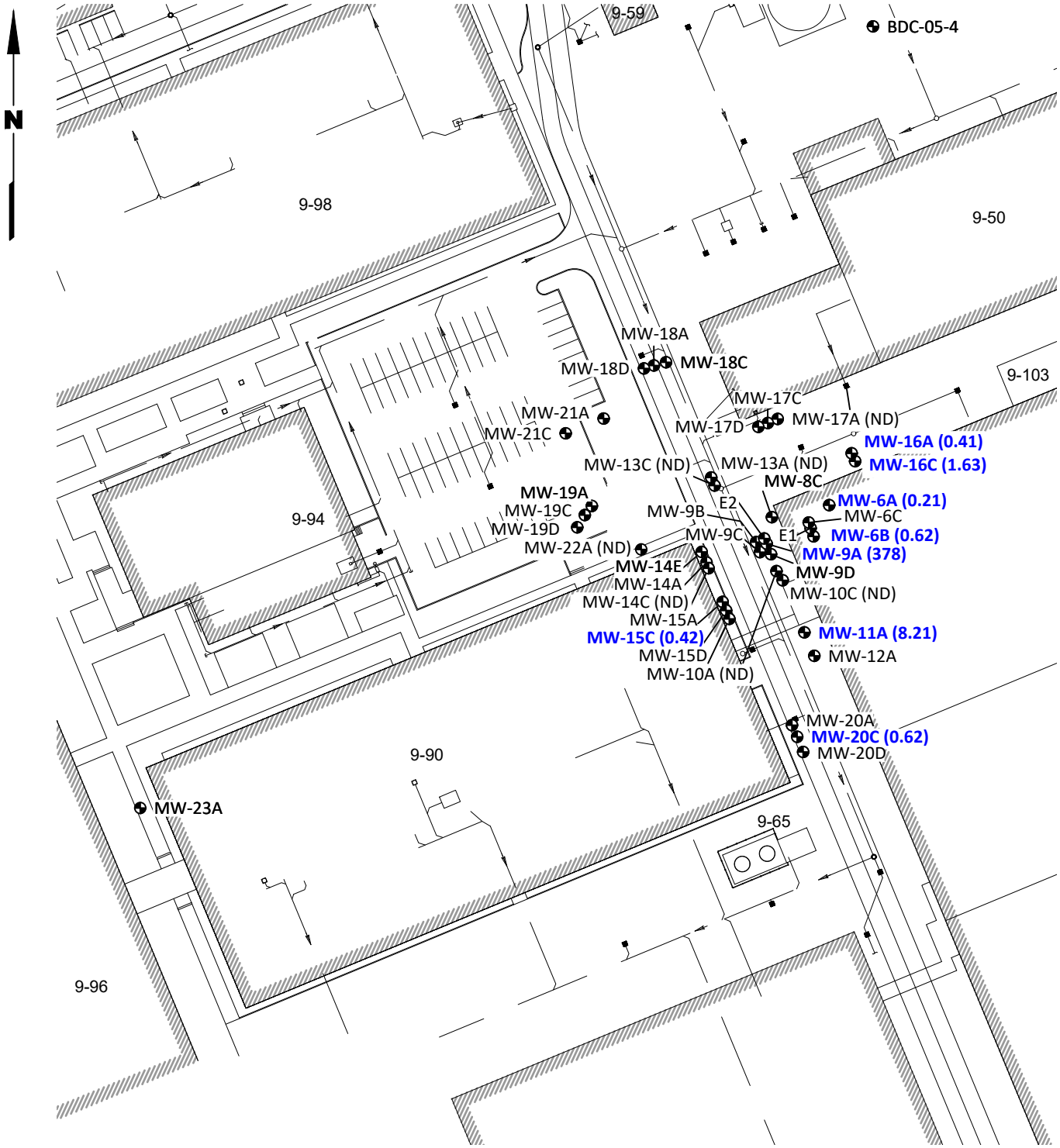
| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20 TCE<br>November 2021<br>Groundwater Concentrations** | Figure<br>13 |

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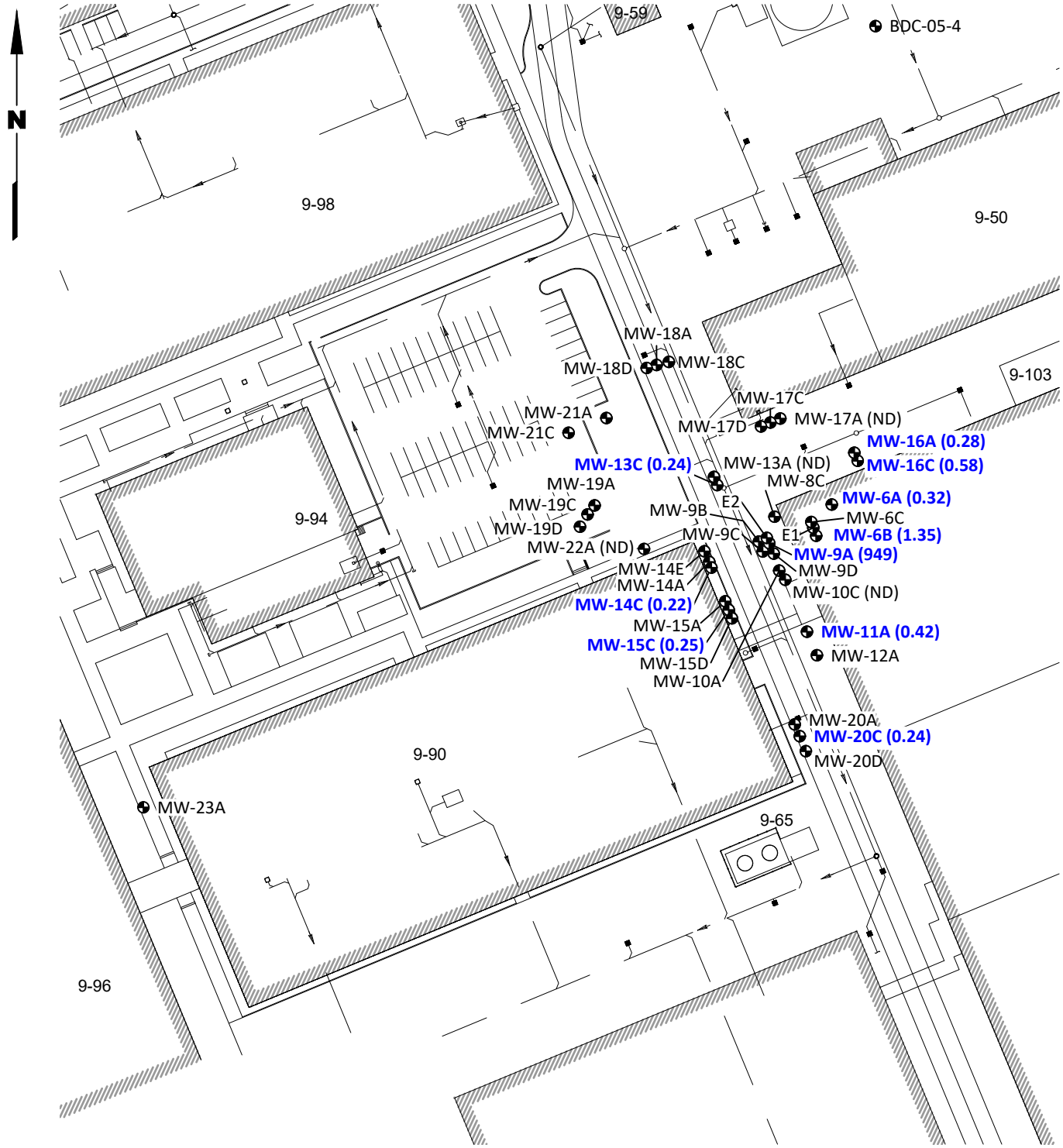
LANDAU ASSOCIATES

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20 cDCE<br>November 2021<br>Groundwater Concentrations** | Figure<br>14 |

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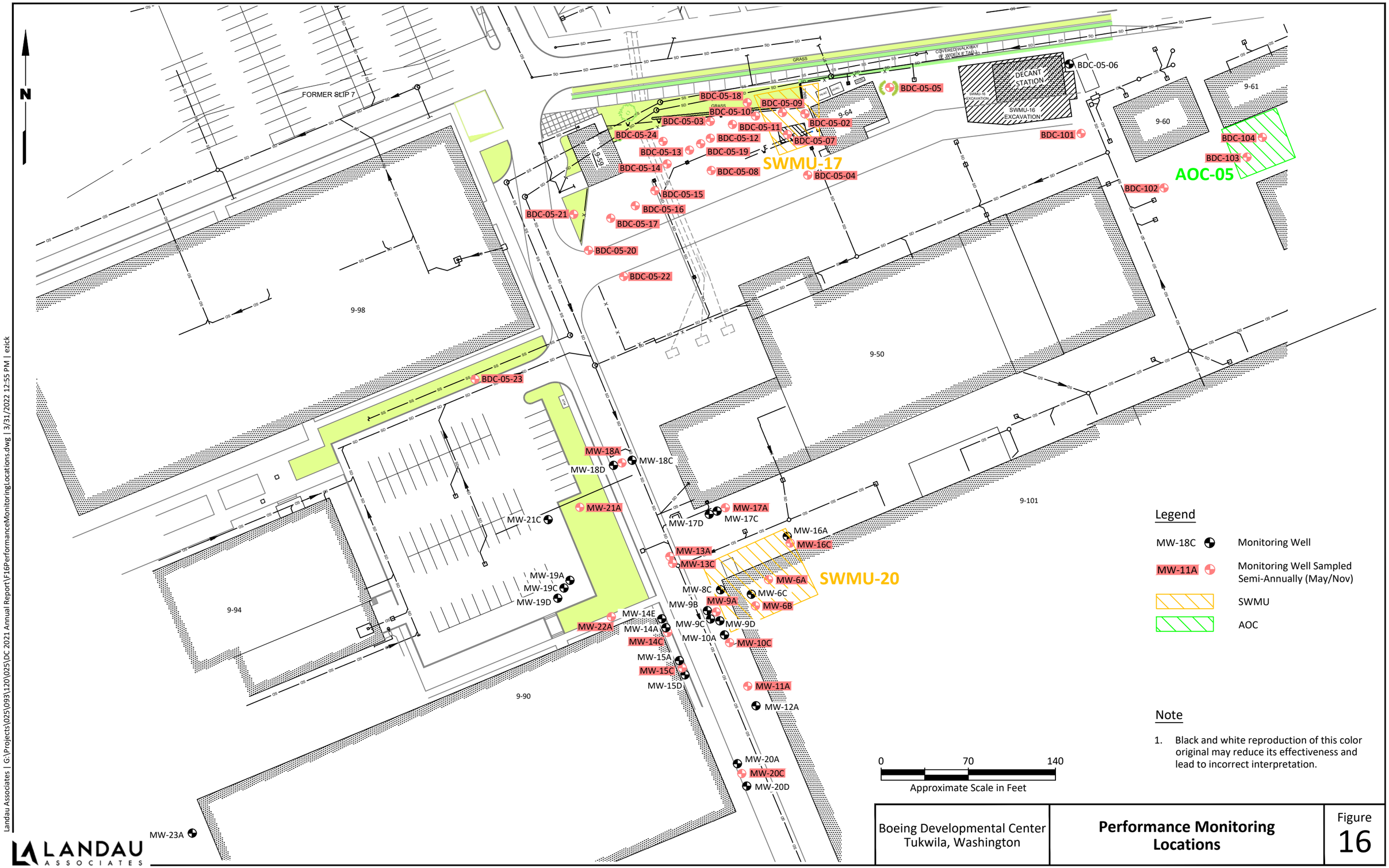
| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20 VC<br>November 2021<br>Groundwater Concentrations** | Figure<br>15 |




## Legend

- MW-18C — Monitoring Well
- MW-11A — Monitoring Well Sampled Semi-Annually (May/Nov)
- SWMU
- AOC

## Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **Performance Monitoring Locations** | Figure<br>16 |

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Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F16PerformanceMonitoringLocations.dwg | 3/31/2022 12:55 PM | ezick

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | ORC Injection | Pilot Injection | Full Scale Injection 1 | Full Scale Injection 2 | Full Scale Injection 3 | Full Scale Injection 4 | Full Scale Injection 5 | Full Scale Injection 6 | Full Scale Injection 7 | Full Scale Injection 8 | Full Scale Injection 9 | Full Scale Injection 10 | Full Scale Injection 11 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BDC-103 | BDC-103 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | Volatile Organic Compounds | | | | | | | Aquifer Redox Conditions | | | | | | | Donor Indicators | |
| | | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | TPH-G (mg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | m,p-Xylene (µg/L) | o-Xylene (µg/L) | Total Xylenes (µg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Nitrite-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (µg/L) | ORP (mV) | TOC (mg/L) | pH |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | | | | | | | | | | | **0.8** | **2.0** | **1294** | **1.7** | **NA** | **NA** | **1546** | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-101 | 6/11/2001 | | | | | | | | | | | | | | 3.0 | 11.9 | <1.0 | 113.1 | | | 109.2 | | | | | | | | |
| BDC-101 | 9/4/2001 | | | | | | | | | | | | | | 5.0 | 7.13 | 10.7 | 50.4 | | | 53.8 | | | | | | | | |
| BDC-101 | 12/3/2001 | | | | | | | | | | | | | | 6.5 | 95 | 1.6 | 750 | | | 650 | | | | | | | | |
| BDC-101 | 3/13/2002 | | | | | | | | | | | | | | <0.25 | 1.4 | <1.0 | 4.4 | | | <1.0 | | | | | | | | |
| BDC-101 | 4/29/2002 | -8 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | 2.2 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 6/3/2002 | 27 | | | | | | | | | | | | | <0.25 | 1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 7/1/2002 | 55 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 8/1/2002 | 86 | | | | | | | | | | | | | <0.25 | 3.1 | <1.0 | 2.4 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 12/2/2002 | 209 | | | | | | | | | | | | | 0.61 | 4.3 | <1.0 | 21 | 27 | 6.4 | 33.4 | | | | | | | | |
| BDC-101 | 3/10/2003 | 307 | | | | | | | | | | | | | <0.25 | 1.0 | <1.0 | 4.5 | 3.2 | <1.0 | 3.2 | | | | | | | | |
| BDC-101 | 6/3/2003 | 392 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 11/19/2003 | 561 | | | | | | | | | | | | | 0.42 | 13 | <1.0 | 15 | 35 | <1.0 | 35 | 0.36 | 1.1 | 0.010 | 0.2 | 16 | 240 | 120.3 | | |
| BDC-101 | 4/28/2004 | 722 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 10/18/2004 | 895 | | | | | | | | | | | | | 0.64 | 10 | <1.0 | 15 | 43 | <1.0 | 43 | | | | | | | | |
| BDC-101 | 5/10/2005 | 1,099 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | |
| BDC-101 | 11/10/2005 | 1,283 | | | | | | | | | | | | | 0.25 | 7.6 | <1.0 | 2.6 | 42 | <1.0 | 42 | 0.96 | 4.4 | | | 34.3 | | 259 | 2.05 | |
| BDC-101 | 5/15/2006 | 1,469 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.78 | 17.8 | 0.059 | 0.0 | 64.1 | | 80 | | |
| BDC-101 | 11/20/2006 | 1,658 | -59 | | | | | | | | | | | | 1.1 | 10 | <1.0 | 15 | 72.0 | <1.0 | 72 | 0.92 | 0.122 | 0.016 | 2.4 | 8.7 | | 174 | | |
| BDC-101 | 2/20/2007 | 1,750 | 33 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.39 | 15.0 | 0.047 | 0.2 | 50.0 | | 277 | | 6.63 |
| BDC-101 | 3/19/2007 | 1,777 | 60 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.97 | 8.83 | 0.037 | 0.5 | 38.5 | | 213 | | 6.60 |
| BDC-101 | 4/24/2007 | 1,813 | 96 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.09 | 9.59 | 0.041 | 0.5 | 34.1 | | 136 | | 6.46 |
| BDC-101 | 5/17/2007 | 1,836 | 119 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.35 | 9.95 | 0.046 | 0.4 | 35.7 | | 297 | | 6.55 |
| BDC-101 | 11/26/2007 | 2,029 | 312 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | 2.1 | 6.5 | <1.0 | 6.5 | 2.30 | 5.88 | 0.032 | 0.0 | 26.8 | | 287 | | |
| BDC-101 | 2/18/2008 | 2,113 | 396 | -8 | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.55 | 8.10 | 0.040 | 0.0 | 31.5 | | 341 | | 6.29 |
| BDC-101 | 3/27/2008 | 2,151 | 434 | 30 | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.19 | 9.3 | <0.10 | 0.2 | 40.0 | | 506 | | |
| BDC-101 | 5/15/2008 | 2,200 | 483 | 79 | -40 | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.57 | 6.8 | <0.10 | 0.0 | 24.6 | | 176 | | 6.44 |
| BDC-101 | 7/16/2008 | 2,262 | 545 | 141 | 22 | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.34 | 5.3 | <0.10 | 0.0 | 21.8 | | -232 | | 6.52 |
| BDC-101 | 9/15/2008 | 2,323 | 606 | 202 | 83 | -45 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.22 | 5.33 | 0.023 | 0.0 | 28.7 | | 153 | | |
| BDC-101 | 11/20/2008 | 2,389 | 672 | 268 | 149 | 21 | | | | | | | | | 0.44 | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.45 | 2.9 | 0.1 | 0.8 | 17.1 | | -22 | | 6.65 |
| BDC-101 | 1/16/2009 | 2,446 | 729 | 325 | 206 | 78 | | | | | | | | | <0.25 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0 | 4.40 | 0.042 | 0.4 | 29.5 | | -245 | | 6.50 |
| BDC-101 | 2/11/2009 | 2,472 | 755 | 351 | 232 | 104 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.62 | 8.5 | <0.1 | 0.4 | 39.6 | | -16 | | 6.43 |
| BDC-101 | 3/9/2009 | 2,498 | 781 | 377 | 258 | 130 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.93 | 9.4 | <0.1 | 0.0 | 46.8 | | 54 | | 6.54 |
| BDC-101 | 4/16/2009 | 2,536 | 819 | 415 | 296 | 168 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.69 | 9.0 | <0.1 | 0.0 | 36.0 | | 131 | | 6.61 |
| BDC-101 | 5/14/2009 | 2,564 | 847 | 443 | 324 | 196 | -34 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.00 | 13.0 | <0.1 | 0.0 | 44.4 | | 68 | | 6.81 |
| BDC-101 | 7/17/2009 | 2,628 | 911 | 507 | 388 | 260 | 30 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.80 | 12.6 | <0.1 | 0.0 | 49.0 | | 19 | | 7.17 |
| BDC-101 | 9/9/2009 | 2,682 | 965 | 561 | 442 | 314 | 84 | -49 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.25 | 6.2 | <0.1 | 0.0 | 31.7 | | 179 | | 6.90 |
| BDC-101 | 11/12/2009 | 2,746 | 1,029 | 625 | 506 | 378 | 148 | 15 | | | | | | | 0.35 | 1.8 | <1.0 | 6.6 | 16 | <1.0 | 16 | 1.37 | 11.3 | <0.1 | 0-0.2 | 36.7 | | 124 | | 6.53 |
| BDC-101 | 2/17/2010 | 2,843 | 1,126 | 722 | 603 | 475 | 245 | 112 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.86 | 13.9 | <0.1 | 0.0 | 48.7 | | 640 | | 6.55 |
| BDC-101 | 5/17/2010 | 2,932 | 1,215 | 811 | 692 | 564 | 334 | 201 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.20 | 20.7 | <1.0 | 0.0 | 58.7 | | 372 | | 6.86 |
| BDC-101 | 8/16/2010 | 3,023 | 1,306 | 902 | 783 | 655 | 425 | 292 | -37 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.21 | 15.6 | <0.1 | 0.0 | 56.9 | | 76 | | 7.21 |
| BDC-101 | 11/8/2010 | 3,107 | 1,390 | 986 | 867 | 739 | 509 | 376 | 47 | | | | | | <0.25 | 2.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.02 | 2.2 | <0.1 | 0.4 | 14.7 | | 145 | | 6.97 |
| BDC-101 | 2/16/2011 | 3,207 | 1,490 | 1,086 | 967 | 839 | 609 | 476 | 147 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 7.46 | 23.9 | <0.1 | 0.0 | 68.2 | | 161 | | 7.30 |
| BDC-101 | 5/3/2011 | 3,283 | 1,566 | 1,162 | 1,043 | 915 | 685 | 552 | 223 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.57 | 23.7 | <0.1 | 0.0 | 66.2 | | 208 | | 6.99 |
| BDC-101 | 8/1/2011 | 3,373 | 1,656 | 1,252 | 1,133 | 1,005 | 775 | 642 | 313 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.50 | 17.9 | <0.1 | 0.0 | 48.1 | | 150 | | 7.07 |
| BDC-101 | 11/1/2011 | 3,465 | 1,748 | 1,344 | 1,225 | 1,097 | 867 | 734 | 405 | -105 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 6.69 | 6.1 | <0.1 | 0.0 | 24.8 | | 40 | | 7.23 |
| BDC-101 | 2/19/2012 | 3,575 | 1,858 | 1,454 | 1,335 | 1,207 | 977 | 844 | 515 | 5 | | | | | <0.25 | 2.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.53 | 6.6 | | 0.3 | 27.7 | | 12 | | 6.81 |
| BDC-101 | 5/3/2012 | 3,649 | 1,932 | 1,528 | 1,409 | 1,281 | 1,051 | 918 | 589 | 79 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 3.75 | 15.9 | | 0.0 | 51.2 | | 263 | | 6.60 |
| BDC-101 | 9/4/2012 | 3,773 | 2,056 | 1,652 | 1,533 | 1,405 | 1,175 | 1,042 | 713 | 203 | -49 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.88 | 13.8 | <0.10 | 0.0 | 36.0 | | 154 | | 6.97 |
| BDC-101 | 11/13/2012 | 3,843 | 2,126 | 1,722 | 1,603 | 1,475 | 1,245 | 1,112 | 783 | 273 | 21 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.41 | 10.3 | <0.10 | 0.0 | 40.4 | | 150 | | 6.90 |
| BDC-101 | 2/20/2013 | 3,942 | 2,225 | 1,821 | 1,702 | 1,574 | 1,344 | 1,211 | 882 | 372 | 120 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 2.55 | 21.3 | <0.10 | 0.2 | 68.0 | | 73 | | 6.83 |
| BDC-101 | 5/20/2013 | 4,031 | 2,314 | 1,910 | 1,791 | 1,663 | 1,433 | 1,300 | 971 | 461 | 209 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 3.35 | 17 | <0.10 | 0.0 | 52.9 | | -190 | | 6.72 |
| BDC-101 | 8/28/2013 | 4,131 | 2,414 | 2,010 | 1,891 | 1,763 | 1,533 | 1,400 | 1,071 | 561 | 309 | -76 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 1.99 | 10.5 | <0.10 | 0.0 | 41.5 | | -277 | | 6.46 |
| BDC-101 | 11/19/2013 | 4,214 | 2,497 | 2,093 | 1,974 | 1,846 | 1,616 | 1,483 | 1,154 | 644 | 392 | 7 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 2.53 | 7.6 | <0.10 | 0.0 | 28.3 | | -173 | | 6.67 |
| BDC-101 | 2/11/2014 | 4,298 | 2,581 | 2,177 | 2,058 | 1,930 | 1,700 | 1,567 | 1,238 | 728 | 476 | 91 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.65 | 7.7 | <0.10 | 0.0 | 29.1 | | -223 | | 6.80 |
| BDC-101 | 5/6/2014 | 4,382 | 2,665 | 2,261 | 2,142 | 2,014 | 1,784 | 1,651 | 1,322 | 812 | 560 | 175 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 6.79 | 19.6 | <0.10 | 0.0 | 64.2 | | -149 | | 6.71 |
| BDC-101 | 8/7/2014 | 4,475 | 2,758 | 2,354 | 2,235 | 2,107 | 1,877 | 1,744 | 1,415 | 905 | 653 | 268 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.25 | 17.2 | <0.10 | 0.0 | 51.4 | | 71 | | 7.22 |

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | ORC Injection | Pilot Injection | Full Scale Injection 1 | Full Scale Injection 2 | Full Scale Injection 3 | Full Scale Injection 4 | Full Scale Injection 5 | Full Scale Injection 6 | Full Scale Injection 7 | Full Scale Injection 8 | Full Scale Injection 9 | Full Scale Injection 10 | Full Scale Injection 11 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BDC-103 | BDC-103 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | Volatile Organic Compounds | | | | | | | | Aquifer Redox Conditions | | | | | | | Donor Indicators | |
| | | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | TPH-G (mg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | m,p-Xylene (µg/L) | o-Xylene (µg/L) | Total Xylenes (µg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Nitrite-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (µg/L) | ORP (mV) | TOC (mg/L) | pH |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | | | | | | | | | | | **0.8** | **2.0** | **1294** | **1.7** | **NA** | **NA** | **1546** | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-101 | 11/4/2014 | 4,564 | 2,847 | 2,443 | 2,324 | 2,196 | 1,966 | 1,833 | 1,504 | 994 | 742 | 357 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.22 | 7.8 | <0.10 | 0.0 | 29.7 | | 77 | | 6.72 |
| BDC-101 | 1/21/2015 | 4,642 | 2,925 | 2,521 | 2,402 | 2,274 | 2,044 | 1,911 | 1,582 | 1,072 | 820 | 435 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.07 | 21.3 | <0.10 | 0.0 | 44.6 | | 97 | | 6.29 |
| BDC-101 | 4/28/2015 | 4,739 | 3,022 | 2,618 | 2,499 | 2,371 | 2,141 | 2,008 | 1,679 | 1,169 | 917 | 532 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.55 | 19.1 | <0.10 | 0.0 | 48.4 | | 82 | | 6.37 |
| BDC-101 | 7/20/2015 | 4,822 | 3,105 | 2,701 | 2,582 | 2,454 | 2,224 | 2,091 | 1,762 | 1,252 | 1,000 | 615 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.96 | 19.7 | <0.10 | 0.2 | 57.2 | | 96 | | 6.30 |
| BDC-101 | 10/26/2015 | 4,920 | 3,203 | 2,799 | 2,680 | 2,552 | 2,322 | 2,189 | 1,860 | 1,350 | 1,098 | 713 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.63 | 8.8 | <0.10 | 0.0 | 38.6 | | 92 | | 6.64 |
| BDC-101 | 1/27/2016 | 5,013 | 3,296 | 2,892 | 2,773 | 2,645 | 2,415 | 2,282 | 1,953 | 1,443 | 1,191 | 806 | -56 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 7.37 | 12.3 | <0.10 | 0.0 | 40.3 | | 102 | | 6.48 |
| BDC-101 | 4/13/2016 | 5,090 | 3,373 | 2,969 | 2,850 | 2,722 | 2,492 | 2,359 | 2,030 | 1,520 | 1,268 | 883 | 21 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.94 | 23.7 | <0.10 | 0.0 | 65.4 | | 68 | | 6.94 |
| BDC-101 | 8/9/2016 | 5,208 | 3,491 | 3,087 | 2,968 | 2,840 | 2,610 | 2,477 | 2,148 | 1,638 | 1,386 | 1,001 | 139 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.90 | 16.1 | <0.10 | | 45.8 | | 40.6 | | 6.36 |
| BDC-101 | 11/1/2016 | 5,292 | 3,575 | 3,171 | 3,052 | 2,924 | 2,694 | 2,561 | 2,232 | 1,722 | 1,470 | 1,085 | 223 | -35 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.70 | 2.3 | <0.10 | | 20.0 | | 57.9 | | 6.45 |
| BDC-101 | 2/7/2017 | 5,390 | 3,673 | 3,269 | 3,150 | 3,022 | 2,792 | 2,659 | 2,330 | 1,820 | 1,568 | 1,183 | 321 | 63 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.26 | 17.1 | <0.10 | | 54.3 | | 57 | | 6.58 |
| BDC-101 | 5/3/2017 | 5,475 | 3,758 | 3,354 | 3,235 | 3,107 | 2,877 | 2,744 | 2,415 | 1,905 | 1,653 | 1,268 | 406 | 148 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.85 | 24.5 | <0.10 | | 65.5 | | 69.1 | | 6.44 |
| BDC-101 | 8/1/2017 | 5,565 | 3,848 | 3,444 | 3,325 | 3,197 | 2,967 | 2,834 | 2,505 | 1,995 | 1,743 | 1,358 | 496 | 238 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.86 | 19.3 | <0.10 | | 58.3 | | 119.6 | | 6.16 |
| BDC-101 | 11/7/2017 | 5,663 | 3,946 | 3,542 | 3,423 | 3,295 | 3,065 | 2,932 | 2,603 | 2,093 | 1,841 | 1,456 | 594 | 336 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.78 | 12.3 | <0.10 | | 40.4 | | 57.1 | | 6.46 |
| BDC-101 | 2/5/2018 | 5,753 | 4,036 | 3,632 | 3,513 | 3,385 | 3,155 | 3,022 | 2,693 | 2,183 | 1,931 | 1,546 | 684 | 426 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 5.90 | 9.64 | <0.10 | | 28.9 | | 59.2 | | 6.64 |
| BDC-101 | 5/1/2018 | 5,838 | 4,121 | 3,717 | 3,598 | 3,470 | 3,240 | 3,107 | 2,778 | 2,268 | 2,016 | 1,631 | 769 | 511 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.48 | 15.9 | <0.10 | | 44.5 | | 116.9 | | 6.48 |
| BDC-101 | 8/6/2018 | 5,935 | 4,218 | 3,814 | 3,695 | 3,567 | 3,337 | 3,204 | 2,875 | 2,365 | 2,113 | 1,728 | 866 | 608 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 2.08 | 11.9 | <0.10 | | 36.4 | | 145.3 | | 6.29 |
| BDC-101 | 11/5/2018 | 6,026 | 4,309 | 3,905 | 3,786 | 3,658 | 3,428 | 3,295 | 2,966 | 2,456 | 2,204 | 1,819 | 957 | 699 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.29 | 6.90 | <0.10 | | 26.1 | | 100.2 | | 6.38 |
| BDC-101 | 2/6/2019 | 6,119 | 4,402 | 3,998 | 3,879 | 3,751 | 3,521 | 3,388 | 3,059 | 2,549 | 2,297 | 1,912 | 1,050 | 792 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.09 | 7.73 | <0.10 | | 30.6 | | 51.8 | | 6.57 |
| BDC-101 | 5/2/2019 | 6,204 | 4,487 | 4,083 | 3,964 | 3,836 | 3,606 | 3,473 | 3,144 | 2,634 | 2,382 | 1,997 | 1,135 | 877 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 2.71 | 11.2 | <0.10 | | 64.5 | | 49.4 | | 6.44 |
| BDC-101 | 11/5/2019 | 6,391 | 4,674 | 4,270 | 4,151 | 4,023 | 3,793 | 3,660 | 3,331 | 2,821 | 2,569 | 2,184 | 1,322 | 1,064 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 2.29 | 7.73 | <0.1 | | 28.5 | | 57.9 | | 6.26 |
| BDC-101 | 5/5/2020 | 6,573 | 4,856 | 4,452 | 4,333 | 4,205 | 3,975 | 3,842 | 3,513 | 3,003 | 2,751 | 2,366 | 1,504 | 1,246 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.13 | 14.1 | <0.1 | | 50.7 | | 60.2 | | 6.40 |
| BDC-101 | 11/5/2020 | 6,757 | 5,040 | 4,636 | 4,517 | 4,389 | 4,159 | 4,026 | 3,697 | 3,187 | 2,935 | 2,550 | 1,688 | 1,430 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 3.32 | 9.36 | <0.1 | | 34.1 | | 91.0 | | 6.29 |
| BDC-101 | 5/4/2021 | 6,937 | 5,220 | 4,816 | 4,697 | 4,569 | 4,339 | 4,206 | 3,877 | 3,367 | 3,115 | 2,730 | 1,868 | 1,610 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.93 | 15.3 | <0.100 | | 47.7 | | -86.1 | | 6.32 |
| BDC-101 | 11/2/2021 | 7,119 | 5,402 | 4,998 | 4,879 | 4,751 | 4,521 | 4,388 | 4,059 | 3,549 | 3,297 | 2,912 | 2,050 | 1,792 | <0.1 | 0.35 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.52 | 3.31 | <0.100 | | 19.2 | | 74.2 | | 6.52 |
| BDC-102 | 6/11/2001 | | | | | | | | | | | | | | 0.55 | 5.33 | <1.0 | <1.0 | | | <1.0 | | | | | | | | | |
| BDC-102 | 9/4/2001 | | | | | | | | | | | | | | 0.38 | 1.61 | 1.89 | <1.0 | | | 1.87 | | | | | | | | | |
| BDC-102 | 12/3/2001 | | | | | | | | | | | | | | 1.6 | 3.7 | <1.0 | <1.0 | | | 3.49 | | | | | | | | | |
| BDC-102 | 3/13/2002 | | | | | | | | | | | | | | 0.50 | 1.3 | <1.0 | <1.0 | | | <1.0 | | | | | | | | | |
| BDC-102 | 4/29/2002 | -8 | | | | | | | | | | | | | 0.33 | 2.6 | <1.0 | <1.0 | 1.1 | <1.0 | 1.1 | | | | | | | | | |
| BDC-102 | 6/3/2002 | 27 | | | | | | | | | | | | | <0.25 | 4.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 7/1/2002 | 55 | | | | | | | | | | | | | 0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 8/1/2002 | 86 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 12/2/2002 | 209 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 3/10/2003 | 307 | | | | | | | | | | | | | 0.26 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 6/3/2003 | 392 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 11/19/2003 | 561 | | | | | | | | | | | | | 0.99 | 120 | <1.0 | 8.5 | <1.0 | <1.0 | <1.0 | 0.38 | 0.19 | 0.011 | 5.5 | 46 | 1100 | 122.2 | | |
| BDC-102 | 4/28/2004 | 722 | | | | | | | | | | | | | 0.40 | 10 | <1.0 | <1.0 | 3.0 | <1.0 | 3.0 | | | | | | | | | |
| BDC-102 | 10/18/2004 | 895 | | | | | | | | | | | | | 0.33 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 5/10/2005 | 1,099 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | | | | | | | |
| BDC-102 | 11/10/2005 | 1,283 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.82 | 4.4 | | | 34.0 | | 122 | 18.4 | |
| BDC-102 | 5/15/2006 | 1,469 | | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.21 | 4.72 | 0.175 | 2.2 | 35.7 | | -11 | | |
| BDC-102 | 11/20/2006 | 1,658 | -59 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.25 | <0.250 | <0.250 | 2.2 | 9.2 | | 163 | | |
| BDC-102 | 2/20/2007 | 1,750 | 33 | | | | | | | | | | | | <0.25 | 5.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.47 | 0.749 | 0.027 | 3.0 | 25.3 | | -145 | | 6.54 |
| BDC-102 | 3/19/2007 | 1,777 | 60 | | | | | | | | | | | | <0.25 | 18 | <1.0 | <1.0 | 32 | <1.0 | 32 | 0.88 | 0.938 | 0.072 | 3.0 | 31.0 | | -98 | | 6.67 |
| BDC-102 | 4/24/2007 | 1,813 | 96 | | | | | | | | | | | | 0.53 | 6.1 | <1.0 | 3.1 | 100 | <1.0 | 100 | 1.20 | 1.94 | 0.051 | 2.8 | 40.4 | | -93 | | 6.51 |
| BDC-102 | 5/17/2007 | 1,836 | 119 | | | | | | | | | | | | <0.25 | 1.8 | <1.0 | <1.0 | 7.4 | <1.0 | 7.4 | 0.84 | 2.78 | 0.108 | 2.6 | 33.9 | | 286 | | 6.52 |
| BDC-102 | 11/26/2007 | 2,029 | 312 | | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.29 | 1.03 | 0.247 | 3.0 | 55.7 | | 46 | | |
| BDC-102 | 2/18/2008 | 2,113 | 396 | -8 | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.51 | 3.91 | 0.054 | 2.8 | 42.8 | | 431 | | 5.97 |
| BDC-102 | 3/27/2008 | 2,151 | 434 | 30 | | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.85 | 1.3 | <0.10 | 2.5 | 17.9 | | 233 | | |
| BDC-102 | 5/15/2008 | 2,200 | 483 | 79 | -40 | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.40 | 3.0 | <0.10 | 3.5 | 19.2 | | -115 | | 6.56 |
| BDC-102 | 7/16/2008 | 2,262 | 545 | 141 | 22 | | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.46 | 2.5 | <0.10 | 3.2 | 13.7 | | -312 | | 6.67 |
| BDC-102 | 9/15/2008 | 2,323 | 606 | 202 | 83 | -45 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.22 | 4.28 | 0.056 | 3.0 | 31.6 | | 191 | | |
| BDC-102 | 11/20/2008 | 2,389 | 672 | 268 | 149 | 21 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.70 | 0.40 | <0.10 | 2.0 | 5.6 | | -70 | | 6.69 |
| BDC-102 | 1/16/2009 | 2,446 | 729 | 325 | 206 | 78 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.00 | <0.100 | 0.200 | 2.5 | 8.3 | | -235 | | 6.70 |
| BDC-102 | 2/11/2009 | 2,472 | 755 | 351 | 232 | 104 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.65 | 2.4 | <0.1 | 3.0 | 20.4 | | -70 | | 6.61 |

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | ORC Injection | Pilot Injection | Full Scale Injection 1 | Full Scale Injection 2 | Full Scale Injection 3 | Full Scale Injection 4 | Full Scale Injection 5 | Full Scale Injection 6 | Full Scale Injection 7 | Full Scale Injection 8 | Full Scale Injection 9 | Full Scale Injection 10 | Full Scale Injection 11 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BDC-103 | BDC-103 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | Volatile Organic Compounds | | | | | | | | Aquifer Redox Conditions | | | | | | | Donor Indicators | |
| | | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | TPH-G (mg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | m,p-Xylene (µg/L) | o-Xylene (µg/L) | Total Xylenes (µg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Nitrite-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (µg/L) | ORP (mV) | TOC (mg/L) | pH |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | | | | | | | | | | | **0.8** | **2.0** | **1294** | **1.7** | **NA** | **NA** | **1546** | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-102 | 3/9/2009 | 2,498 | 781 | 377 | 258 | 130 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.00 | 0.9 | <0.1 | 3.0 | 8.7 | | -46 | | 6.65 |
| BDC-102 | 4/16/2009 | 2,536 | 819 | 415 | 296 | 168 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.30 | 0.6 | <0.1 | 3.0 | 8.3 | | -7 | | 6.66 |
| BDC-102 | 5/14/2009 | 2,564 | 847 | 443 | 324 | 196 | -34 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.29 | 0.9 | <0.1 | 3.4 | 9.8 | | -35 | | 6.78 |
| BDC-102 | 7/17/2009 | 2,628 | 911 | 507 | 388 | 260 | 30 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.66 | 4.9 | <0.1 | 2.2 | 28.6 | | -11 | | 6.46 |
| BDC-102 | 9/9/2009 | 2,682 | 965 | 561 | 442 | 314 | 84 | -49 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.91 | 0.4 | <0.1 | 2.7 | 5.5 | | 2.8 | | 6.66 |
| BDC-102 | 11/12/2009 | 2,746 | 1,029 | 625 | 506 | 378 | 148 | 15 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.93 | 0.2 | <0.1 | 3.2 | 2.4 | | -42.0 | | 6.49 |
| BDC-102 | 2/17/2010 | 2,843 | 1,126 | 722 | 603 | 475 | 245 | 112 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.90 | 3.4 | 0.2 | 2.8 | 17.2 | | 892 | | 6.56 |
| BDC-102 | 5/17/2010 | 2,932 | 1,215 | 811 | 692 | 564 | 334 | 201 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.35 | 8.4 | <1.0 | 3.0 | 30.1 | | 440 | | 6.61 |
| BDC-102 | 8/16/2010 | 3,023 | 1,306 | 902 | 783 | 655 | 425 | 292 | -37 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.61 | 8.9 | <0.1 | 3.0 | 27.8 | | 82 | | 6.60 |
| BDC-102 | 11/8/2010 | 3,107 | 1,390 | 986 | 867 | 739 | 509 | 376 | 47 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.34 | 0.4 | <0.1 | 2.0 | 6.9 | | 45 | | 7.09 |
| BDC-102 | 2/16/2011 | 3,207 | 1,490 | 1,086 | 967 | 839 | 609 | 476 | 147 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.68 | 3.5 | <0.1 | 2.2 | 43.3 | | 399 | | 6.88 |
| BDC-102 | 5/3/2011 | 3,283 | 1,566 | 1,162 | 1,043 | 915 | 685 | 552 | 223 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.60 | 12.1 | <0.1 | 2.0 | 32.4 | | 40 | | 6.70 |
| BDC-102 | 8/1/2011 | 3,373 | 1,656 | 1,252 | 1,133 | 1,005 | 775 | 642 | 313 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 7.01 | 13.6 | <0.1 | 2.1 | 28.7 | | 11 | | 6.88 |
| BDC-102 | 11/1/2011 | 3,465 | 1,748 | 1,344 | 1,225 | 1,097 | 867 | 734 | 405 | -105 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.45 | 9.8 | <0.1 | 1.5 | 30.9 | | -48 | | 7.19 |
| BDC-102 | 2/19/2012 | 3,575 | 1,858 | 1,454 | 1,335 | 1,207 | 977 | 844 | 515 | 5 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.25 | 2.4 | | 1.0 | 15.4 | | 21 | | 6.60 |
| BDC-102 | 5/3/2012 | 3,649 | 1,932 | 1,528 | 1,409 | 1,281 | 1,051 | 918 | 589 | 79 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.22 | 11.3 | | 2.5 | 40.2 | | 248 | | 6.44 |
| BDC-102 | 9/4/2012 | 3,773 | 2,056 | 1,652 | 1,533 | 1,405 | 1,175 | 1,042 | 713 | 203 | -49 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.20 | 13.2 | <5.0 | 1.5 | 39.2 | | 130 | | 6.63 |
| BDC-102 | 11/13/2012 | 3,843 | 2,126 | 1,722 | 1,603 | 1,475 | 1,245 | 1,112 | 783 | 273 | 21 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.10 | 1.7 | <0.10 | 1.6 | 27.7 | | 48 | | 6.77 |
| BDC-102 | 2/20/2013 | 3,942 | 2,225 | 1,821 | 1,702 | 1,574 | 1,344 | 1,211 | 882 | 372 | 120 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.17 | 18.4 | <0.10 | 1.0 | 58.5 | | 92 | | 6.60 |
| BDC-102 | 5/20/2013 | 4,031 | 2,314 | 1,910 | 1,791 | 1,663 | 1,433 | 1,300 | 971 | 461 | 209 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.49 | 20 | <0.10 | 1.5 | 62.2 | | -280 | | 7.31 |
| BDC-102 | 8/28/2013 | 4,131 | 2,414 | 2,010 | 1,891 | 1,763 | 1,533 | 1,400 | 1,071 | 561 | 309 | -76 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 1.93 | 12.2 | <0.10 | 1.0 | 39.1 | | -341 | | 6.45 |
| BDC-102 | 11/19/2013 | 4,214 | 2,497 | 2,093 | 1,974 | 1,846 | 1,616 | 1,483 | 1,154 | 644 | 392 | 7 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 3.89 | 10.6 | <0.10 | 1.2 | 43.4 | | -254 | | 6.54 |
| BDC-102 | 2/11/2014 | 4,298 | 2,581 | 2,177 | 2,058 | 1,930 | 1,700 | 1,567 | 1,238 | 728 | 476 | 91 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.16 | 19.6 | <0.10 | 2.2 | 63.0 | | -246 | | 6.67 |
| BDC-102 | 5/6/2014 | 4,382 | 2,665 | 2,261 | 2,142 | 2,014 | 1,784 | 1,651 | 1,322 | 812 | 560 | 175 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.65 | 14.8 | <0.10 | 1.6 | 56.1 | | -275 | | 6.54 |
| BDC-102 | 8/7/2014 | 4,475 | 2,758 | 2,354 | 2,235 | 2,107 | 1,877 | 1,744 | 1,415 | 905 | 653 | 268 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.07 | 26.7 | <0.10 | 1.4 | 65.8 | | -65 | | 7.01 |
| BDC-102 | 11/4/2014 | 4,564 | 2,847 | 2,443 | 2,324 | 2,196 | 1,966 | 1,833 | 1,504 | 994 | 742 | 357 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.11 | 22.4 | <0.10 | 1.2 | 55.9 | | -15.3 | | 6.47 |
| BDC-102 | 1/21/2015 | 4,642 | 2,925 | 2,521 | 2,402 | 2,274 | 2,044 | 1,911 | 1,582 | 1,072 | 820 | 435 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.20 | 12.9 | <0.10 | 1.0 | 49.7 | | -22 | | 6.14 |
| BDC-102 | 4/28/2015 | 4,739 | 3,022 | 2,618 | 2,499 | 2,371 | 2,141 | 2,008 | 1,679 | 1,169 | 917 | 532 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.22 | 23.1 | <0.10 | 0.6 | 77.5 | | 28 | | 6.13 |
| BDC-102 | 7/20/2015 | 4,822 | 3,105 | 2,701 | 2,582 | 2,454 | 2,224 | 2,091 | 1,762 | 1,252 | 1,000 | 615 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.33 | 15.5 | <0.10 | 1.0 | 63.3 | | -54 | | 6.18 |
| BDC-102 | 10/26/2015 | 4,920 | 3,203 | 2,799 | 2,680 | 2,552 | 2,322 | 2,189 | 1,860 | 1,350 | 1,098 | 713 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.23 | 10.9 | <0.10 | 1.0 | 47.5 | | -42 | | 6.41 |
| BDC-102 | 1/27/2016 | 5,013 | 3,296 | 2,892 | 2,773 | 2,645 | 2,415 | 2,282 | 1,953 | 1,443 | 1,191 | 806 | -56 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.35 | 0.62 | <0.10 | 1.0 | 11.9 | | -124 | | 6.61 |
| BDC-102 | 4/13/2016 | 5,090 | 3,373 | 2,969 | 2,850 | 2,722 | 2,492 | 2,359 | 2,030 | 1,520 | 1,268 | 883 | 21 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.70 | 12.8 | <0.10 | 1.0 | 43.1 | | -48 | | 6.61 |
| BDC-102 | 8/9/2016 | 5,208 | 3,491 | 3,087 | 2,968 | 2,840 | 2,610 | 2,477 | 2,148 | 1,638 | 1,386 | 1,001 | 139 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.32 | 14.0 | <0.10 | | 42.6 | | -79 | | 6.2 |
| BDC-102 | 11/1/2016 | 5,292 | 3,575 | 3,171 | 3,052 | 2,924 | 2,694 | 2,561 | 2,232 | 1,722 | 1,470 | 1,085 | 223 | -35 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.56 | 0.10 | <0.10 | | 1.4 | | -80.8 | | 6.54 |
| BDC-102 | 2/7/2017 | 5,390 | 3,673 | 3,269 | 3,150 | 3,022 | 2,792 | 2,659 | 2,330 | 1,820 | 1,568 | 1,183 | 321 | 63 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.19 | 4.9 | <0.10 | | 23.8 | | 12.3 | | 7.78 |
| BDC-102 | 5/3/2017 | 5,475 | 3,758 | 3,354 | 3,235 | 3,107 | 2,877 | 2,744 | 2,415 | 1,905 | 1,653 | 1,268 | 406 | 148 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.52 | 25.5 | <0.10 | | 42.9 | | -11.4 | | 6.29 |
| BDC-102 | 8/1/2017 | 5,565 | 3,848 | 3,444 | 3,325 | 3,197 | 2,967 | 2,834 | 2,505 | 1,995 | 1,743 | 1,358 | 496 | 238 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.86 | 37.1 | <0.10 | | 52.4 | | 102.4 | | 6.23 |
| BDC-102 | 11/7/2017 | 5,663 | 3,946 | 3,542 | 3,423 | 3,295 | 3,065 | 2,932 | 2,603 | 2,093 | 1,841 | 1,456 | 594 | 336 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.79 | 6.8 | <0.10 | | 28.3 | | 67.6 | | 6.32 |
| BDC-102 | 2/5/2018 | 5,753 | 4,036 | 3,632 | 3,513 | 3,385 | 3,155 | 3,022 | 2,693 | 2,183 | 1,931 | 1,546 | 684 | 426 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.82 | 0.718 | 0.170 | | 8.15 | | -97.4 | | 6.50 |
| BDC-102 | 5/1/2018 | 5,838 | 4,121 | 3,717 | 3,598 | 3,470 | 3,240 | 3,107 | 2,778 | 2,268 | 2,016 | 1,631 | 769 | 511 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.24 | 13.4 | <0.10 | | 29.5 | | 172.4 | | 6.36 |
| BDC-102 | 8/6/2018 | 5,935 | 4,218 | 3,814 | 3,695 | 3,567 | 3,337 | 3,204 | 2,875 | 2,365 | 2,113 | 1,728 | 866 | 608 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.39 | 15.7 | <0.10 | | 31.7 | | 146.6 | | 6.35 |
| BDC-102 | 11/5/2018 | 6,026 | 4,309 | 3,905 | 3,786 | 3,658 | 3,428 | 3,295 | 2,966 | 2,456 | 2,204 | 1,819 | 957 | 699 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.88 | 1.46 | <0.10 | | 16.4 | | -35.9 | | 6.42 |
| BDC-102 | 2/6/2019 | 6,119 | 4,402 | 3,998 | 3,879 | 3,751 | 3,521 | 3,388 | 3,059 | 2,549 | 2,297 | 1,912 | 1,050 | 792 | 0.192 | <0.20 | <0.20 | 0.98 | 12.5 | <0.20 | 12.6 | 0.27 | 1.53 | 0.154 | | 15.2 | | -114.2 | | 6.65 |
| BDC-102 | 5/2/2019 | 6,204 | 4,487 | 4,083 | 3,964 | 3,836 | 3,606 | 3,473 | 3,144 | 2,634 | 2,382 | 1,997 | 1,135 | 877 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.91 | 9.63 | <0.10 | | 47.7 | | 55.5 | | 6.31 |
| BDC-102 | 11/5/2019 | 6,391 | 4,674 | 4,270 | 4,151 | 4,023 | 3,793 | 3,660 | 3,331 | 2,821 | 2,569 | 2,184 | 1,322 | 1,064 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.59 | 8.12 | <0.1 | | 33.8 | | 65.6 | | 6.30 |
| BDC-102 | 5/5/2020 | 6,573 | 4,856 | 4,452 | 4,333 | 4,205 | 3,975 | 3,842 | 3,513 | 3,003 | 2,751 | 2,366 | 1,504 | 1,246 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.15 | 1.07 | <0.1 | | 13.1 | | 44.9 | | 6.48 |
| BDC-102 | 11/5/2020 | 6,757 | 5,040 | 4,636 | 4,517 | 4,389 | 4,159 | 4,026 | 3,697 | 3,187 | 2,935 | 2,550 | 1,688 | 1,430 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.66 | 2.33 | <0.1 | | 25.4 | | 80.6 | | 6.23 |
| BDC-102 | 5/4/2021 | 6,937 | 5,220 | 4,816 | 4,697 | 4,569 | 4,339 | 4,206 | 3,877 | 3,367 | 3,115 | 2,730 | 1,868 | 1,610 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.62 | 16.5 | <0.500 | | 44.4 | | 29.2 | | 6.44 |
| BDC-102 | 11/2/2021 | 7,119 | 5,402 | 4,998 | 4,879 | 4,751 | 4,521 | 4,388 | 4,059 | 3,549 | 3,297 | 2,912 | 2,050 | 1,792 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.63 | <0.100 | <0.100 | | 12.4 | | 37.5 | | 6.66 |
| BDC-103 | 6/11/2001 | | | | | | | | | | | | | | 177 | 875 | 12,010 | 1,985 | | | 11,430 | | | | | | | | |
| BDC-103 | 9/4/2001 | | | | | | | | | | | | | | 123 | 494 | 3,760 | 419 | | | 2,636 | | | | | | | | |
| BDC-103 (b) | 12/3/2001 | | | | | | | | | | | | | | 120 | 5,100 | 2,300,000 | 10,000 | | | 3,400,000 | | | | | | | | |
| BDC-103 | 3/13/2002 | | | | | | | | | | | | | | 200 | 1,700 | 17,000 | 4,900 | | | 26,400 | | | | | | | | |
| BDC-103 | 4/29/2002 | -8 | | | | | | | | | | | | | 200 | 980 | 16,000 | 5,400 | 20,000 | 7,000 | 27,000 | | | | | | | | |
| BDC-103 | 6/3/2002 | 27 | | | | | | | | | | | | | 200 | 960 | 17,000 | 5,100 | 20,000 | 7,100 | 27,100 | | | | | | | | |

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | |

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | ORC Injection | Pilot Injection | Full Scale Injection 1 | Full Scale Injection 2 | Full Scale Injection 3 | Full Scale Injection 4 | Full Scale Injection 5 | Full Scale Injection 6 | Full Scale Injection 7 | Full Scale Injection 8 | Full Scale Injection 9 | Full Scale Injection 10 | Full Scale Injection 11 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BDC-103 | BDC-103 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103/104 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | BDC-103 | Volatile Organic Compounds | | | | | | | | Aquifer Redox Conditions | | | | | | | Donor Indicators | |
| | | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | Elapsed Time from Injection (days) | TPH-G (mg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | m,p-Xylene (µg/L) | o-Xylene (µg/L) | Total Xylenes (µg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Nitrite-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (µg/L) | ORP (mV) | TOC (mg/L) | pH |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | | | | | | | | | | | **0.8** | **2.0** | **1294** | **1.7** | **NA** | **NA** | **1546** | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-103 | 4/13/2016 | 5,090 | 3,373 | 2,969 | 2,850 | 2,722 | 2,492 | 2,359 | 2,030 | 1,520 | 1,268 | 883 | 21 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | 2.0 | 2.0 | 0.46 | 102 | 0.43 | 0.0 | 51.0 | | 6.7 | | 6.59 |
| BDC-103 | 8/9/2016 | 5,208 | 3,491 | 3,087 | 2,968 | 2,840 | 2,610 | 2,477 | 2,148 | 1,638 | 1,386 | 1,001 | 139 | | 1.7 | 56 | 4.9 | 42 | 210 | 51 | 261 | 0.0 | <0.10 | <0.10 | | 31.1 | | -98.6 | | 6.90 |
| BDC-103 | 11/1/2016 | 5,292 | 3,575 | 3,171 | 3,052 | 2,924 | 2,694 | 2,561 | 2,232 | 1,722 | 1,470 | 1,085 | 223 | -35 | 4.5 | 83 | 24 | 120 | 360 | 180 | 540 | 0.3 | <0.10 | <0.10 | | 0.68 | | -182.9 | | 6.70 |
| BDC-103 | 2/7/2017 | 5,390 | 3,673 | 3,269 | 3,150 | 3,022 | 2,792 | 2,659 | 2,330 | 1,820 | 1,568 | 1,183 | 321 | 63 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | 2.1 | 2.1 | 0.41 | 194 | 0.15 | | 47.4 | | 77.2 | | 6.27 |
| BDC-103 | 5/3/2017 | 5,475 | 3,758 | 3,354 | 3,235 | 3,107 | 2,877 | 2,744 | 2,415 | 1,905 | 1,653 | 1,268 | 406 | 148 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | 1.7 | 1.7 | 0.78 | 215 | 0.40 | | 49.4 | | 67.1 | | 6.25 |
| BDC-103 | 8/1/2017 | 5,565 | 3,848 | 3,444 | 3,325 | 3,197 | 2,967 | 2,834 | 2,505 | 1,995 | 1,743 | 1,358 | 496 | 238 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 6.72 | 172 | <0.10 | | 64.4 | | 111.1 | | 6.23 |
| BDC-103 | 11/7/2017 | 5,663 | 3,946 | 3,542 | 3,423 | 3,295 | 3,065 | 2,932 | 2,603 | 2,093 | 1,841 | 1,456 | 594 | 336 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.86 | 71 | <0.10 | | 73.2 | | 58.2 | | 6.54 |
| BDC-103 | 2/5/2018 | 5,753 | 4,036 | 3,632 | 3,513 | 3,385 | 3,155 | 3,022 | 2,693 | 2,183 | 1,931 | 1,546 | 684 | 426 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.27 | 128 | 0.319 | | 51.7 | | 144 | | 5.93 |
| BDC-103 | 5/1/2018 | 5,838 | 4,121 | 3,717 | 3,598 | 3,470 | 3,240 | 3,107 | 2,778 | 2,268 | 2,016 | 1,631 | 769 | 511 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.27 | 104 | <0.10 | | 71.6 | | 184.7 | | 5.98 |
| BDC-103 | 8/6/2018 | 5,935 | 4,218 | 3,814 | 3,695 | 3,567 | 3,337 | 3,204 | 2,875 | 2,365 | 2,113 | 1,728 | 866 | 608 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.38 | 65.8 | <0.10 | | 70.0 | | 166.9 | | 6.44 |
| BDC-103 | 11/5/2018 | 6,026 | 4,309 | 3,905 | 3,786 | 3,658 | 3,428 | 3,295 | 2,966 | 2,456 | 2,204 | 1,819 | 957 | 699 | 0.113 | 1.82 | <0.20 | 0.31 | 0.91 | 0.47 | 1.37 | 0.58 | 0.333 | <0.10 | | 63.1 | | 34.1 | | 6.74 |
| BDC-103 | 2/6/2019 | 6,119 | 4,402 | 3,998 | 3,879 | 3,751 | 3,521 | 3,388 | 3,059 | 2,549 | 2,297 | 1,912 | 1,050 | 792 | <0.1 | <0.20 | <0.20 | 0.40 | 0.79 | <0.20 | 0.79 | 0.31 | 112 | 0.180 | | 219 | | 67.8 | | 6.88 |
| BDC-103 | 5/2/2019 | 6,204 | 4,487 | 4,083 | 3,964 | 3,836 | 3,606 | 3,473 | 3,144 | 2,634 | 2,382 | 1,997 | 1,135 | 877 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.35 | 113 | <0.10 | | 160 | | 50.3 | | 6.37 |
| BDC-103 | 11/5/2019 | 6,391 | 4,674 | 4,270 | 4,151 | 4,023 | 3,793 | 3,660 | 3,331 | 2,821 | 2,569 | 2,184 | 1,322 | 1,064 | 1.29 | 13.2 | <0.20 | 24.8 | 58.3 | 0.99 | 59.3 | 0.11 | 0.397 | <0.1 | | 59.6 | | -29.8 | | 6.92 |
| BDC-103 | 5/5/2020 | 6,573 | 4,856 | 4,452 | 4,333 | 4,205 | 3,975 | 3,842 | 3,513 | 3,003 | 2,751 | 2,366 | 1,504 | 1,246 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.26 | 61.8 | <0.1 | | 101 | | 136.1 | | 6.54 |
| BDC-103 | 11/4/2020 | 6,756 | 5,039 | 4,635 | 4,516 | 4,388 | 4,158 | 4,025 | 3,696 | 3,186 | 2,934 | 2,549 | 1,687 | 1,429 | 0.393 | 0.74 | <0.20 | 27.7 | 9.57 | 0.36 | 9.93 | 1.44 | <0.1 | <0.1 | | 76.5 | | -127.0 | | 6.83 |
| BDC-103 | 5/4/2021 | 6,937 | 5,220 | 4,816 | 4,697 | 4,569 | 4,339 | 4,206 | 3,877 | 3,367 | 3,115 | 2,730 | 1,868 | 1,610 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.97 | 62.3 | <0.100 | | 99.4 | | -84.3 | | 6.80 |
| BDC-103 | 11/2/2021 | 7,119 | 5,402 | 4,998 | 4,879 | 4,751 | 4,521 | 4,388 | 4,059 | 3,549 | 3,297 | 2,912 | 2,050 | 1,792 | 0.57 | 1.07 | <0.20 | 33.5 | 10.7 | 0.80 | 11.5 | 0.33 | <0.100 | <0.100 | | 118 | | 20.2 | | 6.97 |
| BDC-104 | 2/18/2008 | 2,113 | 396 | -8 | | | | | | | | | | | 2.9 | <1.0 | <1.0 | 47 | 180 | 28 | 208 | 2.09 | 1.63 | 0.072 | 3.0 | 18.7 | | 598 | | |
| BDC-104 | 3/27/2008 | 2,151 | 434 | 30 | | | | | | | | | | | 3.2 | <1.0 | <1.0 | 22 | 220 | 52 | 272 | 1.34 | 161 | 0.1 | 0.5 | 52.2 | | 259 | | |
| BDC-104 | 5/15/2008 | 2,200 | 483 | 79 | -40 | | | | | | | | | | 1.0 | <1.0 | <1.0 | 7.0 | 26 | 22 | 48 | 1.24 | 28.7 | 0.7 | 0.4 | 26.6 | | 94 | | 6.69 |
| BDC-104 | 7/16/2008 | 2,262 | 545 | 141 | 22 | | | | | | | | | | 2.3 | <1.0 | 2.9 | 3.3 | 110 | 50 | 160 | 1.56 | 196 | 0.4 | 0.0 | 74.7 | | -221 | | 7.17 |
| BDC-104 | 9/15/2008 | 2,323 | 606 | 202 | 83 | -45 | | | | | | | | | 0.64 | <1.0 | 2.6 | <1.0 | 20 | 16 | 36 | 0.06 | 122 | 0.729 | 0.0 | 38.4 | | 191 | | |
| BDC-104 | 11/20/2008 | 2,389 | 672 | 268 | 149 | 21 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | 1.4 | 4.1 | 5.5 | 0.96 | 67.2 | <0.10 | 0.2 | 24.3 | | -27 | | 7.46 |
| BDC-104 | 1/16/2009 | 2,446 | 729 | 325 | 206 | 78 | | | | | | | | | 0.26 | <1.0 | <1.0 | <1.0 | <1.0 | 5.5 | 5.5 | 0.05 | 71.4 | 0.204 | 0.6 | 34.6 | | -164 | | 6.86 |
| BDC-104 | 2/11/2009 | 2,472 | 755 | 351 | 232 | 104 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | 1.3 | 1.1 | 2.4 | 1.78 | 95.4 J | 0.1 | 0.2 | 20.1 | | -75 | | 6.68 |
| BDC-104 | 3/9/2009 | 2,498 | 781 | 377 | 258 | 130 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | 1.3 | 1.1 | 2.4 | 0 | 91.5 | <0.1 | 0.0 | 19.2 | | 20 | | 6.67 |
| BDC-104 | 4/16/2009 | 2,536 | 819 | 415 | 296 | 168 | | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | 1.6 | 1.6 | 0.34 | 67.2 | <0.1 | 0.0 | 21.6 | | 67 | | 6.63 |
| BDC-104 | 5/14/2009 | 2,564 | 847 | 443 | 324 | 196 | -34 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 | 1.4 | 0.51 | 63.4 | <0.1 | 0.0 | 20.1 | | 6 | | 6.70 |
| BDC-104 | 7/17/2009 | 2,628 | 911 | 507 | 388 | 260 | 30 | | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.41 | 21.0 | 0.5 | 1.0 | 30.8 | | -3 | | 7.30 |
| BDC-104 | 9/9/2009 | 2,682 | 965 | 561 | 442 | 314 | 84 | -49 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.63 | 39.8 | 0.1 | 0.8 | 41.6 | | 61 | | 7.20 |
| BDC-104 | 11/12/2009 | 2,746 | 1,029 | 625 | 506 | 378 | 148 | 15 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.99 | 115 | 1.4 | 0.0 | 24.1 | | 68 | | 6.49 |
| BDC-104 | 2/17/2010 | 2,843 | 1,126 | 722 | 603 | 475 | 245 | 112 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.73 | 119 | 0.1 | 0.0 | 111 | | 868 | | 6.93 |
| BDC-104 | 5/17/2010 | 2,932 | 1,215 | 811 | 692 | 564 | 334 | 201 | | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.98 | 47.4 | <1.0 | 0.6 | 30.5 | | 482 | | 6.74 |
| BDC-104 | 8/16/2010 | 3,023 | 1,306 | 902 | 783 | 655 | 425 | 292 | -37 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.59 | 38.4 | 0.2 | 2.5 | 23.6 | | 76 | | 6.92 |
| BDC-104 | 11/8/2010 | 3,107 | 1,390 | 986 | 867 | 739 | 509 | 376 | 47 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.87 | 32.5 | <0.1 | 0.0 | 18.6 | | 115 | | 7.23 |
| BDC-104 | 2/16/2011 | 3,207 | 1,490 | 1,086 | 967 | 839 | 609 | 476 | 147 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.48 | 40.0 | <0.1 | 0.4 | 24.1 | | 423 | | 6.71 |
| BDC-104 | 5/3/2011 | 3,283 | 1,566 | 1,162 | 1,043 | 915 | 685 | 552 | 223 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.19 | 31.3 | <0.1 | 1.2 | 26.8 | | 231 | | 6.63 |
| BDC-104 | 8/1/2011 | 3,373 | 1,656 | 1,252 | 1,133 | 1,005 | 775 | 642 | 313 | | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.10 | 11.7 | <0.1 | 0.0 | 21.2 | | 121 | | 7.20 |
| BDC-104 | 11/1/2011 | 3,465 | 1,748 | 1,344 | 1,225 | 1,097 | 867 | 734 | 405 | -105 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.43 | 14.6 | <0.1 | 0.0 | 18.7 | | -53 | | 7.40 |
| BDC-104 | 2/19/2012 | 3,575 | 1,858 | 1,454 | 1,335 | 1,207 | 977 | 844 | 515 | 5 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.26 | 21.6 | | 0.0 | 29.2 | | 66 | | 6.23 |
| BDC-104 | 5/3/2012 | 3,649 | 1,932 | 1,528 | 1,409 | 1,281 | 1,051 | 918 | 589 | 79 | | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.06 | 19.4 | | 1.5 | 26.5 | | 207 | | 6.78 |
| BDC-104 | 9/4/2012 | 3,773 | 2,056 | 1,652 | 1,533 | 1,405 | 1,175 | 1,042 | 713 | 203 | -49 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.68 | 12.3 | <0.10 | 0.5 | 22.1 | | 130 | | 7.11 |
| BDC-104 | 11/13/2012 | 3,843 | 2,126 | 1,722 | 1,603 | 1,475 | 1,245 | 1,112 | 783 | 273 | 21 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.24 | 0.80 | <0.10 | | 5.1 | | 64 | | 7.19 |
| BDC-104 | 2/20/2013 | 3,942 | 2,225 | 1,821 | 1,702 | 1,574 | 1,344 | 1,211 | 882 | 372 | 120 | | | | 0.28 | <1.0 | 6.5 | <1.0 | 17 | 3.3 | 20.3 | 0.44 | 2.5 | <0.10 | 0.2 | 3.6 | | 82 | | 6.96 |
| BDC-104 | 5/20/2013 | 4,031 | 2,314 | 1,910 | 1,791 | 1,663 | 1,433 | 1,300 | 971 | 461 | 209 | | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 2.01 | 20.0 | <0.10 | 0.0 | 20.8 | | -230 | | 7.16 |
| BDC-104 | 8/28/2013 | 4,131 | 2,414 | 2,010 | 1,891 | 1,763 | 1,533 | 1,400 | 1,071 | 561 | 309 | -76 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 0.52 | 16.4 | <0.10 | 1.0 | 35.3 | | -322 | | 6.82 |
| BDC-104 | 11/19/2013 | 4,214 | 2,497 | 2,093 | 1,974 | 1,846 | 1,616 | 1,483 | 1,154 | 644 | 392 | 7 | | | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <2.0 | 8.09 | 0.47 | <0.10 | 0.0 | 3.1 | | -35 | | 7.16 |
| BDC-104 | 2/11/2014 | 4,298 | 2,581 | 2,177 | 2,058 | 1,930 | 1,700 | 1,567 | 1,238 | 728 | 476 | 91 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 6.11 | 0.54 | <0.10 | 0.0 | 3.4 | | -135 | | 7.04 |
| BDC-104 | 5/6/2014 | 4,382 | 2,665 | 2,261 | 2,142 | 2,014 | 1,784 | 1,651 | 1,322 | 812 | 560 | 175 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 8.49 | 0.35 | <0.10 | 0.0 | 4.2 | | -113 | | 6.82 |
| BDC-104 | 8/7/2014 | 4,475 | 2,758 | 2,354 | 2,235 | 2,107 | 1,877 | 1,744 | 1,415 | 905 | 653 | 268 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.04 | 2.9 | <0.10 | 0.0 | 4.4 | | 64 | | 7.44 |
| BDC-104 | 11/4/2014 | 4,564 | 2,847 | 2,443 | 2,324 | 2,196 | 1,966 | 1,833 | 1,504 | 994 | 742 | 357 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.66 | 2.1 | <0.10 | 0.0 | 10.1 | | 39 | | 6.50 |
| BDC-104 | 1/21/2015 | 4,642 | 2,925 | 2,521 | 2,402 | 2,274 | 2,044 | 1,911 | 1,582 | 1,072 | 820 | 435 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.02 | 11.3 | <0.10 | 0.0 | 36.3 | | 135 | | 5.87 |
| BDC-104 | 4/28/2015 | 4,739 | 3,022 | 2,618 | 2,499 | 2,371 | 2,141 | 2,008 | 1,679 | 1,169 | 917 | 532 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.37 | 11.3 | <0.10 | 0.0 | 74.4 | | 85 | | 6.09 |
| BDC-104 | 7/20/2015 | 4,822 | 3,105 | 2,701 | 2,582 | 2,454 | 2,224 | 2,091 | 1,762 | 1,252 | 1,000 | 615 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.18 | 11.7 | <0.10 | 0.2 | 74.4 | | -22 | | 6.48 |

# Table 1
## AOC-05 Clean-Up Action Data Summary
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | ORC Injection BDC-103 Elapsed Time from Injection (days) | Pilot Injection BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 1 BDC-103/104 Elapsed Time from Injection (days) | Full Scale Injection 2 BDC-103/104 Elapsed Time from Injection (days) | Full Scale Injection 3 BDC-103/104 Elapsed Time from Injection (days) | Full Scale Injection 4 BDC-103/104 Elapsed Time from Injection (days) | Full Scale Injection 5 BDC-103/104 Elapsed Time from Injection (days) | Full Scale Injection 6 BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 7 BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 8 BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 9 BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 10 BDC-103 Elapsed Time from Injection (days) | Full Scale Injection 11 BDC-103 Elapsed Time from Injection (days) | Volatile Organic Compounds | | | | | | | Aquifer Redox Conditions | | | | | | | Donor Indicators | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | TPH-G (mg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | m,p-Xylene (µg/L) | o-Xylene (µg/L) | Total Xylenes (µg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Nitrite-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (µg/L) | ORP (mV) | TOC (mg/L) | pH |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | | | | | | | | | | | **0.8** | **2.0** | **1294** | **1.7** | **NA** | **NA** | **1546** | | | | | | | | | |
| BDC-104 | 10/26/2015 | 4,920 | 3,203 | 2,799 | 2,680 | 2,552 | 2,322 | 2,189 | 1,860 | 1,350 | 1,098 | 713 | | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.20 | 14.1 | <0.10 | 1.0 | 84.2 | | -2.0 | | 6.72 |
| BDC-104 | 1/27/2016 | 5,013 | 3,296 | 2,892 | 2,773 | 2,645 | 2,415 | 2,282 | 1,953 | 1,443 | 1,191 | 806 | -56 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.13 | 11.5 | <0.10 | 0.0 | 69.1 | | 16.0 | | 6.67 |
| BDC-104 | 4/13/2016 | 5,090 | 3,373 | 2,969 | 2,850 | 2,722 | 2,492 | 2,359 | 2,030 | 1,520 | 1,268 | 883 | 21 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.65 | 20.2 | <0.10 | 0.0 | 96.9 | | 31 | | 6.75 |
| BDC-104 | 8/9/2016 | 5,208 | 3,491 | 3,087 | 2,968 | 2,840 | 2,610 | 2,477 | 2,148 | 1,638 | 1,386 | 1,001 | 139 | | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.6 | 8.1 | <0.10 | | 42.2 | | -27.2 | | 6.30 |
| BDC-104 | 11/1/2016 | 5,292 | 3,575 | 3,171 | 3,052 | 2,924 | 2,694 | 2,561 | 2,232 | 1,722 | 1,470 | 1,085 | 223 | -35 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.91 | 3.4 | <0.10 | | 22.3 | | -9.8 | | 6.49 |
| BDC-104 | 2/7/2017 | 5,390 | 3,673 | 3,269 | 3,150 | 3,022 | 2,792 | 2,659 | 2,330 | 1,820 | 1,568 | 1,183 | 321 | 63 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.03 | 0.58 | <0.10 | | 5.2 | | 69.2 | | 5.93 |
| BDC-104 | 5/3/2017 | 5,475 | 3,758 | 3,354 | 3,235 | 3,107 | 2,877 | 2,744 | 2,415 | 1,905 | 1,653 | 1,268 | 406 | 148 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.06 | 23.6 | <0.10 | | 84.3 | | 80.9 | | 5.85 |
| BDC-104 | 8/1/2017 | 5,565 | 3,848 | 3,444 | 3,325 | 3,197 | 2,967 | 2,834 | 2,505 | 1,995 | 1,743 | 1,358 | 496 | 238 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.00 | 7.0 | <0.10 | | 29.1 | | 125.9 | | 5.83 |
| BDC-104 | 11/7/2017 | 5,663 | 3,946 | 3,542 | 3,423 | 3,295 | 3,065 | 2,932 | 2,603 | 2,093 | 1,841 | 1,456 | 594 | 336 | <0.25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.82 | 0.17 | <0.10 | | 4.5 | | 60.4 | | 6.89 |
| BDC-104 | 2/5/2018 | 5,753 | 4,036 | 3,632 | 3,513 | 3,385 | 3,155 | 3,022 | 2,693 | 2,183 | 1,931 | 1,546 | 684 | 426 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 6.93 | 0.230 | <0.10 | | 4.76 | | 90.6 | | 6.18 |
| BDC-104 | 5/1/2018 | 5,838 | 4,121 | 3,717 | 3,598 | 3,470 | 3,240 | 3,107 | 2,778 | 2,268 | 2,016 | 1,631 | 769 | 511 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.25 | 1.22 | <0.10 | | 4.05 | | 172.3 | | 6.09 |
| BDC-104 | 8/6/2018 | 5,935 | 4,218 | 3,814 | 3,695 | 3,567 | 3,337 | 3,204 | 2,875 | 2,365 | 2,113 | 1,728 | 866 | 608 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 3.02 | 9.11 | <0.10 | | 36.5 | | 149.8 | | 6.28 |
| BDC-104 | 11/5/2018 | 6,026 | 4,309 | 3,905 | 3,786 | 3,658 | 3,428 | 3,295 | 2,966 | 2,456 | 2,204 | 1,819 | 957 | 699 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.73 | 6.97 | <0.10 | | 35.4 | | 156.6 | | 6.09 |
| BDC-104 | 2/6/2019 | 6,119 | 4,402 | 3,998 | 3,879 | 3,751 | 3,521 | 3,388 | 3,059 | 2,549 | 2,297 | 1,912 | 1,050 | 792 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.48 | 11.5 | 0.111 | | 49.3 | | 52.6 | | 6.46 |
| BDC-104 | 5/2/2019 | 6,204 | 4,487 | 4,083 | 3,964 | 3,836 | 3,606 | 3,473 | 3,144 | 2,634 | 2,382 | 1,997 | 1,135 | 877 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 2.41 | 17.6 | <0.10 | | 44.6 | | 66.2 | | 6.34 |
| BDC-104 | 11/5/2019 | 6,391 | 4,674 | 4,270 | 4,151 | 4,023 | 3,793 | 3,660 | 3,331 | 2,821 | 2,569 | 2,184 | 1,322 | 1,064 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.30 | 6.30 | <0.1 | | 29.5 | | 61.7 | | 6.48 |
| BDC-104 | 5/5/2020 | 6,573 | 4,856 | 4,452 | 4,333 | 4,205 | 3,975 | 3,842 | 3,513 | 3,003 | 2,751 | 2,366 | 1,504 | 1,246 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 2.64 | 7.35 | <0.1 | | 28.8 | | 139.0 | | 6.46 |
| BDC-104 | 11/4/2020 | 6,756 | 5,039 | 4,635 | 4,516 | 4,388 | 4,158 | 4,025 | 3,696 | 3,186 | 2,934 | 2,549 | 1,687 | 1,429 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 1.80 | 2.69 | <0.1 | | 13.9 | | 57.7 | | 6.40 |
| BDC-104 | 5/4/2021 | 6,937 | 5,220 | 4,816 | 4,697 | 4,569 | 4,339 | 4,206 | 3,877 | 3,367 | 3,115 | 2,730 | 1,868 | 1,610 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 4.51 | 6.24 | <0.100 | | 17.4 | | 122.3 | | 5.97 |
| BDC-104 | 11/2/2021 | 7,119 | 5,402 | 4,998 | 4,879 | 4,751 | 4,521 | 4,388 | 4,059 | 3,549 | 3,297 | 2,912 | 2,050 | 1,792 | <0.1 | <0.20 | <0.20 | <0.20 | <0.40 | <0.20 | <0.60 | 0.40 | <0.100 | <0.100 | | 0.134 | | 81.2 | | 6.55 |

**Abbreviations and Acronyms:**

µg/L = micrograms per liter
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
NA = not applicable, not available
ORP = oxidation reduction potential
TOC = total organic carbon
TPH-G = total petroleum hydrocarbon-gasoline

**Notes:**

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).
(b) BTEX data questionable for this event. Concentrations inconsistent with TPH-G data for indicated event and BTEX data from other events.

= No sample collected or sample not analyzed for specified constituent.
Box = Exceedance of proposed cleanup level

| Injection Dates | Months Since Prior Injection Event | |
|---|---|---|
| 5/7/2002 | | ORC |
| 1/18/2007 | 57 | Pilot -scale nitrate |
| 2/26/2008 | 13 | 1st full scale injection |
| 6/24/2008 | 4 | 2nd full scale injection |
| 10/30/2008 | 4 | 3rd full scale injection |
| 6/17/2009 | 8 | 4th full scale injection (start ammonium phosphate, 1/3 ammonium nitrate dose to both wells) |
| 10/28/2009 | 4 | 5th full scale injection (103 full dose, 104 half dose) |
| 9/22/2010 | 11 | 6th full scale injection (103 only full dose) |
| 2/14/2012 | 17 | 7th full scale injection (103 only full dose) |
| 10/23/2012 | 8 | 8th full scale injection (103 only 1.5x volume dose) |
| 11/12/2013 | 13 | 9th full scale injection (103 only 1.5x volume dose) |
| 3/23/2016 | 29 | 10th full scale injection (103 only 1.5x volume, half concentration dose) |
| 12/6/2016 | 9 | 11th full scale injection (103 only 1.5x volume dose) |

# Table 2
## AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
## Boeing Developmental Center
## Tukwila, Washington

| | | | | Aquifer Redox Conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Area | Well | Date | | DO (mg/L) | **Nitrate-Nitrogen (mg/L)** | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) |
| SWMU-17 | BDC-05-04 | 5/15/2006 | Natural Redox Baseline | | **12.3** | 2.6 | 33.4 | | |
| SWMU-17 | BDC-05-04 | 10/23/2008 | | 2.45 | **7.6** | 0.1 | 31.0 | 0.29 | 73.5 |
| SWMU-17 | BDC-05-04 | 11/2/2008 | | 0.59 | **4.5** | 0.8 | 25,2 | 0.05 | -16 |
| SWMU-17 | BDC-05-04 | 12/16/2008 | | 0.55 | **5.5** | 1.0 | 30.4 | 1.61 | -98 |
| SWMU-17 | BDC-05-04 | 1/16/2009 | | 0.06 | **4.3** | 1.0 | 21.8 | 1.48 | -192 |
| SWMU-17 | BDC-05-04 | 2/11/2009 | | 2.45 | **5.9** | 1.0 | 31.8 | 1.06 | -54 |
| SWMU-17 | BDC-05-04 | 3/9/2009 | | 0.27 | **4.8** | 1.5 | 30.1 | 0.20 | 35 |
| SWMU-17 | BDC-05-04 | 4/16/2009 | | 1.48 | **5.9** | 1.4 | 33.6 | <0.0007 | 68 |
| SWMU-17 | BDC-05-04 | 5/13/2009 | | 0.33 | **4.5** | 1.6 | 26.6 | 0.37 | 49 |
| SWMU-17 | BDC-05-04 | 8/16/2009 | | 0.86 | **5.4** | 2.2 | 30.6 | <0.0007 | 93 |
| SWMU-17 | BDC-05-04 | 11/13/2009 | Downgradient Monitoring Triggered | 0.56 | **2.2** | 3.0 | 18.4 | 2.44 | 109 |
| SWMU-17 | BDC-05-04 | 2/16/2010 | | 0.88 | **<0.1** | 3.3 | 24.6 | 1.49 | 899 |
| SWMU-17 | BDC-05-04 | 5/18/2010 | | 0.75 | **<0.1** | 3.0 | 25.4 | 1.32 | 473 |
| SWMU-17 | BDC-05-04 | 8/17/2010 | | 1.00 | **<0.1** | 2.8 | 17.1 | 3.53 | 108 |
| SWMU-17 | BDC-05-04 | 11/9/2010 | | 2.21 | **<0.1** | 2.2 | 21.3 | 3.00 | 101 |
| SWMU-17 | BDC-05-04 | 2/15/2011 | | 2.50 | **<0.1** | 2.4 | 19.4 | 4.46 | 93 |
| SWMU-17 | BDC-05-04 | 5/2/2011 | | 1.69 | **<0.1** | 2.2 | 18.0 | 1.75 | 49 |
| SWMU-17 | BDC-05-04 | 11/2/2011 | | 1.52 | **<1.0** | 1.2 | <1.0 | | -3 |
| SWMU-17 | BDC-05-04 | 5/7/2012 | | 0.16 | | 2.0 | 21.5 | | 98 |
| SWMU-17 | BDC-05-04 | 9/4/2012 | | 0.21 | **<0.10** | | 16.6 | | 96 |
| SWMU-17 | BDC-05-04 | 11/13/2012 | | 0.03 | **<0.10** | 1.8 | 16.9 | | 64 |
| SWMU-17 | BDC-05-04 | 5/23/2013 | | 0.49 | | 1.5 | 13.7 | | -310 |
| SWMU-17 | BDC-05-04 | 11/19/2013 | | 2.56 | **<0.10** | 1.0 | 13.2 | | -259 |
| SWMU-17 | BDC-05-04 | 5/6/2014 | | 3.49 | **0.40** | | 14.4 | | -299 |
| SWMU-17 | BDC-05-04 | 11/4/2014 | | 0.05 | **<0.10** | 1.6 | <1.0 | | -126 |
| SWMU-17 | BDC-05-04 | 4/28/2015 | | 0.11 | **5.0** | 0.4 | 13.5 | | 74 |
| SWMU-17 | BDC-05-04 | 10/26/2015 | | 0.08 | **<0.10** | 1.5 | <1.0 | | -101 |
| SWMU-17 | BDC-05-04 | 4/13/2016 | | 0.57 | **5.5** | | 13.9 | | 46 |
| SWMU-17 | BDC-05-04 | 11/2/2016 | | 0.39 | **<0.10** | | 0.75 | | -140.5 |
| SWMU-17 | BDC-05-04 | 5/3/2017 | | 0.42 | **8.8** | 0.6 | 12.0 | | 73.8 |
| SWMU-17 | BDC-05-04 | 11/6/2017 | | 0.93 | **<0.050** | 2.0 | 2.7 | | -28.3 |
| SWMU-17 | BDC-05-04 | 5/2/2018 | | 4.25 | | 4.7 | <1.0 | | -107.0 |
| SWMU-17 | BDC-05-04 | 11/7/2018 | | 0.97 | **<0.10** | 1.8 | 0.842 | 13.2 | -24.8 |
| SWMU-17 | BDC-05-04 | 5/3/2019 | | 0.78 | **<0.10** | 3.3 | 8.21 | 13.3 | -106.2 |
| SWMU-17 | BDC-05-04 | 11/6/2019 | | 0.02 | **<0.10** | 1.5 | 4.68 | 8.16 | -85.5 |
| SWMU-17 | BDC-05-04 | 5/6/2020 | | 0.58 | **<0.10** | 0.0 | 0.197 | 5.15 | 1.7 |
| SWMU-17 | BDC-05-04 | 11/6/2020 | | 3.18 | **<0.10** | 1.5 | 0.844 | 5.8 | -76.2 |
| SWMU-17 | BDC-05-04 | 5/5/2021 | | 0.43 | **<0.50** | 2.5 | 5.24 | 7.5 | -112.6 |
| SWMU-17 | BDC-05-04 | 11/3/2021 | | 0.64 | **<0.10** | 5.0 | 1.06 | 6.6 | -86.3 |
| | | | | | | | | | |
| SWMU-20 | MW-17A | 05/15/2006 | Natural Redox Baseline | | **1.37** | 0.0 | 27.0 | | |
| SWMU-20 | MW-17A | 11/12/2009 | Downgradient Monitoring Triggered | | **0.9** | | | | |
| SWMU-20 | MW-17A | 5/17/2010 | | | **1.6** | 0.2 | 21.0 | | |
| SWMU-20 | MW-17A | 11/8/2010 | | | **0.1** | 2.1 | 15.7 | | |
| SWMU-20 | MW-17A | 5/3/2011 | | | **1.6** | 0.0 | 19.8 | | |
| SWMU-20 | MW-17A | 8/1/2011 | | | **0.5** | 0.0 | 20.5 | | |
| SWMU-20 | MW-17A | 11/1/2011 | | | **0.3** | 0.0 | 23.2 | | |
| SWMU-20 | MW-17A | 5/3/2012 | | | **4.4** | 0.0 | | | |
| SWMU-20 | MW-17A | 9/4/2012 | | | **2.0** | | 26.8 | | |
| SWMU-20 | MW-17A | 11/13/2012 | | | **0.59** | 0.0 | 22.9 | | |
| SWMU-20 | MW-17A | 5/20/2013 | | | **2.9** | | 26.8 | | |
| SWMU-20 | MW-17A | 11/19/2013 | | | **1.3** | 0.4 | 23.9 | | |
| SWMU-20 | MW-17A | 5/6/2014 | | | **2.2** | 0.0 | 23.7 | | |
| SWMU-20 | MW-17A | 11/4/2014 | | | **0.16** | 0.4 | 26.0 | | |
| SWMU-20 | MW-17A | 4/28/2015 | | | **1.6** | 0.0 | 26.3 | | |
| SWMU-20 | MW-17A | 10/26/2015 | | 0.17 | **0.91** | 0.0 | 29.0 | | -11.1 |
| SWMU-20 | MW-17A | 4/13/2016 | | 0.31 | **1.7** | 1.8 | 0.90 | | -175 |
| SWMU-20 | MW-17A | 11/1/2016 | | 0.41 | **<0.10** | 1.4 | | | -215.9 |
| SWMU-20 | MW-17A | 5/3/2017 | | 0.62 | **<0.10** | 2.2 | | | -225 |

# Table 2
## AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
## Boeing Developmental Center
## Tukwila, Washington

| | | | | Aquifer Redox Conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Area | Well | Date | | DO (mg/L) | **Nitrate-Nitrogen (mg/L)** | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) |
| SWMU-20 | MW-17A | 11/7/2017 | | 0.57 | **<0.10** | 1.8 | <0.30 | | 23.8 |
| SWMU-20 | MW-17A | 5/1/2018 | | 0.19 | **<0.5** | 2.4 | <0.5 | | -127.4 |
| SWMU-20 | MW-17A | 11/5/2018 | | 0.41 | **<1.0** | 1.5 | <0.2 | | -189.8 |
| SWMU-20 | MW-17A | 5/1/2019 | | 0.56 | **<0.10** | 1.0 | 0.732 | | -176.0 |
| SWMU-20 | MW-17A | 11/5/2019 | | 1.65 | **0.741** | 3.0 | 2.91 | | -89.1 |
| SWMU-20 | MW-17A | 5/4/2020 | | 0.61 | **<0.10** | 1.5 | 0.145 | | -159.9 |
| SWMU-20 | MW-17A | 11/4/2020 | | 1.93 | **<0.10** | 2.0 | 0.141 | | -196.0 |
| SWMU-20 | MW-17A | 5/4/2021 | | 1.23 | **<0.50** | 0.0 | <0.5 | | -164.3 |
| SWMU-20 | MW-17A | 11/2/2021 | | 0.46 | **<0.10** | 7.0 | 0.313 | | -85.9 |
| SWMU-20 | MW-18A | 05/15/2006 | Natural Redox Baseline | | **0.154** | 0.4 | 64.8 | | |
| SWMU-20 | MW-18A | 11/12/2009 | Downgradient Monitoring Triggered | | **0.8** | | | | |
| SWMU-20 | MW-18A | 05/17/2010 | | | **1.0** | 0.4 | 32.2 | | |
| SWMU-20 | MW-18A | 11/08/2010 | | | **0.1** | 0.0 | 14.2 | | |
| SWMU-20 | MW-18A | 5/3/2011 | | | **<0.1** | 0.0 | 31.5 | | |
| SWMU-20 | MW-18A | 8/1/2011 | | | **1.1** | 0.0 | 42.2 | | |
| SWMU-20 | MW-18A | 11/1/2011 | | | **0.7** | 0.0 | 93.3 | | |
| SWMU-20 | MW-18A | 5/3/2012 | | | **<0.10** | 0.0 | | | |
| SWMU-20 | MW-18A | 9/4/2012 | | | **<0.10** | | 19.5 | | |
| SWMU-20 | MW-18A | 11/13/2012 | | | **<0.10** | 0.0 | 21.5 | | |
| SWMU-20 | MW-18A | 5/20/2013 | | | **<0.10** | | 19.6 | | |
| SWMU-20 | MW-18A | 11/19/2013 | | | **<0.10** | 0.6 | 15.0 | | |
| SWMU-20 | MW-18A | 5/6/2014 | | | **<0.10** | 0.0 | 26.1 | | |
| SWMU-20 | MW-18A | 11/4/2014 | | | **<0.10** | 0.4 | 21.0 | | |
| SWMU-20 | MW-18A | 4/28/2015 | | | **0.11** | 0.0 | 19.1 | | |
| SWMU-20 | MW-18A | 10/26/2015 | | 0.10 | **<0.10** | 0.6 | 23.4 | | -7.1 |
| SWMU-20 | MW-18A | 4/13/2016 | | 0.76 | **0.10** | 0.0 | 42.8 | | 38 |
| SWMU-20 | MW-18A | 11/1/2016 | | 0.26 | **<0.10** | 0.4 | | | -8.5 |
| SWMU-20 | MW-18A | 5/3/2017 | | 1.22 | **0.26** | 0.0 | | | 63.7 |
| SWMU-20 | MW-18A | 11/7/2017 | | 0.55 | **<0.10** | 0.0 | 14.2 | | 7.0 |
| SWMU-20 | MW-18A | 5/1/2018 | | 0.83 | **<0.10** | 0.0 | 36.8 | | -15.6 |
| SWMU-20 | MW-18A | 11/5/2018 | | 0.49 | **<0.10** | 0.0 | 13.3 | | 25.1 |
| SWMU-20 | MW-18A | 5/1/2019 | | 0.54 | **<0.10** | 0.0 | 17.6 | | 45.8 |
| SWMU-20 | MW-18A | 11/5/2019 | | 0.29 | **<0.10** | 1.0 | 11.5 | | 5.4 |
| SWMU-20 | MW-18A | 5/4/2020 | | 0.84 | **<0.10** | 0.0 | 12.2 | | 30.8 |
| SWMU-20 | MW-18A | 11/5/2020 | | 0.79 | **<0.10** | 0.8 | 6.50 | | 46.5 |
| SWMU-20 | MW-18A | 5/4/2021 | | 0.93 | **<0.10** | 0.0 | 14.4 | | 32.9 |
| SWMU-20 | MW-18A | 11/2/2021 | | 0.84 | **<0.10** | 2.5 | 2.67 | | 85.6 |
| SWMU-20 | MW-21A | 05/15/2006 | Natural Redox Baseline | | **0.136** | 0.4 | 54.9 | | |
| SWMU-20 | MW-21A | 11/12/2009 | Downgradient Monitoring Triggered | | **<0.1** | | | | |
| SWMU-20 | MW-21A | 05/17/2010 | | | **0.2** | 0.0 | 11.9 | | |
| SWMU-20 | MW-21A | 11/08/2010 | | | **<0.1** | 0.0 | 5.9 | | |
| SWMU-20 | MW-21A | 5/3/2011 | | | **0.2** | 0.0 | 52.1 | | |
| SWMU-20 | MW-21A | 8/1/2011 | | | **0.1** | 0.0 | 26.7 | | |
| SWMU-20 | MW-21A | 11/1/2011 | | | **<0.1** | 0.0 | 9.3 | | |
| SWMU-20 | MW-21A | 5/3/2012 | | | **0.17** | 0.0 | | | |
| SWMU-20 | MW-21A | 9/4/2012 | | | **<0.10** | | 6.7 | | |
| SWMU-20 | MW-21A | 11/13/2012 | | | **0.16** | 0.0 | 18.5 | | |
| SWMU-20 | MW-21A | 5/20/2013 | | | **0.10** | 0.5 | 13.5 | | |
| SWMU-20 | MW-21A | 11/19/2013 | | | **<0.10** | 0.0 | 15.6 | | |
| SWMU-20 | MW-21A | 5/6/2014 | | | **<0.10** | 0.0 | 7.6 | | |
| SWMU-20 | MW-21A | 11/4/2014 | | | **<0.10** | 0.0 | 5.1 | | |
| SWMU-20 | MW-21A | 4/28/2015 | | | **<0.10** | 0.0 | 5.3 | | |
| SWMU-20 | MW-21A | 10/26/2015 | | 0.33 | **0.11** | 0.0 | 3.9 | | 10.3 |
| SWMU-20 | MW-21A | 4/13/2016 | | 2.08 | **<0.10** | 0.0 | 4.9 | | 56 |
| SWMU-20 | MW-21A | 11/1/2016 | | 1.71 | **0.10** | 0.2 | | | 78 |
| SWMU-20 | MW-21A | 5/3/2017 | | 3.41 | **0.19** | 0.0 | | | 99.8 |

# Table 2
## AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
## Boeing Developmental Center
## Tukwila, Washington

| | | | | Aquifer Redox Conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Area | Well | Date | | DO (mg/L) | **Nitrate-Nitrogen (mg/L)** | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) |
| SWMU-20 | MW-21A | 11/7/2017 | | 0.88 | **<0.10** | 0.0 | 11.0 | | 44.2 |
| SWMU-20 | MW-21A | 5/1/2018 | | 3.49 | **<0.10** | 0.0 | 7.53 | | 80.7 |
| SWMU-20 | MW-21A | 11/5/2018 | | 0.96 | **<0.10** | 0.0 | 4.88 | | 141.9 |
| SWMU-20 | MW-21A | 5/1/2019 | | 1.92 | **0.125** | 0.0 | 11.4 | | 93.7 |
| SWMU-20 | MW-21A | 11/5/2019 | | 6.22 | **<0.10** | 0.0 | 4.35 | | 33.7 |
| SWMU-20 | MW-21A | 5/4/2020 | | 1.75 | **<0.10** | 0.0 | 7.81 | | -4.1 |
| SWMU-20 | MW-21A | 11/5/2020 | | 1.68 | **<0.10** | 0.0 | 8.88 | | 47.3 |
| SWMU-20 | MW-21A | 5/4/2021 | | 1.85 | **<0.10** | 0.0 | 6.46 | | 66.2 |
| SWMU-20 | MW-21A | 11/2/2021 | | 0.61 | **<0.10** | 0.0 | 8.94 | | 80.7 |

**Abbreviations and Acronyms:**

DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxidation-reduction potential

**Notes:**

Nitrate-nitrogen column **bolded** for emphasis of target compound. Other results included for aquifer redox evaluation.
= not analyzed

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-02 | 5/21/2007 | -526 | | | 20 | 24 | 1.2 | <1.0 | | | | 0.003 | 0.002 | 0.004 | <0.002 | | | | | | | | 0.12 | 0.18 | 0.01 | 0.00 | | | 0.32 | | 0.38 | 0.58 | 0.04 | 0.00 | |
| (IW 2011, 2017) | 11/26/2007 | -337 | | | 12 | 14 | 1.3 | <1.0 | | | | 0.001 | <0.001 | <0.002 | <0.002 | | | | | | | | 0.07 | 0.11 | 0.01 | 0.00 | | | 0.19 | | 0.38 | 0.55 | 0.07 | 0.00 | |
| | 5/22/2008 | -159 | | | 14 | 20 | 1.2 | <0.2 | | | | 0.002 | <0.001 | 0.004 | <0.002 | | | | | | | | 0.08 | 0.15 | 0.01 | 0.00 | | | 0.25 | | 0.34 | 0.61 | 0.05 | 0.00 | |
| BDC-05-02 | 10/23/2008 | -5 | | | 31 | 62 | 2.9 | <1.0 | <1.1 | <1.2 | <1.1 | 0.003 | 0.003 | 0.006 | <0.002 | 5.15 | 0.4 | 0.2 | 13.0 | 0.19 | 87.1 | 5.5 | 6.47 | 0.19 | 0.47 | 0.03 | 0.00 | 0.00 | 0.00 | 0.69 | 0.00 | 0.27 | 0.69 | 0.04 | 0.00 | 0.00 |
| BDC-05-02 | 11/20/2008 | 23 | | | 5.1 | 4.2 | 0.7 | <0.2 | <1.1 | <1.2 | <1.1 | 0.017 | 0.011 | 0.008 | <0.002 | 0.29 | <0.1 | 1.8 | 64.8 | 3.3 | -111 | 430 | 6.47 | 0.03 | 0.03 | 0.01 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.44 | 0.46 | 0.10 | 0.00 | 0.00 |
| BDC-05-02 | 12/16/2008 | 49 | | | 6.6 | 7.3 | 1.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.024 | 0.017 | 0.030 | 0.003 | 1.28 | <0.1 | 3.4 | 88.8 | 2.9 | -225 | 610 | 6.41 | 0.04 | 0.06 | 0.01 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.37 | 0.51 | 0.12 | 0.00 | 0.00 |
| BDC-05-02 | 1/16/2009 | 80 | | | 7.5 | 22 | 3.7 | <1.0 | <1.1 | <1.2 | <1.1 | 0.022 | 0.014 | 0.029 | <0.002 | 0.09 | <1.0 | 3.5 | 6.9 | 6.2 | -304 | 732 | 6.10 | 0.05 | 0.17 | 0.04 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.18 | 0.67 | 0.15 | 0.00 | 0.00 |
| BDC-05-02 | 2/11/2009 | 106 | | | 9.5 | 17 | 12 | <1.0 | <1.1 | <1.2 | <1.1 | 0.046 | 0.040 | 0.004 | <0.002 | 2.36 | <0.1 | 4.0 | <0.1 | 13.2 | -99 | 433 | 6.32 | 0.06 | 0.13 | 0.12 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.18 | 0.42 | 0.40 | 0.00 | 0.00 |
| BDC-05-02 | 3/9/2009 | 132 | | | 9.1 | 8.1 | 25 | <1.0 | <1.1 | <1.2 | <1.1 | 0.041 | 0.036 | 0.004 | <0.002 | 0.09 | <1.0 | 3.5 | <1.0 | 22.9 | -102 | 317 | 6.43 | 0.05 | 0.06 | 0.26 | 0.00 | 0.00 | 0.00 | 0.37 | 0.00 | 0.15 | 0.16 | 0.69 | 0.00 | 0.00 |
| BDC-05-02 | 4/16/2009 | 170 | | | 7.3 | 6.0 | 41 | <1.0 | <1.1 | <1.2 | <1.1 | 0.029 | 0.025 | 0.003 | <0.002 | 1.78 | <0.1 | 3.0 | <0.5 | 26.3 | -97 | 274 | 6.59 | 0.04 | 0.05 | 0.42 | 0.00 | 0.00 | 0.00 | 0.51 | 0.00 | 0.09 | 0.09 | 0.83 | 0.00 | 0.00 |
| BDC-05-02 | 5/13/2009 | 197 | | | 4.4 | 4.6 | 35 | 1.4 | <1.1 | <1.2 | | 0.024 | 0.019 | 0.004 | <0.002 | 0.27 | <0.1 | 5.2 | <0.1 | 23.0 | -63 | 215 | 6.61 | 0.03 | 0.04 | 0.36 | 0.02 | 0.00 | 0.00 | 0.44 | 0.00 | 0.06 | 0.08 | 0.81 | 0.05 | 0.00 |
| BDC-05-02 | 8/16/2009 | 292 | | | 1.8 | 1.1 | 49 | <1.0 | <1.1 | <1.2 | <1.1 | 0.023 | 0.017 | 0.009 | <0.002 | 1.58 | <0.5 | 3.6 | <0.5 | 22.6 | -23 | 125 | 6.77 | 0.01 | 0.01 | 0.51 | 0.00 | 0.00 | 0.00 | 0.52 | 0.00 | 0.02 | 0.02 | 0.96 | 0.00 | 0.00 |
| BDC-05-02 | 11/13/2009 | 381 | | | 1.0 | <1.0 | 70 | <1.0 | <1.1 | <1.2 | <1.1 | 0.020 | 0.016 | 0.003 | <0.002 | 1.07 | <0.1 | 2.8 | 0.3 | 21.1 | -26 | 44.1 | 6.05 | 0.01 | 0.00 | 0.72 | 0.00 | 0.00 | 0.00 | 0.73 | 0.00 | 0.01 | 0.00 | 0.99 | 0.00 | 0.00 |
| BDC-05-02 | 2/16/2010 | 476 | | | <1.0 | <1.0 | 54 | <1.0 | <1.1 | <1.2 | <1.1 | 0.022 | 0.020 | 0.005 | 0.002 | 1.52 | <0.5 | 2.0 | 0.5 | 22.5 | 763 | 86.7 | 6.87 | 0.00 | 0.00 | 0.56 | 0.00 | 0.00 | 0.00 | 0.56 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 5/18/2010 | 567 | | | <1.0 | 1.0 | 32 | <1.0 | <1.1 | <1.2 | <1.1 | 0.013 | 0.012 | <0.002 | <0.002 | 1.83 | <0.5 | 2.3 | <0.5 | 18.4 | 515 | 20.6 | 6.69 | 0.00 | 0.01 | 0.33 | 0.00 | 0.00 | 0.00 | 0.34 | 0.00 | 0.00 | 0.02 | 0.98 | 0.00 | 0.00 |
| BDC-05-02 | 8/17/2010 | 658 | | | <1.0 | <1.0 | 23 | <1.0 | <1.1 | <1.2 | <1.1 | 0.010 | 0.008 | <0.002 | <0.002 | 2.82 | 0.2 | 2.7 | 1.4 | 20.2 | 55 | 13.3 | 6.74 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 11/9/2010 | 742 | | | <1.0 | <1.0 | 14 | <1.0 | <1.1 | <1.2 | <1.1 | 0.006 | 0.005 | <0.002 | <0.002 | 2.77 | <0.1 | 2.2 | 0.3 | 16.9 | 72 | 10.8 | 6.83 | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 2/15/2011 | 840 | | | <1.0 | <1.0 | 13 | <1.0 | <1.1 | <1.2 | <1.1 | 0.007 | 0.006 | 0.003 | <0.002 | 2.43 | <0.1 | 3.0 | 0.7 | 17.8 | 114 | 13.2 | 6.80 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 5/2/2011 | 916 | | | 0.6 | 0.9 | 22 | 0.3 | <1.1 | <1.2 | <1.1 | 0.008 | 0.007 | <0.002 | <0.002 | 2.09 | <0.1 | 1.4 | 0.2 | 13.3 | 13 | 9.8 | 6.86 | 0.00 | 0.01 | 0.23 | 0.00 | 0.00 | 0.00 | 0.24 | 0.00 | 0.01 | 0.03 | 0.94 | 0.02 | 0.00 |
| BDC-05-02 | 7/31/2011 | 1006 | -18 | | <1.0 | <1.0 | 10 | <1.0 | <1.1 | <1.2 | <1.1 | 0.006 | 0.005 | <0.002 | <0.002 | 1.97 | <0.1 | 3.2 | 0.2 | 15.0 | -35 | 8.7 | 6.82 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 11/2/2011 | 1100 | 76 | | 8.4 | 4.8 | 150 | 1.6 | <1.1 | <1.2 | <1.1 | 0.025 | 0.022 | 0.010 | 0.010 | 2.40 | <0.1 | 3.5 | 1.4 | 9.0 | -28 | 5360 | 5.43 | 0.05 | 0.04 | 1.55 | 0.03 | 0.00 | 0.00 | 1.66 | 0.00 | 0.03 | 0.02 | 0.93 | 0.02 | 0.00 |
| BDC-05-02 | 2/19/2012 | 1209 | 185 | | <4.0 | <4.0 | 220 | <4.0 | <1.0 | <1.0 | <1.0 | | | | | 1.37 | <0.5 | 1.3 | <1.5 | 8.5 | -32 | 673 | 6.70 | 0.00 | 0.00 | 2.27 | 0.00 | 0.00 | 0.00 | 2.27 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 5/7/2012 | 1287 | 263 | | <2.0 | <2.0 | 180 | <2.0 | <1.0 | <1.0 | <1.0 | 0.051 | 0.049 | 0.004 | <0.002 | 0.60 | | 2.2 | 0.8 | 19.0 | 35 | 412 | 6.71 | 0.00 | 0.00 | 1.86 | 0.00 | 0.00 | 0.00 | 1.86 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 9/5/2012 | 1408 | 384 | | <2.0 | <2.0 | 57 | <2.0 | <1.0 | <1.0 | <1.0 | | | | | 0.11 | | 1.8 | <0.3 | 10.0 | 71 | 116 | 6.45 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 11/15/2012 | 1479 | 455 | | <2.0 | <2.0 | 32 | 5.5 | <1.0 | <1.0 | <1.0 | 0.014 | 0.013 | <0.003 | <0.002 | 0.03 | | 1.2 | <0.3 | 20.0 | 17 | 106 | 6.49 | 0.00 | 0.00 | 0.33 | 0.09 | 0.00 | 0.00 | 0.42 | 0.00 | 0.00 | 0.00 | 0.79 | 0.21 | 0.00 |
| BDC-05-02 | 2/26/2013 | 1582 | 558 | | <1.0 | <1.0 | 1.2 | 2.7 | 1.4 | <1.0 | <1.0 | | | | | 0.12 | | 1.2 | <0.30 | 17.0 | 45 | 32.2 | 6.66 | 0.00 | 0.00 | 0.01 | 0.04 | 0.05 | 0.00 | 0.06 | 0.05 | 0.00 | 0.00 | 0.12 | 0.41 | 0.47 |
| BDC-05-02 | 5/22/2013 | 1667 | 643 | | 0.3 | 0.5 | 0.7 | 0.6 | <1.0 | <1.0 | <1.0 | 0.006 | 0.005 | 0.002 | <0.002 | 0.21 | | 1.0 | 0.57 | 15.0 | -316 | 19.3 | 7.74 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.08 | 0.17 | 0.32 | 0.43 | 0.00 |
| BDC-05-02 | 8/29/2013 | 1766 | 742 | | 0.3 | 0.4 | 0.6 | 0.2 | <1.0 | <1.0 | <1.0 | | | | | 1.96 | | 1.4 | <0.30 | 14.0 | -303 | 15.7 | 6.34 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.13 | 0.21 | 0.43 | 0.22 | 0.00 |
| BDC-05-02 | 11/13/2013 | 1842 | 818 | | 0.4 | 0.5 | 0.9 | 0.6 | <1.0 | <1.0 | <1.0 | 0.008 | 0.007 | 0.003 | <0.002 | 2.52 | | 1.8 | <0.30 | 14.0 | -272 | 26.8 | 6.42 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 0.10 | 0.15 | 0.37 | 0.38 | 0.00 |
| BDC-05-02 | 2/11/2014 | 1932 | 908 | | 0.8 | <0.2 | <0.2 | <0.2 | <1.0 | <3.0 | <1.0 | | | | | 4.01 | | 2.8 | <0.30 | 12.0 | -235 | 7.1 | 6.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-02 | 5/13/2014 | 2023 | 999 | | 0.8 | 1.1 | 1.5 | 2.4 | 5.1 | <1.0 | <1.0 | 0.023 | 0.019 | 0.003 | <0.002 | 4.23 | | 1.8 | 5.7 | 15.0 | -380 | 66.5 | 6.62 | 0.00 | 0.01 | 0.02 | 0.04 | 0.18 | 0.00 | 0.07 | 0.18 | 0.02 | 0.03 | 0.06 | 0.15 | 0.73 |
| BDC-05-02 | 8/6/2014 | 2108 | 1084 | | <1.0 | <1.0 | <1.0 | 4.1 | 40 | 11 | <1.0 | | | | | 7.61 | | 1.5 | 3.6 | 17.0 | -215 | 93.4 | 7.20 | 0.00 | 0.00 | 0.00 | 0.07 | 1.43 | 0.37 | 0.07 | 1.79 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-02 | 11/11/2014 | 2205 | 1181 | | 1.5 | 0.7 | 2.3 | 0.6 | <1.0 | 12 | <1.0 | 0.039 | 0.032 | 0.003 | <0.002 | 0.05 | | 1.0 | 1.2 | 13.0 | -80 | 38.2 | 6.22 | 0.01 | 0.01 | 0.02 | 0.01 | 0.00 | 0.40 | 0.05 | 0.40 | 0.02 | 0.01 | 0.05 | 0.02 | 0.89 |
| BDC-05-02 | 1/21/2015 | 2276 | 1252 | | 1.2 | 0.6 | 1.7 | 1.7 | <1.0 | 4.7 | <1.0 | | | | | 0.16 | | 0.6 | 8.9 | 12.0 | -135 | 40 | 6.36 | 0.01 | 0.00 | 0.02 | 0.03 | 0.00 | 0.16 | 0.06 | 0.16 | 0.03 | 0.02 | 0.08 | 0.13 | 0.73 |
| BDC-05-02 | 4/27/2015 | 2372 | 1348 | | 2.7 | 1.1 | 1.2 | 3.4 | 3.0 | 6.4 | <1.0 | 0.018 | 0.011 | 0.004 | <0.002 | 0.07 | | 2.0 | 14.3 | 9.8 | -63 | 15.9 | 6.39 | 0.02 | 0.01 | 0.01 | 0.05 | 0.11 | 0.21 | 0.09 | 0.32 | 0.04 | 0.02 | 0.03 | 0.13 | 0.78 |
| BDC-05-02 | 7/20/2015 | 2456 | 1432 | | 1.8 | 1.4 | 0.7 | 0.7 | <1.0 | 11 | <1.0 | | | | | 0.15 | | 1.9 | 9.5 | 8.0 | -67 | 15.3 | 6.36 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.37 | 0.04 | 0.37 | 0.03 | 0.03 | 0.02 | 0.03 | 0.90 |
| BDC-05-02 | 10/28/2015 | 2556 | 1532 | | 0.8 | <0.2 | 0.6 | 0.4 | <1.0 | <1.0 | <1.0 | 0.002 | 0.002 | 0.006 | <0.002 | 0.21 | | 0.8 | 0.70 | 9.2 | -5.7 | 3.8 | 6.29 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.28 | 0.00 | 0.36 | 0.37 | 0.00 |
| BDC-05-02 | 1/26/2016 | 2646 | 1622 | | 4.9 | 1.7 | 1.4 | 1.8 | 2.1 | 5.5 | <1.0 | | | | | 0.22 | | 1.4 | 23.7 | 10.0 | -28 | 20.9 | 6.40 | 0.03 | 0.01 | 0.01 | 0.03 | 0.07 | 0.18 | 0.09 | 0.26 | 0.09 | 0.04 | 0.04 | 0.08 | 0.75 |
| BDC-05-02 | 4/20/2016 | 2731 | 1707 | | 4.2 | 1.4 | 0.8 | 0.6 | <1.0 | 4.4 | <1.0 | 0.005 | 0.002 | 0.008 | 0.004 | 0.09 | | 1.8 | 14.5 | 8.8 | -9.8 | 13.6 | 6.26 | 0.03 | 0.01 | 0.01 | 0.01 | 0.00 | 0.15 | 0.05 | 0.15 | 0.13 | 0.05 | 0.04 | 0.05 | 0.73 |
| BDC-05-02 | 8/9/2016 | 2842 | 1818 | | 1.6 | 1.6 | 0.3 | <0.2 | <1.0 | 4.9 | <1.0 | 0.021 | 0.011 | <0.002 | <0.002 | 0.50 | | 1.4 | 3.8 | 12.0 | -101.3 | 14.4 | 6.28 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.16 | 0.02 | 0.16 | 0.05 | 0.06 | 0.02 | 0.00 | 0.87 |
| BDC-05-02 | 11/2/2016 | 2927 | 1903 | | 1.7 | <0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.003 | 0.002 | <0.002 | <0.002 | 0.50 | | 0.6 | <0.30 | 10.0 | -83.5 | 6.0 | 6.42 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-02 | 2/7/2017 | 3024 | 2000 | | 2.1 | 1.6 | 0.5 | 0.5 | 1.2 | 5.4 | <1.0 | 0.004 | 0.002 | 0.002 | <0.002 | 0.40 | | 2.4 | 18.8 | 9.6 | -72.5 | 10.7 | 6.65 | 0.01 | 0.01 | 0.01 | 0.01 | 0.04 | 0.18 | 0.04 | 0.22 | 0.05 | 0.05 | 0.02 | 0.03 | 0.85 |
| BDC-05-02 | 5/4/2017 | 3110 | 2086 | | 4.2 | 2.0 | 0.4 | 0.4 | <1.0 | 3.6 | <1.0 | 0.002 | 0.001 | 0.007 | 0.004 | 0.48 | | 0.8 | 23.2 | 5.0 | 27.5 | 15.6 | 6.34 | 0.03 | 0.02 | 0.00 | 0.01 | 0.00 | 0.12 | 0.05 | 0.12 | 0.15 | 0.09 | 0.02 | 0.04 | 0.70 |
| BDC-05-02 | 8/1/2017 | 3199 | 2175 | | 3.9 | 2.5 | 0.3 | <0.2 | <1.0 | 8.2 | <1.0 | 0.012 | 0.009 | <0.002 | <0.002 | 0.13 | | 1.6 | 18.4 | 8.0 | -14.1 | 12.3 | 6.07 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.27 | 0.05 | 0.27 | 0.07 | 0.06 | 0.01 | 0.00 | 0.86 |
| BDC-05-02 | 11/6/2017 | 3296 | 2272 | -4 | 1.3 | 3.6 | 0.3 | <0.2 | <1.0 | 3.5 | <1.0 | 0.013 | 0.011 | <0.002 | <0.002 | 1.12 | | 1.8 | 13.0 | 10.0 | -5.0 | 10.5 | 6.53 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.12 | 0.04 | 0.12 | 0.05 | 0.18 | 0.02 | 0.00 | 0.75 |
| BDC-05-02 | 5/2/2018 | 3473 | 2449 | 173 | 3.7 | 3.75 | 15.4 | 1.83 | <1.14 | <1.23 | <1.06 | 0.039 | 0.035 | <0.050 | <0.050 | 0.66 | | 8.6 | 135 | 10.2 | 3.2 | 9629 | 5.16 | 0.02 | 0.03 | 0.16 | 0.03 | 0.00 | 0.00 | 0.24 | 0.00 | 0.09 | 0.12 | 0.66 | 0.12 | 0.00 |
| BDC-05-02 | 11/6/2018 | 3661 | 2637 | 361 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | <1.06 | 0.044 | 0.033 | 0.035 | <0.010 | 2.08 | | 1.2 | <1.0 | 9.3 | -179.4 | 1723 | 6.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-02 | 5/3/2019 | 3839 | 2815 | 539 | 0.41 | 0.21 | 1.10 | <0.2 | <1.14 | <1.23 | <1.06 | 0.041 | 0.036 | 0.018 | <0.010 | 1.09 | | | 6.21 | 15.7 | -156.7 | 1360 | 6.64 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.16 | 0.10 | 0.74 | 0.00 | 0.00 |
| BDC-05-02 | 11/6/2019 | 4026 | 3002 | 726 | <0.2 | <0.2 | 0.70 | <0.2 | <1.14 | <1.23 | <1.06 | 0.025 | 0.025 | 0.016 | <0.010 | 1.29 | | 0.0 | 1.52 | 4.35 | -48.1 | 1233 | 6.71 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-02 | 5/6/2020 | 4208 | 3184 | 908 | 0.24 | <0.2 | 0.40 | <0.2 | <1.14 | <1.23 | <1.06 | 0.028 | 0.026 | 0.017 | 0.001 | 2.35 | | 0.0 | 2.09 | 12.6 | -76.3 | 1103 | 6.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.26 | 0.00 | 0.74 | 0.00 | 0.00 |
| BDC-05-02 | 11/5/2020 | 4391 | 3367 | 1091 | 0.56 | <0.2 | 0.73 | <0.2 | <1.14 | <1.23 | <1.06 | 0.021 | 0.016 | 0.028 | <0.010 | 1.83 | | 2.5 | 0.88 | 11.9 | -159.6 | 894 | 6.53 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.31 | 0.00 | 0.69 | 0.00 | 0.00 |
| BDC-05-02 | 5/5/2021 | 4572 | 3548 | 1272 | 0.52 | 0.98 | 0.54 | <0.20 | <1.14 | <1.23 | <1.06 | 0.010 | 0.009 | 0.027 | 0.003 | 0.29 | | 3.0 | 25.7 | 7.6 | -153.7 | 484.4 | 6.69 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.19 | 0.46 | 0.34 | 0.00 | 0.00 |
| BDC-05-02 | 11/3/2021 | 4754 | 3730 | 1454 | 0.45 | <0.20 | 0.57 | <0.20 | <1.14 | <1.23 | <1.06 | 0.015 | 0.011 | 0.032 | 0.001 | 0.02 | | 7.0 | 2.2 | 9.27 | 6.6 | 604 | 6.83 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.32 | 0.00 | 0.68 | 0.00 | 0.00 |
| BDC-05-03 | 5/21/2007 | -526 | | | 3.5 | 8.1 | 11 | <1.0 | | | | 0.003 | <0.001 | 0.004 | <0.002 | | | | | | | | 0.02 | 0.06 | 0.11 | 0.00 | | | 0.20 | | 0.11 | 0.31 | 0.58 | 0.00 | |
| (IW 2017) | 11/26/2007 | -337 | | | 2.3 | 4.4 | 7.2 | <1.0 | | | | 0.002 | <0.001 | 0.003 | <0.002 | | | | | | | | 0.01 | 0.03 | 0.07 | 0.00 | | | 0.12 | | 0.11 | 0.28 | 0.61 | 0.00 | |
| | 5/22/2008 | -159 | | | 3.8 | 8.5 | 13 | <0.2 | | | | 0.002 | <0.001 | 0.003 | <0.002 | | | | | | | | 0.02 | 0.06 | 0.13 | 0.00 | | | 0.22 | | 0.10 | 0.29 | 0.60 | 0.00 | |
| BDC-05-03 | 10/23/2008 | -5 | | | 4.2 | 8.2 | 17 | <0.2 | <1.1 | <1.2 | <1.1 | 0.004 | 0.002 | 0.004 | 0.002 | 0.37 | <0.1 | 0.1 | 4.9 | 2.1 | 48.9 | 4.9 | 6.23 | 0.03 | 0.06 | 0.18 | 0.00 | 0.00 | 0.00 | 0.26 | 0.00 | 0.10 | 0.24 | 0.67 | 0.00 | 0.00 |
| BDC-05-03 | 11/20/2008 | 23 | | | 1.8 | 2.1 | 2.7 | <0.2 | <1.1 | <1.2 | <1.1 | 0.003 | 0.001 | 0.004 | <0.002 | 2.07 | 0.9 | 1.6 | 8.5 | 3.6 | -8 | 7.0 | 6.23 | 0.01 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.20 | 0.29 | 0.51 | 0.00 | 0.00 |
| BDC-05-03 | 12/16/2008 | 49 | | | 2.2 | 4.1 | 5.8 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | <0.001 | 0.002 | <0.002 | 1.20 | 0.4 | 2.4 | 20.1 | 4.7 | -67 | 5.4 | 6.44 | 0.01 | 0.03 | 0.06 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.13 | 0.30 | 0.57 | 0.00 | 0.00 |
| BDC-05-03 | 1/16/2009 | 80 | | | 1.5 | 1.2 | <1.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | <0.001 | 0.002 | <0.002 | 0.71 | 1.7 | 0.4 | 10.3 | 1.5 J | -144 | 3.2 | 6.17 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.50 | 0.50 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 2/11/2009 | 106 | | | 1.8 | 3.2 | 4.4 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | <0.001 | 0.002 | <0.002 | 2.43 | 0.9 | 2.4 | 6.2 | 5.4 | -60 | 5.4 | 6.59 | 0.01 | 0.02 | 0.05 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.13 | 0.30 | 0.56 | 0.00 | 0.00 |
| BDC-05-03 | 3/9/2009 | 132 | | | 1.3 | 1.7 | 1.4 | <1.0 | <1.1 | <1.2 | <1.1 | <0.001 | <0.001 | <0.002 | <0.002 | 0.86 | 1.0 | 1.0 | 6.6 | 4.3 | 39 | 4.8 | 6.48 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.22 | 0.37 | 0.41 | 0.00 | 0.00 |
| BDC-05-03 | 4/16/2009 | 170 | | | 1.5 | 2.2 | 2.8 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | 0.002 | <0.002 | <0.002 | 1.42 | 1.0 | 1.4 | 4.8 | 3.3 | 14 | 5.4 | 6.69 | 0.01 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.17 | 0.31 | 0.53 | 0.00 | 0.00 |
| BDC-05-03 | 5/13/2009 | 197 | | | 1.2 | 2.1 | 3.4 | <1.0 | <1.1 | <1.2 | | 0.001 | 0.0004 | 0.004 | 0.002 | 1.06 | 1.0 | 3.0 | 4.8 | 6.9 | 31 | 5.5 | 6.75 | 0.01 | 0.02 | 0.04 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.12 | 0.27 | 0.60 | 0.00 | 0.00 |
| BDC-05-03 | 8/16/2009 | 292 | | | 2.2 | 4.3 | 8.1 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | 0.001 | <0.002 | <0.002 | 0.85 | 0.1 | 3.0 | 3.0 | 8.3 | -42 | 6.5 | 7.11 | 0.01 | 0.03 | 0.08 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.10 | 0.25 | 0.64 | 0.00 | 0.00 |
| BDC-05-03 | 11/13/2009 | 381 | | | 1.2 | 1.2 | <1.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.003 | <0.002 | 1.66 | 0.2 | 3.0 | 5.6 | 5.0 | 57 | 4.3 | 6.37 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.44 | 0.56 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 2/16/2010 | 476 | | | 1.4 | 1.0 | <1.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | <0.001 | 0.005 | 0.005 | 1.25 | 2.5 | 0.0 | 8.6 | <0.0007 | 663 | 3.5 | 6.30 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.53 | 0.47 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 5/18/2010 | 567 | | | 1.2 | 1.8 | 2.7 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.004 | 0.003 | 0.88 | 1.5 | 2.0 | 4.9 | 2.4 | 346 | 4.7 | 6.42 | 0.01 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.15 | 0.28 | 0.57 | 0.00 | 0.00 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-03 | 8/17/2010 | 658 | | | 2.3 | 5.2 | 14 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.003 | <0.002 | 2.10 | 0.2 | 2.7 | 2.8 | 7.1 | 73 | 7.6 | 6.79 | 0.01 | 0.04 | 0.14 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.07 | 0.20 | 0.73 | 0.00 | 0.00 |
| BDC-05-03 | 11/9/2010 | 742 | | | 1.4 | 1.7 | 3.7 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | 0.001 | 0.003 | <0.002 | 3.20 | 0.5 | 2.2 | 5.3 | 3.0 | 133 | 4.7 | 7.61 | 0.01 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.14 | 0.22 | 0.64 | 0.00 | 0.00 |
| BDC-05-03 | 2/15/2011 | 840 | | | 1.3 | <1.0 | 2.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.001 | 0.0003 | 0.005 | 0.003 | 2.86 | 0.7 | 0.0 | 6.2 | 4.6 | 166 | 5.4 | 7.01 | 0.01 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.25 | 0.00 | 0.75 | 0.00 | 0.00 |
| BDC-05-03 | 5/2/2011 | 916 | -108 | | 1.7 | 1.0 | 0.2 | <0.2 | <1.1 | <1.2 | <1.1 | 0.002 | 0.0004 | 0.005 | 0.003 | 3.31 | 0.8 | 0.0 | 5.5 | 0.3 | 203 | 4.1 | 6.91 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.51 | 0.38 | 0.10 | 0.00 | 0.00 |
| BDC-05-03 | 11/2/2011 | 1100 | 76 | | 1.4 | 1.6 | 20 | 2.0 | | | | 0.018 | 0.017 | 0.004 | 0.002 | 1.20 | <0.1 | 1.6 | <1.0 | | -60 | 70.0 | 6.72 | 0.01 | 0.01 | 0.21 | 0.03 | | | 0.26 | | 0.03 | 0.05 | 0.80 | 0.12 | |
| BDC-05-03 | 5/6/2012 | 1286 | 262 | | 0.6 | 1.3 | <0.2 | 0.3 | | | | 0.002 | 0.004 | 0.003 | 0.010 | 0.02 | | 1.2 | 10.3 | | 82 | 4.9 | 6.26 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.02 | | 0.20 | 0.54 | 0.00 | 0.26 | |
| BDC-05-03 | 11/13/2012 | 1477 | 453 | | <0.5 | <0.5 | <0.5 | 0.7 | | | | 0.008 | 0.007 | 0.003 | <0.002 | 0.01 | | 0.3 | 1.2 | | 13 | 8.3 | 6.79 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.01 | | 0.00 | 0.00 | 0.00 | 1.00 | |
| BDC-05-03 | 5/22/2013 | 1667 | 643 | | 0.4 | 0.5 | 0.4 | 1.1 | | | | 0.004 | 0.003 | <0.002 | <0.002 | 0.23 | | 0.8 | 2.7 | | -264 | 6.6 | 7.57 | 0.00 | 0.00 | 0.00 | 0.02 | | | 0.03 | | 0.09 | 0.14 | 0.15 | 0.63 | |
| BDC-05-03 | 11/13/2013 | 1842 | 818 | | 1.3 | 1.2 | 0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.008 | 0.001 | 0.003 | <0.002 | 3.19 | | 1.6 | 10.5 | 0.45 | -272 | 4.3 | 6.24 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.41 | 0.48 | 0.11 | 0.00 | 0.00 |
| BDC-05-03 | 5/13/2014 | 2023 | 999 | | 1.5 | 0.7 | <0.2 | <0.2 | <1.0 | 1.1 | <1.0 | 0.003 | <0.001 | 0.002 | <0.002 | 4.08 | | 1.4 | 9.6 | 1.00 | -206 | 5.4 | 6.30 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.01 | 0.04 | 0.18 | 0.10 | 0.00 | 0.00 | 0.72 |
| BDC-05-03 | 11/10/2014 | 2204 | 1180 | | 2.1 | 0.6 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.002 | 0.001 | 0.003 | <0.002 | 0.07 | | 0.8 | 5.6 | 0.07 | 81 | 1.1 | 5.72 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.73 | 0.27 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 4/27/2015 | 2372 | 1348 | | 1.5 | 0.4 | <0.2 | 0.4 | <1.0 | <1.0 | <1.0 | 0.002 | 0.003 | 0.004 | <0.002 | 0.93 | | 0.6 | 4.1 | 0.74 | 43 | 1.7 | 5.85 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.49 | 0.16 | 0.00 | 0.35 | 0.00 |
| BDC-05-03 | 10/28/2015 | 2556 | 1532 | | 0.6 | 0.4 | <0.2 | 0.3 | <1.0 | 1.1 | <1.0 | 0.012 | 0.006 | 0.009 | 0.002 | 0.09 | | 1.0 | 1.2 | 5.9 | -13 | 6.5 | 6.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.01 | 0.04 | 0.08 | 0.06 | 0.00 | 0.10 | 0.76 |
| BDC-05-03 | 4/20/2016 | 2731 | 1707 | | 1.2 | 0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.002 | 0.002 | 0.003 | <0.002 | 0.58 | | | 6.5 | 2.8 | 41 | 1.4 | 5.97 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.83 | 0.17 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 11/3/2016 | 2928 | 1904 | | 1.4 | 0.3 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.007 | 0.006 | <0.002 | <0.002 | 0.77 | | 3.0 | 7.7 | 0.31 | 5.4 | 2.3 | 5.91 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.79 | 0.21 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 5/4/2017 | 3110 | 2086 | | 1.4 | 0.3 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.003 | <0.0004 | 0.003 | <0.002 | 1.95 | | 0.0 | 7.2 | <3.0 | 72.5 | 2.8 | 5.63 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.79 | 0.21 | 0.00 | 0.00 | 0.00 |
| BDC-05-03 | 11/6/2017 | 3296 | 2272 | -4 | 0.2 | <0.2 | <0.2 | 0.3 | <1.0 | 3.4 | <1.0 | 0.012 | 0.009 | 0.005 | <0.002 | 0.22 | | 3.6 | <0.30 | 10.0 | 20.3 | 7.3 | 6.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.01 | 0.11 | 0.01 | 0.00 | 0.00 | 0.04 | 0.95 |
| BDC-05-03 | 5/2/2018 | 3473 | 2449 | 173 | <2.0 | <2.0 | 2.49 | <2.0 | <1.14 | <1.23 | <1.06 | 0.027 | 0.019 | <0.050 | <0.050 | 0.65 | | 7.8 | <1.0 | 9.07 | 1.2 | 4463 | 5.45 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-03 | 11/6/2018 | 3661 | 2637 | 361 | <2.0 | <2.0 | 5.27 | <2.0 | <1.14 | <1.23 | <1.06 | 0.029 | 0.018 | 0.046 | 0.004 | 1.30 | | 1.2 | 0.616 | 10.5 | -162 | 940.8 | 6.70 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-03 | 5/2/2019 | 3838 | 2814 | 538 | <0.2 | 0.22 | 4.08 | 1.86 | <1.14 | <1.23 | <1.06 | 0.034 | 0.026 | 0.045 | 0.008 | 0.28 | | 7.0 | <0.50 | 10.1 | -136.4 | 573.5 | 6.32 | 0.00 | 0.00 | 0.04 | 0.03 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.02 | 0.57 | 0.40 | 0.00 |
| BDC-05-03 | 11/6/2019 | 4026 | 3002 | 726 | <0.2 | <0.2 | 0.87 | 2.56 | <1.14 | <1.23 | <1.06 | 0.016 | 0.010 | 0.039 | 0.004 | 0.49 | | 3.0 | 0.361 | 10.6 | -5.1 | 432.6 | 6.58 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.18 | 0.82 | 0.00 |
| BDC-05-03 | 5/6/2020 | 4208 | 3184 | 908 | <0.2 | <0.2 | 0.57 | 1.77 | <1.14 | <1.23 | <1.06 | 0.026 | 0.018 | 0.039 | 0.004 | 0.56 | | 2.0 | 0.773 | 9.3 | -61.2 | 357.6 | 6.49 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.17 | 0.83 | 0.00 |
| BDC-05-03 | 11/6/2020 | 4392 | 3368 | 1092 | <0.2 | <0.2 | 0.32 | 0.93 | <1.14 | <1.23 | <1.06 | 0.017 | 0.011 | 0.057 | 0.006 | 0.60 | | 3.0 | 1.06 | 10.6 | -127.6 | 250.7 | 6.58 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.18 | 0.82 | 0.00 |
| BDC-05-03 | 5/6/2021 | 4573 | 3549 | 1273 | <0.20 | <0.20 | 0.39 | 0.74 | <1.14 | <1.23 | <1.06 | 0.021 | 0.014 | 0.053 | 0.003 | 0.37 | | 1.5 | 5.28 | 11.1 | -115.4 | 129.0 | 6.56 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.25 | 0.75 | 0.00 |
| BDC-05-03 | 11/5/2021 | 4756 | 3732 | 1456 | <0.20 | <0.20 | 0.23 | 0.53 | <1.14 | 2.76 | <1.06 | 0.017 | 0.011 | 0.084 | 0.005 | 0.51 | | 4.8 | 10.8 | 6.1 | -94.5 | 80.8 | 6.47 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.09 | 0.01 | 0.09 | 0.00 | 0.00 | 0.02 | 0.08 | 0.89 |
| BDC-05-04 | 5/21/2007 | -526 | | | <1.0 | <1.0 | 1.4 | <1.0 | | | | 0.018 | <0.001 | <0.002 | <0.002 | | | | | | | | | 0.00 | 0.00 | 0.01 | 0.00 | | | 0.01 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| (IW 2017) | 11/26/2007 | -337 | | | <1.0 | <1.0 | 1.6 | <1.0 | | | | 0.009 | <0.001 | <0.002 | <0.002 | | | | | | | | | 0.00 | 0.00 | 0.02 | 0.00 | | | 0.02 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| | 5/22/2008 | -159 | | | 1.5 | 0.9 | 1.2 | <0.2 | | | | 0.018 | <0.001 | <0.002 | <0.002 | | | | | | | | | 0.01 | 0.01 | 0.01 | 0.00 | | | 0.03 | | 0.32 | 0.24 | 0.44 | 0.00 | |
| BDC-05-04 | 10/23/2008 | -5 | | | 1.1 | 0.8 | 2.1 | <0.2 | <1.1 | <1.2 | <1.1 | 0.009 | <0.001 | <0.002 | <0.002 | 2.45 | 7.6 | 0.1 | 31.0 | 0.3 | 73.5 | 3.8 | 6.33 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.19 | 0.18 | 0.63 | 0.00 | 0.00 |
| BDC-05-04 | 11/20/2008 | 23 | | | 1.1 | 0.7 | 3.6 | <0.2 | <1.1 | <1.2 | <1.1 | 0.019 | <0.001 | <0.002 | <0.002 | 0.59 | 4.5 | 0.8 | 25.2 | 0.05 | -16 | 5.1 | 6.25 | 0.01 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.14 | 0.11 | 0.76 | 0.00 | 0.00 |
| BDC-05-04 | 12/16/2008 | 49 | | | <1.0 | <1.0 | 2.4 | <1.0 | <1.1 | <1.2 | <1.1 | 0.019 | 0.002 | 0.003 | <0.002 | 0.55 | 5.5 | 1.0 | 30.4 | 1.6 | -98 | 6.9 | 6.24 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 1/16/2009 | 80 | | | <1.0 | <1.0 | 2.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.017 | <0.001 | <0.002 | <0.002 | 0.06 | 4.3 | 1.0 | 21.8 | 1.5 | -192 | 5.1 | 6.23 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 2/11/2009 | 106 | | | 1.0 | <1.0 | 1.5 | <1.0 | <1.1 | <1.2 | <1.1 | 0.020 | <0.001 | <0.002 | <0.002 | 2.45 | 5.9 | 1.0 | 31.8 | 1.1 | -54 | 6.8 | 6.17 | 0.01 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.28 | 0.00 | 0.72 | 0.00 | 0.00 |
| BDC-05-04 | 3/9/2009 | 132 | | | 1.0 | <1.0 | 1.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.014 | 0.001 | 0.002 | <0.002 | 0.27 | 4.8 | 1.5 | 30.1 | 0.2 | 35 | 5.2 | 6.22 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.31 | 0.00 | 0.69 | 0.00 | 0.00 |
| BDC-05-04 | 4/16/2009 | 170 | | | 1.2 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.011 | 0.001 | <0.002 | <0.002 | 1.48 | 5.9 | 1.4 | 33.6 | <0.0007 | 68 | 5.7 | 6.29 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-04 | 5/13/2009 | 197 | | | <1.0 | <1.0 | 1.0 | <1.0 | <1.1 | <1.2 | | 0.007 | 0.001 | 0.002 | 0.002 | 0.33 | 4.5 | 1.6 | 26.6 | 0.4 | 49 | 5.2 | 6.37 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 8/16/2009 | 292 | | | 1.3 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.012 | 0.001 | 0.002 | <0.002 | 0.86 | 5.4 | 2.2 | 30.6 | <0.0007 | 93 | 5.0 | 6.97 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-04 | 11/13/2009 | 381 | | | <1.0 | <1.0 | 1.2 | <1.0 | <1.1 | <1.2 | <1.1 | 0.005 | 0.001 | <0.002 | <0.002 | 0.56 | 2.2 | 3.0 | 18.4 | 2.4 | 109 | 4.4 | 5.86 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 2/16/2010 | 476 | | | <1.0 | <1.0 | 1.1 | <1.0 | <1.1 | <1.2 | <1.1 | 0.004 | 0.002 | 0.012 | 0.002 | 0.88 | <0.1 | 3.3 | 24.6 | 1.5 | 899 | 8.9 | 6.24 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 5/18/2010 | 567 | | | 1.1 | <1.0 | 1.2 | <1.0 | <1.1 | <1.2 | <1.1 | 0.014 | 0.001 | 0.005 | <0.002 | 0.75 | <0.1 | 3.0 | 25.4 | 1.3 | 473 | 7.1 | 6.19 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.35 | 0.00 | 0.65 | 0.00 | 0.00 |
| BDC-05-04 | 8/17/2010 | 658 | | | <1.0 | <1.0 | 3.0 | <1.0 | <1.1 | <1.2 | <1.1 | 0.012 | 0.002 | 0.006 | <0.002 | 1.00 | <0.1 | 2.8 | 17.7 | 3.5 | 108 | 8.7 | 6.48 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 11/9/2010 | 742 | | | <1.0 | <1.0 | 4.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.008 | 0.004 | <0.002 | <0.002 | 2.21 | <0.1 | 2.2 | 21.3 | 3.0 | 101 | 7.2 | 6.84 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 2/15/2011 | 840 | | | <1.0 | <1.0 | 2.9 | <1.0 | <1.1 | <1.2 | <1.1 | 0.007 | 0.004 | <0.002 | <0.002 | 2.50 | <0.1 | 2.4 | 19.4 | 4.5 | 93 | 6.9 | 6.85 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 5/2/2011 | 916 | -108 | | 0.4 | 0.5 | 3.1 | <0.2 | <1.1 | <1.2 | <1.1 | 0.008 | 0.004 | <0.002 | <0.002 | 1.69 | <0.1 | 2.2 | 18.0 | 1.8 | 49 | 6.8 | 6.76 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.06 | 0.10 | 0.84 | 0.00 | 0.00 |
| BDC-05-04 | 11/2/2011 | 1100 | 76 | | <1.0 | <1.0 | 4.2 | <1.0 | | | | 0.007 | 0.006 | <0.002 | <0.002 | 1.52 | <1.0 | 1.2 | <1.0 | | -3 | 6.6 | 7.17 | 0.00 | 0.00 | 0.04 | 0.00 | | | 0.04 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-04 | 5/7/2012 | 1287 | 263 | | 0.4 | 0.6 | 3.6 | <0.2 | | | | 0.017 | 0.016 | <0.002 | <0.002 | 0.16 | | 2.0 | 21.5 | | 98 | 8.6 | 6.39 | 0.00 | 0.00 | 0.04 | 0.00 | | | 0.04 | | 0.05 | 0.10 | 0.84 | 0.00 | |
| BDC-05-04 | 11/13/2012 | 1477 | 453 | | <0.5 | <0.5 | 3.3 | <0.5 | | | | 0.012 | 0.010 | 0.002 | <0.002 | 0.02 | | 1.2 | 14.3 | | 27 | 6.5 | 6.65 | 0.00 | 0.00 | 0.03 | 0.00 | | | 0.03 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-04 | 5/23/2013 | 1668 | 644 | | <0.2 | <0.2 | 2.1 | <0.2 | | | | 0.026 | 0.027 | <0.002 | <0.002 | 0.49 | | 1.5 | 13.7 | | -310 | 12.7 | 7.78 | 0.00 | 0.00 | 0.02 | 0.00 | | | 0.02 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-04 | 11/13/2013 | 1842 | 818 | | <0.2 | 0.3 | 3.6 | <0.2 | | | | 0.016 | 0.015 | 0.002 | <0.002 | 2.05 | | 1.8 | 14.4 | | -262 | 8.1 | 6.48 | 0.00 | 0.00 | 0.04 | 0.00 | | | 0.04 | | 0.00 | 0.06 | 0.94 | 0.00 | |
| BDC-05-04 | 5/13/2014 | 2023 | 999 | | 0.6 | 0.3 | 0.8 | <0.2 | | | | 0.002 | 0.002 | 0.005 | 0.002 | 3.86 | | 0.6 | 14.1 | | -177 | 8.2 | 6.28 | 0.00 | 0.00 | 0.01 | 0.00 | | | 0.01 | | 0.26 | 0.16 | 0.58 | 0.00 | |
| BDC-05-04 | 11/11/2014 | 2205 | 1181 | | 0.3 | 0.2 | 2.8 | 0.4 | | | | 0.006 | 0.004 | <0.002 | <0.002 | 0.38 | | 1.6 | 6.2 | | -58 | 4.8 | 6.25 | 0.00 | 0.00 | 0.03 | 0.01 | | | 0.04 | | 0.05 | 0.04 | 0.75 | 0.17 | |
| BDC-05-04 | 4/27/2015 | 2372 | 1348 | | 1.0 | 0.4 | 1.0 | <0.2 | | | | 0.004 | 0.001 | 0.005 | 0.003 | 0.09 | | 0.4 | 16.3 | | 48 | 2.7 | 5.92 | 0.01 | 0.00 | 0.01 | 0.00 | | | 0.02 | | 0.31 | 0.16 | 0.53 | 0.00 | |
| BDC-05-04 | 10/28/2015 | 2556 | 1532 | | <0.2 | <0.2 | 3.6 | 0.7 | | | | 0.008 | 0.007 | <0.002 | <0.002 | 0.43 | | 1.4 | 1.3 | | -26 | 6.1 | 6.44 | 0.00 | 0.00 | 0.04 | 0.01 | | | 0.05 | | 0.00 | 0.00 | 0.77 | 0.23 | |
| BDC-05-04 | 4/21/2016 | 2732 | 1708 | | 1.0 | 0.3 | 0.4 | <0.2 | | | | 0.002 | 0.001 | 0.004 | 0.003 | 0.25 | | 0.8 | 12.2 | | 35 | 2.4 | 6.05 | 0.01 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.48 | 0.18 | 0.33 | 0.00 | |
| BDC-05-04 | 11/2/2016 | 2927 | 1903 | | <0.2 | <0.2 | 1.5 | <0.2 | | | | 0.008 | 0.008 | <0.002 | <0.002 | 0.39 | <0.10 | 1.4 | 0.75 | | -140.5 | 7.4 | 6.51 | 0.00 | 0.00 | 0.02 | 0.00 | | | 0.02 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-04 | 5/3/2017 | 3109 | 2085 | | 1.2 | 0.4 | 0.3 | <0.2 | | | | 0.001 | 0.001 | 0.003 | 0.003 | 0.42 | 8.8 | 0.6 | 12.0 | | 73.8 | 3.3 | 5.71 | 0.01 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.54 | 0.23 | 0.23 | 0.00 | |
| BDC-05-04 | 11/6/2017 | 3296 | 2272 | -4 | 0.3 | 0.3 | 1.1 | <0.2 | <1.0 | <1.0 | <1.0 | 0.012 | 0.010 | <0.002 | <0.002 | 0.93 | <0.05 | 2.0 | 2.7 | 5.9 | -28.3 | 9.2 | 6.71 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.12 | 0.15 | 0.73 | 0.00 | 0.00 |
| BDC-05-04 | 5/2/2018 | 3473 | 2449 | 173 | <2.0 | <2.0 | 4.1 | <2.0 | <1.14 | <1.23 | <1.06 | 0.012 | 0.007 | <0.010 | <0.010 | 4.25 | | 4.7 | <1.0 | 14 | -107 | 1246 | 5.68 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 11/7/2018 | 3662 | 2638 | 362 | <0.2 | <0.2 | 5.31 | <0.2 | <1.14 | <1.23 | <1.06 | 0.014 | 0.011 | 0.003 | <0.001 | 0.97 | <0.10 | 1.8 | 0.842 | 13.2 | -24.8 | 119.3 | 6.21 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-04 | 5/3/2019 | 3839 | 2815 | 539 | <0.2 | 0.21 | 2.02 | <0.2 | <1.14 | <1.23 | <1.06 | 0.015 | 0.012 | 0.006 | <0.001 | 0.78 | <0.10 | 3.3 | 8.21 | 13.3 | -106.2 | 101.0 | 6.47 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.07 | 0.93 | 0.00 | 0.00 |
| BDC-05-04 | 11/6/2019 | 4026 | 3002 | 726 | <0.2 | <0.2 | 2.08 | 0.48 | <1.14 | <1.23 | <1.06 | 0.017 | 0.012 | 0.004 | <0.001 | 0.02 | <0.10 | 1.5 | 4.68 | 8.16 | -85.5 | 48.80 | 6.23 | 0.00 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.74 | 0.26 | 0.00 |
| BDC-05-04 | 5/6/2020 | 4208 | 3184 | 908 | <0.2 | <0.2 | 1.48 | 0.26 | <1.14 | <1.23 | <1.06 | 0.021 | 0.017 | 0.008 | <0.001 | 0.58 | <0.10 | 0.0 | 0.197 | 5.15 | 1.7 | 108.4 | 6.24 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.79 | 0.21 | 0.00 |
| BDC-05-04 | 11/6/2020 | 4392 | 3368 | 1092 | <0.2 | <0.2 | 1.61 | 0.46 | <1.14 | <1.23 | <1.06 | 0.023 | 0.018 | 0.007 | <0.001 | 3.18 | <0.10 | 1.5 | 0.844 | 5.8 | -76.2 | 48.9 | 6.11 | 0.00 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.69 | 0.31 | 0.00 |
| BDC-05-04 | 5/5/2021 | 4572 | 3548 | 1272 | <0.20 | <0.20 | 0.88 | 0.41 | <1.14 | <1.23 | <1.06 | 0.032 | 0.021 | 0.043 | 0.002 | 0.43 | <0.500 | 2.5 | 5.24 | 7.5 | -112.6 | 141.7 | 6.35 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.58 | 0.42 | 0.00 |
| BDC-05-04 | 11/3/2021 | 4754 | 3730 | 1454 | <0.20 | <0.20 | 0.98 | 0.34 | <1.14 | <1.23 | <1.06 | 0.039 | 0.021 | 0.036 | 0.001 | 0.64 | <0.100 | 5.0 | 1.06 | 6.63 | -86.3 | 39.4 | 6.20 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.65 | 0.35 | 0.00 |
| BDC-05-05 | 5/21/2007 | -526 | | | <1.0 | <1.0 | <1.0 | <1.0 | | | | 0.002 | <0.001 | 0.003 | <0.002 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| (MW UG) | 11/26/2007 | -337 | | | <1.0 | <1.0 | <1.0 | <1.0 | | | | <0.001 | <0.001 | <0.002 | <0.002 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5/22/2008 | -159 | | | 0.3 | 0.8 | <0.2 | <0.2 | | | | 0.002 | <0.001 | 0.003 | <0.002 | | | | | | | | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.23 | 0.77 | 0.00 | 0.00 | |
| BDC-05-05 | 10/23/2008 | -5 | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 11/20/2008 | 23 | | | 0.3 | 0.7 | <0.2 | <0.2 | | | | 0.005 | 0.001 | 0.005 | 0.003 | 4.61 | | | | | 52 | | 6.25 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.25 | 0.75 | 0.00 | 0.00 | |
| BDC-05-05 | 12/16/2008 | 49 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 1/16/2009 | 80 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 2/11/2009 | 106 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 3/9/2009 | 132 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 4/16/2009 | 170 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 5/13/2009 | 197 | | | <1.0 | <1.0 | <1.0 | <1.0 | | | | 0.003 | <0.001 | 0.006 | 0.002 | 3.24 | | | | | 68 | | 6.72 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 8/16/2009 | 292 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 11/13/2009 | 381 | | | <1.0 | <1.0 | <1.0 | <1.0 | | | | 0.001 | <0.001 | <0.002 | <0.002 | 2.85 | 1.2 | 0.0 | 8.7 | | 166 | | 5.84 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 2/16/2010 | 476 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 5/18/2010 | 567 | | | <1.0 | <1.0 | <1.0 | <1.0 | | | | 0.002 | 0.0004 | 0.002 | <0.002 | 3.47 | | 0.0 | | | 494 | | 6.74 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 8/17/2010 | 658 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 11/9/2010 | 742 | | | <1.0 | 1.1 | <1.0 | <1.0 | | | | 0.001 | 0.0004 | 0.003 | <0.002 | 3.20 | | | | | 135 | | 6.90 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.00 | 1.00 | 0.00 | 0.00 | |
| BDC-05-05 | 2/15/2011 | 840 | | | | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | |
| BDC-05-05 | 5/2/2011 | 916 | -108 | | 0.3 | 0.8 | <0.2 | <0.2 | | | | 0.001 | 0.0003 | 0.003 | <0.002 | 3.40 | | | | | 158 | | 6.98 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.23 | 0.77 | 0.00 | 0.00 | |
| BDC-05-05 | 11/2/2011 | 1100 | 76 | | <1.0 | 1.2 | <1.0 | <1.0 | | | | 0.001 | 0.0003 | 0.002 | 0.003 | 2.84 | <0.1 | 0.0 | 7.5 | | 85 | 1.7 | 7.66 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.00 | 1.00 | 0.00 | 0.00 | |
| BDC-05-05 | 5/6/2012 | 1286 | 262 | | 0.4 | 0.9 | <0.2 | <0.2 | | | | <0.001 | <0.001 | 0.003 | <0.002 | 3.23 | | 0.0 | 22.1 | | 219 | 1.1 | 6.42 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.26 | 0.74 | 0.00 | 0.00 | |
| BDC-05-05 | 11/13/2012 | 1477 | 453 | | <0.5 | 1.1 | <0.5 | <0.5 | <1.0 | <1.0 | <1.0 | 0.001 | 0.0005 | 0.003 | <0.002 | 1.76 | | 0.2 | 20.6 | <0.003 | 27 | <1.0 | 6.82 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-05 | 5/23/2013 | 1668 | 644 | | 0.3 | 0.9 | <0.2 | <0.2 | | | | 0.001 | 0.001 | <0.002 | <0.002 | 4.69 | | 0.7 | 11.7 | | -165 | 1.5 | 7.35 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.21 | 0.79 | 0.00 | 0.00 | |
| BDC-05-05 | 11/14/2013 | 1843 | 819 | | 0.5 | 1.1 | <0.2 | <0.2 | | | | <0.001 | <0.001 | 0.003 | <0.002 | 1.95 | | 0.0 | 21.8 | | -219 | <1.0 | 6.70 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.26 | 0.74 | 0.00 | 0.00 | |
| BDC-05-05 | 5/13/2014 | 2023 | 999 | | 0.4 | 0.9 | <0.2 | <0.2 | | | | <0.001 | <0.001 | <0.002 | <0.002 | 4.35 | | 0.0 | 18.6 | | -108 | 3.6 | 6.60 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.26 | 0.74 | 0.00 | 0.00 | |
| BDC-05-05 | 11/11/2014 | 2205 | 1181 | | 0.3 | 0.8 | <0.2 | <0.2 | | | | 0.001 | 0.001 | <0.002 | <0.002 | 2.50 | | 0.0 | 12.5 | | 92 | <1.0 | 6.25 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.23 | 0.77 | 0.00 | 0.00 | |
| BDC-05-05 | 4/27/2015 | 2372 | 1348 | | 0.4 | 1.0 | <0.2 | <0.2 | | | | 0.001 | 0.001 | 0.003 | <0.002 | 3.14 | | 0.0 | 16.1 | | 31 | <1.0 | 6.25 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.24 | 0.76 | 0.00 | 0.00 | |
| BDC-05-05 | 10/28/2015 | 2556 | 1532 | | 0.4 | 0.9 | <0.2 | <0.2 | | | | 0.001 | <0.0004 | <0.002 | <0.002 | 0.81 | | 0.3 | 13.2 | | 0 | <1.0 | 6.39 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.26 | 0.74 | 0.00 | 0.00 | |
| BDC-05-05 | 4/21/2016 | 2732 | 1708 | | 0.3 | 0.6 | <0.2 | <0.2 | | | | 0.001 | <0.0004 | <0.002 | <0.002 | 4.00 | | 0.0 | 13.4 | | 14.5 | <1.0 | 6.37 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.28 | 0.72 | 0.00 | 0.00 | |
| BDC-05-05 | 11/2/2016 | 2927 | 1903 | | 0.8 | 1.5 | <0.2 | <0.2 | | | | 0.001 | 0.0004 | 0.003 | 0.003 | 0.29 | | 0.2 | 35.7 | | 6.6 | 3.2 | 6.54 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.02 | | 0.30 | 0.70 | 0.00 | 0.00 | |
| BDC-05-05 | 5/3/2017 | 3109 | 2085 | | 0.4 | 0.7 | <0.2 | <0.2 | | | | 0.001 | <0.0004 | 0.003 | <0.002 | 4.43 | | 0.0 | 21.3 | | 74.9 | 1.9 | 6.29 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.31 | 0.69 | 0.00 | 0.00 | |
| BDC-05-05 | 11/6/2017 | 3296 | 2272 | -4 | 0.5 | 1.0 | <0.2 | <0.2 | | | | 0.001 | <0.0004 | 0.004 | 0.002 | 0.87 | | 0.0 | 39.0 | | -29.2 | 2.7 | 6.63 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.28 | 0.72 | 0.00 | 0.00 | |
| BDC-05-05 | 5/2/2018 | 3473 | 2449 | 173 | 0.32 | 0.54 | <0.2 | <0.2 | | | | 0.001 | 0.0003 | 0.002 | 0.002 | 4.03 | | 0.0 | 24.6 | | 191.6 | 1.9 | 6.25 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.32 | 0.68 | 0.00 | 0.00 | |
| BDC-05-05 | 11/7/2018 | 3662 | 2638 | 362 | 0.69 | 1.17 | <0.2 | <0.2 | | | | 0.001 | 0.0004 | 0.003 | 0.003 | 0.66 | | 0.0 | 37.5 | | 127.8 | 2.38 | 6.33 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.32 | 0.68 | 0.00 | 0.00 | |
| BDC-05-05 | 5/3/2019 | 3839 | 2815 | 539 | 0.41 | 0.70 | <0.2 | <0.2 | | | | 0.001 | 0.0003 | 0.003 | 0.002 | 4.89 | | 0.4 | 36.3 | | 6.1 | 1.85 | 6.57 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.32 | 0.68 | 0.00 | 0.00 | |
| BDC-05-05 | 11/5/2019 | 4025 | 3001 | 725 | 0.66 | 1.04 | <0.2 | <0.2 | | | | 0.001 | 0.0004 | 0.003 | 0.003 | 0.11 | | 0.0 | 33.6 | | 33.4 | 2.52 | 6.62 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.01 | | 0.33 | 0.67 | 0.00 | 0.00 | |
| BDC-05-05 | 5/5/2020 | 4207 | 3183 | 907 | 0.31 | 0.57 | <0.2 | <0.2 | | | | 0.001 | 0.0003 | 0.003 | 0.002 | 4.64 | | 0.0 | 39.9 | | 80.0 | 2.13 | 6.58 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.30 | 0.70 | 0.00 | 0.00 | |
| BDC-05-05 | 11/5/2020 | 4391 | 3367 | 1091 | 0.70 | 1.42 | <0.2 | <0.2 | | | | 0.001 | 0.0005 | 0.003 | 0.003 | 0.21 | | 1.5 | 27.0 | | 18.9 | 2.27 | 6.62 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.02 | | 0.28 | 0.72 | 0.00 | 0.00 | |
| BDC-05-05 | 5/5/2021 | 4572 | 3548 | 1272 | 0.35 | 0.62 | <0.20 | <0.20 | | | | 0.001 | 0.0003 | 0.003 | 0.002 | 2.28 | | 0.5 | 22.6 | | 48.2 | 1.87 | 6.43 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.01 | | 0.31 | 0.69 | 0.00 | 0.00 | |
| BDC-05-05 | 11/3/2021 | 4754 | 3730 | 1454 | 0.80 | 1.27 | 0.29 | <0.20 | | | | 0.001 | 0.0005 | 0.003 | 0.003 | 0.29 | | 0.0 | 21.9 | | 82.9 | 4.8 | 6.62 | 0.00 | 0.01 | 0.00 | 0.00 | | | 0.02 | | 0.28 | 0.55 | 0.17 | 0.00 | |
| BDC-05-07 | 5/21/2007 | -526 | | | 30 | 22 | 10 | <1.0 | | | | 0.003 | <0.001 | 0.014 | 0.009 | | | | | | | | | 0.18 | 0.17 | 0.10 | 0.00 | | | 0.45 | | 0.40 | 0.37 | 0.23 | 0.00 | |
| (IW 2011, 2017) | 11/26/2007 | -337 | | | 28 | 25 | 11 | <1.0 | | | | <0.001 | <0.001 | 0.011 | 0.002 | | | | | | | | | 0.17 | 0.19 | 0.11 | 0.00 | | | 0.47 | | 0.36 | 0.40 | 0.24 | 0.00 | |
| | 5/22/2008 | -159 | | | 33 | 32 | 9.2 | <0.2 | | | | 0.002 | <0.001 | 0.012 | 0.006 | | | | | | | | | 0.20 | 0.24 | 0.09 | 0.00 | | | 0.54 | | 0.37 | 0.45 | 0.18 | 0.00 | |
| BDC-05-07 | 10/23/2008 | -5 | | | 22 | 24 | 14 | <0.2 | <1.1 | <1.2 | <1.1 | 0.004 | 0.002 | 0.022 | 0.013 | 9.71 | 9.6 | 0.0 | 33.4 | 0.6 | 86.0 | 7.8 | 6.47 | 0.13 | 0.18 | 0.14 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 0.29 | 0.40 | 0.31 | 0.00 | 0.00 |
| BDC-05-07 | 11/20/2008 | 23 | | | 17 | 17 | 4.9 | <0.2 | <1.1 | <1.2 | <1.1 | 0.003 | <0.001 | 0.016 | 0.010 | 0.60 | 2.2 | 0.4 | 15.8 | 0.2 | -27 | 4.6 | 6.46 | 0.10 | 0.13 | 0.05 | 0.00 | 0.00 | 0.00 | 0.28 | 0.00 | 0.36 | 0.46 | 0.18 | 0.00 | 0.00 |
| BDC-05-07 | 12/16/2008 | 49 | | | 16 | 25 | 7.2 | <1.0 | <1.1 | <1.2 | <1.1 | 0.003 | 0.001 | 0.016 | 0.012 | 1.20 | 4.8 | 0.0 | 29.4 | 0.6 | -107 | 6.1 | 6.49 | 0.10 | 0.19 | 0.07 | 0.00 | 0.00 | 0.00 | 0.36 | 0.00 | 0.27 | 0.53 | 0.21 | 0.00 | 0.00 |
| BDC-05-07 | 1/16/2009 | 80 | | | 20 | 23 | 6.4 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | <0.001 | 0.013 | 0.008 | 0.00 | 8.4 | 0.0 | 32.6 | 0.03 | -182 | 6.3 | 6.38 | 0.12 | 0.18 | 0.07 | 0.00 | 0.00 | 0.00 | 0.36 | 0.00 | 0.33 | 0.48 | 0.18 | 0.00 | 0.00 |
| BDC-05-07 | 2/11/2009 | 106 | | | 23 | 28 | 9.9 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.017 | 0.012 | 2.05 | 11.2 | 0.0 | 37.5 | 1.5 | -68 | 9.3 | 6.37 | 0.14 | 0.21 | 0.10 | 0.00 | 0.00 | 0.00 | 0.45 | 0.00 | 0.31 | 0.47 | 0.22 | 0.00 | 0.00 |
| BDC-05-07 | 3/9/2009 | 132 | | | 20 | 21 | 8.4 | <1.0 | <1.1 | <1.2 | <1.1 | <0.002 | <0.001 | 0.013 | 0.009 | 0.00 | 8.8 | 0.3 | 35.3 | 5.5 | -23 | 6.8 | 6.37 | 0.12 | 0.16 | 0.09 | 0.00 | 0.00 | 0.00 | 0.37 | 0.00 | 0.33 | 0.44 | 0.24 | 0.00 | 0.00 |
| BDC-05-07 | 4/16/2009 | 170 | | | 20 | 21 | 11 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.015 | 0.008 | 0.27 | 8.2 | 0.0 | 31.2 | 5.1 | 35 | 8.1 | 6.43 | 0.12 | 0.16 | 0.11 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 | 0.31 | 0.41 | 0.29 | 0.00 | 0.00 |
| BDC-05-07 | 5/13/2009 | 197 | | | 11 | 13 | 7.5 | <1.0 | <1.1 | <1.2 | | 0.002 | 0.001 | 0.016 | 0.008 | 0.29 | 6.8 | 0.4 | 27.2 | 7.9 | 34 | 7.3 | 6.47 | 0.07 | 0.10 | 0.08 | 0.00 | 0.00 | 0.00 | 0.24 | 0.00 | 0.27 | 0.41 | 0.32 | 0.00 | 0.00 |
| BDC-05-07 | 8/16/2009 | 292 | | | 11 | 12 | 13 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.010 | <0.002 | 0.74 | 2.3 | 2.0 | 23.2 | 6.8 | 67 | 8.2 | 6.73 | 0.07 | 0.09 | 0.13 | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.23 | 0.31 | 0.46 | 0.00 | 0.00 |
| BDC-05-07 | 11/13/2009 | 381 | | | 6.5 | 5.3 | 5.6 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.004 | <0.002 | 0.50 | <0.1 | 2.8 | 5.7 | 4.7 | 16 | 9.1 | 6.48 | 0.04 | 0.04 | 0.06 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.29 | 0.29 | 0.42 | 0.00 | 0.00 |
| BDC-05-07 | 2/16/2010 | 476 | | | 6.4 | 6.9 | 28 | <1.0 | <1.1 | <1.2 | <1.1 | 0.004 | 0.003 | 0.017 | 0.006 | 1.04 | <0.1 | 2.5 | 20.4 | 5.2 | 839 | 14.7 | 6.88 | 0.04 | 0.05 | 0.29 | 0.00 | 0.00 | 0.00 | 0.38 | 0.00 | 0.10 | 0.14 | 0.76 | 0.00 | 0.00 |
| BDC-05-07 | 5/18/2010 | 567 | | | 5.8 | 9.2 | 41 | 1.2 | <1.1 | <1.2 | <1.1 | 0.009 | 0.003 | 0.009 | <0.002 | 1.06 | <0.5 | 2.0 | 16.4 | 6.0 | 525 | 14.8 | 6.77 | 0.03 | 0.07 | 0.42 | 0.02 | 0.00 | 0.00 | 0.55 | 0.00 | 0.06 | 0.13 | 0.77 | 0.04 | 0.00 |
| BDC-05-07 | 8/17/2010 | 658 | | | 2.8 | 7.8 | 19 | <1.0 | <1.1 | <1.2 | <1.1 | 0.006 | 0.003 | 0.008 | <0.002 | 2.30 | <0.1 | 2.5 | 8.6 | 7.1 | -15 | 18.8 | 7.34 | 0.02 | 0.06 | 0.20 | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 0.06 | 0.22 | 0.72 | 0.00 | 0.00 |
| BDC-05-07 | 11/9/2010 | 742 | | | <1.0 | 9.4 | 20 | <1.0 | <1.1 | <1.2 | <1.1 | 0.008 | 0.005 | 0.009 | <0.002 | 2.42 | <0.1 | 2.2 | 15.2 | 5.1 | 13 | 15.2 | 7.35 | 0.00 | 0.07 | 0.21 | 0.00 | 0.00 | 0.00 | 0.28 | 0.00 | 0.00 | 0.26 | 0.74 | 0.00 | 0.00 |
| BDC-05-07 | 2/15/2011 | 840 | | | <1.0 | 8.7 | 20 | <1.0 | <1.1 | <1.2 | <1.1 | 0.013 | 0.010 | 0.012 | 0.002 | 3.02 | <0.1 | 2.8 | 11.8 | 5.1 | 21 | 14.0 | 7.16 | 0.00 | 0.07 | 0.21 | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 0.00 | 0.24 | 0.76 | 0.00 | 0.00 |
| BDC-05-07 | 5/2/2011 | 916 | -108 | | 5.2 | 11 | 17 | <0.2 | <1.1 | <1.2 | <1.1 | 0.017 | 0.004 | 0.014 | 0.003 | 2.14 | 0.1 | 2.6 | 15.6 | 3.2 | 33 | 16.8 | 6.90 | 0.03 | 0.08 | 0.18 | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.11 | 0.29 | 0.60 | 0.00 | 0.00 |
| BDC-05-07 | 11/2/2011 | 1100 | 76 | | 11 | 6.9 | 39 | <1.0 | <1.1 | <1.2 | <1.1 | 0.042 | 0.035 | 0.010 | 0.006 | 2.06 | <0.1 | 2.4 | <1.0 | 16.1 | -51 | 1780 | 6.31 | 0.07 | 0.05 | 0.40 | 0.00 | 0.00 | 0.00 | 0.52 | 0.00 | 0.13 | 0.10 | 0.77 | 0.00 | 0.00 |
| BDC-05-07 | 5/7/2012 | 1287 | 263 | | 0.8 | <0.2 | 23 | 0.9 | <1.0 | <1.0 | <1.0 | 0.026 | 0.024 | 0.003 | <0.002 | 0.17 | | 1.6 | 0.4 | 27.0 | 100 | 48.5 | 6.34 | 0.00 | 0.00 | 0.24 | 0.01 | 0.00 | 0.00 | 0.26 | 0.00 | 0.02 | 0.00 | 0.93 | 0.06 | 0.00 |
| BDC-05-07 | 11/15/2012 | 1479 | 455 | | <0.2 | 0.4 | 24 | 0.8 | <1.0 | <1.0 | <1.0 | 0.016 | 0.017 | <0.002 | <0.002 | 0.01 | | 1.6 | <0.3 | 23.0 | 3.0 | 26 | 6.60 | 0.00 | 0.00 | 0.25 | 0.01 | 0.00 | 0.00 | 0.26 | 0.00 | 0.00 | 0.01 | 0.94 | 0.05 | 0.00 |
| BDC-05-07 | 5/22/2013 | 1667 | 643 | | <0.2 | 0.3 | 8.6 | 0.5 | <1.0 | <1.0 | <1.0 | 0.006 | 0.007 | <0.002 | <0.002 | 0.17 | | 1.4 | 0.45 | 11.0 | -372 | 10.5 | 8.09 | 0.00 | 0.00 | 0.09 | 0.01 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.02 | 0.90 | 0.08 | 0.00 |
| BDC-05-07 | 11/13/2013 | 1842 | 818 | | <0.2 | <0.2 | 3.4 | 1.6 | <1.0 | 1.3 | <1.0 | 0.006 | 0.007 | <0.002 | <0.002 | 2.12 | | 1.2 | <0.30 | 8.5 | -276 | 8.8 | 6.70 | 0.00 | 0.00 | 0.04 | 0.03 | 0.00 | 0.04 | 0.06 | 0.04 | 0.00 | 0.00 | 0.34 | 0.25 | 0.42 |
| BDC-05-07 | 5/13/2014 | 2023 | 999 | | <0.2 | 0.2 | 2.5 | 1.4 | <1.0 | <1.0 | <1.0 | 0.004 | 0.004 | <0.002 | <0.002 | 3.65 | | 2.0 | 1.8 | 3.7 | -368 | 9.1 | 6.55 | 0.00 | 0.00 | 0.03 | 0.02 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.03 | 0.52 | 0.45 | 0.00 |
| BDC-05-07 | 11/11/2014 | 2205 | 1181 | | <0.2 | <0.2 | 4.1 | 13 | 26 | 3.0 | <1.0 | 0.006 | 0.005 | <0.002 | <0.002 | 0.21 | | 2.6 | 0.72 | 14.0 | -74 | 17.7 | 6.37 | 0.00 | 0.00 | 0.04 | 0.21 | 0.93 | 0.10 | 0.25 | 1.03 | 0.00 | 0.00 | 0.03 | 0.16 | 0.80 |
| BDC-05-07 | 4/27/2015 | 2372 | 1348 | | <0.2 | <0.2 | 0.6 | 5.3 | 1.6 | <1.0 | <1.0 | 0.004 | 0.005 | <0.002 | <0.002 | 0.06 | | 2.0 | <0.30 | 3.5 | -50 | 5.5 | 6.27 | 0.00 | 0.00 | 0.01 | 0.08 | 0.06 | 0.00 | 0.09 | 0.06 | 0.00 | 0.00 | 0.04 | 0.57 | 0.39 |
| BDC-05-07 | 10/28/2015 | 2556 | 1532 | | 0.4 | <0.2 | 1.0 | 1.9 | 1.8 | 1.2 | <1.0 | 0.004 | 0.004 | 0.002 | <0.002 | 0.17 | | 1.0 | 0.41 | 3.7 | -9.9 | 5.4 | 6.30 | 0.00 | 0.00 | 0.01 | 0.03 | 0.06 | 0.04 | 0.04 | 0.10 | 0.02 | 0.00 | 0.07 | 0.21 | 0.71 |
| BDC-05-07 | 4/20/2016 | 2731 | 1707 | | 0.5 | <0.2 | 0.2 | 3.2 | 1.3 | <1.0 | <1.0 | 0.003 | 0.003 | <0.002 | <0.002 | 0.11 | | 2.0 | 2.0 | 5.4 | -23 | 3.8 | 6.35 | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.06 | 0.05 | 0.03 | 0.00 | 0.02 | 0.50 | 0.45 |
| BDC-05-07 | 11/2/2016 | 2927 | 1903 | | 0.8 | <0.2 | 0.2 | 0.3 | <1.0 | 1.6 | <1.0 | 0.002 | 0.002 | <0.002 | <0.002 | 0.14 | | 0.6 | <0.30 | 8.4 | -103 | 5.5 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.01 | 0.05 | 0.07 | 0.00 | 0.03 | 0.07 | 0.82 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | | | | | | | Total Chloroethenes (d) | Ethene + Ethane | | | | | |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | PCE | TCE | c DCE | VC | Ethene | Ethane | | | PCE | TCE | c DCE | VC | Ethene + Ethane |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-07 | 5/4/2017 | 3110 | 2086 | | 1.2 | 0.3 | 0.2 | 0.3 | <1.0 | <1.0 | <1.0 | 0.001 | <0.0004 | <0.002 | <0.002 | 0.37 | | 1.0 | 3.3 | 3.1 | 31.4 | 3.6 | 6.25 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.44 | 0.14 | 0.13 | 0.29 | 0.00 |
| BDC-05-07 | 11/6/2017 | 3296 | 2272 | -4 | 0.7 | <0.2 | <0.2 | 0.2 | <1.0 | 1.9 | <1.0 | 0.006 | 0.005 | <0.002 | <0.002 | 1.30 | | 1.8 | 1.5 | 6.9 | -15.8 | 33.3 | 7.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.01 | 0.06 | 0.06 | 0.00 | 0.00 | 0.05 | 0.89 |
| BDC-05-07 | 5/2/2018 | 3473 | 2449 | 173 | <2.0 | <2.0 | 3.3 | <2.0 | <1.14 | <1.23 | <1.06 | 0.007 | 0.006 | 0.022 | <0.010 | 3.63 | | 7.4 | <0.5 | 16.1 | -224.6 | 626.6 | 6.57 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-07 | 11/6/2018 | 3661 | 2637 | 361 | <2.0 | <2.0 | 2.01 | <2.0 | <1.14 | <1.23 | <1.06 | 0.004 | 0.003 | 0.022 | 0.003 | 1.83 | | 2.8 | 0.335 | 16.3 | -45.8 | 207.7 | 6.41 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-07 | 5/3/2019 | 3839 | 2815 | 539 | <0.2 | <0.2 | 1.90 | 0.93 | <1.14 | <1.23 | <1.06 | 0.003 | 0.002 | 0.005 | 0.001 | 2.14 | | 4.5 | 0.261 | 21.7 | -76.2 | 158.6 | 6.40 | 0.00 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.57 | 0.43 | 0.00 |
| BDC-05-07 | 11/6/2019 | 4026 | 3002 | 726 | <0.2 | <0.2 | 1.88 | 0.47 | <1.14 | <1.23 | <1.06 | 0.002 | 0.002 | 0.007 | <0.003 | 0.65 | | 3.0 | 0.657 | 12.2 | 7.1 | 94.54 | 6.39 | 0.00 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.72 | 0.28 | 0.00 |
| BDC-05-07 | 5/6/2020 | 4208 | 3184 | 908 | <0.2 | <0.2 | 0.34 | 0.32 | <1.14 | <1.23 | <1.06 | 0.003 | 0.002 | 0.006 | 0.0004 | 1.05 | | 2.2 | 0.979 | 7.6 | -17.8 | 85.13 | 6.35 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.41 | 0.59 | 0.00 |
| BDC-05-07 | 11/6/2020 | 4392 | 3368 | 1092 | <0.2 | <0.2 | 0.28 | <0.2 | <1.14 | <1.23 | <1.06 | 0.002 | 0.002 | 0.005 | 0.0006 | 1.72 | | 2.0 | 0.179 | 5.8 | -86.5 | 54.36 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-07 | 5/6/2021 | 4573 | 3549 | 1273 | <0.20 | <0.20 | <0.20 | 0.24 | <1.14 | <1.23 | <1.06 | 0.003 | 0.003 | 0.003 | 0.0003 | 0.58 | | 3.5 | 1.44 | 4.9 | -86.3 | 43.63 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-07 | 11/3/2021 | 4754 | 3730 | 1454 | <0.20 | <0.20 | <0.20 | <0.20 | <1.14 | <1.23 | <1.06 | 0.003 | 0.002 | 0.005 | <0.001 | 0.39 | | 3.0 | 0.404 | 5.2 | -108.1 | 32.2 | 6.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-08 | 10/23/2008 | -5 | | | 1.1 | 3.7 | 3.5 | <0.2 | <1.1 | <1.2 | <1.1 | 0.007 | <0.001 | 0.004 | <0.002 | 1.90 | 0.3 | 0.0 | 8.9 | 4.7 | -12.0 | 5.1 | 6.65 | 0.01 | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.09 | 0.40 | 0.51 | 0.00 | 0.00 |
| (MW 24 ft XG) | 11/20/2008 | 23 | | | 1.1 | 3.4 | 4.2 | <0.2 | <1.1 | <1.2 | <1.1 | 0.035 | 0.004 | 0.036 | <0.002 | 0.80 | 0.7 | 2.2 | 7.2 | 5.5 | -43 | 5.9 | 6.63 | 0.01 | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.09 | 0.34 | 0.57 | 0.00 | 0.00 |
| | 12/16/2008 | 49 | | | 1.2 | 4.3 | 4.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.008 | 0.001 | 0.006 | <0.002 | 0.50 | 0.9 | 4.6 | 21.8 | 3.6 | -99 | 5.4 | 6.61 | 0.01 | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.09 | 0.39 | 0.53 | 0.00 | 0.00 |
| BDC-05-08 | 1/16/2009 | 80 | | | 1.3 | 4.2 | 3.6 | <1.0 | <1.1 | <1.2 | <1.1 | 0.008 | 0.002 | 0.007 | <0.002 | 0.25 | 1.7 | 3.0 | 7.0 | 6.9 | -185 | 5.8 | 6.59 | 0.01 | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.10 | 0.42 | 0.48 | 0.00 | 0.00 |
| BDC-05-08 | 2/11/2009 | 106 | | | <1.0 | 3.2 | 3.9 | <1.0 | <1.1 | <1.2 | <1.1 | 0.019 | 0.001 | 0.010 | <0.002 | 2.38 | 0.3 | 4.4 | 4.7 | 4.4 | -78 | 7.0 | 6.69 | 0.00 | 0.02 | 0.04 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.38 | 0.62 | 0.00 | 0.00 |
| BDC-05-08 | 3/9/2009 | 132 | | | <1.0 | 2.7 | 3.5 | <1.0 | <1.1 | <1.2 | <1.1 | 0.009 | 0.003 | 0.007 | <0.002 | 0.07 | <0.1 | 3.6 | 3.8 | 4.9 | -4 | 6.7 | 6.65 | 0.00 | 0.02 | 0.04 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.36 | 0.64 | 0.00 | 0.00 |
| BDC-05-08 | 4/16/2009 | 170 | | | <1.0 | 2.3 | 4.4 | <1.0 | <1.1 | <1.2 | <1.1 | 0.007 | 0.003 | 0.006 | <0.002 | 0.42 | <0.1 | 2.0 | 1.7 | 6.7 | -8 | 6.8 | 6.80 | 0.00 | 0.02 | 0.05 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.28 | 0.72 | 0.00 | 0.00 |
| BDC-05-08 | 5/13/2009 | 197 | | | <1.0 | 1.6 | 3.0 | <1.0 | <1.1 | <1.2 | | 0.009 | 0.003 | 0.007 | 0.002 | 1.77 | <0.1 | 4.0 | 0.8 | 11.4 | -13 | 6.0 | 6.87 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.28 | 0.72 | 0.00 | 0.00 |
| BDC-05-08 | 8/16/2009 | 292 | | | <1.0 | 2.1 | 3.5 | <1.0 | <1.1 | <1.2 | <1.1 | 0.012 | 0.008 | <0.002 | <0.002 | 0.87 | <0.1 | 2.8 | 5.3 | 13.2 | -20 | 6.1 | 7.15 | 0.00 | 0.02 | 0.04 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.31 | 0.69 | 0.00 | 0.00 |
| BDC-05-08 | 11/13/2009 | 381 | | | <1.0 | 1.2 | 3.1 | <1.0 | <1.1 | <1.2 | <1.1 | 0.011 | 0.008 | 0.007 | <0.002 | 0.73 | <0.1 | 2.8 | 3.3 | 17.4 | 0.8 | 8.4 | 6.44 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.22 | 0.78 | 0.00 | 0.00 |
| BDC-05-08 | 2/16/2010 | 476 | | | <1.0 | <1.0 | 2.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.024 | 0.009 | 0.024 | <0.002 | 0.63 | <0.1 | 3.0 | 0.8 | 13.1 | 841 | 8.3 | 6.76 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 5/18/2010 | 567 | | | <1.0 | <1.0 | 2.4 | <1.0 | <1.1 | <1.2 | <1.1 | 0.031 | 0.011 | 0.027 | <0.002 | 0.96 | <0.1 | 3.0 | 0.8 | 14.9 | 451 | 7.3 | 6.92 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 8/17/2010 | 658 | | | <1.0 | <1.0 | 2.3 | <1.0 | <1.1 | <1.2 | <1.1 | 0.014 | 0.009 | 0.013 | <0.002 | 2.57 | <0.1 | 3.2 | 0.5 | 10.1 | -30 | 7.2 | 7.30 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 11/9/2010 | 742 | | | <1.0 | <1.0 | 3.5 | <1.0 | <1.1 | <1.2 | <1.1 | 0.031 | 0.012 | 0.031 | <0.002 | 2.74 | <0.1 | 2.4 | 0.3 | 14.2 | 59 | 7.6 | 7.17 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 2/15/2011 | 840 | | | <1.0 | <1.0 | 2.1 | <1.0 | <1.1 | <1.2 | <1.1 | 0.021 | 0.010 | 0.016 | <0.002 | 2.36 | <0.1 | 5.0 | 0.3 | 14.1 | 66 | 8.7 | 7.08 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 5/2/2011 | 916 | -108 | | <0.2 | <0.2 | 2.2 | <0.2 | <1.1 | <1.2 | <1.1 | 0.029 | 0.010 | 0.024 | <0.002 | 2.15 | <0.1 | 2.4 | 0.7 | 7.8 | -28 | 8.0 | 7.17 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-08 | 11/2/2011 | 1100 | 76 | | <1.0 | <1.0 | 2.4 | <1.0 | | | | 0.014 | 0.010 | 0.012 | 0.003 | 1.15 | <0.1 | 1.2 | 0.8 | | -53 | 7.3 | 6.88 | 0.00 | 0.00 | 0.02 | 0.00 | | | 0.02 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-08 | 5/6/2012 | 1286 | 262 | | <0.2 | <0.2 | 2.7 | <0.2 | | | | 0.021 | 0.020 | 0.007 | 0.002 | 0.01 | | 2.5 | 0.4 | | 42 | 12.4 | 6.77 | 0.00 | 0.00 | 0.03 | 0.00 | | | 0.03 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-08 | 11/16/2012 | 1480 | 456 | | <0.5 | <0.5 | 1.3 | <0.5 | | | | 0.014 | 0.010 | 0.005 | <0.002 | 0.01 | | 1.0 | <0.3 | | 5 | 8.1 | 6.91 | 0.00 | 0.00 | 0.01 | 0.00 | | | 0.01 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-08 | 5/23/2013 | 1668 | 644 | | <0.2 | <0.2 | 0.4 | <0.2 | | | | 0.008 | 0.007 | 0.002 | <0.002 | 0.39 | | 1.3 | <0.3 | | -249 | 5.7 | 7.68 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-08 | 11/13/2013 | 1842 | 818 | | <0.2 | <0.2 | 4.3 | 0.8 | | | | 0.012 | 0.010 | 0.003 | <0.002 | 2.02 | | 1.4 | <0.30 | | -275 | 15.0 | 6.73 | 0.00 | 0.00 | 0.04 | 0.01 | | | 0.06 | | 0.00 | 0.00 | 0.78 | 0.22 | |
| BDC-05-08 | 5/13/2014 | 2023 | 999 | | <0.2 | <0.2 | 2.9 | 1.8 | <1.0 | <1.0 | <1.0 | 0.015 | 0.011 | 0.004 | <0.002 | 2.02 | | 1.4 | 0.31 | 7.7 | -255 | 9.5 | 6.87 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.51 | 0.49 | 0.00 |
| BDC-05-08 | 11/10/2014 | 2204 | 1180 | | <0.2 | <0.2 | 3.8 | 16 | | | | 0.017 | 0.015 | 0.003 | <0.002 | 0.04 | | 1.4 | 0.65 | | -104 | 21.6 | 6.26 | 0.00 | 0.00 | 0.04 | 0.26 | | | 0.30 | | 0.00 | 0.00 | 0.13 | 0.87 | |
| BDC-05-08 | 4/27/2015 | 2372 | 1348 | | <0.2 | <0.2 | 0.8 | 2.3 | | | | 0.019 | 0.011 | 0.004 | <0.002 | 0.05 | | 0.6 | <0.30 | | -90 | 9.4 | 6.36 | 0.00 | 0.00 | 0.01 | 0.04 | | | 0.05 | | 0.00 | 0.00 | 0.18 | 0.82 | |
| BDC-05-08 | 10/28/2015 | 2556 | 1532 | | <0.2 | <0.2 | 0.3 | 0.5 | | | | 0.011 | 0.008 | 0.002 | <0.002 | 0.06 | | 1.0 | <0.30 | | -31 | 8.6 | 6.47 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.01 | | 0.00 | 0.00 | 0.28 | 0.72 | |
| BDC-05-08 | 4/21/2016 | 2732 | 1708 | | <0.2 | <0.2 | 0.2 | 1.2 | | | | 0.014 | 0.012 | 0.007 | <0.002 | 0.22 | | | <0.30 | | -38 | 3.8 | 6.53 | 0.00 | 0.00 | 0.00 | 0.02 | | | 0.02 | | 0.00 | 0.00 | 0.10 | 0.90 | |
| BDC-05-08 | 11/3/2016 | 2928 | 1904 | | <0.2 | <0.2 | 0.2 | 0.5 | | | | | | | | 0.19 | | 1.6 | <0.30 | | -109.8 | 4.7 | 6.22 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.01 | | 0.00 | 0.00 | 0.21 | 0.79 | |
| BDC-05-08 | 5/4/2017 | 3110 | 2086 | | <0.2 | <0.2 | <0.2 | 0.5 | | | | | | | | 0.62 | | 1.6 | 0.41 | | -107.5 | 5.7 | 6.36 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.01 | | 0.00 | 0.00 | 0.00 | 1.00 | |
| BDC-05-08 | 11/6/2017 | 3296 | 2272 | -4 | <0.2 | <0.2 | <0.2 | 0.5 | | | | 0.009 | 0.008 | <0.002 | 0.004 | 0.50 | | 2.2 | 0.90 | | -19.7 | 5.1 | 6.50 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.01 | | 0.00 | 0.00 | 0.00 | 1.00 | |
| BDC-05-08 | 5/2/2018 | 3473 | 2449 | 173 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.012 | 0.008 | 0.005 | <0.001 | 1.44 | | 3.4 | 0.137 | | -117.4 | 6.0 | 6.46 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 11/6/2018 | 3661 | 2637 | 361 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.009 | 0.006 | 0.003 | <0.001 | 0.55 | | 3.6 | <0.100 | | -57.6 | 8.35 | 6.39 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 5/2/2019 | 3838 | 2814 | 538 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.018 | 0.008 | 0.010 | <0.001 | 0.17 | | 4.5 | 0.211 | | -54.6 | 5.29 | 6.31 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 11/6/2019 | 4026 | 3002 | 726 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.016 | 0.006 | 0.011 | 0.001 | 0.08 | | 3.0 | 0.495 | | 37.0 | 9.31 | 6.55 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 5/6/2020 | 4208 | 3184 | 908 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.008 | 0.005 | 0.003 | <0.001 | 0.34 | | 5.0 | 0.156 | | -22.5 | 8.35 | 6.42 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 11/6/2020 | 4392 | 3368 | 1092 | <0.2 | <0.2 | <0.2 | <0.2 | | | | 0.009 | 0.004 | 0.005 | 0.001 | 0.17 | | 3.6 | 0.129 | | -9.9 | 6.81 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 5/6/2021 | 4573 | 3549 | 1273 | <0.20 | <0.20 | <0.20 | <0.20 | | | | 0.006 | 0.005 | 0.0005 | <0.001 | 1.59 | | 3.5 | <0.500 | | -96.7 | 6.78 | 6.28 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | NA | NA | NA | NA | |
| BDC-05-08 | 11/5/2021 | 4756 | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.25 | | | | 0.009 | 0.005 | 0.004 | <0.001 | 0.50 | | 4.0 | <0.100 | | -79.9 | 7.8 | 6.59 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 0.00 | 1.00 | |
| BDC-05-09 | 7/31/2011 | | -18 | | 30 | 20 | 22 | <1.0 | <1.1 | <1.2 | <1.1 | 0.007 | 0.007 | <0.002 | <0.002 | 1.37 | <0.1 | 2.5 | 12.1 | 1.4 | 15 | 5.5 | 6.89 | 0.18 | 0.15 | 0.23 | 0.00 | 0.00 | 0.00 | 0.56 | 0.00 | 0.32 | 0.27 | 0.41 | 0.00 | 0.00 |
| (IW 2011) | 11/2/2011 | | 76 | | 37 | 56 | 44 | 1.3 | <1.1 | <1.2 | <1.1 | 0.042 | 0.040 | 0.009 | 0.006 | 2.80 | <0.1 | 3.0 | 7.6 | 4.3 | 80 | 4360 | 5.24 | 0.22 | 0.43 | 0.45 | 0.02 | 0.00 | 0.00 | 1.12 | 0.00 | 0.20 | 0.38 | 0.40 | 0.02 | 0.00 |
| | 5/7/2012 | | 263 | | 3.0 | 1.1 | 250 | 3.9 | <1.0 | <1.0 | <1.0 | 0.059 | 0.052 | 0.011 | <0.002 | 0.69 | | 2.2 | 0.5 | 18.0 | 85 | 531 | 6.33 | 0.02 | 0.01 | 2.58 | 0.06 | 0.00 | 0.00 | 2.67 | 0.00 | 0.01 | 0.00 | 0.97 | 0.02 | 0.00 |
| BDC-05-09 | 11/15/2012 | | 455 | | <2.0 | <2.0 | 24 | 20 | 69 | <1.0 | <1.0 | 0.074 | 0.070 | 0.006 | <0.002 | 0.01 | | 1.2 | <0.3 | 27.0 | -10 | 266 | 6.71 | 0.00 | 0.00 | 0.25 | 0.32 | 2.46 | 0.00 | 0.57 | 2.46 | 0.00 | 0.00 | 0.08 | 0.11 | 0.81 |
| BDC-05-09 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 1.0 | 3.7 | 23 | 3.4 | <1.0 | 0.026 | 0.025 | 0.003 | <0.002 | 0.18 | | 1.5 | <0.3 | 17.0 | -300 | 40.6 | 7.83 | 0.00 | 0.00 | 0.01 | 0.06 | 0.82 | 0.11 | 0.07 | 0.93 | 0.00 | 0.00 | 0.01 | 0.06 | 0.93 |
| BDC-05-09 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 3.2 | 14 | 8.6 | 8.3 | <1.0 | 0.022 | 0.022 | <0.002 | <0.002 | 2.80 | | 1.4 | 0.9 | 11.0 | -263 | 36.8 | 6.61 | 0.00 | 0.00 | 0.03 | 0.22 | 0.31 | 0.28 | 0.26 | 0.58 | 0.00 | 0.00 | 0.04 | 0.27 | 0.69 |
| BDC-05-09 | 5/13/2014 | | 999 | | <0.2 | <0.2 | 0.7 | 1.0 | 1.6 | 8.5 | <1.0 | 0.010 | 0.010 | <0.002 | <0.002 | 3.66 | | 1.5 | 1.9 | 8.0 | -356 | 13.1 | 6.53 | 0.00 | 0.00 | 0.01 | 0.02 | 0.06 | 0.28 | 0.02 | 0.34 | 0.00 | 0.00 | 0.02 | 0.04 | 0.94 |
| BDC-05-09 | 11/11/2014 | | 1181 | | <0.2 | <0.2 | 1.1 | 3.5 | 1.2 | 6.4 | <1.0 | 0.018 | 0.017 | <0.002 | <0.002 | 0.08 | | 2.3 | 0.72 | 8.5 | -47 | 6.9 | 6.19 | 0.00 | 0.00 | 0.01 | 0.06 | 0.04 | 0.21 | 0.07 | 0.26 | 0.00 | 0.00 | 0.04 | 0.17 | 0.79 |
| BDC-05-09 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | 0.4 | 8.3 | 5.0 | 4.3 | <1.0 | 0.007 | 0.009 | <0.002 | <0.002 | 0.04 | | 1.4 | 0.68 | 7.5 | -53 | 4.0 | 6.27 | 0.00 | 0.00 | 0.00 | 0.13 | 0.18 | 0.14 | 0.14 | 0.32 | 0.00 | 0.00 | 0.01 | 0.29 | 0.70 |
| BDC-05-09 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | 0.3 | 2.1 | <1.0 | 2.0 | <1.0 | 0.008 | 0.008 | <0.002 | <0.002 | 0.15 | | 1.0 | <0.30 | 5.3 | -5.3 | 2.5 | 6.36 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.07 | 0.04 | 0.07 | 0.00 | 0.00 | 0.03 | 0.33 | 0.64 |
| BDC-05-09 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 2.8 | 1.9 | 8.4 | <1.0 | 0.007 | 0.009 | <0.002 | <0.002 | 0.08 | | 3.0 | <0.30 | 6.6 | -30 | 2.8 | 6.36 | 0.00 | 0.00 | 0.00 | 0.04 | 0.07 | 0.28 | 0.04 | 0.35 | 0.00 | 0.00 | 0.00 | 0.11 | 0.89 |
| BDC-05-09 | 11/2/2016 | | 1903 | | <0.2 | <0.2 | <0.2 | 1.3 | 1.0 | 9.2 | <1.0 | 0.009 | 0.009 | <0.002 | <0.002 | 0.41 | | 1.6 | 2.8 | 7.6 | -82.3 | 5.2 | 6.36 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.31 | 0.02 | 0.34 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-09 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | 0.4 | 2.8 | 1.0 | 9.0 | <1.0 | 0.006 | 0.006 | <0.002 | <0.002 | 0.26 | | 2.0 | 4.3 | 5.3 | -83.9 | 4.3 | 6.32 | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 | 0.30 | 0.05 | 0.33 | 0.00 | 0.00 | 0.01 | 0.12 | 0.87 |
| BDC-05-09 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 1.2 | <1.0 | 8.7 | <1.0 | 0.005 | 0.005 | <0.002 | <0.002 | 0.72 | | 2.2 | 0.65 | 4.4 | -17.5 | 3.6 | 6.51 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.29 | 0.02 | 0.29 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-09 | 5/2/2018 | | 2449 | 173 | <0.2 | 0.33 | 0.9 | 3.32 | <1.14 | <1.23 | <1.06 | 0.008 | 0.007 | <0.001 | <0.001 | 0.46 | | 2.0 | 0.195 | 15.3 | -2.3 | 38.8 | 6.15 | 0.00 | 0.00 | 0.01 | 0.05 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.04 | 0.14 | 0.82 | 0.00 |
| BDC-05-09 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | <0.2 | 0.98 | <1.14 | 3.91 | <1.06 | 0.009 | 0.009 | <0.001 | <0.001 | 1.30 | | 3.6 | <0.100 | 15.6 | -24.3 | 39.0 | 6.23 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.13 | 0.02 | 0.13 | 0.00 | 0.00 | 0.00 | 0.11 | 0.89 |
| BDC-05-09 | 5/2/2019 | | 2814 | 538 | <0.2 | 0.21 | 0.37 | 2.35 | <1.14 | 4.35 | <1.06 | 0.007 | 0.007 | <0.001 | <0.001 | 0.29 | | 3.5 | 7.19 | 8.63 | -32.6 | 26.23 | 6.18 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.14 | 0.04 | 0.14 | 0.00 | 0.01 | 0.02 | 0.20 | 0.77 |
| BDC-05-09 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | 0.21 | 1.62 | <1.14 | <1.23 | <1.06 | 0.006 | 0.006 | <0.001 | <0.001 | 0.46 | | 4.0 | 2.59 | 7.45 | 15.0 | 30.69 | 6.46 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 | 0.00 |
| BDC-05-09 | 5/6/2020 | | 3184 | 908 | <0.2 | 0.32 | 0.25 | 1.57 | <1.14 | <1.23 | <1.06 | 0.004 | 0.004 | <0.001 | <0.001 | 0.67 | | 0.9 | 2.43 | 5.75 | -7.2 | 29.08 | 6.52 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.08 | 0.09 | 0.83 | 0.00 |
| BDC-05-09 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | 0.87 | <1.14 | <1.23 | <1.06 | 0.005 | 0.005 | <0.001 | <0.001 | 0.68 | | 3.0 | 0.224 | 7.14 | -91.9 | 43.99 | 6.54 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-09 | 5/6/2021 | | 3549 | 1273 | <0.20 | 0.26 | <0.20 | 0.96 | <1.14 | 4.38 | <1.06 | 0.004 | 0.003 | 0.001 | <0.001 | 1.28 | | 3.5 | 1.47 | 4.79 | -87.4 | 25.20 | 6.32 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.15 | 0.02 | 0.15 | 0.00 | 0.01 | 0.00 | 0.09 | 0.89 |
| BDC-05-09 | 11/3/2021 | | 3730 | 1454 | <0.20 | <0.20 | <0.20 | 1.05 | <1.14 | 2.63 | <1.06 | 0.004 | 0.003 | 0.001 | 0.0002 | 0.21 | | 7.0 | 0.413 | 5.74 | 48.2 | 14.5 | 6.56 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.09 | 0.02 | 0.09 | 0.00 | 0.00 | 0.00 | 0.16 | 0.84 |
| BDC-05-10 | 7/31/2011 | | -18 | | 39 | 26 | 12 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.002 | <0.002 | <0.002 | 1.41 | <0.1 | 2.0 | 19.7 | 0.3 | 76 | 4.5 | 6.84 | 0.24 | 0.20 | 0.12 | 0.00 | 0.00 | 0.00 | 0.56 | 0.00 | 0.42 | 0.36 | 0.22 | 0.00 | 0.00 |
| (IW 2011, 2017) | 11/2/2011 | | 76 | | 22 | 27 | 1.0 | <1.0 | 1.6 | 1.7 | <1.1 | 0.038 | 0.037 | 0.008 | 0.004 | 2.43 | <0.1 | 2.2 | 10.9 | 0.1 | -38 | 2030 | 5.72 | 0.13 | 0.21 | 0.01 | 0.00 | 0.06 | 0.06 | 0.35 | 0.11 | 0.29 | 0.44 | 0.02 | 0.00 | 0.25 |
| | 5/6/2012 | | 262 | | <1.0 | <1.0 | 120 | 5.4 | 1.1 | <1.0 | <1.0 | 0.052 | 0.048 | 0.012 | <0.002 | 0.02 | | 1.7 | 0.4 | 19.0 | 58 | 270 | 6.48 | 0.00 | 0.00 | 1.24 | 0.09 | 0.04 | 0.00 | 1.32 | 0.04 | 0.00 | 0.00 | 0.91 | 0.06 | 0.03 |
| BDC-05-10 | 11/15/2012 | | 455 | | <1.0 | <1.0 | 4.4 | 49 | 8.5 | <1.0 | <1.0 | 0.069 | 0.060 | 0.003 | <0.002 | 0.02 | | 1.0 | <0.3 | 24.0 | -11 | 122 | 6.63 | 0.00 | 0.00 | 0.05 | 0.78 | 0.30 | 0.00 | 0.83 | 0.30 | 0.00 | 0.00 | 0.04 | 0.69 | 0.27 |
| BDC-05-10 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.3 | 11 | 14 | <3.0 | <1.0 | 0.056 | 0.053 | 0.003 | <0.002 | 0.25 | | 1.2 | 0.49 | 20.0 | -308 | 50.8 | 7.84 | 0.00 | 0.00 | 0.00 | 0.18 | 0.50 | 0.00 | 0.18 | 0.50 | 0.00 | 0.00 | 0.00 | 0.26 | 0.74 |
| BDC-05-10 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 0.6 | 15 | 17 | <1.0 | <1.0 | 0.058 | 0.052 | <0.002 | <0.002 | 3.33 | | 1.8 | <0.30 | 23.0 | -263 | 54.1 | 6.55 | 0.00 | 0.00 | 0.01 | 0.24 | 0.61 | 0.00 | 0.25 | 0.61 | 0.00 | 0.00 | 0.01 | 0.28 | 0.71 |
| BDC-05-10 | 5/13/2014 | | 999 | | <0.2 | <0.2 | <0.2 | 5.1 | 29 | <1.0 | <1.0 | 0.037 | 0.034 | <0.002 | <0.002 | 3.87 | | 1.6 | <0.30 | 21.0 | -196 | 27.6 | 6.53 | 0.00 | 0.00 | 0.00 | 0.08 | 1.03 | 0.00 | 0.08 | 1.03 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-10 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 0.2 | 3.9 | 3.4 | <1.0 | <1.0 | 0.040 | 0.038 | <0.002 | <0.002 | 0.03 | | 1.0 | <0.30 | 16.0 | -86 | 19.3 | 6.25 | 0.00 | 0.00 | 0.00 | 0.06 | 0.12 | 0.00 | 0.06 | 0.12 | 0.00 | 0.00 | 0.01 | 0.34 | 0.65 |
| BDC-05-10 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 2.9 | 7.2 | 8.3 | <1.0 | 0.026 | 0.024 | 0.003 | <0.002 | 0.04 | | 0.8 | <0.30 | 14.0 | -68 | 10.3 | 6.24 | 0.00 | 0.00 | 0.00 | 0.05 | 0.26 | 0.28 | 0.05 | 0.53 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-10 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 0.7 | <1.0 | 3.2 | <1.0 | 0.021 | 0.019 | <0.002 | <0.002 | 0.17 | | 1.0 | <0.30 | 7.4 | -14 | 7.8 | 6.42 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.11 | 0.01 | 0.11 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-10 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 1.8 | 3.9 | 11 | <1.0 | 0.015 | 0.016 | <0.002 | <0.002 | 0.22 | | 1.1 | 0.65 | 5.8 | -17 | 5.0 | 6.22 | 0.00 | 0.00 | 0.00 | 0.03 | 0.14 | 0.37 | 0.03 | 0.50 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-10 | 11/2/2016 | | 1903 | | <0.2 | <0.2 | <0.2 | 0.8 | <1.0 | 19 | <1.0 | 0.022 | 0.021 | <0.002 | <0.002 | 0.15 | | 0.6 | <0.30 | 6.1 | -109 | 7.5 | 6.34 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.63 | 0.01 | 0.63 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-10 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | 0.3 | 1.8 | 1.0 | 15 | <1.0 | 0.015 | 0.014 | <0.002 | <0.002 | 0.23 | | 2.0 | 1.7 | 4.0 | -89.7 | 6.0 | 6.38 | 0.00 | 0.00 | 0.00 | 0.03 | 0.04 | 0.50 | 0.03 | 0.53 | 0.00 | 0.00 | 0.01 | 0.05 | 0.94 |
| BDC-05-10 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 0.6 | <1.0 | 12 | <1.0 | 0.014 | 0.011 | <0.002 | <0.002 | 0.32 | | 2.0 | 1.3 | 6.2 | 8.90 | 5.3 | 6.37 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.40 | 0.01 | 0.40 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-10 | 5/2/2018 | | 2449 | 173 | <2.0 | <2.0 | 7.43 | <2.0 | <1.14 | <1.23 | <1.06 | 0.036 | 0.022 | 0.063 | <0.050 | 0.41 | | 4.2 | <1.0 | 13.8 | -79.8 | 1453 | 6.44 | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| BDC-05-10 | 11/6/2018 | | 2637 | 361 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | <1.06 | 0.017 | 0.012 | 0.024 | 0.004 | 1.09 | | 1.8 | <0.100 | 18.4 | -93.2 | 303.1 | 6.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-10 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | 1.16 | 2.01 | <1.14 | 2.68 | <1.06 | 0.013 | 0.009 | 0.048 | 0.001 | 0.34 | | 3.0 | 1.85 | 19.3 | -54.7 | 105.1 | 6.22 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.09 | 0.04 | 0.09 | 0.00 | 0.00 | 0.00 | 0.24 | 0.67 |
| BDC-05-10 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | 0.58 | 0.92 | <1.14 | <1.23 | <1.06 | 0.010 | 0.009 | 0.022 | <0.001 | 0.48 | | 2.5 | 0.403 | 6.68 | 16.9 | 53.47 | 6.40 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.29 | 0.71 | 0.00 |
| BDC-05-10 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | 0.64 | 1.66 | <1.14 | <1.23 | <1.06 | 0.009 | 0.007 | 0.010 | 0.001 | 0.66 | | 1.8 | 1.16 | 11.0 | -15.0 | 37.43 | 6.38 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 0.00 |
| BDC-05-10 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | 0.24 | 0.34 | <1.14 | <1.23 | <1.06 | 0.009 | 0.007 | 0.012 | <0.001 | 1.22 | | 2.5 | 0.182 | 8.68 | -75.7 | 20.52 | 6.44 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.69 | 0.00 |
| BDC-05-10 | 5/6/2021 | | 3549 | 1273 | <0.20 | <0.20 | 0.40 | 1.18 | <1.14 | 3.59 | <1.06 | 0.006 | 0.005 | 0.005 | 0.0003 | 0.39 | | 4.0 | <0.500 | 6.90 | -81.9 | 12.71 | 6.44 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.12 | 0.02 | 0.12 | 0.00 | 0.00 | 0.03 | 0.13 | 0.84 |
| BDC-05-10 | 11/3/2021 | | 3730 | 1454 | <0.20 | <0.20 | 0.24 | 0.43 | <1.14 | 5.49 | <1.06 | 0.010 | 0.008 | 0.010 | 0.0006 | 0.14 | | 5.0 | <0.100 | 6.62 | 63.1 | 14.6 | 6.43 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.18 | 0.01 | 0.18 | 0.00 | 0.00 | 0.01 | 0.04 | 0.95 |
| BDC-05-11 | 7/31/2011 | | -18 | | 16 | 19 | 5.8 | <1.0 | <1.1 | <1.2 | <1.1 | 0.005 | 0.005 | <0.002 | <0.002 | 1.41 | <0.1 | 2.0 | 4.0 | 1.4 | 65 | 3.9 | 6.93 | 0.10 | 0.14 | 0.06 | 0.00 | 0.00 | 0.00 | 0.30 | 0.00 | 0.32 | 0.48 | 0.20 | 0.00 | 0.00 |
| (IW 2011) | 11/2/2011 | | 76 | | 9.6 | 20 | 12 | <1.0 | <1.1 | <1.2 | <1.1 | 0.039 | 0.037 | 0.013 | 0.004 | 2.16 | <0.1 | 1.8 | <1.0 | 1.0 | -38 | 1330 | 5.72 | 0.06 | 0.15 | 0.12 | 0.00 | 0.00 | 0.00 | 0.33 | 0.00 | 0.17 | 0.46 | 0.37 | 0.00 | 0.00 |
| | 5/6/2012 | | 262 | | 0.2 | 0.5 | 44 | 7.2 | 1.6 | <1.0 | <1.0 | 0.038 | 0.034 | 0.009 | 0.002 | 0.01 | | 1.4 | 0.5 | 18.0 | 70 | 284 | 6.42 | 0.00 | 0.00 | 0.45 | 0.12 | 0.06 | 0.00 | 0.57 | 0.06 | 0.00 | 0.01 | 0.72 | 0.18 | 0.09 |
| BDC-05-11 | 11/15/2012 | | 455 | | <1.0 | <1.0 | 6.1 | 5.7 | 7.6 | <1.0 | <1.0 | 0.043 | 0.038 | 0.003 | <0.002 | 0.02 | | 1.3 | <0.3 | 26.0 | -15 | 73.8 | 6.76 | 0.00 | 0.00 | 0.06 | 0.09 | 0.27 | 0.00 | 0.15 | 0.27 | 0.00 | 0.00 | 0.15 | 0.21 | 0.64 |
| BDC-05-11 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.3 | 2.9 | 16 | 3.7 | <1.0 | 0.035 | 0.032 | <0.002 | <0.002 | 0.25 | | 1.6 | 0.43 | 23.0 | -299 | 42.1 | 7.71 | 0.00 | 0.00 | 0.00 | 0.05 | 0.57 | 0.12 | 0.05 | 0.69 | 0.00 | 0.00 | 0.00 | 0.06 | 0.93 |
| BDC-05-11 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 0.2 | 3.9 | 17 | 4.6 | <1.0 | 0.038 | 0.035 | 0.002 | <0.002 | 3.81 | | 2.0 | 0.36 | 24.0 | -264 | 48.4 | 6.5 | 0.00 | 0.00 | 0.00 | 0.06 | 0.61 | 0.15 | 0.06 | 0.76 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-11 | 5/13/2014 | | 999 | | <0.2 | <0.2 | <0.2 | 2.0 | 9.0 | 7.2 | <1.0 | 0.038 | 0.036 | <0.002 | <0.002 | 4.13 | | 1.8 | <0.30 | 24.0 | -185 | 38.1 | 6.49 | 0.00 | 0.00 | 0.00 | 0.03 | 0.32 | 0.24 | 0.03 | 0.56 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-11 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | <0.2 | 2.5 | 1.7 | 1.9 | <1.0 | 0.030 | 0.030 | <0.002 | <0.002 | 0.01 | | 1.8 | <0.30 | 8.0 | -88 | 11.1 | 6.30 | 0.00 | 0.00 | 0.00 | 0.04 | 0.06 | 0.06 | 0.04 | 0.12 | 0.00 | 0.00 | 0.00 | 0.24 | 0.76 |
| BDC-05-11 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 3.5 | 2.1 | <1.0 | <1.0 | 0.019 | 0.017 | <0.002 | <0.002 | 0.07 | | 0.8 | 0.81 | 6.2 | -77 | 7.6 | 6.22 | 0.00 | 0.00 | 0.00 | 0.06 | 0.07 | 0.00 | 0.06 | 0.07 | 0.00 | 0.00 | 0.00 | 0.43 | 0.57 |
| BDC-05-11 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 1.5 | 1.8 | 2.1 | <1.0 | 0.018 | 0.017 | <0.002 | <0.002 | 0.11 | | 0.6 | <0.30 | 15.0 | -16 | 7.4 | 6.52 | 0.00 | 0.00 | 0.00 | 0.02 | 0.06 | 0.07 | 0.02 | 0.13 | 0.00 | 0.00 | 0.00 | 0.15 | 0.85 |
| BDC-05-11 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 1.4 | 3.3 | 2.6 | <1.0 | 0.020 | 0.020 | <0.002 | <0.002 | 0.08 | | 0.8 | <0.30 | 13.0 | -15.4 | 6.5 | 6.33 | 0.00 | 0.00 | 0.00 | 0.02 | 0.12 | 0.09 | 0.02 | 0.20 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-11 | 11/2/2016 | | 1903 | | <0.2 | <0.2 | <0.2 | 0.4 | 1.8 | 5.8 | <1.0 | 0.017 | 0.015 | <0.002 | <0.002 | 0.11 | | 2.8 | <0.30 | 13.0 | -118.1 | 9.0 | 6.27 | 0.00 | 0.00 | 0.00 | 0.01 | 0.06 | 0.19 | 0.01 | 0.26 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-11 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 0.8 | 2.5 | 6.8 | <1.0 | 0.018 | 0.018 | <0.002 | <0.002 | 0.24 | | 2.0 | <0.30 | 9.0 | -101.7 | 9.2 | 6.37 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.09 | 0.23 | 0.01 | 0.32 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-11 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 0.3 | <1.0 | 5.1 | <1.0 | 0.012 | 0.011 | <0.002 | <0.002 | 0.54 | | 3.8 | <0.30 | 10.0 | -15.5 | 7.4 | 6.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.03 | 0.97 |
| BDC-05-11 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 1.12 | <1.14 | <1.23 | <1.06 | 0.014 | 0.013 | 0.001 | <0.001 | 0.15 | | 2.4 | 0.107 | 14.8 | -5 | 40.8 | 6.27 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-11 | 11/7/2018 | | 2638 | 362 | <0.2 | <0.2 | <0.2 | 0.43 | <1.14 | 1.35 | <1.06 | 0.014 | 0.015 | <0.001 | <0.001 | 0.37 | | 4.8 | <0.100 | 20.7 | -13.1 | 43.4 | 6.25 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.04 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.13 | 0.87 |
| BDC-05-11 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.41 | <1.14 | 2.02 | <1.06 | 0.014 | 0.012 | 0.001 | <0.001 | 0.29 | | 2.5 | 0.652 | 18.9 | -50.0 | 22.9 | 6.08 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.07 | 0.01 | 0.07 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-11 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.29 | <1.14 | <1.23 | <1.06 | 0.008 | 0.008 | 0.001 | 0.001 | 0.19 | | | 0.226 | 16.4 | 32.2 | 13.05 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-11 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | <0.2 | 0.70 | <1.14 | <1.23 | <1.06 | 0.011 | 0.010 | 0.0004 | <0.001 | 0.65 | | 2.4 | 0.166 | 14.8 | -9.7 | 16.68 | 6.39 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-11 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | 0.29 | <1.14 | <1.23 | <1.06 | 0.010 | 0.010 | <0.001 | <0.001 | 0.89 | | 4.0 | 0.155 | 9.96 | -81.2 | 11.58 | 6.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-11 | 5/6/2021 | | 3549 | 1273 | <0.20 | <0.20 | <0.20 | 0.80 | <1.14 | 8.40 | <1.06 | 0.012 | 0.013 | 0.0003 | <0.001 | 0.38 | | 5.0 | <0.400 | 9.48 | -86.0 | 11.19 | 6.44 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.28 | 0.01 | 0.28 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-11 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.39 | <1.14 | 3.21 | <1.06 | 0.009 | 0.009 | 0.0002 | <0.001 | 0.82 | | 4.8 | <0.100 | 7.19 | -78.7 | 7.1 | 6.32 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.11 | 0.01 | 0.11 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-12 | 7/31/2011 | | -18 | | 15 | 18 | 16 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.002 | 0.002 | <0.002 | 1.60 | 0.1 | 2.4 | 8.4 | 4.0 | 26 | 7.0 | 7.02 | 0.09 | 0.14 | 0.17 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 | 0.23 | 0.35 | 0.42 | 0.00 | 0.00 |
| (IW 2011) | 11/2/2011 | | 76 | | 11 | 17 | 11 | <1.0 | <1.1 | <1.2 | <1.1 | 0.041 | 0.031 | 0.012 | 0.009 | 2.60 | <0.1 | 3.5 | 5.6 | 1.0 | -77 | 2960 | 5.83 | 0.07 | 0.13 | 0.11 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.21 | 0.42 | 0.37 | 0.00 | 0.00 |
| | 2/19/2012 | | 185 | | <0.4 | <0.4 | 53 | 1.8 | <1.0 | <1.0 | <1.0 | | | | | 1.7 | <0.5 | 2.0 | <1.5 | 17.0 | -2 | 279 | 6.59 | 0.00 | 0.00 | 0.55 | 0.03 | 0.00 | 0.00 | 0.58 | 0.00 | 0.00 | 0.00 | 0.95 | 0.05 | 0.00 |
| BDC-05-12 | 5/6/2012 | | 262 | | <0.2 | <0.2 | 39 | 3.4 | <1.0 | <1.0 | <1.0 | 0.082 | 0.071 | 0.005 | <0.002 | 0.03 | | 2.5 | 0.8 | 21.0 | 65 | 83.2 | 6.45 | 0.00 | 0.00 | 0.40 | 0.05 | 0.00 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | 0.88 | 0.12 | 0.00 |
| BDC-05-12 | 9/5/2012 | | 384 | | <0.2 | <0.2 | 6.5 | 3.3 | 1.0 | <1.0 | <1.0 | | | | | 0.13 | | 1.8 | <0.3 | 22.0 | 80 | 50.4 | 6.48 | 0.00 | 0.00 | 0.07 | 0.05 | 0.04 | 0.00 | 0.12 | 0.04 | 0.00 | 0.00 | 0.43 | 0.34 | 0.23 |
| BDC-05-12 | 11/15/2012 | | 455 | | <1.0 | <1.0 | 7.9 | 5.4 | 1.1 | <1.0 | <1.0 | 0.037 | 0.036 | 0.002 | <0.002 | 0.03 | | 1.3 | <0.3 | 27.0 | 7 | 52.9 | 6.56 | 0.00 | 0.00 | 0.08 | 0.09 | 0.04 | 0.00 | 0.17 | 0.04 | 0.00 | 0.00 | 0.39 | 0.42 | 0.19 |
| BDC-05-12 | 2/25/2013 | | 557 | | <1.0 | <1.0 | 1.7 | 4.4 | 3.8 | <1.0 | <1.0 | | | | | 0.18 | | 2.0 | <0.3 | 26.0 | 54 | 27.5 | 6.68 | 0.00 | 0.00 | 0.02 | 0.07 | 0.14 | 0.00 | 0.09 | 0.14 | 0.00 | 0.00 | 0.08 | 0.32 | 0.61 |
| BDC-05-12 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.8 | 5.0 | 12 | <3.0 | <1.0 | 0.022 | 0.022 | <0.002 | <0.002 | 0.29 | | 1.4 | <0.3 | 24.0 | -366 | 35.4 | 8.08 | 0.00 | 0.00 | 0.01 | 0.08 | 0.43 | 0.00 | 0.09 | 0.43 | 0.00 | 0.00 | 0.02 | 0.16 | 0.83 |
| BDC-05-12 | 8/29/2013 | | 742 | | <2.0 | <2.0 | <2.0 | <2.0 | 5.5 | 2.8 | <1.0 | | | | | 5.25 | | 1.6 | <0.30 | 22.0 | -320 | 32.6 | 6.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.09 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 11/13/2013 | | 818 | | <2.0 | <2.0 | <2.0 | <2.0 | 2.2 | 3.4 | <1.0 | 0.010 | 0.012 | <0.002 | <0.002 | 2.61 | | 2.6 | 0.39 | 26.0 | -268 | 26.9 | 6.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.11 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 2/11/2014 | | 908 | | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 | <6.0 | <1.0 | | | | | 4.83 | | 2.2 | 0.37 | 23.0 | -239 | 19.7 | 6.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 5/13/2014 | | 999 | | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5.6 | <1.0 | 0.007 | 0.006 | <0.002 | <0.002 | 3.01 | | 2.0 | 0.49 | 25.0 | -299 | 21.5 | 6.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.19 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 8/6/2014 | | 1084 | | <1.0 | <1.0 | <1.0 | 1.1 | 1.8 | 4.5 | <1.0 | | | | | 7.00 | | 1.5 | <0.30 | 21.0 | -146 | 43.1 | 7.05 | 0.00 | 0.00 | 0.00 | 0.02 | 0.06 | 0.15 | 0.02 | 0.21 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-12 | 11/10/2014 | | 1180 | | <1.0 | <1.0 | <1.0 | 1.7 | 2.5 | 8.9 | <1.0 | 0.017 | 0.018 | <0.002 | <0.002 | 0.03 | | 0.8 | <0.30 | 25.0 | -83 | 30.3 | 6.23 | 0.00 | 0.00 | 0.00 | 0.03 | 0.09 | 0.30 | 0.03 | 0.39 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-12 | 1/21/2015 | | 1252 | | <0.2 | <0.2 | <0.2 | 2.8 | 1.5 | 5.0 | <1.0 | | | | | 0.12 | | 2.2 | 0.45 | 17.0 | -115 | 22.6 | 6.25 | 0.00 | 0.00 | 0.00 | 0.04 | 0.05 | 0.17 | 0.04 | 0.22 | 0.00 | 0.00 | 0.00 | 0.17 | 0.83 |
| BDC-05-12 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 1.4 | 1.2 | 2.2 | <1.0 | 0.017 | 0.017 | <0.002 | <0.002 | 0.07 | | 1.1 | <0.30 | 21.0 | -84 | 13.2 | 6.29 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.07 | 0.02 | 0.12 | 0.00 | 0.00 | 0.00 | 0.16 | 0.84 |
| BDC-05-12 | 7/21/2015 | | 1433 | | <0.2 | <0.2 | <0.2 | 0.7 | <1.0 | 3.1 | <1.0 | | | | | 0.12 | | 1.4 | <0.30 | 18.0 | -41 | 15.2 | 6.25 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.10 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-12 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 0.9 | <1.0 | 2.6 | <1.0 | 0.034 | 0.033 | 0.003 | <0.002 | 0.08 | | 1.4 | <0.30 | 14.0 | -28 | 29.0 | 6.40 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.09 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 | 0.14 | 0.86 |
| BDC-05-12 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | <0.2 | 0.8 | 1.3 | 4.3 | <1.0 | | | | | 0.11 | | 1.1 | <0.30 | 19.0 | -129 | 32.7 | 6.52 | 0.00 | 0.00 | 0.00 | 0.01 | 0.05 | 0.14 | 0.01 | 0.19 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-12 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 0.4 | <1.0 | 4.3 | <1.0 | 0.016 | 0.017 | <0.002 | <0.002 | 0.10 | | 1.1 | <0.30 | 16.0 | -44 | 14.3 | 6.45 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.14 | 0.01 | 0.14 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-12 | 8/9/2016 | | 1818 | | <0.2 | <0.2 | <0.2 | 0.4 | <1.0 | 2.7 | <1.0 | 0.004 | 0.008 | <0.002 | <0.002 | 0.35 | | 2.5 | <0.30 | 13.0 | -106.8 | 9.4 | 6.11 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.09 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-12 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | 2.8 | <1.0 | 0.016 | 0.014 | <0.002 | <0.002 | 0.13 | | 3.0 | <0.30 | 12.0 | -129.0 | 10.6 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 2/8/2017 | | 2001 | | <0.2 | <0.2 | <0.2 | 0.4 | <1.0 | 1.9 | <1.0 | 0.006 | 0.007 | <0.002 | <0.002 | 0.28 | | 2.4 | <0.30 | 12.0 | -25.1 | 8.6 | 6.52 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.06 | 0.01 | 0.06 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-12 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 0.3 | <1.0 | 2.4 | <1.0 | 0.010 | 0.009 | <0.002 | <0.002 | 0.22 | | 2.2 | <0.30 | 11.0 | -94.4 | 8.1 | 6.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-12 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | 8.0 | <1.0 | 0.011 | 0.009 | <0.002 | <0.002 | 0.08 | | 2.3 | <0.30 | 9.5 | -85.0 | 7.6 | 6.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-12 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 0.2 | <1.0 | 1.6 | <1.0 | 0.005 | 0.005 | <0.002 | <0.002 | 0.66 | | 3.0 | <0.30 | 12.0 | -18.5 | 7.0 | 6.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-12 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.46 | <1.14 | <1.23 | <1.06 | 0.006 | 0.008 | <0.001 | <0.001 | 0.20 | | 4.6 | 0.104 | 14.2 | -12.5 | 19.4 | 6.29 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-12 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.006 | 0.007 | <0.001 | <0.001 | 0.56 | | 3.8 | <0.100 | 24.5 | -64.4 | 23.33 | 6.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.009 | 0.009 | <0.001 | <0.001 | 0.29 | | 4.5 | 0.107 | 20.7 | -62.6 | 17.66 | 6.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.005 | 0.005 | 0.001 | 0.0005 | 0.48 | | 3.0 | 0.726 | 17.4 | 30.4 | 13.49 | 6.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.005 | 0.005 | <0.001 | <0.001 | 0.37 | | 4.5 | 0.149 | 12.5 | -22.4 | 10.59 | 6.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.004 | 0.004 | <0.001 | <0.001 | 0.36 | | 4.0 | 0.161 | 10.5 | -73.1 | 10.64 | 6.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | <0.20 | <1.14 | <1.23 | <1.06 | 0.005 | 0.004 | 0.0004 | <0.001 | 0.37 | | 3.5 | <0.600 | 8.6 | -93.0 | 8.52 | 6.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-12 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.21 | <1.14 | <1.23 | <1.06 | 0.004 | 0.005 | 0.0006 | <0.001 | 0.62 | | 3.0 | <0.100 | 7.5 | -84.0 | 7.7 | 6.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-13 | 7/31/2011 | | -18 | | 5.2 | 6.6 | 2.6 | <1.0 | <1.1 | <1.2 | <1.1 | 0.003 | 0.002 | 0.002 | <0.002 | 1.73 | <0.1 | 2.0 | 2.3 | 5.0 | -1 | 6.0 | 7.06 | 0.03 | 0.05 | 0.03 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.29 | 0.46 | 0.25 | 0.00 | 0.00 |
| (IW 2011) | 11/1/2011 | | 75 | | <1.0 | 1.2 | 39 | <1.0 | <1.1 | <1.2 | <1.1 | 0.068 | 0.064 | 0.017 | 0.003 | 1.82 | <1.0 | 1.5 | <1.0 | 2.2 | -70 | 550 | 6.65 | 0.00 | 0.01 | 0.40 | 0.00 | 0.00 | 0.00 | 0.41 | 0.00 | 0.00 | 0.02 | 0.98 | 0.00 | 0.00 |
| | 5/6/2012 | | 262 | | <0.2 | <0.2 | 13 | 3.9 | 1.7 | <1.0 | <1.0 | 0.051 | 0.046 | 0.003 | <0.002 | 0.03 | | 3.0 | 0.4 | 19.0 | 78 | 34.2 | 6.40 | 0.00 | 0.00 | 0.13 | 0.06 | 0.06 | 0.00 | 0.20 | 0.06 | 0.00 | 0.00 | 0.52 | 0.24 | 0.24 |
| BDC-05-13 | 11/15/2012 | | 455 | | <1.0 | <1.0 | <1.0 | 2.3 | 3.7 | <1.0 | <1.0 | 0.060 | 0.055 | <0.002 | <0.002 | 0.04 | | 2.2 | <0.3 | 22.0 | -9 | 30.2 | 6.75 | 0.00 | 0.00 | 0.00 | 0.04 | 0.13 | 0.00 | 0.04 | 0.13 | 0.00 | 0.00 | 0.00 | 0.22 | 0.78 |
| BDC-05-13 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.3 | 1.2 | 3.8 | 3.9 | <1.0 | 0.019 | 0.019 | <0.002 | <0.002 | 0.29 | | 1.8 | 0.43 | 23.0 | -296 | 21.4 | 7.76 | 0.00 | 0.00 | 0.00 | 0.02 | 0.14 | 0.13 | 0.02 | 0.27 | 0.00 | 0.00 | 0.01 | 0.07 | 0.92 |
| BDC-05-13 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 0.3 | 2.1 | 3.6 | 6.4 | <1.0 | 0.031 | 0.027 | <0.002 | <0.002 | 3.20 | | 1.6 | 0.31 | 19.0 | -241 | 24.7 | 6.59 | 0.00 | 0.00 | 0.00 | 0.03 | 0.13 | 0.21 | 0.04 | 0.34 | 0.00 | 0.00 | 0.01 | 0.09 | 0.90 |
| BDC-05-13 | 5/12/2014 | | 998 | | <0.2 | <0.2 | <0.2 | 2.6 | 4.3 | 6.8 | <1.0 | 0.032 | 0.032 | <0.002 | <0.002 | 4.73 | | 2.4 | <0.30 | 19.0 | -238 | 23.4 | 6.69 | 0.00 | 0.00 | 0.00 | 0.04 | 0.15 | 0.23 | 0.04 | 0.38 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-13 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 0.2 | 2.5 | 2.1 | 2.2 | <1.0 | 0.020 | 0.019 | <0.002 | <0.002 | 0.02 | | 1.0 | 0.33 | 7.1 | -123 | 15.1 | 6.41 | 0.00 | 0.00 | 0.00 | 0.04 | 0.07 | 0.07 | 0.04 | 0.15 | 0.00 | 0.00 | 0.01 | 0.21 | 0.78 |
| BDC-05-13 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 1.9 | 2.5 | 1.6 | <1.0 | 0.019 | 0.018 | <0.002 | <0.002 | 0.09 | | 0.8 | <0.30 | 12.0 | -102 | 8.9 | 6.45 | 0.00 | 0.00 | 0.00 | 0.03 | 0.09 | 0.05 | 0.03 | 0.14 | 0.00 | 0.00 | 0.00 | 0.18 | 0.82 |
| BDC-05-13 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 1.1 | <1.0 | 1.0 | <1.0 | 0.020 | 0.019 | <0.002 | <0.002 | 0.20 | | 1.2 | <0.30 | 6.1 | -32 | 10.8 | 6.54 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.03 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.35 | 0.65 |
| BDC-05-13 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 2.0 | 1.9 | 2.0 | <1.0 | 0.026 | 0.024 | <0.002 | <0.002 | 0.10 | | 1.0 | <0.30 | 10.0 | -36 | 7.6 | 6.60 | 0.00 | 0.00 | 0.00 | 0.03 | 0.07 | 0.07 | 0.03 | 0.13 | 0.00 | 0.00 | 0.00 | 0.19 | 0.81 |
| BDC-05-13 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | 1.0 | <1.0 | 2.3 | <1.0 | 0.023 | 0.020 | <0.002 | <0.002 | 0.08 | | 1.0 | <0.30 | 15.0 | -140.9 | 12.2 | 6.32 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.08 | 0.02 | 0.08 | 0.00 | 0.00 | 0.00 | 0.17 | 0.83 |
| BDC-05-13 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 1.1 | 1.4 | 12 | <1.0 | 0.027 | 0.027 | <0.002 | <0.002 | 0.17 | | 2.4 | <0.30 | 14.0 | -123.1 | 11.6 | 6.42 | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.40 | 0.02 | 0.45 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-13 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 1.1 | <1.0 | 7.0 | <1.0 | 0.030 | 0.030 | <0.002 | <0.002 | 0.36 | | 1.8 | <0.30 | 14.0 | -28.5 | 18.5 | 6.53 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.23 | 0.02 | 0.23 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-13 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.6 | <1.14 | <1.23 | <1.06 | 0.029 | 0.026 | 0.0005 | <0.001 | 0.98 | | 1.6 | 0.112 | 16.0 | -80.4 | 21.5 | 6.43 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-13 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | <0.2 | 0.62 | <1.14 | 3.82 | <1.06 | 0.034 | 0.032 | 0.0005 | <0.001 | 0.26 | | 2.4 | <0.100 | 14.7 | -108.6 | 20.12 | 6.52 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.13 | 0.01 | 0.13 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-13 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.41 | <1.14 | <1.23 | <1.06 | 0.023 | 0.023 | 0.0004 | <0.001 | 0.45 | | 3.5 | 0.254 | 19.6 | -93.9 | 23.23 | 6.46 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-13 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.41 | <1.14 | <1.23 | <1.06 | 0.023 | 0.025 | <0.001 | 0.002 | 0.35 | | 3.5 | 0.122 | 9.98 | 24.8 | 19.70 | 6.54 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-13 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | <0.2 | 0.33 | <1.14 | <1.23 | <1.06 | 0.010 | 0.011 | <0.001 | <0.001 | 0.75 | | 3.0 | 0.137 | 13.2 | -32.6 | 11.14 | 6.35 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-13 | 11/5/2020 | | 3367 | 1091 | <0.2 | <0.2 | <0.2 | 0.33 | <1.14 | 3.7 | <1.06 | 0.016 | 0.016 | 0.0004 | <0.001 | 0.30 | | 2.4 | 0.16 | 13.7 | -44.0 | 17.85 | 6.41 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.12 | 0.01 | 0.12 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-13 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.52 | <1.14 | 4.78 | <1.06 | 0.016 | 0.015 | 0.0004 | <0.001 | 0.35 | | 3.5 | <0.100 | 11.8 | -94.9 | 11.23 | 6.35 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.16 | 0.01 | 0.16 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-13 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.51 | <1.14 | 5.87 | <1.06 | 0.017 | 0.012 | 0.0003 | <0.001 | 0.37 | | 4.8 | <0.100 | 7.2 | -74.0 | 15.9 | 6.34 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.20 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-14 | 7/31/2011 | | -18 | | 2.8 | 6.8 | 2.8 | <1.0 | <1.1 | <1.2 | <1.1 | 0.004 | 0.004 | 0.004 | <0.002 | 1.76 | <0.1 | 2.0 | 10.1 | 6.5 | -15 | 8.6 | 7.00 | 0.02 | 0.05 | 0.03 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.17 | 0.53 | 0.30 | 0.00 | 0.00 |
| (IW 2011) | 11/1/2011 | | 75 | | 2.5 | 6.7 | 13 | <1.0 | <1.1 | <1.2 | <1.1 | 0.083 | 0.074 | 0.022 | 0.002 | 1.87 | <1.0 | 2.3 | <1.0 | 4.0 | -124 | 725 | 6.13 | 0.02 | 0.05 | 0.13 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.08 | 0.25 | 0.67 | 0.00 | 0.00 |
| | 5/6/2012 | | 262 | | <0.2 | 0.4 | 3.0 | 1.1 | <1.0 | <1.0 | <1.0 | 0.012 | 0.009 | <0.002 | <0.002 | 0.08 | | 1.7 | 0.6 | 23.0 | 99 | 41.5 | 6.33 | 0.00 | 0.00 | 0.03 | 0.02 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.06 | 0.60 | 0.34 | 0.00 |
| BDC-05-14 | 11/15/2012 | | 455 | | <0.2 | <0.2 | 1.1 | 2.0 | 1.4 | <1.0 | <1.0 | 0.022 | 0.019 | <0.002 | <0.002 | 0.11 | | 2.2 | <0.3 | 24.0 | -1.4 | 39.9 | 6.66 | 0.00 | 0.00 | 0.01 | 0.03 | 0.05 | 0.00 | 0.04 | 0.05 | 0.00 | 0.00 | 0.12 | 0.34 | 0.54 |
| BDC-05-14 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.2 | 1.3 | 1.3 | <3.0 | <1.0 | 0.012 | 0.012 | <0.002 | <0.002 | 0.40 | | 1.8 | <0.3 | 26.0 | -311 | 26.3 | 7.69 | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.00 | 0.02 | 0.05 | 0.00 | 0.00 | 0.03 | 0.30 | 0.67 |
| BDC-05-14 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 0.2 | 1.2 | 1.3 | 2.5 | <1.0 | 0.017 | 0.015 | <0.002 | <0.002 | 3.80 | | 1.5 | <0.30 | 24.0 | -219 | 29.5 | 6.44 | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.08 | 0.02 | 0.13 | 0.00 | 0.00 | 0.01 | 0.13 | 0.86 |
| BDC-05-14 | 5/12/2014 | | 998 | | <0.2 | <0.2 | 0.2 | 1.5 | 2.2 | 5.0 | <1.0 | 0.018 | 0.021 | <0.002 | <0.002 | 5.21 | | 2.0 | <0.30 | 22.0 | -233 | 30.2 | 6.55 | 0.00 | 0.00 | 0.00 | 0.02 | 0.08 | 0.17 | 0.03 | 0.24 | 0.00 | 0.00 | 0.01 | 0.09 | 0.90 |
| BDC-05-14 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 0.4 | 5.1 | 4.3 | 6.4 | <1.0 | 0.017 | 0.017 | <0.002 | <0.002 | 0.15 | | 1.2 | 2.3 | 19.0 | -97 | 21.3 | 6.35 | 0.00 | 0.00 | 0.00 | 0.08 | 0.15 | 0.21 | 0.09 | 0.37 | 0.00 | 0.00 | 0.01 | 0.18 | 0.81 |
| BDC-05-14 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | 0.4 | 1.6 | <1.0 | 1.1 | <1.0 | 0.018 | 0.015 | <0.002 | <0.002 | 0.11 | | 1.4 | 1.8 | 11.0 | -88 | 18.9 | 6.25 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.04 | 0.03 | 0.04 | 0.00 | 0.00 | 0.06 | 0.39 | 0.55 |
| BDC-05-14 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | 0.3 | 1.4 | 1.1 | 2.4 | <1.0 | 0.015 | 0.013 | <0.002 | <0.002 | 0.11 | | 1.0 | 0.46 | 12.0 | -28 | 21.0 | 6.47 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.08 | 0.03 | 0.12 | 0.00 | 0.00 | 0.02 | 0.15 | 0.82 |
| BDC-05-14 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | 0.3 | 0.9 | <1.0 | 1.7 | <1.0 | 0.016 | 0.016 | <0.002 | <0.002 | 0.11 | | 2.0 | 3.1 | 11.0 | -42 | 22.3 | 6.71 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.06 | 0.02 | 0.06 | 0.00 | 0.00 | 0.04 | 0.19 | 0.76 |
| BDC-05-14 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.007 | 0.007 | <0.002 | <0.002 | 0.32 | | 2.6 | <0.30 | 17.0 | -111 | 16.0 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BDC-05-14 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | 0.3 | 1 | <2.0 | 8.9 | <1.0 | 0.023 | 0.021 | <0.002 | <0.002 | 0.17 | | 2.2 | 3.8 | 12.0 | -125.1 | 21.8 | 6.45 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.30 | 0.02 | 0.30 | 0.00 | 0.00 | 0.01 | 0.05 | 0.94 |
| BDC-05-14 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | 0.7 | <1.0 | 3.6 | <1.0 | 0.020 | 0.020 | <0.002 | <0.002 | 0.31 | | 2.8 | 3.8 | 14.0 | -27.6 | 19.2 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.12 | 0.01 | 0.12 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-14 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.33 | <1.14 | <1.23 | <1.06 | 0.025 | 0.025 | <0.001 | <0.001 | 0.92 | | 2.8 | 10.4 | 10.1 | -98.5 | 20.6 | 6.46 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | <0.2 | 0.42 | <1.14 | <1.23 | <1.06 | 0.029 | 0.031 | <0.001 | <0.001 | 0.34 | | 4.0 | 9.23 | 23.8 | -94.3 | 22.28 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.30 | <1.14 | <1.23 | <1.06 | 0.030 | 0.031 | <0.001 | <0.001 | 0.76 | | 4.9 | 2.82 | 20.3 | -97.7 | 18.43 | 6.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 11/5/2019 | | 3001 | 725 | <0.2 | <0.2 | <0.2 | 0.29 | <1.14 | <1.23 | <1.06 | 0.029 | 0.029 | <0.001 | <0.001 | 0.02 | | 3.2 | 3.30 | 14.6 | -134.1 | 19.80 | 6.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 5/5/2020 | | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.32 | <1.14 | <1.23 | <1.06 | 0.043 | 0.038 | 0.0005 | <0.001 | 0.78 | | 3.3 | 2.36 | 15.8 | -60.7 | 26.67 | 6.52 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 11/5/2020 | | 3367 | 1091 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.013 | 0.012 | <0.001 | <0.001 | 1.09 | | 1.8 | 0.18 | 14.6 | -98.2 | 13.90 | 6.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-14 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.32 | <1.14 | <1.23 | <1.06 | 0.050 | 0.050 | 0.0002 | 0.0002 | 0.54 | | 3.0 | 1.19 | 8.4 | -109.3 | 23.09 | 6.46 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-14 | 11/8/2021 | | 3735 | 1459 | <0.20 | <0.20 | <0.20 | 0.27 | <1.14 | 3.7 | <1.06 | 0.042 | 0.044 | <0.001 | <0.001 | 0.45 | | 6.0 | <0.100 | 9.2 | 78.1 | 25.2 | 6.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.03 | 0.97 |
| BDC-05-15 | 7/31/2011 | | -18 | | 9.6 | 28 | 58 | <1.0 | <1.1 | <1.2 | <1.1 | 0.019 | 0.019 | <0.002 | <0.002 | 1.91 | <0.1 | 1.3 | 18.6 | 0.8 | -0.9 | 10.3 | 7.00 | 0.06 | 0.21 | 0.60 | 0.00 | 0.00 | 0.00 | 0.87 | 0.00 | 0.07 | 0.25 | 0.69 | 0.00 | 0.00 |
| (IW 2011) | 11/1/2011 | | 75 | | 4.8 | 9.8 | 15 | <1.0 | <1.1 | <1.2 | <1.1 | 0.061 | 0.058 | 0.010 | 0.009 | 2.38 | <0.1 | 3.0 | 11.3 | 3.5 | -0.1 | 4420 | 5.67 | 0.03 | 0.07 | 0.15 | 0.00 | 0.00 | 0.00 | 0.26 | 0.00 | 0.11 | 0.29 | 0.60 | 0.00 | 0.00 |
| | 5/6/2012 | | 262 | | <2.0 | <2.0 | 49 | 6.3 | <1.0 | <1.0 | <1.0 | 0.057 | 0.047 | 0.009 | 0.004 | 0.07 | | 1.8 | <0.3 | 21.0 | 93 | 423 | 6.36 | 0.00 | 0.00 | 0.51 | 0.10 | 0.00 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | 0.83 | 0.17 | 0.00 |
| BDC-05-15 | 11/15/2012 | | 455 | | <1.0 | <1.0 | 1.5 | 7.5 | 1.8 | <1.0 | <1.0 | 0.054 | 0.049 | <0.002 | <0.002 | 0.02 | | 0.8 | <0.3 | 27.0 | 8 | 71.2 | 6.61 | 0.00 | 0.00 | 0.02 | 0.12 | 0.06 | 0.00 | 0.14 | 0.06 | 0.00 | 0.00 | 0.08 | 0.60 | 0.32 |
| BDC-05-15 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 0.3 | 16 | 11 | <3.0 | <1.0 | 0.065 | 0.061 | <0.002 | <0.002 | 0.22 | | 1.0 | 0.3 | 25.0 | -317 | 42.9 | 7.82 | 0.00 | 0.00 | 0.00 | 0.26 | 0.39 | 0.00 | 0.26 | 0.39 | 0.00 | 0.00 | 0.00 | 0.39 | 0.60 |
| BDC-05-15 | 11/13/2013 | | 818 | | <0.2 | <0.2 | 0.2 | 4.9 | 7.2 | 2.5 | <1.0 | 0.066 | 0.059 | <0.002 | <0.002 | 2.11 | | 2.6 | <0.30 | 23.0 | -265 | 45.5 | 6.60 | 0.00 | 0.00 | 0.00 | 0.08 | 0.26 | 0.08 | 0.08 | 0.34 | 0.00 | 0.00 | 0.00 | 0.19 | 0.81 |
| BDC-05-15 | 5/13/2014 | | 999 | | <0.2 | <0.2 | <0.2 | 8.6 | 9.4 | <1.0 | <1.0 | 0.065 | 0.061 | <0.002 | <0.002 | 2.92 | | 1.7 | <0.30 | 26.0 | -230 | 37.5 | 6.69 | 0.00 | 0.00 | 0.00 | 0.14 | 0.34 | 0.00 | 0.14 | 0.34 | 0.00 | 0.00 | 0.00 | 0.29 | 0.71 |
| BDC-05-15 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | <0.2 | 1.3 | 4.6 | 8.6 | <1.0 | 0.072 | 0.066 | <0.002 | <0.002 | 0.33 | | 1.4 | <0.30 | 25.0 | -126 | 37.5 | 6.37 | 0.00 | 0.00 | 0.00 | 0.02 | 0.16 | 0.29 | 0.02 | 0.45 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-15 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 1.9 | 3.2 | 5.1 | <1.0 | 0.056 | 0.052 | <0.002 | <0.002 | 0.06 | | 0.8 | <0.30 | 18.0 | -115 | 25.6 | 6.37 | 0.00 | 0.00 | 0.00 | 0.03 | 0.11 | 0.17 | 0.03 | 0.28 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-15 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 0.7 | 1.2 | 6.0 | <1.0 | 0.053 | 0.041 | <0.002 | <0.002 | 0.16 | | 1.2 | <0.30 | 17.0 | -41 | 22.2 | 6.64 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.20 | 0.01 | 0.24 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-15 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 1.1 | <1.0 | 12 | <1.0 | 0.057 | 0.051 | <0.002 | <0.002 | 0.13 | | 0.6 | <0.30 | 18.0 | -67 | 27.6 | 6.78 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.40 | 0.02 | 0.40 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-15 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | 9.4 | <1.0 | 0.047 | 0.044 | <0.002 | 0.002 | 0.31 | | 1.0 | <0.30 | 15.0 | -135.7 | 22.5 | 6.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-15 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 0.7 | <1.0 | 17 | <1.0 | 0.048 | 0.049 | <0.002 | 0.002 | 0.19 | | 1.8 | 0.41 | 10.0 | -141.5 | 23.9 | 6.57 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.57 | 0.01 | 0.57 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-15 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | <0.2 | 0.3 | <1.0 | 11 | <1.0 | 0.053 | 0.053 | <0.002 | <0.002 | 0.16 | | 1.8 | <0.30 | 8.7 | -29.1 | 25.1 | 6.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.37 | 0.00 | 0.37 | 0.00 | 0.00 | 0.00 | 0.01 | 0.99 |
| BDC-05-15 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.2 | <1.14 | <1.23 | <1.06 | 0.044 | 0.044 | 0.0004 | <0.001 | 0.88 | | 1.8 | 0.108 | 11.3 | -131.3 | 19.6 | 6.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 11/7/2018 | | 2638 | 362 | <0.2 | <0.2 | <0.2 | 0.22 | <1.14 | <1.23 | <1.06 | 0.042 | 0.043 | <0.001 | <0.001 | 0.31 | | 2.0 | <0.100 | 19.3 | -51.8 | 15.31 | 6.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 5/3/2019 | | 2815 | 539 | <0.2 | <0.2 | <0.2 | 0.21 | <1.14 | <1.23 | <1.06 | 0.046 | 0.045 | 0.001 | <0.001 | 0.62 | | 1.8 | 0.164 | 26.0 | -82.6 | 23.15 | 6.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.25 | <1.14 | <1.23 | <1.06 | 0.049 | 0.050 | 0.0003 | 0.001 | 0.28 | | 3.5 | 0.269 | 19.4 | 23.5 | 24.89 | 6.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | <0.2 | 0.25 | <1.14 | <1.23 | <1.06 | 0.045 | 0.045 | <0.001 | 0.001 | 0.47 | | 2.5 | 0.143 | 15.0 | -49.0 | 20.74 | 6.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | 0.26 | <1.14 | <1.23 | <1.06 | 0.053 | 0.053 | <0.001 | <0.001 | 0.34 | | 2.8 | 0.166 | 15.1 | -39.9 | 23.15 | 6.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.28 | <1.14 | <1.23 | <1.06 | 0.054 | 0.049 | 0.0004 | <0.001 | 0.52 | | 4.5 | <0.100 | 11.1 | -115.6 | 21.69 | 6.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-15 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.26 | <1.14 | 2.34 | <1.06 | 0.064 | 0.056 | 0.001 | <0.001 | 0.48 | | 6.5 | <0.100 | 7.2 | 68.4 | 25.9 | 6.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-16 | 7/31/2011 | | -18 | | 9.5 | 17 | 20 | <1.0 | <1.1 | <1.2 | <1.1 | 0.006 | 0.006 | 0.002 | <0.002 | 1.91 | <0.1 | 1.5 | 8.9 | 3.1 | -8 | 7.8 | 7.06 | 0.06 | 0.13 | 0.21 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 | 0.15 | 0.33 | 0.52 | 0.00 | 0.00 |
| BDC-05-16 | (IW 2011) | | 11/1/2011 | 75 | | 2.6 | 2.8 | 37 | <1.0 | <1.1 | <1.2 | <1.1 | 0.079 | 0.074 | 0.005 | 0.002 | 2.30 | <1.0 | 2.5 | 2.8 | 3.1 | 7 | 2250 | 5.51 | 0.02 | 0.02 | 0.38 | 0.00 | 0.00 | 0.00 | 0.42 | 0.00 | 0.04 | 0.05 | 0.91 | 0.00 | 0.00 |
| | | 2/19/2012 | 185 | | <2.0 | <2.0 | 46 | 7.4 | <1.0 | <1.0 | <1.0 | | | | | 1.59 | <0.5 | 2.2 | <1.5 | 18.0 | 128 | 1270 | 5.12 | 0.00 | 0.00 | 0.47 | 0.12 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.80 | 0.20 | 0.00 |
| BDC-05-16 | | 5/6/2012 | 262 | | <0.2 | 0.3 | 6.7 | 24 | 2.5 | <1.0 | <1.0 | 0.042 | 0.039 | 0.003 | <0.002 | 0.06 | | 2.5 | <0.3 | 25.0 | 121 | 207 | 6.28 | 0.00 | 0.00 | 0.07 | 0.38 | 0.09 | 0.00 | 0.46 | 0.09 | 0.00 | 0.00 | 0.13 | 0.71 | 0.16 |
| BDC-05-16 | | 9/5/2012 | 384 | | <0.4 | <0.4 | 0.9 | 8.1 | 6.0 | <1.0 | <1.0 | | | | | 0.12 | | 2.0 | <0.3 | 22.0 | 64 | 40.6 | 6.67 | 0.00 | 0.00 | 0.01 | 0.13 | 0.21 | 0.00 | 0.14 | 0.21 | 0.00 | 0.00 | 0.03 | 0.37 | 0.61 |
| BDC-05-16 | | 11/15/2012 | 455 | | <1.0 | <1.0 | <1.0 | 4.9 | 4.0 | <1.0 | <1.0 | 0.041 | 0.037 | <0.002 | <0.002 | 0.02 | | 1.0 | <0.3 | 28.0 | 7 | 32.3 | 6.68 | 0.00 | 0.00 | 0.00 | 0.08 | 0.14 | 0.00 | 0.08 | 0.14 | 0.00 | 0.00 | 0.00 | 0.35 | 0.65 |
| BDC-05-16 | | 2/25/2013 | 557 | | <1.0 | <1.0 | <1.0 | 13 | 4.7 | 2.7 | <1.0 | | | | | 0.41 | | 2.0 | <0.30 | 28.0 | 68 | 34.6 | 6.77 | 0.00 | 0.00 | 0.00 | 0.21 | 0.17 | 0.09 | 0.21 | 0.26 | 0.00 | 0.00 | 0.00 | 0.45 | 0.55 |
| BDC-05-16 | | 5/22/2013 | 643 | | <0.2 | <0.2 | 0.2 | 7.7 | 3.9 | <3.0 | <1.0 | 0.043 | 0.048 | <0.002 | <0.002 | 0.19 | | 1.0 | 0.38 | 26.0 | -291 | 33.1 | 7.70 | 0.00 | 0.00 | 0.00 | 0.12 | 0.14 | 0.00 | 0.13 | 0.14 | 0.00 | 0.00 | 0.01 | 0.47 | 0.53 |
| BDC-05-16 | | 8/28/2013 | 741 | | <1.0 | <1.0 | <1.0 | 4.0 | 4.2 | <3.0 | <1.0 | | | | | 1.77 | | 1.4 | <0.30 | 26.0 | -316 | 31.6 | 6.57 | 0.00 | 0.00 | 0.00 | 0.06 | 0.15 | 0.00 | 0.06 | 0.15 | 0.00 | 0.00 | 0.00 | 0.30 | 0.70 |
| BDC-05-16 | | 11/13/2013 | 818 | | <1.0 | <1.0 | <1.0 | 4.3 | 3.2 | <1.0 | <1.0 | 0.048 | 0.046 | <0.002 | <0.002 | 2.04 | | 2.2 | <0.30 | 24.0 | -263 | 36.0 | 6.64 | 0.00 | 0.00 | 0.00 | 0.07 | 0.11 | 0.00 | 0.07 | 0.11 | 0.00 | 0.00 | 0.00 | 0.38 | 0.62 |
| BDC-05-16 | | 2/11/2014 | 908 | | <1.0 | <1.0 | <1.0 | 2.1 | 2.0 | <7.0 | <1.0 | | | | | 4.05 | | 2.0 | <0.30 | 25.0 | -236 | 28.9 | 6.67 | 0.00 | 0.00 | 0.00 | 0.03 | 0.07 | 0.00 | 0.03 | 0.07 | 0.00 | 0.00 | 0.00 | 0.32 | 0.68 |
| BDC-05-16 | | 5/12/2014 | 998 | | <1.0 | 1.3 | <1.0 | 4.9 | 4.9 | <1.0 | <1.0 | 0.044 | 0.041 | <0.002 | <0.002 | 3.67 | | 1.3 | <0.30 | 28.0 | -229 | 28.7 | 6.67 | 0.00 | 0.01 | 0.00 | 0.08 | 0.17 | 0.00 | 0.09 | 0.17 | 0.00 | 0.04 | 0.00 | 0.30 | 0.66 |
| BDC-05-16 | | 8/6/2014 | 1084 | | <1.0 | <1.0 | <1.0 | 2.4 | 1.9 | <1.0 | <1.0 | | | | | 5.07 | | 1.4 | <0.30 | 23.0 | -176 | 27.8 | 7.27 | 0.00 | 0.00 | 0.00 | 0.04 | 0.07 | 0.00 | 0.04 | 0.07 | 0.00 | 0.00 | 0.00 | 0.36 | 0.64 |
| BDC-05-16 | | 11/11/2014 | 1181 | | <1.0 | <1.0 | <1.0 | 4.6 | 3.9 | 5.4 | <1.0 | 0.056 | 0.055 | <0.002 | <0.002 | 0.08 | | 1.2 | 0.82 | 26.0 | -104 | 38.7 | 6.24 | 0.00 | 0.00 | 0.00 | 0.07 | 0.14 | 0.18 | 0.07 | 0.32 | 0.00 | 0.00 | 0.00 | 0.19 | 0.81 |
| BDC-05-16 | | 1/21/2015 | 1252 | | <0.2 | <0.2 | <0.2 | 2.9 | 5.7 | 6.1 | <1.0 | | | | | 0.18 | | 1.3 | 0.70 | 21.0 | -135 | 33.6 | 6.31 | 0.00 | 0.00 | 0.00 | 0.05 | 0.20 | 0.20 | 0.05 | 0.41 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-16 | | 4/26/2015 | 1347 | | <0.2 | <0.2 | <0.2 | 2.3 | 2.4 | 5.7 | <1.0 | 0.048 | 0.046 | 0.002 | <0.002 | 0.11 | | 1.4 | <0.30 | 22.0 | -118 | 23.8 | 6.40 | 0.00 | 0.00 | 0.00 | 0.04 | 0.09 | 0.19 | 0.04 | 0.28 | 0.00 | 0.00 | 0.00 | 0.12 | 0.88 |
| BDC-05-16 | | 7/21/2015 | 1433 | | <0.2 | <0.2 | <0.2 | 1.7 | 1.4 | 6.3 | <1.0 | | | | | 0.26 | | 2.0 | <0.30 | 22.0 | -67 | 28.9 | 6.30 | 0.00 | 0.00 | 0.00 | 0.03 | 0.05 | 0.21 | 0.03 | 0.26 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-16 | | 10/27/2015 | 1531 | | <0.2 | <0.2 | <0.2 | 2.8 | 1.0 | 5.5 | <1.0 | 0.047 | 0.044 | <0.002 | <0.002 | 0.06 | | 1.2 | <0.30 | 19.0 | -45 | 28.9 | 6.41 | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 | 0.18 | 0.04 | 0.22 | 0.00 | 0.00 | 0.00 | 0.17 | 0.83 |
| BDC-05-16 | | 1/26/2016 | 1622 | | <0.2 | <0.2 | <0.2 | 1.7 | <1.0 | 8 | <1.0 | | | | | 0.41 | | | <0.30 | 21.0 | -126 | 23.7 | 6.51 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.27 | 0.03 | 0.27 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-16 | | 4/20/2016 | 1707 | | <0.2 | <0.2 | <0.2 | 1.3 | 1.4 | 9.0 | <1.0 | 0.042 | 0.039 | 0.006 | <0.002 | 0.51 | | 1.0 | <0.30 | 17.0 | -33 | 17.7 | 6.78 | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.30 | 0.02 | 0.35 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-16 | | 8/9/2016 | 1818 | | <0.2 | <0.2 | <0.2 | 0.9 | 1.0 | 12 | <1.0 | 0.033 | 0.033 | <0.002 | <0.002 | -0.02 | | 1.6 | <0.30 | 15.0 | -75.1 | 16.9 | 6.57 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.40 | 0.01 | 0.43 | 0.00 | 0.00 | 0.00 | 0.03 | 0.97 |
| BDC-05-16 | | 11/3/2016 | 1904 | | <0.2 | <0.2 | <0.2 | 0.6 | <1.0 | 6.9 | <1.0 | 0.022 | 0.021 | <0.002 | <0.002 | 0.32 | | 1.6 | <0.30 | 13.0 | -90.8 | 13.0 | 6.13 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.23 | 0.01 | 0.23 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-16 | | 2/8/2017 | 2001 | | <0.2 | <0.2 | <0.2 | 0.8 | <1.0 | 6.7 | <1.0 | 0.033 | 0.032 | <0.002 | <0.002 | 0.29 | | 2.4 | <0.30 | 10.0 | -51.1 | 17.7 | 6.62 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.22 | 0.01 | 0.22 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-16 | | 5/4/2017 | 2086 | | <0.2 | <0.2 | <0.2 | 1.3 | 1.6 | 12 | <1.0 | 0.029 | 0.027 | <0.002 | <0.002 | 0.15 | | 2.0 | <0.30 | 9.1 | -95.8 | 17.0 | 6.34 | 0.00 | 0.00 | 0.00 | 0.02 | 0.06 | 0.40 | 0.02 | 0.46 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-16 | | 8/1/2017 | 2175 | | <0.2 | <0.2 | <0.2 | 0.5 | <1.0 | 9.9 | <1.0 | 0.031 | 0.029 | 0.003 | <0.002 | 0.05 | | 2.0 | <0.30 | 7.4 | -104 | 12.7 | 6.12 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.33 | 0.01 | 0.33 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-16 | | 11/7/2017 | 2273 | -3 | <0.2 | <0.2 | <0.2 | 0.7 | <1.0 | 4.0 | <1.0 | 0.021 | 0.020 | <0.002 | <0.002 | 0.41 | | 2.8 | <0.30 | 9.5 | -5.0 | 11.6 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.13 | 0.01 | 0.13 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-16 | | 5/2/2018 | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.44 | <1.14 | <1.23 | <1.06 | 0.027 | 0.026 | <0.001 | 0.001 | 0.10 | | 3.2 | <0.1 | 12.2 | -4.4 | 13.1 | 6.45 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 11/6/2018 | 2637 | 361 | <0.2 | <0.2 | <0.2 | 0.54 | <1.14 | <1.23 | <1.06 | 0.022 | 0.022 | <0.001 | 0.001 | 0.45 | | 3.5 | <0.100 | 16.7 | -93.6 | 14.17 | 6.47 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 5/2/2019 | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.49 | <1.14 | <1.23 | <1.06 | 0.027 | 0.026 | 0.0004 | 0.001 | 0.78 | | 5.8 | 0.103 | 22.6 | -96.6 | 16.15 | 6.49 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 11/6/2019 | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.51 | <1.14 | <1.23 | <1.06 | 0.027 | 0.027 | 0.001 | 0.001 | 1.58 | | 1.5 | 0.285 | 19.9 | -142.6 | 20.08 | 6.56 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 5/5/2020 | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.41 | <1.14 | <1.23 | <1.06 | 0.027 | 0.026 | <0.001 | 0.0005 | 0.35 | <0.10 | 5.0 | <0.100 | 16.1 | -38.2 | 17.57 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 11/6/2020 | 3368 | 1092 | <0.2 | <0.2 | <0.2 | 0.51 | <1.14 | <1.23 | <1.06 | 0.028 | 0.028 | <0.001 | <0.001 | 0.44 | | 3.4 | 0.174 | 14.4 | -29.6 | 17.73 | 6.45 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 5/5/2021 | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.52 | <1.14 | <1.23 | <1.06 | 0.026 | 0.026 | 0.0002 | 0.0002 | 0.77 | | 3.4 | <0.100 | 13.4 | -112.0 | 14.50 | 6.51 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-16 | | 11/5/2021 | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.49 | <1.14 | <1.23 | <1.06 | 0.025 | 0.023 | 0.0002 | <0.001 | 0.28 | | 3.5 | <0.100 | 9.0 | 75.9 | 16.7 | 6.58 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-17 | 7/31/2011 | | -18 | | 11 | 22 | 34 | <1.0 | <1.1 | <1.2 | <1.1 | 0.004 | 0.004 | 0.003 | 0.002 | 2.03 | 0.6 | 1.5 | 16.0 | 0.30 | 59 | 10.2 | 6.95 | 0.07 | 0.17 | 0.35 | 0.00 | 0.00 | 0.00 | 0.58 | 0.00 | 0.11 | 0.29 | 0.60 | 0.00 | 0.00 |
| BDC-05-17 | (IW 2011) | | 11/1/2011 | 75 | | 3.2 | 4.8 | 5.1 | <1.0 | <1.1 | <1.2 | <1.1 | 0.053 | 0.047 | 0.005 | <0.002 | 2.61 | <1.0 | 2.4 | 23.9 | 2.8 | -50 | 3500 | 5.74 | 0.02 | 0.04 | 0.05 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.18 | 0.34 | 0.49 | 0.00 | 0.00 |
| | | 5/6/2012 | 262 | | <2.0 | <2.0 | 9.3 | 5.6 | <1.0 | <1.0 | <1.0 | 0.058 | 0.026 | 0.003 | <0.002 | 0.24 | | 2.0 | 0.7 | 15.0 | 182 | 839 | 6.08 | 0.00 | 0.00 | 0.10 | 0.09 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.52 | 0.48 | 0.00 |
| BDC-05-17 | | 11/15/2012 | 455 | | <5.0 | <5.0 | <5.0 | 5.4 | 2.0 | <1.0 | <1.0 | 0.081 | 0.062 | <0.002 | <0.002 | 0.02 | | 1.0 | <0.3 | 23.0 | 13 | 73.5 | 6.62 | 0.00 | 0.00 | 0.00 | 0.09 | 0.07 | 0.00 | 0.09 | 0.07 | 0.00 | 0.00 | 0.00 | 0.55 | 0.45 |
| BDC-05-17 | | 5/23/2013 | 644 | | <0.2 | <0.2 | 0.7 | 5.1 | 4.3 | <3.0 | <1.0 | 0.142 | 0.062 | <0.002 | <0.002 | 0.44 | | 1.2 | <0.3 | 26.0 | -259 | 45.8 | 7.54 | 0.00 | 0.00 | 0.01 | 0.08 | 0.15 | 0.00 | 0.09 | 0.15 | 0.00 | 0.00 | 0.03 | 0.34 | 0.63 |
| BDC-05-17 | | 11/13/2013 | 818 | | <0.2 | <0.2 | 0.5 | 4.0 | 3.0 | 2.2 | <1.0 | 0.057 | 0.037 | <0.002 | <0.002 | 2.21 | | 2.0 | <0.30 | 26.0 | -266 | 49.8 | 6.57 | 0.00 | 0.00 | 0.01 | 0.06 | 0.11 | 0.07 | 0.07 | 0.18 | 0.00 | 0.00 | 0.02 | 0.26 | 0.72 |
| BDC-05-17 | | 5/12/2014 | 998 | | <0.2 | <0.2 | 0.4 | 3.2 | 2.5 | 6.0 | <1.0 | 0.038 | 0.033 | <0.002 | <0.002 | 4.60 | | 1.8 | <0.30 | 25.0 | -368 | 44.1 | 6.64 | 0.00 | 0.00 | 0.00 | 0.05 | 0.09 | 0.20 | 0.06 | 0.29 | 0.00 | 0.00 | 0.01 | 0.15 | 0.84 |
| BDC-05-17 | | 11/11/2014 | 1181 | | <0.2 | <0.2 | 0.3 | 2.7 | 3.9 | 5.9 | <1.0 | 0.038 | 0.036 | <0.002 | <0.002 | 0.06 | | 2.0 | 0.74 | 26.0 | -123 | 52.0 | 6.35 | 0.00 | 0.00 | 0.00 | 0.04 | 0.14 | 0.20 | 0.05 | 0.34 | 0.00 | 0.00 | 0.01 | 0.11 | 0.88 |
| BDC-05-17 | | 4/26/2015 | 1347 | | <0.2 | <0.2 | 0.2 | 1.5 | 2.7 | 3.0 | <1.0 | 0.039 | 0.032 | 0.004 | <0.002 | 0.25 | | 1.4 | <0.30 | 21.0 | -127 | 29.0 | 6.44 | 0.00 | 0.00 | 0.00 | 0.02 | 0.10 | 0.10 | 0.03 | 0.20 | 0.00 | 0.00 | 0.01 | 0.11 | 0.88 |
| BDC-05-17 | | 10/27/2015 | 1531 | | <0.2 | <0.2 | 0.2 | 1.6 | 1.0 | 4.5 | <1.0 | 0.037 | 0.036 | <0.002 | <0.002 | 0.12 | | 1.5 | <0.30 | 21.0 | -47 | 32.0 | 6.38 | 0.00 | 0.00 | 0.00 | 0.03 | 0.04 | 0.15 | 0.03 | 0.19 | 0.00 | 0.00 | 0.01 | 0.12 | 0.87 |
| BDC-05-17 | | 4/20/2016 | 1707 | | <0.2 | <0.2 | <0.2 | 1 | 1.1 | 6.6 | <1.0 | 0.042 | 0.036 | 0.003 | <0.002 | 0.44 | | 0.8 | <0.30 | 19.0 | -77 | 29.0 | 6.84 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.22 | 0.02 | 0.26 | 0.00 | 0.00 | 0.00 | 0.06 | 0.94 |
| BDC-05-17 | | 11/3/2016 | 1904 | | <0.2 | <0.2 | <0.2 | 0.9 | <1.0 | 7.6 | <1.0 | 0.041 | 0.035 | <0.002 | <0.002 | 0.45 | | 1.0 | <0.30 | 19.0 | -118.8 | 19.9 | 6.23 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.25 | 0.01 | 0.25 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-17 | | 5/4/2017 | 2086 | | <0.2 | <0.2 | <0.2 | 0.9 | <2.0 | 13 | <1.0 | 0.044 | 0.037 | <0.002 | <0.002 | 0.14 | | 1.0 | <0.30 | 11.0 | -110.4 | 19.2 | 6.29 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.43 | 0.01 | 0.43 | 0.00 | 0.00 | 0.00 | 0.03 | 0.97 |
| BDC-05-17 | | 11/7/2017 | 2273 | -3 | <0.2 | <0.2 | <0.2 | 0.8 | <1.0 | 7.6 | <1.0 | 0.033 | 0.033 | <0.002 | <0.002 | 0.47 | | 1.8 | <0.30 | 11.0 | -2.7 | 15.8 | 6.52 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.25 | 0.01 | 0.25 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-17 | | 5/2/2018 | 2449 | 173 | <0.2 | <0.2 | <0.2 | 0.59 | <1.14 | <1.23 | <1.06 | 0.032 | 0.032 | <0.001 | <0.001 | 0.13 | | 2.8 | <0.1 | 10.0 | 4.7 | 14.9 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-17 | | 11/6/2018 | 2637 | 361 | <0.2 | <0.2 | <0.2 | 0.64 | <1.14 | 2.09 | <1.06 | 0.029 | 0.030 | <0.001 | <0.001 | 0.33 | | 3.2 | <0.100 | 13.6 | -94.4 | 11.21 | 6.51 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.07 | 0.01 | 0.07 | 0.00 | 0.00 | 0.00 | 0.13 | 0.87 |
| BDC-05-17 | | 5/2/2019 | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.58 | <1.14 | 1.26 | <1.06 | 0.032 | 0.031 | 0.001 | <0.001 | 0.30 | | 5.4 | 0.986 | 16.7 | -98.5 | 17.81 | 6.56 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.04 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.18 | 0.82 |
| BDC-05-17 | | 11/6/2019 | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.54 | <1.14 | <1.23 | <1.06 | 0.030 | 0.032 | 0.001 | <0.001 | 0.09 | | 2.4 | 0.213 | 16.2 | -152.2 | 20.00 | 6.57 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-17 | | 5/5/2020 | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.53 | <1.14 | <1.23 | <1.06 | 0.029 | 0.028 | 0.0005 | 0.0005 | 0.42 | <0.10 | 4.5 | <0.100 | 17.4 | -53.6 | 17.34 | 6.50 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-17 | 11/5/2020 | | 3367 | 1091 | <0.2 | <0.2 | <0.2 | 0.38 | <1.14 | <1.23 | <1.06 | 0.032 | 0.031 | 0.0004 | <0.001 | 0.38 | | 3.8 | 0.203 | 15.2 | -47.6 | 20.19 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-17 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.47 | <1.14 | <1.23 | <1.06 | 0.030 | 0.031 | 0.0004 | <0.001 | 1.23 | | 4.7 | <0.100 | 14.0 | -118.3 | 18.24 | 6.50 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-17 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.42 | <1.14 | <1.23 | <1.06 | 0.034 | 0.033 | 0.0005 | <0.001 | 0.14 | | 4.5 | <0.100 | 12.2 | 57.4 | 17.8 | 6.60 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-18 | 7/31/2011 | | -18 | | 3.6 | 5.0 | 6.6 | <1.0 | <1.1 | <1.2 | <1.1 | 0.019 | 0.020 | <0.002 | <0.002 | 1.57 | <0.1 | 2.4 | 4.5 | 3.9 | -19 | 3.2 | 7.13 | 0.02 | 0.04 | 0.07 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.17 | 0.30 | 0.53 | 0.00 | 0.00 |
| (MW 12 ft XG) | 11/1/2011 | | 75 | | 2.8 | 4.0 | 7.6 | <1.0 | <1.1 | <1.2 | <1.1 | 0.019 | 0.020 | 0.003 | 0.003 | 1.37 | <0.1 | 1.2 | 1.2 | 4.3 | -106 | 21.7 | 6.88 | 0.02 | 0.03 | 0.08 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.13 | 0.24 | 0.62 | 0.00 | 0.00 |
| | 2/19/2012 | | 185 | | 1.8 | 3.7 | 12 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.19 | <0.5 | 2.2 | <1.5 | 11.0 | 9 | 2.7 | 6.66 | 0.01 | 0.03 | 0.12 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.07 | 0.17 | 0.76 | 0.00 | 0.00 |
| BDC-05-18 | 5/6/2012 | | 262 | | 2.0 | 4.0 | 9.6 | <0.2 | <1.0 | <1.0 | <1.0 | 0.013 | 0.013 | <0.002 | <0.002 | 0.21 | | 2.5 | 2.1 | 7.5 | 132 | 2.5 | 6.39 | 0.01 | 0.03 | 0.10 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.09 | 0.22 | 0.70 | 0.00 | 0.00 |
| BDC-05-18 | 9/5/2012 | | 384 | | 1.5 | 3.1 | 11 | 0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.13 | | 1.5 | 2.0 | 7.9 | 58 | 1.8 | 6.91 | 0.01 | 0.02 | 0.11 | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.06 | 0.16 | 0.76 | 0.02 | 0.00 |
| BDC-05-18 | 11/15/2012 | | 455 | | 1.0 | 4.3 | 16 | <0.5 | <1.0 | <1.0 | <1.0 | 0.015 | 0.014 | <0.002 | <0.002 | 0.48 | | 1.4 | 2.4 | 8.3 | 25 | 1.7 | 6.62 | 0.01 | 0.03 | 0.17 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.03 | 0.16 | 0.81 | 0.00 | 0.00 |
| BDC-05-18 | 2/25/2013 | | 557 | | 2.0 | 4.6 | 5.7 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.25 | | 2.0 | 9.2 | 1.3 | 72 | 2.0 | 6.53 | 0.01 | 0.04 | 0.06 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.11 | 0.33 | 0.56 | 0.00 | 0.00 |
| BDC-05-18 | 5/23/2013 | | 644 | | 3.1 | 5.2 | 4.1 | <0.2 | <1.0 | <1.0 | <1.0 | 0.014 | 0.014 | <0.002 | <0.002 | 0.30 | | 1.5 | 7.0 | 1.0 | -262 | 1.3 | 7.24 | 0.02 | 0.04 | 0.04 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.19 | 0.39 | 0.42 | 0.00 | 0.00 |
| BDC-05-18 | 8/28/2013 | | 741 | | 2.2 | 3.7 | 7.4 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.76 | | 1.6 | 4.1 | 1.5 | -309 | 2.2 | 6.25 | 0.01 | 0.03 | 0.08 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.11 | 0.24 | 0.65 | 0.00 | 0.00 |
| BDC-05-18 | 11/14/2013 | | 819 | | 1.2 | 1.8 | 1.4 | 0.2 | <1.0 | <1.0 | <1.0 | 0.006 | 0.002 | <0.002 | <0.002 | 2.53 | | 1.0 | 4.7 | 0.68 | -164 | <1.0 | 7.03 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.19 | 0.36 | 0.37 | 0.08 | 0.00 |
| BDC-05-18 | 2/11/2014 | | 908 | | 1.7 | 2.1 | 5.4 | 0.3 | <1.0 | <1.0 | <1.0 | | | | | 2.53 | | 1.2 | 3.2 | 3.70 | -224 | 1.4 | 6.68 | 0.01 | 0.02 | 0.06 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.12 | 0.18 | 0.64 | 0.06 | 0.00 |
| BDC-05-18 | 5/13/2014 | | 999 | | 2.0 | 2.4 | 4.4 | 0.3 | <1.0 | <1.0 | <1.0 | 0.001 | 0.002 | <0.002 | <0.002 | 3.54 | | 1.5 | 6.7 | 3.2 | -208 | 2.6 | 6.44 | 0.01 | 0.02 | 0.05 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.15 | 0.23 | 0.56 | 0.06 | 0.00 |
| BDC-05-18 | 8/6/2014 | | 1084 | | 0.7 | 0.9 | 0.5 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 4.21 | | 0.4 | 2.9 | 0.012 | -49 | 1.4 | 8.05 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.26 | 0.42 | 0.32 | 0.00 | 0.00 |
| BDC-05-18 | 11/10/2014 | | 1180 | | 0.4 | 1.1 | 1.2 | <0.2 | <1.0 | <1.0 | <1.0 | 0.006 | 0.002 | <0.002 | <0.002 | 0.78 | | 0.5 | 3.0 | 0.058 | 3.2 | <1.0 | 6.56 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.10 | 0.36 | 0.53 | 0.00 | 0.00 |
| BDC-05-18 | 1/21/2015 | | 1252 | | 0.9 | 1.1 | 1.5 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.21 | | 1.0 | 2.0 | 1.8 | 11.6 | 1.2 | 6.32 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.19 | 0.29 | 0.53 | 0.00 | 0.00 |
| BDC-05-18 | 4/26/2015 | | 1347 | | 0.8 | 2.0 | 1.0 | 0.3 | <1.0 | <1.0 | <1.0 | 0.027 | 0.004 | 0.003 | <0.002 | 0.28 | | 1.0 | 3.6 | 0.95 | 33 | 4.1 | 6.11 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.14 | 0.43 | 0.29 | 0.14 | 0.00 |
| BDC-05-18 | 7/20/2015 | | 1432 | | 0.4 | 1.0 | 1.4 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 0.45 | | 0.6 | 2.8 | 0.29 | 26 | <1.0 | 6.30 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.10 | 0.31 | 0.59 | 0.00 | 0.00 |
| BDC-05-18 | 10/27/2015 | | 1531 | | 0.7 | 1.3 | 2.4 | <0.2 | <1.0 | <1.0 | <1.0 | 0.014 | 0.001 | 0.006 | <0.002 | 0.73 | | 0.2 | 3.1 | 1.7 | 22 | <1.0 | 6.43 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.11 | 0.25 | 0.64 | 0.00 | 0.00 |
| BDC-05-18 | 1/26/2016 | | 1622 | | 2.2 | 2.9 | 1.3 | <0.2 | <1.0 | <1.0 | <1.0 | | | | | 1.03 | | | 5.4 | 0.17 | -127 | 1.8 | 6.30 | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.27 | 0.45 | 0.28 | 0.00 | 0.00 |
| BDC-05-18 | 4/20/2016 | | 1707 | | 2.3 | 3.0 | 1 | <0.2 | <1.0 | <1.0 | <1.0 | 0.003 | 0.001 | <0.002 | <0.002 | 0.26 | | 0.8 | 8.5 | 0.32 | 10.1 | <1.0 | 6.51 | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.29 | 0.49 | 0.22 | 0.00 | 0.00 |
| BDC-05-18 | 8/9/2016 | | 1818 | | 1.8 | 2.9 | 2.6 | <0.2 | <1.0 | <1.0 | <1.0 | 0.003 | 0.002 | <0.002 | <0.002 | 0.42 | | 2.8 | 2.5 | 0.74 | -5.7 | <1.0 | 6.45 | 0.01 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.18 | 0.37 | 0.45 | 0.00 | 0.00 |
| BDC-05-18 | 11/2/2016 | | 1903 | | 1.2 | 1.6 | 4.1 | 0.4 | <1.0 | <1.0 | <1.0 | 0.005 | 0.004 | <0.002 | <0.002 | 0.34 | | 1.0 | 2.6 | 3.3 | -11.8 | 2.0 | 6.21 | 0.01 | 0.01 | 0.04 | 0.01 | 0.00 | 0.00 | 0.07 | 0.00 | 0.11 | 0.18 | 0.62 | 0.09 | 0.00 |
| BDC-05-18 | 2/7/2017 | | 2000 | | 2.8 | 3.4 | 2.4 | <0.2 | <1.0 | <1.0 | <1.0 | 0.011 | 0.003 | <0.002 | <0.002 | 0.40 | | 3.0 | 5.3 | 0.72 | 32.4 | 1.8 | 6.24 | 0.02 | 0.03 | 0.02 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.25 | 0.38 | 0.37 | 0.00 | 0.00 |
| BDC-05-18 | 5/3/2017 | | 2085 | | 3.6 | 4.6 | 1.3 | <0.2 | <1.0 | <1.0 | <1.0 | 0.007 | 0.002 | <0.002 | <0.002 | 1.33 | | 2.2 | 8.1 | 0.095 | 81.5 | 1.7 | 5.94 | 0.02 | 0.04 | 0.01 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.31 | 0.50 | 0.19 | 0.00 | 0.00 |
| BDC-05-18 | 8/1/2017 | | 2175 | | 1.9 | 2.4 | 1.1 | <0.2 | <1.0 | <1.0 | <1.0 | 0.047 | 0.001 | <0.002 | <0.002 | 1.12 | | 2.6 | 5.2 | 3.9 | -1.2 | 18.3 | 6.16 | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.28 | 0.44 | 0.28 | 0.00 | 0.00 |
| BDC-05-18 | 11/7/2017 | | 2273 | -3 | 0.6 | 1.7 | 2.6 | <0.2 | <1.0 | <1.0 | <1.0 | 0.112 | 0.003 | 0.004 | <0.002 | 0.57 | | 1.8 | 1.3 | 7.2 | 32.4 | 3.9 | 6.27 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.08 | 0.30 | 0.62 | 0.00 | 0.00 |
| BDC-05-18 | 5/2/2018 | | 2449 | 173 | <0.2 | 0.31 | 6.74 | 3.42 | <1.14 | <1.23 | <1.06 | 0.005 | 0.005 | 0.002 | <0.001 | 0.46 | | 4.6 | 0.823 | 15.6 | 15.0 | 27.9 | 6.03 | 0.00 | 0.00 | 0.07 | 0.05 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 0.02 | 0.55 | 0.43 | 0.00 |
| BDC-05-18 | 11/7/2018 | | 2638 | 362 | 0.90 | 1.01 | 6.86 | 2.18 | <1.14 | <1.23 | <1.06 | 0.003 | 0.001 | 0.0004 | <0.001 | 0.30 | | 1.4 | 3.22 | 14.6 | 50.7 | 2.67 | 5.95 | 0.01 | 0.01 | 0.07 | 0.03 | 0.00 | 0.00 | 0.12 | 0.00 | 0.05 | 0.06 | 0.60 | 0.29 | 0.00 |
| BDC-05-18 | 5/2/2019 | | 2814 | 538 | 2.81 | 1.47 | 2.10 | 0.60 | <1.14 | <1.23 | <1.06 | 0.002 | 0.0005 | 0.001 | 0.0004 | 0.34 | | 1.0 | 7.20 | 4.71 | 58.7 | 1.94 | 5.98 | 0.02 | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 0.29 | 0.19 | 0.36 | 0.16 | 0.00 |
| BDC-05-18 | 11/6/2019 | | 3002 | 726 | 3.41 | 1.42 | 1.42 | 0.52 | <1.14 | <1.23 | <1.06 | 0.006 | 0.0003 | 0.002 | 0.001 | 2.39 | | 1.4 | 9.24 | 2.43 | 41.5 | 2.59 | 6.20 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.05 | 0.00 | 0.38 | 0.20 | 0.27 | 0.15 | 0.00 |
| BDC-05-18 | 5/5/2020 | | 3183 | 907 | 1.98 | 2.57 | 1.25 | 0.85 | <1.14 | <1.23 | <1.06 | 0.003 | 0.001 | 0.0004 | 0.001 | 0.55 | <0.10 | 2.5 | 11.9 | 2.82 | -3.6 | 2.04 | 6.03 | 0.01 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 0.21 | 0.34 | 0.22 | 0.23 | 0.00 |
| BDC-05-18 | 11/6/2020 | | 3368 | 1092 | 1.44 | 1.12 | 0.91 | 1.05 | <1.14 | <1.23 | <1.06 | 0.002 | 0.001 | 0.0007 | 0.0004 | 1.18 | | 1.4 | 4.8 | 2.07 | 48.7 | 1.40 | 6.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.20 | 0.20 | 0.22 | 0.39 | 0.00 |
| BDC-05-18 | 5/5/2021 | | 3548 | 1272 | 3.16 | 1.80 | 0.89 | <0.20 | <1.14 | <1.23 | <1.06 | 0.001 | 0.0002 | 0.001 | 0.0017 | 0.42 | | 2.0 | 19.1 | 0.30 | 44.8 | 1.68 | 5.98 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.45 | 0.33 | 0.22 | 0.00 | 0.00 |
| BDC-05-18 | 11/5/2021 | | 3732 | 1456 | 2.44 | 1.54 | 0.88 | <0.20 | <1.14 | <1.23 | <1.06 | 0.002 | 0.0003 | 0.001 | 0.0007 | 0.40 | | 2.5 | 5.8 | 0.51 | 77.4 | 1.8 | 6.28 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.41 | 0.33 | 0.26 | 0.00 | 0.00 |
| BDC-05-19 | 7/31/2011 | | -18 | | 15 | 21 | 23 | <1.0 | <1.1 | <1.2 | <1.1 | 0.002 | 0.001 | 0.002 | <0.002 | 1.81 | 0.2 | 2.6 | 5.2 | 4.7 | 34 | 7.3 | 6.97 | 0.09 | 0.16 | 0.24 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.19 | 0.33 | 0.49 | 0.00 | 0.00 |
| (MW 10 ft DG) | 11/1/2011 | | 75 | | 9.1 | 13 | 36 | 4.1 | <1.1 | <1.2 | <1.1 | 0.020 | 0.020 | 0.007 | <0.002 | 1.53 | <1.0 | 1.8 | 2.5 | 4.5 | -142 | 170 | 6.82 | 0.05 | 0.10 | 0.37 | 0.07 | 0.00 | 0.00 | 0.59 | 0.00 | 0.09 | 0.17 | 0.63 | 0.11 | 0.00 |
| | 2/19/2012 | | 185 | | <1.0 | 1.7 | 68 | 14 | 1.4 | <1.0 | <1.0 | | | | | 0.85 | <0.5 | 2.0 | <1.5 | 22.0 | 36 | 296 | 6.40 | 0.00 | 0.01 | 0.70 | 0.22 | 0.05 | 0.00 | 0.94 | 0.05 | 0.00 | 0.01 | 0.71 | 0.23 | 0.05 |
| BDC-05-19 | 5/6/2012 | | 262 | | 0.7 | 1.4 | 52 | 23 | 1.8 | <1.0 | <1.0 | 0.058 | 0.052 | 0.032 | 0.008 | 0.02 | | 2.0 | 1.4 | 25.0 | 69 | 244 | 6.39 | 0.00 | 0.01 | 0.54 | 0.37 | 0.06 | 0.00 | 0.92 | 0.06 | 0.00 | 0.01 | 0.55 | 0.37 | 0.07 |
| BDC-05-19 | 9/5/2012 | | 384 | | <2.0 | <2.0 | 13 | 15 | 3.9 | <1.0 | <1.0 | | | | | 0.19 | | 1.8 | 1.4 | 19.0 | 73 | 68.0 | 6.43 | 0.00 | 0.00 | 0.13 | 0.24 | 0.14 | 0.00 | 0.37 | 0.14 | 0.00 | 0.00 | 0.26 | 0.47 | 0.27 |
| BDC-05-19 | 11/15/2012 | | 455 | | <1.0 | 1.1 | 9.9 | 15 | 5.5 | <1.0 | <1.0 | 0.088 | 0.074 | 0.006 | <0.002 | 0.21 | | 1.6 | 1.8 | 24.0 | 3 | 68.1 | 6.58 | 0.00 | 0.01 | 0.10 | 0.24 | 0.20 | 0.00 | 0.35 | 0.20 | 0.00 | 0.02 | 0.19 | 0.44 | 0.36 |
| BDC-05-19 | 2/25/2013 | | 557 | | <1.0 | <1.0 | 6.9 | 20 | 6.5 | <1.0 | <1.0 | | | | | 0.25 | | 2.0 | 0.31 | 23.0 | 71 | 53.0 | 6.64 | 0.00 | 0.00 | 0.07 | 0.32 | 0.23 | 0.00 | 0.39 | 0.23 | 0.00 | 0.00 | 0.11 | 0.51 | 0.37 |
| BDC-05-19 | 5/22/2013 | | 643 | | <0.2 | <0.2 | 5.1 | 9.6 | 7.2 | <3.0 | <1.0 | 0.054 | 0.051 | 0.006 | <0.002 | 0.28 | | 1.6 | 0.85 | 22.0 | -385 | 52.4 | 8.12 | 0.00 | 0.00 | 0.05 | 0.15 | 0.26 | 0.00 | 0.21 | 0.26 | 0.00 | 0.00 | 0.11 | 0.33 | 0.55 |
| BDC-05-19 | 8/28/2013 | | 741 | | <2.0 | <2.0 | 6.9 | 7.3 | 7.3 | 2.5 | <1.0 | | | | | 1.53 | | 2.0 | 0.52 | 22.0 | -318 | 60.6 | 6.54 | 0.00 | 0.00 | 0.07 | 0.12 | 0.26 | 0.08 | 0.19 | 0.34 | 0.00 | 0.00 | 0.13 | 0.22 | 0.65 |
| BDC-05-19 | 11/13/2013 | | 818 | | <2.0 | <2.0 | 2.3 | 3.1 | 4.1 | 3.0 | <1.0 | 0.046 | 0.040 | 0.003 | <0.002 | 3.93 | | 1.4 | 0.52 | 26.0 | -270 | 57.7 | 6.54 | 0.00 | 0.00 | 0.02 | 0.05 | 0.15 | 0.10 | 0.07 | 0.25 | 0.00 | 0.00 | 0.07 | 0.16 | 0.77 |
| BDC-05-19 | 2/11/2014 | | 908 | | <1.0 | <1.0 | <1.0 | 2.0 | 2.5 | 5.7 | <1.0 | | | | | 5.69 | | 2.0 | 0.39 | 23.0 | -239 | 64.8 | 6.51 | 0.00 | 0.00 | 0.00 | 0.03 | 0.09 | 0.19 | 0.03 | 0.28 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-19 | 5/13/2014 | | 999 | | <1.0 | <1.0 | <1.0 | 1.8 | 2.0 | 5.9 | <1.0 | 0.033 | 0.025 | 0.003 | <0.002 | 2.51 | | 2.2 | 0.37 | 26.0 | -306 | 54.9 | 6.56 | 0.00 | 0.00 | 0.00 | 0.03 | 0.07 | 0.20 | 0.03 | 0.27 | 0.00 | 0.00 | 0.00 | 0.10 | 0.90 |
| BDC-05-19 | 8/6/2014 | | 1084 | | <1.0 | <1.0 | <1.0 | 2.6 | 5.4 | 4.6 | <1.0 | | | | | 6.55 | | 1.8 | <0.30 | 21.0 | -174 | 57.8 | 7.13 | 0.00 | 0.00 | 0.00 | 0.04 | 0.19 | 0.15 | 0.04 | 0.35 | 0.00 | 0.00 | 0.00 | 0.11 | 0.89 |
| BDC-05-19 | 11/10/2014 | | 1180 | | <1.0 | <1.0 | <1.0 | 1.6 | 2.5 | 7.0 | <1.0 | 0.032 | 0.025 | 0.004 | <0.002 | 0.03 | | 1.8 | 0.31 | 25.0 | -82 | 40.1 | 6.20 | 0.00 | 0.00 | 0.00 | 0.03 | 0.09 | 0.23 | 0.03 | 0.32 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-19 | 1/21/2015 | | 1252 | | <0.2 | <0.2 | <0.2 | 3.8 | 1.3 | 4.0 | <1.0 | | | | | 0.19 | | 2.2 | 0.55 | 18.0 | -102 | 31.4 | 6.19 | 0.00 | 0.00 | 0.00 | 0.06 | 0.05 | 0.13 | 0.06 | 0.18 | 0.00 | 0.00 | 0.00 | 0.25 | 0.75 |
| BDC-05-19 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | <0.2 | 1.6 | <1.0 | 3.5 | <1.0 | 0.031 | 0.023 | 0.006 | <0.002 | 0.06 | | 1.4 | <0.30 | 19.0 | -74 | 20.1 | 6.15 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.12 | 0.03 | 0.12 | 0.00 | 0.00 | 0.00 | 0.18 | 0.82 |
| BDC-05-19 | 7/21/2015 | | 1433 | | <0.2 | <0.2 | <0.2 | 1.5 | 1.6 | 2.2 | <1.0 | | | | | 0.10 | | 1.2 | <0.30 | 21.0 | -41 | 20.3 | 6.26 | 0.00 | 0.00 | 0.00 | 0.02 | 0.06 | 0.07 | 0.02 | 0.13 | 0.00 | 0.00 | 0.00 | 0.16 | 0.84 |
| BDC-05-19 | 10/28/2015 | | 1532 | | <0.2 | <0.2 | <0.2 | 1.0 | <1.0 | 3.3 | <1.0 | 0.034 | 0.027 | 0.004 | <0.002 | 0.07 | | 0.6 | <0.30 | 19.0 | -19 | 28.8 | 6.35 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.11 | 0.02 | 0.11 | 0.00 | 0.00 | 0.00 | 0.13 | 0.87 |
| BDC-05-19 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | <0.2 | 1.2 | <1.0 | 3.4 | <1.0 | | | | | 0.21 | | 1.3 | <0.30 | 18.0 | -95 | 25.9 | 6.41 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.11 | 0.02 | 0.11 | 0.00 | 0.00 | 0.00 | 0.15 | 0.85 |
| BDC-05-19 | 4/20/2016 | | 1707 | | <0.2 | <0.2 | <0.2 | 0.6 | <1.0 | 3.4 | <1.0 | 0.025 | 0.021 | 0.003 | <0.002 | 0.14 | | 1.2 | 0.36 | 19.0 | -43 | 21.3 | 6.45 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.11 | 0.01 | 0.11 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-19 | 8/9/2016 | | 1818 | | <0.2 | <0.2 | <0.2 | 0.4 | <1.0 | 3.9 | <1.0 | 0.015 | 0.014 | <0.002 | <0.002 | 0.31 | | 1.5 | 0.6 | 17.0 | -109.1 | 12.2 | 6.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.13 | 0.01 | 0.13 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-19 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | 0.2 | <1.0 | <1.0 | <1.0 | 0.012 | 0.010 | <0.002 | <0.002 | 0.08 | | 2.6 | 0.30 | 18.0 | -116.1 | 12.9 | 6.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-19 | 2/8/2017 | | 2001 | | <0.2 | <0.2 | <0.2 | 0.3 | <1.0 | 3.2 | <1.0 | 0.023 | 0.011 | 0.003 | <0.002 | 0.34 | | 3.2 | 0.32 | 16.0 | -33.3 | 12.1 | 6.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.96 |
| BDC-05-19 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 0.4 | <1.0 | 2.3 | <1.0 | 0.020 | 0.013 | <0.002 | <0.002 | 0.24 | | 1.8 | 0.43 | 13.0 | -96 | 11.6 | 6.26 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.08 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-19 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | <0.2 | 0.2 | <1.0 | 9.3 | <1.0 | 0.017 | 0.012 | <0.002 | <0.002 | 0.11 | | 2.2 | <0.30 | 15.0 | -98.0 | 10.2 | 6.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.01 | 0.99 |
| BDC-05-19 | 11/6/2017 | | 2272 | -4 | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | 1.5 | <1.0 | 0.006 | 0.004 | <0.002 | <0.002 | 0.55 | | 3.0 | 0.45 | 15.0 | -19.6 | 9.3 | 6.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| BDC-05-19 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.011 | 0.008 | <0.001 | <0.001 | 1.28 | | 3.4 | 0.124 | 13.8 | -105.6 | 22.62 | 6.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-19 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.006 | 0.006 | <0.001 | <0.001 | 0.71 | | 4.6 | 0.255 | 20.9 | -72.6 | 15.89 | 6.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-19 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.012 | 0.011 | 0.001 | <0.001 | 0.32 | | 6.0 | 0.232 | 19.7 | -69.4 | 15.61 | 6.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-19 | 11/5/2019 | | 3001 | 725 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.006 | 0.005 | 0.0005 | <0.001 | 0.15 | | 2.0 | 0.496 | 14.8 | 11.8 | 16.51 | 6.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-19 | 5/5/2020 | | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.29 | <1.14 | <1.23 | <1.06 | 0.015 | 0.013 | 0.0005 | <0.001 | 0.80 | | 3.7 | 0.312 | 12.9 | -55.6 | 21.00 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-19 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.006 | 0.005 | 0.0004 | <0.001 | 0.63 | | 4.5 | 0.138 | 12.2 | -79.1 | 13.78 | 6.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-19 | 5/6/2021 | | 3549 | 1273 | <0.20 | <0.20 | <0.20 | 0.26 | <1.14 | 5.56 | <1.06 | 0.011 | 0.009 | 0.0003 | <0.001 | 0.81 | | 3.5 | <0.500 | 13.0 | -99.3 | 16.28 | 6.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.02 | 0.98 |
| BDC-05-19 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.23 | <1.14 | 2.31 | <1.06 | 0.009 | 0.008 | 0.0004 | 0.0002 | 0.72 | | 3.0 | <0.100 | 7.7 | 89.6 | 14.2 | 6.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.05 | 0.95 |
| BDC-05-20 | 7/31/2011 | | -18 | | <1.0 | 7.0 | 45 | <1.0 | <1.1 | <1.2 | <1.1 | 0.011 | 0.011 | <0.002 | <0.002 | 2.33 | <0.1 | 1.5 | 7.4 | 0.2 | -42 | 10.8 | 7.12 | 0.00 | 0.05 | 0.46 | 0.00 | 0.00 | 0.00 | 0.52 | 0.00 | 0.00 | 0.10 | 0.90 | 0.00 | 0.00 |
| (MW 31 ft DG) | 11/3/2011 | | 77 | | <1.0 | 5.7 | 25 | 1.0 | <1.1 | <1.2 | <1.1 | 0.010 | 0.011 | <0.002 | <0.002 | 1.54 | <0.1 | 1.0 | 6.0 | 4.6 | 11 | 8.3 | 7.14 | 0.00 | 0.04 | 0.26 | 0.02 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 | 0.14 | 0.81 | 0.05 | 0.00 |
| | 2/19/2012 | | 185 | | <0.2 | 2.9 | 17 | 2.5 | <1.0 | <1.0 | <1.0 | | | | | 0.35 | <0.5 | 1.5 | <1.5 | 16.0 | 31 | 8.2 | 6.69 | 0.00 | 0.02 | 0.18 | 0.04 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 | 0.09 | 0.74 | 0.17 | 0.00 |
| BDC-05-20 | 5/7/2012 | | 263 | | <0.2 | 1.8 | 14 | 2.2 | <1.0 | <1.0 | <1.0 | 0.011 | 0.011 | <0.002 | <0.002 | 0.69 | | 1.8 | 2.3 | 20.0 | 20 | 11.1 | 6.66 | 0.00 | 0.01 | 0.14 | 0.04 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.07 | 0.75 | 0.18 | 0.00 |
| BDC-05-20 | 9/5/2012 | | 384 | | <0.4 | <0.4 | 12 | 2.0 | <1.0 | <1.0 | <1.0 | | | | | 0.08 | | 1.4 | <0.3 | 14.0 | 67 | 12.1 | 6.75 | 0.00 | 0.00 | 0.12 | 0.03 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.79 | 0.21 | 0.00 |
| BDC-05-20 | 11/16/2012 | | 456 | | <0.5 | 0.6 | 17 | 3.5 | <1.0 | <1.0 | <1.0 | 0.012 | 0.013 | <0.002 | <0.002 | 0.07 | | 2.0 | <0.3 | 18.0 | 0.9 | 13.1 | 6.88 | 0.00 | 0.00 | 0.18 | 0.06 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 | 0.02 | 0.74 | 0.24 | 0.00 |
| BDC-05-20 | 2/26/2013 | | 558 | | <0.2 | 0.5 | 9.8 | 6.1 | <1.0 | <1.0 | <1.0 | | | | | 0.16 | | 1.5 | <0.3 | 22.0 | 16 | 16.3 | 6.86 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.02 | 0.50 | 0.48 | 0.00 |
| BDC-05-20 | 5/23/2013 | | 644 | | <0.2 | 0.4 | 10 | 8.1 | 1.5 | <1.0 | <1.0 | 0.016 | 0.017 | <0.002 | <0.002 | 0.25 | | 1.2 | <0.3 | 25.0 | -233 | 16.9 | 7.55 | 0.00 | 0.00 | 0.10 | 0.13 | 0.05 | 0.00 | 0.24 | 0.05 | 0.00 | 0.01 | 0.36 | 0.45 | 0.18 |
| BDC-05-20 | 8/28/2013 | | 741 | | <0.2 | 0.2 | 6.5 | 10 | 2.1 | <1.0 | <1.0 | | | | | 2.38 | | 2.6 | <0.30 | 20.0 | -317 | 15.4 | 6.70 | 0.00 | 0.00 | 0.07 | 0.16 | 0.07 | 0.00 | 0.23 | 0.07 | 0.00 | 0.01 | 0.22 | 0.53 | 0.25 |
| BDC-05-20 | 11/14/2013 | | 819 | | <0.2 | 0.3 | 8.1 | 8.8 | 2.2 | <1.0 | <1.0 | 0.021 | 0.021 | <0.002 | <0.002 | 2.26 | | 1.4 | <0.30 | 19.0 | -287 | 17.9 | 6.77 | 0.00 | 0.00 | 0.08 | 0.14 | 0.08 | 0.00 | 0.23 | 0.08 | 0.00 | 0.01 | 0.27 | 0.46 | 0.26 |
| BDC-05-20 | 2/12/2014 | | 909 | | <0.2 | 0.2 | 3.9 | 7.8 | 3.0 | <4.0 | <1.0 | | | | | 2.82 | | 1.8 | <0.30 | 16.0 | -205 | 16.3 | 6.78 | 0.00 | 0.00 | 0.04 | 0.12 | 0.11 | 0.00 | 0.17 | 0.11 | 0.00 | 0.01 | 0.15 | 0.46 | 0.39 |
| BDC-05-20 | 5/13/2014 | | 999 | | <0.2 | <0.2 | 3.8 | 6.3 | 2.0 | <1.0 | <1.0 | 0.017 | 0.017 | <0.002 | <0.002 | 3.44 | | 1.6 | 0.36 | 16.0 | -213 | 18.7 | 6.79 | 0.00 | 0.00 | 0.04 | 0.10 | 0.07 | 0.00 | 0.14 | 0.07 | 0.00 | 0.00 | 0.19 | 0.48 | 0.34 |
| BDC-05-20 | 8/6/2014 | | 1084 | | <0.2 | <0.2 | 1.3 | 7.5 | 2.1 | 2.0 | <1.0 | | | | | 4.23 | | 1.4 | <0.30 | 12.0 | -150 | 17.6 | 7.31 | 0.00 | 0.00 | 0.01 | 0.12 | 0.07 | 0.07 | 0.13 | 0.14 | 0.00 | 0.00 | 0.05 | 0.44 | 0.51 |
| BDC-05-20 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 0.7 | 4.9 | 3.0 | 3.6 | <1.0 | 0.021 | 0.021 | <0.002 | <0.002 | 0.08 | | 0.8 | 0.97 | 15.0 | -117 | 15.9 | 6.50 | 0.00 | 0.00 | 0.01 | 0.08 | 0.11 | 0.12 | 0.09 | 0.23 | 0.00 | 0.00 | 0.02 | 0.25 | 0.73 |
| BDC-05-20 | 1/21/2015 | | 1252 | | <0.2 | <0.2 | 0.5 | 3.8 | 2.7 | 2.6 | <1.0 | | | | | 0.27 | | 1.0 | 0.59 | 13.0 | -120 | 13.8 | 6.47 | 0.00 | 0.00 | 0.01 | 0.06 | 0.10 | 0.09 | 0.07 | 0.18 | 0.00 | 0.00 | 0.02 | 0.24 | 0.73 |
| BDC-05-20 | 4/26/2015 | | 1347 | | <0.2 | <0.2 | 0.4 | 6.9 | 4.8 | 1.6 | <1.0 | 0.028 | 0.023 | <0.002 | <0.002 | 0.06 | | 0.8 | <0.30 | 14.0 | -99 | 11.4 | 6.43 | 0.00 | 0.00 | 0.00 | 0.11 | 0.17 | 0.05 | 0.11 | 0.22 | 0.00 | 0.00 | 0.01 | 0.33 | 0.66 |
| BDC-05-20 | 7/21/2015 | | 1433 | | <0.2 | <0.2 | 0.2 | 2.7 | 4.5 | 3.0 | <1.0 | | | | | 0.12 | | 1.3 | <0.30 | 17.0 | -59 | 14.2 | 6.55 | 0.00 | 0.00 | 0.00 | 0.04 | 0.16 | 0.10 | 0.05 | 0.26 | 0.00 | 0.00 | 0.01 | 0.14 | 0.85 |
| BDC-05-20 | 10/27/2015 | | 1531 | | <0.2 | <0.2 | <0.2 | 2.0 | 1.5 | 1.1 | <1.0 | 0.028 | 0.028 | <0.002 | <0.002 | 0.23 | | 1.4 | <0.30 | 11.0 | -35 | 10.6 | 6.47 | 0.00 | 0.00 | 0.00 | 0.03 | 0.05 | 0.04 | 0.03 | 0.09 | 0.00 | 0.00 | 0.00 | 0.26 | 0.74 |
| BDC-05-20 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | 0.2 | 2.7 | 2.1 | 1.5 | <1.0 | | | | | 0.26 | | 1.3 | <0.30 | 11.0 | -109 | 9.9 | 6.63 | 0.00 | 0.00 | 0.00 | 0.04 | 0.07 | 0.05 | 0.05 | 0.12 | 0.00 | 0.00 | 0.01 | 0.25 | 0.73 |
| BDC-05-20 | 4/21/2016 | | 1708 | | <0.2 | <0.2 | 0.3 | 6.8 | 6.1 | 2.5 | <1.0 | 0.034 | 0.030 | <0.002 | <0.002 | 0.38 | | 0.8 | <0.30 | 8.8 | -44 | 16.2 | 6.63 | 0.00 | 0.00 | 0.00 | 0.11 | 0.22 | 0.08 | 0.11 | 0.30 | 0.00 | 0.00 | 0.01 | 0.26 | 0.73 |
| BDC-05-20 | 8/9/2016 | | 1818 | | <0.2 | <0.2 | 0.2 | 2.2 | 7.0 | 2.9 | <1.0 | 0.030 | 0.028 | <0.002 | <0.002 | -0.01 | | 2.0 | 0.37 | 8.4 | -82 | 12.9 | 6.62 | 0.00 | 0.00 | 0.00 | 0.04 | 0.25 | 0.10 | 0.04 | 0.35 | 0.00 | 0.00 | 0.01 | 0.09 | 0.90 |
| BDC-05-20 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | <0.2 | 1.4 | 5.2 | 2.5 | <1.0 | 0.027 | 0.028 | <0.002 | <0.002 | 0.40 | | 1.0 | <0.30 | 8.9 | -121.9 | 14.1 | 6.60 | 0.00 | 0.00 | 0.00 | 0.02 | 0.19 | 0.08 | 0.02 | 0.27 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-20 | 2/8/2017 | | 2001 | | <0.2 | <0.2 | <0.2 | 1.8 | 5.2 | 2.8 | <1.0 | 0.029 | 0.030 | <0.002 | <0.002 | 0.39 | | 2.8 | <0.30 | 7.1 | -44.2 | 13.0 | 6.61 | 0.00 | 0.00 | 0.00 | 0.03 | 0.19 | 0.09 | 0.03 | 0.28 | 0.00 | 0.00 | 0.00 | 0.09 | 0.91 |
| BDC-05-20 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | <0.2 | 1.2 | 2.3 | 4.3 | <1.0 | 0.027 | 0.026 | <0.002 | <0.002 | 0.30 | | 1.6 | 1.2 | 4.3 | -99.6 | 12.9 | 6.55 | 0.00 | 0.00 | 0.00 | 0.02 | 0.08 | 0.14 | 0.02 | 0.22 | 0.00 | 0.00 | 0.00 | 0.08 | 0.92 |
| BDC-05-20 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | <0.2 | 0.9 | 1.4 | 4.6 | <1.0 | 0.027 | 0.027 | <0.002 | <0.002 | 0.61 | | 2.1 | <0.30 | 6.4 | -104.9 | 12.3 | 6.46 | 0.00 | 0.00 | 0.00 | 0.01 | 0.05 | 0.15 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0.07 | 0.93 |
| BDC-05-20 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | <0.2 | 1.1 | <1.0 | 1.3 | <1.0 | 0.027 | 0.027 | <0.002 | <0.002 | 0.36 | | 2.2 | <0.30 | 8.7 | 6.8 | 7.9 | 6.56 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.04 | 0.02 | 0.04 | 0.00 | 0.00 | 0.00 | 0.29 | 0.71 |
| BDC-05-20 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | 1.04 | <1.14 | <1.23 | <1.06 | 0.028 | 0.028 | <0.001 | 0.0004 | 0.89 | | 2.3 | <0.1 | 3.9 | -96.4 | 12.2 | 6.55 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 11/7/2018 | | 2638 | 362 | <0.2 | <0.2 | <0.2 | 0.90 | <1.14 | <1.23 | <1.06 | 0.030 | 0.028 | <0.001 | <0.001 | 0.19 | | 2.8 | <0.100 | 24.3 | -45.2 | 9.14 | 6.54 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.86 | <1.14 | <1.23 | <1.06 | 0.028 | 0.027 | <0.001 | <0.001 | 0.23 | | 3.8 | <0.10 | 22.9 | -84.3 | 11.96 | 6.57 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.78 | <1.14 | <1.23 | <1.06 | 0.025 | 0.026 | 0.0005 | <0.001 | 1.07 | | 3.2 | 0.196 | 20.8 | -130.5 | 12.30 | 6.56 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 5/5/2020 | | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.73 | <1.14 | <1.23 | <1.06 | 0.024 | 0.024 | <0.001 | 0.0006 | 0.38 | <0.10 | 5.0 | <0.100 | 19.8 | -37.5 | 11.85 | 6.48 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 11/5/2020 | | 3367 | 1091 | <0.2 | <0.2 | <0.2 | 0.46 | <1.14 | <1.23 | <1.06 | 0.017 | 0.017 | 0.0003 | <0.001 | 0.37 | | 3.0 | 0.159 | 13.7 | -35.9 | 12.80 | 6.47 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.75 | <1.14 | <1.23 | <1.06 | 0.021 | 0.022 | 0.0005 | 0.0005 | 0.30 | | 5.0 | <0.100 | 10.4 | -119.2 | 12.13 | 6.44 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-20 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.59 | <1.14 | <1.23 | <1.06 | 0.018 | 0.017 | 0.0005 | <0.001 | 0.15 | | 5.5 | <0.100 | 13.9 | 53.2 | 10.8 | 6.59 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-21 | 7/31/2011 | | -18 | | <1.0 | <1.0 | 1.3 | 14 | 2.6 | <1.2 | <1.1 | 0.006 | 0.006 | <0.002 | <0.002 | 2.98 | <0.1 | 3.2 | 0.2 | 5.6 | -31 | 6.4 | 7.33 | 0.00 | 0.00 | 0.01 | 0.22 | 0.09 | 0.00 | 0.24 | 0.09 | 0.00 | 0.00 | 0.04 | 0.68 | 0.28 |
| (MW 30 ft XG) | 11/3/2011 | | 77 | | <1.0 | <1.0 | 1.0 | 4.7 | | | | 0.005 | 0.005 | <0.002 | <0.002 | 1.95 | <0.1 | 1.4 | 6.3 | | -12 | 5.2 | 7.29 | 0.00 | 0.00 | 0.01 | 0.08 | | | 0.09 | | 0.00 | 0.00 | 0.12 | 0.88 | |
| | 2/19/2012 | | 185 | | <0.2 | 0.3 | 0.7 | 5.9 | | | | | | | | 0.40 | <0.5 | 1.4 | <1.5 | | 47 | 7.2 | 6.65 | 0.00 | 0.00 | 0.01 | 0.09 | | | 0.10 | | 0.00 | 0.02 | 0.07 | 0.91 | |
| BDC-05-21 | 5/7/2012 | | 263 | | <0.2 | 0.4 | 0.8 | 2.5 | | | | 0.010 | 0.011 | 0.005 | <0.002 | 0.86 | | 1.5 | 1.9 | | -35 | 12.3 | 6.76 | 0.00 | 0.00 | 0.01 | 0.04 | | | 0.05 | | 0.00 | 0.06 | 0.16 | 0.78 | |
| BDC-05-21 | 9/5/2012 | | 384 | | <0.2 | 0.3 | 0.6 | 2.9 | | | | | | | | 0.08 | | 2.5 | 1.4 | | 62 | 9.5 | 6.78 | 0.00 | 0.00 | 0.01 | 0.05 | | | 0.05 | | 0.00 | 0.04 | 0.11 | 0.85 | |
| BDC-05-21 | 11/16/2012 | | 456 | | <0.5 | <0.5 | 0.6 | 2.9 | | | | 0.020 | 0.020 | <0.002 | <0.002 | 0.02 | | 1.5 | 0.6 | | -4 | 8.9 | 6.92 | 0.00 | 0.00 | 0.01 | 0.05 | | | 0.05 | | 0.00 | 0.00 | 0.12 | 0.88 | |
| BDC-05-21 | 2/26/2013 | | 558 | | <0.2 | 0.3 | 0.8 | 3.3 | <1.0 | <1.0 | <1.0 | | | | | 0.24 | | 1.4 | <0.3 | 18.0 | -2.6 | 8.7 | 7.03 | 0.00 | 0.00 | 0.01 | 0.05 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.04 | 0.13 | 0.83 | 0.00 |
| BDC-05-21 | 5/23/2013 | | 644 | | <0.2 | 0.3 | 0.9 | 6.5 | | | | 0.024 | 0.022 | <0.002 | <0.002 | 0.19 | | 1.5 | <0.3 | | -235 | 8.2 | 7.50 | 0.00 | 0.00 | 0.01 | 0.10 | | | 0.12 | | 0.00 | 0.02 | 0.08 | 0.90 | |
| BDC-05-21 | 8/28/2013 | | 741 | | <0.2 | 0.2 | 0.8 | 7.7 | 6.2 | 1.8 | <1.0 | | | | | 0.74 | | 3.5 | <0.30 | 14.0 | -310 | 7.9 | 6.72 | 0.00 | 0.00 | 0.01 | 0.12 | 0.22 | 0.06 | 0.13 | 0.28 | 0.00 | 0.00 | 0.02 | 0.30 | 0.68 |
| BDC-05-21 | 11/14/2013 | | 819 | | <0.2 | 0.2 | 1.0 | 7.3 | 3.5 | 1.4 | <1.0 | 0.019 | 0.017 | <0.002 | <0.002 | 2.84 | | 2.0 | <0.30 | 12.0 | -239 | 7.7 | 6.78 | 0.00 | 0.00 | 0.01 | 0.12 | 0.12 | 0.05 | 0.13 | 0.17 | 0.00 | 0.01 | 0.03 | 0.39 | 0.57 |
| BDC-05-21 | 2/12/2014 | | 909 | | <0.2 | 0.2 | 3.0 | 3.4 | 1.9 | 2.9 | <1.0 | | | | | 2.74 | | 2.2 | <0.30 | 12.0 | -210 | 8.3 | 6.87 | 0.00 | 0.00 | 0.03 | 0.05 | 0.07 | 0.10 | 0.09 | 0.16 | 0.00 | 0.01 | 0.12 | 0.22 | 0.65 |
| BDC-05-21 | 5/13/2014 | | 999 | | <0.2 | <0.2 | 1.9 | 2.2 | 2.8 | 2.9 | <1.0 | 0.022 | 0.017 | <0.002 | <0.002 | 3.33 | | 1.4 | 0.60 | 9.1 | -259 | 8.6 | 6.82 | 0.00 | 0.00 | 0.02 | 0.04 | 0.10 | 0.10 | 0.05 | 0.20 | 0.00 | 0.00 | 0.08 | 0.14 | 0.78 |
| BDC-05-21 | 8/6/2014 | | 1084 | | <0.2 | <0.2 | 2.3 | 5.6 | 3.8 | 1.8 | <1.0 | | | | | 3.75 | | 2.2 | <0.30 | 6.5 | -153 | 9.4 | 7.42 | 0.00 | 0.00 | 0.02 | 0.09 | 0.14 | 0.06 | 0.11 | 0.20 | 0.00 | 0.00 | 0.08 | 0.29 | 0.63 |
| BDC-05-21 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 1.5 | 3.4 | 4.3 | 1.2 | <1.0 | 0.017 | 0.014 | <0.002 | <0.002 | 0.24 | | 1.4 | 0.99 | 5.8 | -126 | 5.7 | 6.44 | 0.00 | 0.00 | 0.02 | 0.05 | 0.15 | 0.04 | 0.07 | 0.19 | 0.00 | 0.00 | 0.06 | 0.21 | 0.73 |
| BDC-05-21 | 1/21/2015 | | 1252 | | <0.2 | <0.2 | 1.1 | 3.5 | 2.2 | <1.0 | <1.0 | | | | | 0.15 | | 1.0 | 0.97 | 1.8 | -124 | 6.3 | 6.43 | 0.00 | 0.00 | 0.01 | 0.06 | 0.08 | 0.00 | 0.07 | 0.08 | 0.00 | 0.00 | 0.08 | 0.38 | 0.54 |
| BDC-05-21 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | 1.5 | 4.4 | 2.7 | <1.0 | <1.0 | 0.013 | 0.011 | <0.002 | <0.002 | 0.28 | | 0.8 | 1.9 | 4.8 | -104 | 5.4 | 6.43 | 0.00 | 0.00 | 0.02 | 0.07 | 0.10 | 0.00 | 0.09 | 0.10 | 0.00 | 0.00 | 0.08 | 0.39 | 0.53 |
| BDC-05-21 | 7/20/2015 | | 1432 | | <0.2 | <0.2 | 0.8 | 3.0 | 2.7 | <1.0 | <1.0 | | | | | 0.17 | | 1.2 | 0.55 | 6.8 | -84 | 4.5 | 6.41 | 0.00 | 0.00 | 0.01 | 0.05 | 0.10 | 0.00 | 0.06 | 0.10 | 0.00 | 0.00 | 0.05 | 0.31 | 0.63 |
| BDC-05-21 | 10/27/2015 | | 1531 | | <0.2 | <0.2 | 0.5 | 4.1 | 2.1 | <1.0 | <1.0 | 0.009 | 0.011 | <0.002 | <0.002 | 0.08 | | 2.0 | 0.49 | 3.0 | -46 | 5.7 | 6.53 | 0.00 | 0.00 | 0.01 | 0.07 | 0.07 | 0.00 | 0.07 | 0.07 | 0.00 | 0.00 | 0.04 | 0.45 | 0.51 |
| BDC-05-21 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | 2.0 | 2.9 | 1.2 | <1.0 | <1.0 | | | | | 1.41 | | | 1.40 | 2.5 | -119 | 13.8 | 6.50 | 0.00 | 0.00 | 0.02 | 0.05 | 0.04 | 0.00 | 0.07 | 0.04 | 0.00 | 0.00 | 0.19 | 0.42 | 0.39 |
| BDC-05-21 | 4/21/2016 | | 1708 | | <0.2 | <0.2 | 1.7 | 2.4 | 1.6 | <1.0 | <1.0 | 0.016 | 0.016 | <0.002 | <0.002 | 0.18 | | 1.0 | 1.1 | 4.6 | -75 | 12.7 | 6.78 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.00 | 0.06 | 0.06 | 0.00 | 0.00 | 0.16 | 0.34 | 0.50 |
| BDC-05-21 | 8/9/2016 | | 1818 | | <0.2 | <0.2 | 0.6 | 1.6 | 3 | 2.3 | <1.0 | 0.008 | 0.008 | <0.002 | <0.002 | 0.05 | | 4.0 | <0.30 | 11.0 | -99.6 | 6.7 | 6.52 | 0.00 | 0.00 | 0.01 | 0.03 | 0.11 | 0.08 | 0.03 | 0.18 | 0.00 | 0.00 | 0.03 | 0.12 | 0.85 |
| BDC-05-21 | 11/2/2016 | | 1903 | | <0.2 | <0.2 | 0.4 | 1.3 | 1.2 | 1.8 | <1.0 | 0.008 | 0.009 | <0.002 | <0.002 | 0.43 | | 0.8 | <0.30 | 8.8 | -122.8 | 9.5 | 6.45 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.02 | 0.10 | 0.00 | 0.00 | 0.03 | 0.16 | 0.80 |
| BDC-05-21 | 2/7/2017 | | 2000 | | <0.2 | <0.2 | 0.5 | 1.4 | <1.0 | 1.6 | <1.0 | 0.007 | 0.006 | <0.002 | <0.002 | 0.36 | | 2.6 | <0.30 | 9.1 | -67.5 | 9.3 | 6.52 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.05 | 0.03 | 0.05 | 0.00 | 0.00 | 0.06 | 0.28 | 0.66 |
| BDC-05-21 | 5/3/2017 | | 2085 | | <0.2 | <0.2 | 0.7 | 2.0 | 2.8 | 1.3 | <1.0 | 0.009 | 0.009 | <0.002 | <0.002 | 0.46 | | 2.0 | 0.64 | 3.4 | -114.4 | 9.1 | 6.45 | 0.00 | 0.00 | 0.01 | 0.03 | 0.10 | 0.04 | 0.04 | 0.14 | 0.00 | 0.00 | 0.04 | 0.18 | 0.78 |
| BDC-05-21 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | 0.6 | 1.5 | 3.9 | 5.6 | <1.0 | 0.009 | 0.009 | <0.002 | <0.002 | 2.53 | | 2.8 | 1.1 | 4.9 | | 13.9 | 6.11 | 0.00 | 0.00 | 0.01 | 0.02 | 0.14 | 0.19 | 0.03 | 0.33 | 0.00 | 0.00 | 0.02 | 0.07 | 0.92 |
| BDC-05-21 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | 0.9 | 1.2 | <1.0 | 2.5 | <1.0 | 0.011 | 0.011 | <0.002 | <0.002 | 0.42 | | 2.0 | 1.3 | 5.8 | 10.7 | 13.2 | 6.54 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.08 | 0.03 | 0.08 | 0.00 | 0.00 | 0.08 | 0.17 | 0.74 |
| BDC-05-21 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | 0.43 | 0.83 | <1.14 | <1.23 | <1.06 | 0.008 | 0.008 | <0.001 | <0.001 | 0.10 | | 4.0 | 7.32 | 9.1 | 5.6 | 4.95 | 6.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.75 | 0.00 |
| BDC-05-21 | 11/7/2018 | | 2638 | 362 | <0.2 | <0.2 | 0.20 | 0.72 | <1.14 | <1.23 | <1.06 | 0.007 | 0.007 | <0.001 | <0.001 | 0.39 | | 2.8 | 0.490 | 10.3 | 13.2 | 5.89 | 6.32 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.15 | 0.85 | 0.00 |
| BDC-05-21 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.50 | <1.14 | <1.23 | <1.06 | 0.009 | 0.009 | <0.001 | <0.001 | 0.18 | | 4.6 | 2.19 | 5.1 | -4.1 | 4.62 | 6.28 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | | | | | | | Total Chloroethenes (d) | Ethene + Ethane | | | | | |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | PCE | TCE | c DCE | VC | Ethene | Ethane | | | PCE | TCE | c DCE | VC | Ethene + Ethane |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BDC-05-21 | 11/6/2019 | | 3002 | 726 | <0.2 | <0.2 | <0.2 | 0.32 | <1.14 | <1.23 | <1.06 | 0.009 | 0.011 | <0.001 | <0.001 | 1.10 | | 3.4 | 1.97 | 5.14 | -82.4 | 6.95 | 6.28 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-21 | 5/5/2020 | | 3183 | 907 | <0.2 | <0.2 | <0.2 | 0.55 | <1.14 | <1.23 | <1.06 | 0.007 | 0.007 | <0.001 | <0.001 | 0.51 | <0.10 | 4.0 | 0.327 | 8.02 | -46.0 | 7.43 | 6.38 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-21 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | 0.23 | <1.14 | <1.23 | <1.06 | 0.006 | 0.006 | <0.001 | <0.001 | 0.70 | | 2.4 | 0.689 | 5.20 | 4.3 | 5.49 | 6.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-21 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | 0.21 | 0.91 | <1.14 | <1.23 | <1.06 | 0.012 | 0.011 | 0.0003 | 0.0005 | 0.39 | | 4.5 | 0.171 | 5.46 | -126.4 | 14.43 | 6.39 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.87 | 0.00 |
| BDC-05-21 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | <0.20 | 0.47 | <1.14 | <1.23 | <1.06 | 0.007 | 0.007 | 0.0003 | 0.0003 | 0.44 | | 2.5 | 0.487 | 5.21 | 45.5 | 8.4 | 6.53 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-22 | 7/31/2011 | | -18 | | <1.0 | 1.1 | 9.6 | 1.0 | <1.1 | <1.2 | <1.1 | 0.025 | 0.024 | <0.002 | <0.002 | 2.02 | <0.1 | 2.2 | 14.0 | 5.1 | -59 | 7.9 | 7.21 | 0.00 | 0.01 | 0.10 | 0.02 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.07 | 0.80 | 0.13 | 0.00 |
| (MW 48 ft XG) | 11/3/2011 | | 77 | | <1.0 | 2.1 | 10 | <1.0 | | | | 0.020 | 0.020 | <0.002 | <0.002 | 1.46 | <0.1 | 0.8 | 18.1 | | 19 | 6.1 | 7.08 | 0.00 | 0.02 | 0.10 | 0.00 | | | 0.12 | | 0.00 | 0.13 | 0.87 | 0.00 | |
| | 2/19/2012 | | 185 | | <0.2 | 2.0 | 13 | 0.4 | | | | | | | | 0.43 | <0.5 | 1.2 | 17.0 | | 110 | 6.2 | 6.73 | 0.00 | 0.02 | 0.13 | 0.01 | | | 0.16 | | 0.00 | 0.10 | 0.86 | 0.04 | |
| BDC-05-22 | 5/7/2012 | | 263 | | <0.2 | 2.0 | 11 | 0.5 | | | | 0.025 | 0.023 | 0.002 | <0.002 | 0.81 | | 1.6 | 19.4 | | 32 | 8.4 | 6.68 | 0.00 | 0.02 | 0.11 | 0.01 | | | 0.14 | | 0.00 | 0.11 | 0.83 | 0.06 | |
| BDC-05-22 | 9/5/2012 | | 384 | | <0.2 | 1.8 | 9.5 | 0.8 | | | | | | | | 0.06 | | 2.2 | 14.7 | | 75 | 7.6 | 6.71 | 0.00 | 0.01 | 0.10 | 0.01 | | | 0.12 | | 0.00 | 0.11 | 0.79 | 0.10 | |
| BDC-05-22 | 11/16/2012 | | 456 | | <0.5 | 1.6 | 10 | 0.7 | | | | 0.033 | 0.031 | <0.002 | <0.002 | 0.02 | | 0.8 | 17.8 | | 5 | 7.7 | 6.93 | 0.00 | 0.01 | 0.10 | 0.01 | | | 0.13 | | 0.00 | 0.10 | 0.82 | 0.09 | |
| BDC-05-22 | 2/26/2013 | | 558 | | <0.2 | 1.3 | 9.4 | 1.2 | | | | | | | | 0.09 | | 1.6 | 10.1 | | 23 | 7.5 | 6.92 | 0.00 | 0.01 | 0.10 | 0.02 | | | 0.13 | | 0.00 | 0.08 | 0.77 | 0.15 | |
| BDC-05-22 | 5/23/2013 | | 644 | | <0.2 | 1.2 | 10 | 0.6 | | | | 0.029 | 0.029 | <0.002 | <0.002 | 0.25 | | 1.4 | 6.3 | | -233 | 8.7 | 7.63 | 0.00 | 0.01 | 0.10 | 0.01 | | | 0.12 | | 0.00 | 0.07 | 0.85 | 0.08 | |
| BDC-05-22 | 8/28/2013 | | 741 | | <0.2 | 1.2 | 7.3 | 0.2 | | | | | | | | 0.65 | | | 3.5 | | -322 | 8.9 | 6.69 | 0.00 | 0.01 | 0.08 | 0.00 | | | 0.09 | | 0.00 | 0.10 | 0.86 | 0.04 | |
| BDC-05-22 | 11/14/2013 | | 819 | | <0.2 | 1.2 | 6.9 | <0.2 | | | | 0.028 | 0.027 | <0.002 | <0.002 | 1.96 | | 1.5 | 5.9 | | -240 | 8.8 | 6.74 | 0.00 | 0.01 | 0.07 | 0.00 | | | 0.08 | | 0.00 | 0.11 | 0.89 | 0.00 | |
| BDC-05-22 | 2/12/2014 | | 909 | | <0.2 | 0.7 | 5.7 | <0.2 | | | | | | | | 2.67 | | 2.0 | 4.9 | | -224 | 7.3 | 6.88 | 0.00 | 0.01 | 0.06 | 0.00 | | | 0.06 | | 0.00 | 0.08 | 0.92 | 0.00 | |
| BDC-05-22 | 5/13/2014 | | 999 | | <0.2 | 1.4 | 6.7 | <0.2 | | | | 0.027 | 0.025 | <0.002 | <0.002 | 3.16 | | 1.5 | 8.7 | | -183 | 8.4 | 6.68 | 0.00 | 0.01 | 0.07 | 0.00 | | | 0.08 | | 0.00 | 0.13 | 0.87 | 0.00 | |
| BDC-05-22 | 8/6/2014 | | 1084 | | <0.2 | 1.2 | 5.5 | <0.2 | | | | | | | | 4.59 | | 1.6 | 10.9 | | -137 | 9.6 | 7.31 | 0.00 | 0.01 | 0.06 | 0.00 | | | 0.07 | | 0.00 | 0.14 | 0.86 | 0.00 | |
| BDC-05-22 | 11/10/2014 | | 1180 | | <0.2 | 1.2 | 5.8 | <0.2 | | | | 0.031 | 0.031 | <0.002 | <0.002 | 0.05 | | 1.4 | 19.2 | | -113 | 6.8 | 6.43 | 0.00 | 0.01 | 0.06 | 0.00 | | | 0.07 | | 0.00 | 0.13 | 0.87 | 0.00 | |
| BDC-05-22 | 1/21/2015 | | 1252 | | <0.2 | 0.7 | 4.2 | <0.2 | | | | | | | | 0.30 | | 1.0 | 1.2 | | -140 | 7.3 | 6.53 | 0.00 | 0.01 | 0.04 | 0.00 | | | 0.05 | | 0.00 | 0.11 | 0.89 | 0.00 | |
| BDC-05-22 | 4/27/2015 | | 1348 | | <0.2 | 0.5 | 4.2 | <0.2 | | | | 0.025 | 0.026 | 0.004 | <0.002 | 0.14 | | 1.8 | <0.30 | | -115 | 5.2 | 6.44 | 0.00 | 0.00 | 0.04 | 0.00 | | | 0.05 | | 0.00 | 0.08 | 0.92 | 0.00 | |
| BDC-05-22 | 7/21/2015 | | 1433 | | <0.2 | 0.7 | 5.5 | <0.2 | | | | | | | | 0.12 | | 1.0 | 4.4 | | -47 | 6.1 | 6.38 | 0.00 | 0.01 | 0.06 | 0.00 | | | 0.06 | | 0.00 | 0.09 | 0.91 | 0.00 | |
| BDC-05-22 | 10/27/2015 | | 1531 | | <0.2 | 0.6 | 4.5 | <0.2 | | | | 0.030 | 0.027 | <0.002 | <0.002 | 0.09 | | 1.0 | 4.2 | | -50 | 6.9 | 6.59 | 0.00 | 0.00 | 0.05 | 0.00 | | | 0.05 | | 0.00 | 0.09 | 0.91 | 0.00 | |
| BDC-05-22 | 1/26/2016 | | 1622 | | <0.2 | 0.9 | 7.1 | <0.2 | | | | | | | | 0.28 | | 1.4 | 8.5 | | -109 | 6.8 | 6.55 | 0.00 | 0.01 | 0.07 | 0.00 | | | 0.08 | | 0.00 | 0.09 | 0.91 | 0.00 | |
| BDC-05-22 | 4/21/2016 | | 1708 | | <0.2 | 0.9 | 7.3 | <0.2 | | | | 0.035 | 0.034 | <0.002 | <0.002 | 0.79 | | 1.0 | 22.4 | | -39 | 6.0 | 6.44 | 0.00 | 0.01 | 0.08 | 0.00 | | | 0.08 | | 0.00 | 0.08 | 0.92 | 0.00 | |
| BDC-05-22 | 8/9/2016 | | 1818 | | <0.2 | 1.1 | 6.2 | 1.5 | | | | 0.029 | 0.030 | <0.002 | <0.002 | 0.04 | | 2.2 | 6.6 | | -60.8 | 6.2 | 6.50 | 0.00 | 0.01 | 0.06 | 0.02 | | | 0.10 | | 0.00 | 0.09 | 0.66 | 0.25 | |
| BDC-05-22 | 11/3/2016 | | 1904 | | <0.2 | 0.3 | 7.0 | 0.8 | | | | 0.025 | 0.025 | <0.002 | 0.004 | 0.60 | | 0.8 | 0.57 | | -126.9 | 5.7 | 6.66 | 0.00 | 0.00 | 0.07 | 0.01 | | | 0.09 | | 0.00 | 0.03 | 0.83 | 0.15 | |
| BDC-05-22 | 2/8/2017 | | 2001 | | <0.2 | 0.3 | 8.4 | <0.2 | | | | 0.026 | 0.026 | <0.002 | <0.002 | 0.54 | | 3.4 | 0.3 | | -23.5 | 5.9 | 6.27 | 0.00 | 0.00 | 0.09 | 0.00 | | | 0.09 | | 0.00 | 0.03 | 0.97 | 0.00 | |
| BDC-05-22 | 5/4/2017 | | 2086 | | <0.2 | 0.6 | 9.4 | <0.2 | | | | 0.028 | 0.030 | <0.002 | <0.002 | 0.24 | | 2.6 | 6.6 | | -128 | 6.0 | 6.57 | 0.00 | 0.00 | 0.10 | 0.00 | | | 0.10 | | 0.00 | 0.04 | 0.96 | 0.00 | |
| BDC-05-22 | 8/1/2017 | | 2175 | | <0.2 | 0.7 | 9.1 | <0.2 | | | | 0.032 | 0.030 | <0.002 | <0.002 | 1.88 | | 2.6 | 1.8 | | -85.1 | 6.3 | 6.28 | 0.00 | 0.01 | 0.09 | 0.00 | | | 0.10 | | 0.00 | 0.05 | 0.95 | 0.00 | |
| BDC-05-22 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | 6.7 | <0.2 | | | | 0.021 | 0.021 | <0.002 | <0.002 | 0.55 | | 1.6 | <0.30 | | -0.8 | 5.9 | 6.60 | 0.00 | 0.00 | 0.07 | 0.00 | | | 0.07 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-22 | 5/2/2018 | | 2449 | 173 | <0.2 | 0.55 | 10.6 | 1.02 | | | | 0.033 | 0.032 | <0.001 | <0.001 | 0.90 | | 3.4 | 10.9 | | -88.1 | 5.7 | 6.49 | 0.00 | 0.00 | 0.11 | 0.02 | | | 0.13 | | 0.00 | 0.03 | 0.84 | 0.13 | |
| BDC-05-22 | 11/7/2018 | | 2638 | 362 | <0.2 | 0.39 | 11.9 | 1.25 | | | | 0.028 | 0.030 | 0.005 | <0.001 | 0.30 | | 3.2 | 2.12 | | -29.0 | 5.39 | 6.47 | 0.00 | 0.00 | 0.12 | 0.02 | | | 0.15 | | 0.00 | 0.02 | 0.84 | 0.14 | |
| BDC-05-22 | 5/2/2019 | | 2814 | 538 | <0.2 | 0.54 | 6.48 | 1.02 | | | | 0.043 | 0.039 | <0.001 | <0.001 | 0.23 | | 3.7 | 2.43 | | -80.6 | 9.83 | 6.56 | 0.00 | 0.00 | 0.07 | 0.02 | | | 0.09 | | 0.00 | 0.05 | 0.77 | 0.19 | |
| BDC-05-22 | 11/6/2019 | | 3002 | 726 | <0.2 | 0.35 | 4.87 | 0.69 | | | | 0.043 | 0.043 | <0.001 | <0.001 | 1.71 | | 4.0 | 1.12 | | -133.1 | 9.35 | 6.53 | 0.00 | 0.00 | 0.05 | 0.01 | | | 0.06 | | 0.00 | 0.04 | 0.79 | 0.17 | |
| BDC-05-22 | 5/5/2020 | | 3183 | 907 | <0.2 | 0.33 | 4.68 | 0.80 | | | | 0.050 | 0.049 | <0.001 | <0.001 | 0.45 | <0.10 | 4.5 | <0.100 | | -52.8 | 9.06 | 6.51 | 0.00 | 0.00 | 0.05 | 0.01 | | | 0.06 | | 0.00 | 0.04 | 0.76 | 0.20 | |
| BDC-05-22 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | 1.78 | 1.00 | | | | 0.036 | 0.034 | <0.001 | <0.001 | 0.55 | | 1.8 | 0.152 | | -11.3 | 6.72 | 6.47 | 0.00 | 0.00 | 0.02 | 0.02 | | | 0.03 | | 0.00 | 0.00 | 0.53 | 0.47 | |
| BDC-05-22 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | 3.38 | 2.26 | | | | 0.048 | 0.049 | <0.001 | 0.0004 | 0.40 | | 4.0 | <0.100 | | -121.2 | 10.12 | 6.51 | 0.00 | 0.00 | 0.03 | 0.04 | | | 0.07 | | 0.00 | 0.00 | 0.49 | 0.51 | |
| BDC-05-22 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | 1.10 | 1.94 | | | | 0.026 | 0.024 | 0.0002 | <0.001 | 0.30 | | 4.5 | <0.100 | | 44.0 | 6.0 | 6.58 | 0.00 | 0.00 | 0.01 | 0.03 | | | 0.04 | | 0.00 | 0.00 | 0.27 | 0.73 | |
| BDC-05-23 | 7/31/2011 | | -18 | | <1.0 | <1.0 | 3.2 | <1.0 | <1.1 | <1.2 | <1.1 | 0.005 | 0.005 | 0.002 | <0.002 | 2.72 | <0.1 | 2.2 | 8.6 | 6.0 | -101 | 9.1 | 7.47 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| (MW 170ft DG) | 11/3/2011 | | 77 | | <1.0 | <1.0 | 4.8 | <1.0 | | | | 0.005 | 0.006 | <0.002 | <0.002 | 1.45 | <0.1 | 1.0 | 25.2 | | 1 | 8.8 | 7.08 | 0.00 | 0.00 | 0.05 | 0.00 | | | 0.05 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| | 2/19/2012 | | 185 | | <0.2 | 0.6 | 4.7 | 0.7 | | | | | | | | 0.96 | <0.5 | 1.2 | 8.9 | | 162 | 8.1 | 6.33 | 0.00 | 0.00 | 0.05 | 0.01 | | | 0.06 | | 0.00 | 0.07 | 0.75 | 0.17 | |
| BDC-05-23 | 5/7/2012 | | 263 | | <0.2 | 0.7 | 5.4 | 0.8 | | | | 0.008 | 0.008 | <0.002 | <0.002 | 0.07 | | 2.0 | 15.8 | | 45 | 9.3 | 6.70 | 0.00 | 0.01 | 0.06 | 0.01 | | | 0.07 | | 0.00 | 0.07 | 0.75 | 0.17 | |
| BDC-05-23 | 9/5/2012 | | 384 | | <0.2 | 0.7 | 6.2 | 0.9 | | | | | | | | 0.08 | | 1.9 | 8.8 | | 78 | 11.3 | 6.84 | 0.00 | 0.01 | 0.06 | 0.01 | | | 0.08 | | 0.00 | 0.06 | 0.76 | 0.17 | |
| BDC-05-23 | 11/16/2012 | | 456 | | <0.5 | 0.8 | 6.9 | 0.5 | | | | 0.012 | 0.010 | <0.002 | <0.002 | 0.09 | | 1.0 | 4.9 | | -6 | 11.6 | 7.06 | 0.00 | 0.01 | 0.07 | 0.01 | | | 0.09 | | 0.00 | 0.07 | 0.83 | 0.09 | |
| BDC-05-23 | 2/25/2013 | | 557 | | <0.2 | 0.5 | 4.2 | 1.0 | | | | | | | | 0.08 | | 1.5 | 0.87 | | 72 | 9.2 | 6.91 | 0.00 | 0.00 | 0.04 | 0.02 | | | 0.06 | | 0.00 | 0.06 | 0.69 | 0.25 | |
| BDC-05-23 | 5/23/2013 | | 644 | | <0.2 | 0.5 | 4.7 | 1.0 | | | | 0.015 | 0.015 | <0.002 | <0.002 | 0.31 | | 1.2 | 1.7 | | -234 | 11.0 | 7.59 | 0.00 | 0.00 | 0.05 | 0.02 | | | 0.07 | | 0.00 | 0.06 | 0.71 | 0.23 | |
| BDC-05-23 | 8/28/2013 | | 741 | | <1.0 | 2.2 | 21 | 5.4 | | | | | | | | 0.60 | | 0.5 | 0.35 | | -323 | 10.4 | 6.76 | 0.00 | 0.02 | 0.22 | 0.09 | | | 0.32 | | 0.00 | 0.05 | 0.68 | 0.27 | |
| BDC-05-23 | 11/14/2013 | | 819 | | <0.2 | 0.3 | 3.0 | 0.9 | | | | 0.017 | 0.015 | <0.002 | <0.002 | 1.58 | | 1.3 | 0.62 | | -252 | 11.1 | 6.87 | 0.00 | 0.00 | 0.03 | 0.01 | | | 0.05 | | 0.00 | 0.05 | 0.65 | 0.30 | |
| BDC-05-23 | 2/12/2014 | | 909 | | <0.2 | 0.2 | 2.7 | 1.2 | | | | | | | | 2.40 | | 1.8 | 0.74 | | -229 | 9.3 | 6.86 | 0.00 | 0.00 | 0.03 | 0.02 | | | 0.05 | | 0.00 | 0.03 | 0.57 | 0.40 | |
| BDC-05-23 | 5/13/2014 | | 999 | | <0.2 | 0.3 | 4.5 | 1.0 | | | | 0.023 | 0.023 | <0.002 | <0.002 | 3.15 | | 1.4 | 3.1 | | -207 | 12.1 | 6.97 | 0.00 | 0.00 | 0.05 | 0.02 | | | 0.06 | | 0.00 | 0.04 | 0.72 | 0.25 | |
| BDC-05-23 | 8/6/2014 | | 1084 | | <0.2 | 0.3 | 4.2 | 1.2 | | | | | | | | 4.49 | | 1.2 | 2.7 | | -149 | 13.3 | 7.35 | 0.00 | 0.00 | 0.04 | 0.02 | | | 0.06 | | 0.00 | 0.04 | 0.67 | 0.30 | |
| BDC-05-23 | 11/10/2014 | | 1180 | | <0.2 | 0.3 | 3.9 | 1.0 | | | | 0.023 | 0.021 | <0.002 | <0.002 | 0.10 | | 1.6 | 1.9 | | -122 | 10.1 | 6.40 | 0.00 | 0.00 | 0.04 | 0.02 | | | 0.06 | | 0.00 | 0.04 | 0.69 | 0.27 | |
| BDC-05-23 | 1/21/2015 | | 1252 | | <0.2 | <0.2 | 2.8 | 1.7 | | | | | | | | 0.13 | | 1.4 | 0.66 | | -144 | 9.5 | 6.49 | 0.00 | 0.00 | 0.03 | 0.03 | | | 0.06 | | 0.00 | 0.00 | 0.51 | 0.49 | |
| BDC-05-23 | 4/27/2015 | | 1348 | | <0.2 | <0.2 | 2.9 | 2.4 | | | | 0.022 | 0.021 | <0.002 | <0.002 | 0.19 | | 1.6 | 0.74 | | -114 | 7.5 | 6.40 | 0.00 | 0.00 | 0.03 | 0.04 | | | 0.07 | | 0.00 | 0.00 | 0.44 | 0.56 | |
| BDC-05-23 | 7/20/2015 | | 1432 | | <0.2 | <0.2 | 1.5 | 2.7 | | | | | | | | 0.22 | | 0.9 | <0.30 | | -84 | 7.1 | 6.40 | 0.00 | 0.00 | 0.02 | 0.04 | | | 0.06 | | 0.00 | 0.00 | 0.26 | 0.74 | |
| BDC-05-23 | 10/27/2015 | | 1531 | | <0.2 | <0.2 | 2.1 | 1.6 | | | | 0.021 | 0.020 | <0.002 | <0.002 | 0.18 | | 1.4 | 0.46 | | -55 | 7.9 | 6.64 | 0.00 | 0.00 | 0.02 | 0.03 | | | 0.05 | | 0.00 | 0.00 | 0.46 | 0.54 | |
| BDC-05-23 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | 4.9 | 0.9 | | | | | | | | 0.50 | | 2.2 | | | -112 | 7.8 | 6.44 | 0.00 | 0.00 | 0.05 | 0.01 | | | 0.06 | | 0.00 | 0.00 | 0.78 | 0.22 | |
| BDC-05-23 | 4/21/2016 | | 1708 | | <0.2 | <0.2 | 4.0 | 1.4 | | | | 0.024 | 0.023 | <0.002 | <0.002 | 0.28 | | 0.6 | 3.0 | | -72 | 6.3 | 6.83 | 0.00 | 0.00 | 0.04 | 0.02 | | | 0.06 | | 0.00 | 0.00 | 0.65 | 0.35 | |
| BDC-05-23 | 8/9/2016 | | 1818 | | <0.2 | <0.2 | 3.2 | 1.1 | | | | 0.026 | 0.025 | <0.002 | <0.002 | 0.03 | | 1.8 | 2.8 | | -80.3 | 7.3 | 6.64 | 0.00 | 0.00 | 0.03 | 0.02 | | | 0.05 | | 0.00 | 0.00 | 0.65 | 0.35 | |
| BDC-05-23 | 11/3/2016 | | 1904 | | <0.2 | <0.2 | 3.7 | 0.5 | | | | 0.023 | 0.023 | 0.003 | <0.002 | 0.62 | | 0.6 | 4.2 | | -122.2 | 7.4 | 6.73 | 0.00 | 0.00 | 0.04 | 0.01 | | | 0.05 | | 0.00 | 0.00 | 0.83 | 0.17 | |
| BDC-05-23 | 2/7/2017 | | 2000 | | <0.2 | <0.2 | 2.1 | 1.3 | | | | 0.016 | 0.016 | <0.002 | <0.002 | 0.62 | | 3.0 | 2.2 | | -65.0 | 7.1 | 6.70 | 0.00 | 0.00 | 0.02 | 0.02 | | | 0.04 | | 0.00 | 0.00 | 0.51 | 0.49 | |
| BDC-05-23 | 5/3/2017 | | 2085 | | <0.2 | <0.2 | 2.0 | 0.5 | | | | 0.026 | 0.026 | <0.002 | <0.002 | 0.80 | | 2.0 | 10.9 | | -37.3 | 7.2 | 6.52 | 0.00 | 0.00 | 0.02 | 0.01 | | | 0.03 | | 0.00 | 0.00 | 0.72 | 0.28 | |
| BDC-05-23 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | 0.9 | 0.5 | | | | 0.017 | 0.019 | <0.002 | <0.002 | 1.00 | | 2.2 | 4.7 | | -20.5 | 6.7 | 6.15 | 0.00 | 0.00 | 0.01 | 0.01 | | | 0.02 | | 0.00 | 0.00 | 0.54 | 0.46 | |
| BDC-05-23 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | 2.6 | 1.8 | | | | 0.025 | 0.025 | <0.002 | <0.002 | 0.44 | | 3.2 | 2.0 | | 10.5 | 7.5 | 6.61 | 0.00 | 0.00 | 0.03 | 0.03 | | | 0.06 | | 0.00 | 0.00 | 0.48 | 0.52 | |
| BDC-05-23 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | 0.31 | <0.2 | | | | 0.026 | 0.026 | 0.001 | <0.001 | 0.51 | | 1.4 | 11.4 | | 30 | 5.6 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-23 | 11/7/2018 | | 2638 | 362 | <0.2 | <0.2 | 1.66 | 1.61 | | | | 0.022 | 0.022 | 0.001 | <0.001 | 0.33 | | 1.2 | 2.97 | | -23.5 | 6.23 | 6.58 | 0.00 | 0.00 | 0.02 | 0.03 | | | 0.04 | | 0.00 | 0.00 | 0.40 | 0.60 | |

# Table 3
## SWMU-17 Groundwater Data Cleanup Action Summary
## Boeing Developmental Center
## Tukwila, Washington

| | | Pilot Injection | Full Injection #1 | Full Injection #2 | Volatile Organic Compounds | | | | | | | Metals | | | | Aquifer Redox Conditions | | | | | | Donor Indicators | | VOCs- micromoles/Liter (b) | | | | | | | Molar Fraction (c) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | Elapsed Time From Injection (days) | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | Acetylene (µg/L) | As, Tot (mg/L) | As, Dis (mg/L) | Cu, Tot (mg/L) | Cu, Dis (mg/L) | DO (mg/L) | Nitrate-Nitrogen (mg/L) | Iron II (mg/L) | Sulfate (mg/L) | Methane (mg/L) | ORP (mV) | TOC (mg/L) | pH | | | | | | | | | | | | |
| **Proposed Groundwater Cleanup Levels (a)** | | | | | 5.3 | 1.4 | 134 | 2.4 | NA | NA | NA | 0.008 | 0.008 | 0.008 | 0.008 | | | | | | | | | | | | | | | | | | | |
| Well | Date | | | | | | | | | | | | | | | | | | | | | | | PCE | TCE | c DCE | VC | Ethene | Ethane | Total Chloroethenes (d) | Ethene + Ethane | PCE | TCE | c DCE | VC | Ethene + Ethane |
| BDC-05-23 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | 2.00 | 1.30 | | | | 0.035 | 0.028 | 0.001 | <0.001 | 0.28 | | 5.0 | 12.7 | | -83.4 | 6.27 | 6.67 | 0.00 | 0.00 | 0.02 | 0.02 | | | 0.04 | | 0.00 | 0.00 | 0.50 | 0.50 | |
| BDC-05-23 | 11/5/2019 | | 3001 | 725 | <0.2 | <0.2 | 1.42 | 1.46 | | | | 0.021 | 0.022 | <0.001 | <0.001 | 0.51 | | 4.8 | 4.07 | | -117.4 | 6.92 | 6.66 | 0.00 | 0.00 | 0.01 | 0.02 | | | 0.04 | | 0.00 | 0.00 | 0.39 | 0.61 | |
| BDC-05-23 | 5/5/2020 | | 3183 | 907 | <0.2 | <0.2 | 0.83 | 1.62 | | | | 0.015 | 0.017 | <0.001 | <0.001 | 0.87 | <0.10 | 5.0 | 0.419 | | -67.1 | 6.29 | 6.37 | 0.00 | 0.00 | 0.01 | 0.03 | | | 0.03 | | 0.00 | 0.00 | 0.25 | 0.75 | |
| BDC-05-23 | 11/5/2020 | | 3367 | 1091 | <0.2 | <0.2 | 0.71 | 0.98 | | | | 0.014 | 0.020 | <0.001 | <0.001 | 0.66 | | 3.8 | 1.24 | | -36.3 | 6.69 | 6.51 | 0.00 | 0.00 | 0.01 | 0.02 | | | 0.02 | | 0.00 | 0.00 | 0.32 | 0.68 | |
| BDC-05-23 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | 0.87 | 1.36 | | | | 0.023 | 0.022 | <0.001 | 0.0003 | 0.57 | | 6.0 | 1.06 | | -132.9 | 6.71 | 6.75 | 0.00 | 0.00 | 0.01 | 0.02 | | | 0.03 | | 0.00 | 0.00 | 0.29 | 0.71 | |
| BDC-05-23 | 11/5/2021 | | 3732 | 1456 | <0.20 | <0.20 | 0.44 | 0.72 | | | | 0.019 | 0.018 | <0.001 | <0.001 | 0.21 | | 7.0 | 0.62 | | 41.9 | 6.4 | 6.64 | 0.00 | 0.00 | 0.00 | 0.01 | | | 0.02 | | 0.00 | 0.00 | 0.28 | 0.72 | |
| BDC-05-24 | 7/31/2011 | | -18 | | <1.0 | <1.0 | 1.6 | 1.6 | <1.1 | <1.2 | <1.1 | 0.003 | 0.003 | <0.002 | <0.002 | 1.67 | <0.1 | 2.0 | 1.1 | 7.6 | -7 | 10.0 | 7.06 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.39 | 0.61 | 0.00 |
| (MW 18 ft XG) | 11/1/2011 | | 75 | | <1.0 | 2.0 | 4.0 | 2.2 | | | | 0.002 | 0.002 | <0.002 | <0.002 | 1.50 | <0.1 | 1.6 | 0.3 | | -2.6 | 8.1 | 7.06 | 0.00 | 0.02 | 0.04 | 0.04 | | | 0.09 | | 0.00 | 0.17 | 0.45 | 0.38 | |
| | 2/19/2012 | | 185 | | <0.2 | 0.2 | 0.7 | 0.8 | | | | | | | | 0.31 | <0.5 | 1.8 | <1.5 | | 63 | 9.8 | 6.55 | 0.00 | 0.00 | 0.01 | 0.01 | | | 0.02 | | 0.00 | 0.07 | 0.34 | 0.59 | |
| BDC-05-24 | 5/6/2012 | | 262 | | <0.2 | 1.3 | 2.8 | 1.0 | | | | 0.006 | 0.004 | <0.002 | <0.002 | 0.03 | | | 0.9 | | 73 | 9.1 | 6.60 | 0.00 | 0.01 | 0.03 | 0.02 | | | 0.05 | | 0.00 | 0.18 | 0.53 | 0.29 | |
| BDC-05-24 | 9/5/2012 | | 384 | | <0.2 | 1.2 | 4.0 | 0.9 | | | | | | | | 0.08 | | 2.0 | <0.3 | | 67 | 7.4 | 6.67 | 0.00 | 0.01 | 0.04 | 0.01 | | | 0.06 | | 0.00 | 0.14 | 0.64 | 0.22 | |
| BDC-05-24 | 11/15/2012 | | 455 | | <0.5 | <0.5 | 1.2 | <0.5 | | | | 0.002 | 0.003 | <0.002 | <0.002 | 0.13 | | 1.0 | <0.3 | | -1.7 | 10.7 | 6.94 | 0.00 | 0.00 | 0.01 | 0.00 | | | 0.01 | | 0.00 | 0.00 | 1.00 | 0.00 | |
| BDC-05-24 | 2/25/2013 | | 557 | | <0.2 | 0.7 | 5.1 | 1.9 | 1.1 | <1.2 | <1.0 | | | | | 0.10 | | 1.5 | 1.1 | 9.1 | 87 | 7.2 | 6.72 | 0.00 | 0.01 | 0.05 | 0.03 | 0.04 | 0.00 | 0.09 | 0.04 | 0.00 | 0.04 | 0.41 | 0.24 | 0.31 |
| BDC-05-24 | 5/22/2013 | | 643 | | <0.2 | 0.8 | 7.6 | 2.1 | | | | 0.004 | 0.003 | <0.002 | <0.002 | 0.58 | | 1.4 | 0.82 | | -272 | 7.4 | 7.54 | 0.00 | 0.01 | 0.08 | 0.03 | | | 0.12 | | 0.00 | 0.05 | 0.66 | 0.28 | |
| BDC-05-24 | 8/28/2013 | | 741 | | <0.2 | 0.5 | 4.4 | 1.6 | <1.0 | 1.8 | <1.0 | | | | | 0.78 | | 1.4 | 0.47 | 11.0 | -321 | 8.6 | 6.57 | 0.00 | 0.00 | 0.05 | 0.03 | 0.00 | 0.06 | 0.07 | 0.06 | 0.00 | 0.03 | 0.34 | 0.19 | 0.44 |
| BDC-05-24 | 11/13/2013 | | 818 | | <0.2 | 0.4 | 3.3 | 1.4 | <1.0 | 1.4 | <1.0 | 0.003 | 0.003 | <0.002 | <0.002 | 2.43 | | 1.3 | 1.4 | 11.0 | -219 | 8.7 | 6.54 | 0.00 | 0.00 | 0.03 | 0.02 | 0.00 | 0.05 | 0.06 | 0.05 | 0.00 | 0.03 | 0.32 | 0.21 | 0.44 |
| BDC-05-24 | 2/12/2014 | | 909 | | <0.2 | 0.2 | 1.7 | 0.6 | 1.1 | 3.0 | <1.0 | | | | | 2.72 | | 2.0 | 0.81 | 11.0 | -211 | 7.1 | 6.76 | 0.00 | 0.00 | 0.02 | 0.01 | 0.04 | 0.10 | 0.03 | 0.14 | 0.00 | 0.01 | 0.10 | 0.06 | 0.83 |
| BDC-05-24 | 5/12/2014 | | 998 | | <0.2 | 0.3 | 4.8 | 1.6 | 1.0 | 2.3 | <1.0 | 0.003 | 0.002 | <0.002 | <0.002 | 2.58 | | 1.2 | 0.87 | 10.0 | -196 | 8.2 | 6.75 | 0.00 | 0.00 | 0.05 | 0.03 | 0.04 | 0.08 | 0.08 | 0.11 | 0.00 | 0.01 | 0.26 | 0.14 | 0.59 |
| BDC-05-24 | 8/6/2014 | | 1084 | | <0.2 | 0.2 | 2.8 | 1.8 | 3.6 | 2.3 | <1.0 | | | | | 4.02 | | 1.0 | 0.36 | 9.6 | -167 | 9.5 | 7.33 | 0.00 | 0.00 | 0.03 | 0.03 | 0.13 | 0.08 | 0.06 | 0.20 | 0.00 | 0.01 | 0.11 | 0.11 | 0.78 |
| BDC-05-24 | 11/10/2014 | | 1180 | | <0.2 | <0.2 | 6.2 | 12 | 2.0 | <1.0 | <1.0 | 0.001 | 0.001 | <0.002 | <0.002 | 0.05 | | 1.2 | 1.8 | 0.97 | -86 | 4.2 | 6.52 | 0.00 | 0.00 | 0.06 | 0.19 | 0.07 | 0.00 | 0.26 | 0.07 | 0.00 | 0.00 | 0.20 | 0.59 | 0.22 |
| BDC-05-24 | 1/21/2015 | | 1252 | | <0.2 | 0.4 | 2.1 | 1.6 | 2.5 | <1.0 | <1.0 | | | | | 0.14 | | 2.0 | 2.3 | 5.4 | -65 | 3.8 | 6.31 | 0.00 | 0.00 | 0.02 | 0.03 | 0.09 | 0.00 | 0.05 | 0.09 | 0.00 | 0.02 | 0.16 | 0.18 | 0.64 |
| BDC-05-24 | 4/27/2015 | | 1348 | | <0.2 | 0.5 | 0.9 | 2.5 | 2.5 | <1.0 | <1.0 | 0.003 | 0.003 | <0.002 | <0.002 | 0.08 | | 0.8 | 0.97 | 3.2 | -27 | 3.2 | 6.22 | 0.00 | 0.00 | 0.01 | 0.04 | 0.09 | 0.00 | 0.05 | 0.09 | 0.00 | 0.03 | 0.07 | 0.28 | 0.63 |
| BDC-05-24 | 7/21/2015 | | 1433 | | <0.2 | 0.3 | 1.3 | 3.9 | <1.0 | <1.0 | <1.0 | | | | | 0.09 | | 1.8 | 6.2 | 0.45 | -23 | 2.2 | 6.27 | 0.00 | 0.00 | 0.01 | 0.06 | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.03 | 0.17 | 0.80 | 0.00 |
| BDC-05-24 | 10/28/2015 | | 1532 | | <0.2 | 0.5 | 0.7 | 1.3 | <1.0 | <1.0 | <1.0 | 0.003 | 0.004 | <0.002 | <0.002 | 0.47 | | 1.0 | 5.1 | 1.4 | -3.1 | 2.9 | 6.54 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.12 | 0.23 | 0.65 | 0.00 |
| BDC-05-24 | 1/26/2016 | | 1622 | | <0.2 | <0.2 | 0.4 | 1.9 | <1.0 | 1.2 | <1.0 | | | | | 0.34 | | 1.0 | 0.43 | 12.0 | -76 | 8.3 | 6.47 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.04 | 0.03 | 0.04 | 0.00 | 0.00 | 0.06 | 0.41 | 0.54 |
| BDC-05-24 | 4/20/2016 | | 1707 | | <0.2 | 0.2 | 0.5 | 0.7 | <1.0 | 1.8 | <1.0 | 0.004 | 0.002 | <0.002 | <0.002 | 0.28 | | | 1.3 | 7.5 | -3.8 | 4.6 | 6.44 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.06 | 0.02 | 0.06 | 0.00 | 0.02 | 0.07 | 0.14 | 0.77 |
| BDC-05-24 | 8/9/2016 | | 1818 | | <0.2 | 0.7 | 1.9 | 2.2 | 3.6 | 3.6 | <1.0 | 0.005 | 0.003 | <0.002 | <0.002 | 0.15 | | | 2.2 | 6.0 | -34.6 | 2.6 | 5.85 | 0.00 | 0.01 | 0.02 | 0.04 | 0.13 | 0.12 | 0.06 | 0.25 | 0.00 | 0.02 | 0.06 | 0.11 | 0.80 |
| BDC-05-24 | 11/3/2016 | | 1904 | | <0.2 | 0.2 | 0.7 | 0.8 | 1.9 | 1.3 | <1.0 | 0.002 | 0.002 | <0.002 | <0.002 | 0.34 | | 1.8 | 0.80 | 12.0 | -86.4 | 4.9 | 5.95 | 0.00 | 0.00 | 0.01 | 0.01 | 0.07 | 0.04 | 0.02 | 0.11 | 0.00 | 0.01 | 0.05 | 0.10 | 0.84 |
| BDC-05-24 | 2/8/2017 | | 2001 | | <0.2 | 0.3 | 1.3 | 2.1 | 2.7 | 3.2 | <1.0 | 0.003 | 0.002 | <0.002 | 0.004 | 0.34 | | 2.2 | 1.8 | 5.9 | -6.4 | 4.0 | 6.41 | 0.00 | 0.00 | 0.01 | 0.03 | 0.10 | 0.11 | 0.05 | 0.20 | 0.00 | 0.01 | 0.05 | 0.13 | 0.80 |
| BDC-05-24 | 5/4/2017 | | 2086 | | <0.2 | <0.2 | 0.4 | 0.5 | <1.0 | 3.7 | <1.0 | 0.004 | 0.003 | <0.002 | <0.002 | 0.20 | | 2.4 | 1.5 | 5.9 | -36.4 | 4.8 | 6.22 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.12 | 0.01 | 0.12 | 0.00 | 0.00 | 0.03 | 0.06 | 0.91 |
| BDC-05-24 | 8/1/2017 | | 2175 | | <0.2 | <0.2 | 0.4 | 0.5 | 1.1 | <1.0 | <1.0 | 0.003 | 0.002 | <0.002 | <0.002 | 0.11 | | 2.0 | 1.3 | 11.0 | -51.1 | 5.7 | 5.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.08 | 0.16 | 0.76 |
| BDC-05-24 | 11/7/2017 | | 2273 | -3 | <0.2 | <0.2 | <0.2 | 0.5 | <1.0 | 1.3 | <1.0 | 0.002 | 0.001 | <0.002 | <0.002 | 0.37 | | 1.8 | <0.30 | 12.0 | -10.7 | 8.4 | 6.42 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.04 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.16 | 0.84 |
| BDC-05-24 | 5/2/2018 | | 2449 | 173 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.001 | 0.001 | <0.001 | <0.001 | 1.13 | | 3.2 | <0.1 | 7.24 | -106.1 | 10.9 | 6.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-24 | 11/6/2018 | | 2637 | 361 | <0.2 | <0.2 | 0.26 | 0.66 | <1.14 | <1.23 | <1.06 | 0.002 | 0.002 | <0.001 | <0.001 | 0.30 | | 5.0 | <0.100 | 17.0 | -56.4 | 12.51 | 6.23 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.20 | 0.80 | 0.00 |
| BDC-05-24 | 5/2/2019 | | 2814 | 538 | <0.2 | <0.2 | <0.2 | 0.42 | <1.14 | <1.23 | <1.06 | 0.001 | 0.001 | <0.001 | <0.001 | 0.36 | | 5.2 | 0.379 | 12.7 | -66.1 | 11.40 | 6.41 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-24 | 11/5/2019 | | 3001 | 725 | <0.2 | <0.2 | <0.2 | 0.39 | <1.14 | <1.23 | <1.06 | 0.002 | 0.002 | 0.0004 | <0.001 | 4.10 | | 1.7 | 0.515 | 8.92 | -103.7 | 11.80 | 6.50 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-24 | 5/6/2020 | | 3184 | 908 | <0.2 | <0.2 | <0.2 | 0.38 | <1.14 | <1.23 | <1.06 | 0.004 | 0.004 | <0.001 | 0.0005 | 1.32 | | 3.0 | 0.326 | 8.56 | -8.7 | 12.76 | 6.14 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-24 | 11/6/2020 | | 3368 | 1092 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | <1.06 | 0.001 | 0.001 | <0.001 | <0.001 | 0.24 | | 4.0 | 0.193 | 9.88 | -4.6 | 9.93 | 6.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA |
| BDC-05-24 | 5/5/2021 | | 3548 | 1272 | <0.20 | <0.20 | <0.20 | 0.32 | <1.14 | <1.23 | <1.06 | 0.007 | 0.006 | 0.0002 | 0.0002 | 0.35 | | 6.6 | 0.498 | 5.97 | -87.1 | 9.04 | 6.36 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| BDC-05-24 | 11/8/2021 | | 3735 | 1459 | <0.20 | <0.20 | <0.20 | 0.33 | <1.14 | <1.23 | <1.06 | 0.005 | 0.004 | 0.0004 | <0.001 | 0.37 | | 6.5 | <0.100 | 6.65 | 91.8 | 8.1 | 6.53 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |

**Abbreviations and Acronyms:**

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
As = arsenic
Cu = copper
Tot = total
Dis = dissolved
DO = dissolved oxygen
ORP = oxidation reduction potential
TOC = total organic carbon
NA = not applicable, not available
µg/L = micrograms per liter
mg/L = milligrams per liter
IW = Injection Well
MW = Monitoring Well
DG = Downgradient; distance from nearest injection well
UG = Upgradient; distance from nearest injection well
XG = Crossgradient; distance from nearest injection well

**Notes:**

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).
(c) Indicates the fraction of total ethenes due to each compound.
(d) Calculated by dividing the concentration in groundwater by the molecular weight of the compound. Reporting limits for non-detect results replaced with zero.
(e) Sum of PCE, TCE, cDCE, and VC.
(b) Calculated by dividing the concentration in groundwater by the molecular weight of the compound. Reporting limits for non-detect results replaced with zero.
(c) Indicates the fraction of total ethenes (PCE+TCE+cDCE+VC+ethene/ethane) due to each individual compound on a molar basis.
(d) Sum of PCE, TCE, cDCE, and VC.

Box = exceedance of proposed cleanup level

= not analyzed
= Highlights the predominant ethene

**Injection Dates:**

10/28/2008 Pilot Injection: BDC-05-02 only
8/18/2011 Full Injection #1: BDC-05-02, BDC-05-07, and BDC-05-09 through BDC-05-17; performed 8/15/11-8/18/11
11/10/2017 Full Injection #2: BDC-05-02, BDC-05-03, BDC-05-04, BDC-05-07, and BDC-05-10; performed 11/7/17-11/10/2017

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 06A (c) | 06/15/2004 | -2 | | | | | <1.0 | **1.0** | **23** | **4.0** | <0.50 | <0.50 | 6.34 | -19.6 | 0.8 | 58.9 | <0.50 | 6.5 | 18.8 |
| 06A (c) | 08/23/2004 | 67 | | | | | <1.0 | <1.0 | **45** | **5.9** | <0.50 | <0.50 | 0.46 | 92 | 3.5 | 40.7 | 21 | 7.0 | 288 |
| 06A (c) | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | **2.6** | **31** | <0.50 | <0.50 | 0.70 | 54 | 3.0 | 44.8 | 530 | 6.8 | 80.8 |
| 06A (c) | 02/22/2005 | 250 | 68 | | | | <1.0 | <1.0 | **3.3** | <1.0 | <0.50 | <0.50 | 1.15 | 187 | 2.4 | <0.1 | 130 | 6.8 | 244 |
| 06A (c) | 05/16/2005 | 333 | 151 | | | | <1.0 | <1.0 | **2.6** | <1.0 | <0.50 | <0.50 | 1.25 | 58 | 3.0 | 0.1 | 10000 | 6.9 | 145 |
| 06A (c) | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | **1.6** | <1.0 | <0.50 | <0.50 | 1.26 | 212 | 2.7 | 3.1 | 390 | 6.8 | 54.2 |
| 06A (c) | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | **1.3** | **1.2** | <0.50 | <0.50 | 0.93 | 108 | 3.0 | 0.1 | 3700 | 6.9 | 31.8 |
| 06A (c) | 02/22/2006 | 615 | 433 | | | | <1.0 | <1.0 | **1.4** | **4.8** | <11.4 | <12.3 | 0.80 | 186 | 2.6 | 60.4 | 10100 | 6.4 | 15.5 |
| 06A (c) | 05/18/2006 | 700 | 518 | | | | <1.0 | <1.0 | <1.0 | **1.6** | <11 | <12 | 6.41 | 1 | 3.0 | 20.9 | 16000 | 6.6 | 23.9 |
| 06A (c) | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | **1.5** | <1.1 | <1.2 | 0.89 | 240 | 2.2 | 23.1 | 18800 | 6.5 | 23.2 |
| 06A (c) | 11/29/2006 | 895 | 713 | | | | <0.2 | <0.2 | **0.4** | **2.1** | <1.1 | <1.2 | 2.09 | 102 | 2.6 | 33.1 | 20200 | 6.5 | 31.4 |
| 06A (c) | 02/23/2007 | 981 | 799 | | | | <1.0 | <1.0 | <1.0 | **6.7** | <1.1 | <1.2 | 0.65 | -97 | 4.5 | 26.2 | 17400 | 6.5 | 24.6 |
| 06A (c) | 05/24/2007 | 1071 | 889 | | | | <1.0 | <1.0 | <1.0 | **2.9** | <1.1 | **2.0** | 0.56 | 184 | 4.0 | 21.0 | 18300 | 6.7 | 21.5 |
| 06A (c) | 11/30/2007 | 1261 | 1079 | | | | <0.2 | <0.2 | <0.2 | **1.2** | <1.1 | **2.2** | 0.80 | 173 | 3.0 | 29.1 | 21900 | 6.7 | 22.6 |
| 06A (c) | 05/21/2008 | 1434 | 1252 | | -96 | | <1.0 | <1.0 | <1.0 | **1.4** | <1.1 | **1.3** | 2.11 | -82 | 2.5 | 21.0 | 13200 | 6.9 | 20.1 |
| 06A (c) | 11/25/2008 | 1622 | 1440 | | 92 | | <1.0 | <1.0 | **1.7** | <1.0 | <1.1 | <1.2 | 1.71 | -73 | 3.4 | 0.1 | 19700 | 6.5 | 150 |
| 06A (c) | 05/20/2009 | 1798 | 1616 | | 268 | | <4.0 | <4.0 | <4.0 | <4.0 | <1.1 | <1.2 | 0.52 | -45 | 4.0 | <0.5 | 19500 | 6.8 | 38.2 |
| 06A (c) | 11/19/2009 | 1981 | 1799 | | 451 | | <1.0 | <1.0 | **1.9** | <1.0 | <1.1 | <1.2 | 2.66 | 6 | 2.8 | 0.8 | 20100 | 6.2 | 25.4 |
| 06A (c) | 5/24/2010 | 2167 | 1985 | | 637 | | <1.0 | <1.0 | **1.3** | **1.9** | <1.1 | <1.2 | 3.56 | 448 | 2.0 | 16 | 19900 | 6.6 | 19.3 |
| 06A (c) | 11/11/2010 | 2338 | 2156 | | 808 | | <1.0 | <1.0 | <1.0 | **1.7** | <1.1 | <1.2 | 4.75 | 106 | 2.6 | 0.4 | 24700 | 7.0 | 20.2 |
| 06A (c) | 5/4/2011 | 2512 | 2330 | | 982 | | <1.0 | <1.0 | <1.0 | **1.4** | <1.1 | <1.2 | 2.14 | 22 | 2.5 | <0.2 | 21400 | 7.1 | 13.6 |
| 06A (c) | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **0.3** | **0.8** | <1.1 | <1.2 | 5.80 | -54 | 1.0 | 0.3 | 6370 | 7.2 | 12.7 |
| 06A (c) | 5/15/2012 | 2889 | 2707 | | 1359 | | <0.2 | <0.2 | **0.4** | **1.2** | <1.0 | <1.0 | 0.08 | 66 | 2.0 | 4.3 | 13000 | 6.7 | 11.6 |
| 06A (c) | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | <0.2 | **0.3** | **0.8** | <1.0 | <4.0 | 0.02 | -0.5 | 1.5 | <0.30 | 13000 | 6.9 | 9.0 |
| 06A (c) | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.5 | <0.5 | <0.5 | **1.3** | <1.0 | <1.0 | 0.17 | -434 | 2.6 | 3.3 | 5200 | 7.9 | 8.8 |
| 06A (c) | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | **0.4** | **2.4** | <1.0 | <1.0 | 2.68 | -298 | 1.2 | 5.8 | 3500 | 6.8 | 8.3 |
| 06A (c) | 5/7/2014 | 3611 | 3429 | | 2081 | | <0.2 | <0.2 | **0.4** | **1.5** | <1.0 | <1.0 | 3.60 | -386 | 1.5 | 11.2 | 1300 | 7.1 | 7.2 |
| 06A (c) | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **0.4** | **2.7** | <1.0 | <1.0 | 0.28 | -89 | 1.0 | 13.9 | 770 | 6.7 | 7.2 |
| 06A (c) | 4/29/2015 | 3968 | 3786 | | 2438 | | <0.2 | <0.2 | **0.6** | **3.3** | <1.0 | <1.0 | 0.36 | -54 | 3.0 | 17.5 | 430 | 6.7 | 5.2 |
| 06A (c) | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | <0.2 | <0.2 | **0.2** | **2.5** | <1.0 | <1.0 | 0.17 | -66 | 0.8 | 19.7 | 410 | 6.6 | 6.5 |
| 06A (c) | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | <0.2 | **1** | **0.7** | <100 | <100 | 0.06 | -118 | 1.0 | <0.30 | 18000 | 7.0 | 203 |
| 06A (c) | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | **0.5** | **0.7** | <100 | <100 | 0.35 | -154.9 | NM | 0.47 | 20000 | 7.1 | 121 |
| 06A (c) | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | **0.3** | **0.4** | <1.0 | **1.4** | 0.26 | -151.5 | NM | <0.30 | 18000 | 7.2 | 124 |
| 06A (c) | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **0.3** | **0.3** | <1.0 | **3.4** | 0.41 | -56.1 | NM | 16.1 | 13000 | 7.1 | 99.5 |
| 06A (c) | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 0.15 | -28.7 | NM | 0.342 | 6130 | 7.2 | 149.3 |
| 06A (c) | 11/6/2018 | 5255 | 5073 | | 3725 | 1091 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **1.55** | 0.50 | -61.9 | NM | 0.476 | 5090 | 7.0 | 116.1 |
| 06A (c) | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **1.80** | 0.42 | -88.6 | NM | 1.09 | 4220 | 7.1 | 102.7 |
| 06A (c) | 11/6/2019 | 5620 | 5438 | | 4090 | 1456 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | 0.58 | -105.6 | NM | 3.12 | 1730 | 6.9 | 410.2 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 06A (c) | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.22** | **0.5** | <1.14 | <1.23 | 1.58 | -48.0 | NM | 9.64 | 652 | 6.9 | 79.14 |
| 06A (c) | 11/5/2020 | 5985 | 5803 | | 4455 | 1821 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | 1.57 | -64.8 | NM | 1.71 | 1060 | 7.0 | 15.48 |
| 06A (c) | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **0.23** | **0.46** | <1.14 | <1.23 | 1.21 | -113.6 | NM | 22.3 | 739 | 6.95 | 28.13 |
| 06A (c) | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | **0.30** | **0.21** | **0.32** | <1.14 | <1.23 | 0.89 | 45.3 | NM | 22.8 | 683 | 6.85 | 8.9 |
| 06B | 05/04/2004 | -44 | | | | | **9.5** | **3.2** | **10** | **9.4** | <0.50 | <0.50 | 0.36 | 179 | 4.5 | 18.7 | 130 | 6.8 | 25.6 |
| 06B | 08/23/2004 | 67 | | | | | **1.9** | **1.2** | **13** | **2.3** | <0.50 | <0.50 | 0.45 | 115 | 3.2 | 33.8 | 1100 | 6.9 | 177 |
| 06B | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | **10** | **3.6** | <0.50 | <0.50 | 0.61 | 217 | 3.5 | 14.8 | 590 | 6.7 | 53.6 |
| 06B | 02/22/2005 | 250 | 68 | | | | <1.0 | <1.0 | **11** | <1.0 | <0.50 | <0.50 | 0.79 | 224 | 2.6 | <0.5 | 3800 | 6.9 | 968 |
| 06B | 05/16/2005 | 333 | 151 | | | | <2.0 | <2.0 | **5.5** | <2.0 | <0.50 | <0.50 | 1.51 | 133 | 3.5 | <0.5 | 2300 | 6.9 | 336 |
| 06B | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | **1.8** | **1.6** | <0.50 | <0.50 | 1.21 | 217 | 2.8 | <0.1 | 440 | 6.9 | 100 |
| 06B | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | **1.1** | **1.3** | <0.50 | <0.50 | 1.05 | 241 | 2.8 | <0.1 | 2900 | 6.9 | 64.4 |
| 06B | 02/22/2006 | 615 | 433 | | | | <1.0 | <1.0 | <1.0 | **1.4** | **53.5** | <12.3 | 0.74 | 184 | 2.6 | 14.8 | 13000 | 6.4 | 30.4 |
| 06B | 05/18/2006 | 700 | 518 | | | | <1.0 | <1.0 | <1.0 | **1.3** | <11 | <12 | 2.25 | 52 | 3.2 | 13.6 | 16000 | 6.6 | 25.9 |
| 06B | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | **1.1** | <1.1 | <1.2 | 0.82 | 225 | 2.4 | 12.9 | 21700 | 6.5 | 14.7 |
| 06B | 11/29/2006 | 895 | 713 | | | | <0.2 | <0.2 | **1.4** | **2.6** | <1.1 | <1.2 | 1.82 | 111 | 2.4 | 10.9 | 22000 | 6.5 | 25.2 |
| 06B | 02/23/2007 | 981 | 799 | | | | <1.0 | <1.0 | **3.8** | **9.5** | <1.1 | <1.2 | 0.75 | -66 | 5.0 | 25.0 | 17700 | 6.5 | 21.1 |
| 06B | 05/24/2007 | 1071 | 889 | | | | <1.0 | <1.0 | **1.4** | **6.5** | <1.1 | <1.2 | 0.58 | 151 | 3.0 | 11.3 | 18500 | 6.6 | 21.4 |
| 06B | 11/30/2007 | 1261 | 1079 | | | | <0.2 | <0.2 | <0.2 | **1.0** | <1.1 | **4.0** | 0.83 | 135 | 4.0 | 26.3 | 24900 | 6.4 | 26.5 |
| 06B | 05/21/2008 | 1434 | 1252 | | -96 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **4.9** | 2.66 | -61 | 3.4 | 21.1 | 12700 | 6.7 | 20.4 |
| 06B | 11/25/2008 | 1622 | 1440 | | 92 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.53 | -68 | 2.4 | 0.2 | 18400 | 6.6 | 19.6 |
| 06B | 05/20/2009 | 1798 | 1616 | | 268 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.33 | -36 | 4.0 | <0.5 | 25300 | 6.9 | 20.9 |
| 06B | 11/19/2009 | 1981 | 1799 | | 451 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **6.7** | 1.01 | 10 | 2.8 | 0.1 | 22500 | 6.9 | 20.0 |
| 06B | 5/24/2010 | 2167 | 1985 | | 637 | | <1.0 | <1.0 | <1.0 | **4.2** | <1.1 | **1.6** | 3.05 | 417 | 2.0 | 3.0 | 7110 | 7.0 | 19.1 |
| 06B | 11/11/2010 | 2338 | 2156 | | 808 | | <1.0 | <1.0 | <1.0 | **5.4** | <1.1 | **1.4** | 3.40 | 112 | 2.0 | 8.6 | 4600 | 7.1 | 15.8 |
| 06B | 5/4/2011 | 2512 | 2330 | | 982 | | <1.0 | <1.0 | <1.0 | **5.2** | <1.1 | <1.2 | 2.55 | 57 | 2.2 | 19.7 | 2120 | 7.1 | 12.6 |
| 06B | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | <0.2 | **0.8** | <1.1 | <1.2 | 6.10 | -34 | 1.5 | 0.3 | 2260 | 7.3 | 14.8 |
| 06B | 5/15/2012 | 2889 | 2707 | | 1359 | | <0.2 | <0.2 | **0.5** | **6.0** | <1.0 | **1.3** | 0.14 | 71 | 1.8 | 10.9 | 2200 | 6.6 | 11.4 |
| 06B | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | <0.2 | <0.2 | **3.7** | <1.0 | **1.8** | 0.02 | 10 | 2.0 | 7.0 | 2300 | 6.8 | 13.7 |
| 06B | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.5 | <0.5 | <0.5 | **4.3** | <1.0 | <1.0 | 0.17 | -427 | 2.5 | 20.1 | 720 | 7.7 | 11.0 |
| 06B | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | <0.2 | **2.5** | <1.0 | <1.0 | 2.62 | -309 | 1.5 | 4.0 | 350 | 7.0 | 15.5 |
| 06B | 5/7/2014 | 3611 | 3429 | | 2081 | | <0.2 | <0.2 | <0.2 | **2.4** | <1.0 | <1.0 | 3.50 | -320 | 1.6 | 2.8 | 1200 | 7.1 | 10.2 |
| 06B | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | <0.2 | **1.8** | <1.0 | <1.0 | 0.30 | -54 | 1.7 | 4.7 | 2200 | 6.8 | 6.9 |
| 06B | 4/29/2015 | 3968 | 3786 | | 2438 | | <0.2 | <0.2 | <0.2 | **1.8** | <1.0 | <1.0 | 0.52 | -39 | 1.0 | 0.99 | 1300 | 6.6 | 4.0 |
| 06B | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | <0.2 | <0.2 | <0.2 | **1.0** | <1.0 | <1.0 | 0.99 | -39 | 1.0 | 2.0 | 1900 | 6.6 | 4.9 |
| 06B | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <2.0 | <2.0 | <2.0 | <2.0 | <100 | <100 | 0.06 | -78 | NM | 0.3 | 17000 | 6.8 | 306 |
| 06B | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | **0.5** | **0.2** | <100 | <100 | 0.32 | -148.5 | NM | 0.71 | 23000 | 7.24 | 274 |
| 06B | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | <0.2 | **0.3** | <1.0 | <1.0 | 0.17 | -129.6 | NM | 1.3 | 21000 | 7.38 | 149 |
| 06B | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | <0.2 | **0.6** | <1.0 | **2.4** | 0.10 | -45.5 | NM | <30.0 | 18000 | 6.88 | 320 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| | | 1st | 2nd | 3rd (b) | 4th | 5th | PCE | TCE | cDCE | VC | Ethene | Ethane | DO | ORP | Iron II | Sulfate | Methane | pH | TOC |
| Well | Date | Injection | Injection | Injection | Injection | Injection | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (mg/L) | (mV) | mg/L | (mg/L) | (µg/L) | | (mg/L) |
| 06B | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 1.05 | 14.0 | NM | <0.5 | 5370 | 6.71 | 4147 |
| 06B | 11/6/2018 | 5255 | 5073 | | 3725 | 1091 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | <1.23 | 3.43 | 69.4 | NM | 1.01 | 4870 | 6.51 | 1740 |
| 06B | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 1.18 | 20.6 | NM | 7.87 | 4510 | 6.67 | 4692 |
| 06B | 11/20/2019 | 5634 | 5452 | | 4104 | 1470 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 2.20 | -7.6 | NM | 1.69 | 2590 | 6.89 | 1065 |
| 06B | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.51** | **1.84** | <1.14 | <1.23 | 0.87 | 35.4 | NM | 0.44 | 2490 | 6.57 | 1120 |
| 06B | 11/5/2020 | 5985 | 5803 | | 4455 | 1821 | **0.21** | <0.2 | **0.42** | **0.82** | <1.14 | <1.23 | 1.55 | -8.4 | NM | 1.20 | 1950 | 6.54 | 17.53 |
| 06B | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **0.49** | **0.88** | <1.14 | <1.23 | 1.22 | -23.1 | NM | 2.68 | 1040 | 6.56 | 227.9 |
| 06B | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | <0.20 | **0.62** | **1.35** | <1.14 | <1.23 | 0.60 | 42.2 | NM | 0.49 | 1530 | 6.56 | 25.2 |
| 06C | 05/04/2004 | -44 | | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | **0.6** | 0.40 | 93 | 5.0 | 20.7 | 360 | 6.7 | 29.0 |
| 06C | 08/23/2004 | 67 | | | | | <1.0 | <1.0 | **1.4** | <1.0 | **5.7** | **5.9** | 0.63 | 95 | 2.5 | 42.7 | 3100 | 6.3 | 1560 |
| 06C | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 2.00 | 206 | 3.0 | 18.1 | 450 | 6.3 | 464 |
| 06C | 02/22/2005 | 250 | 68 | | | | <1.0 | <1.0 | **3.6** | <1.0 | <0.50 | <0.50 | 0.82 | 198 | 2.6 | <0.5 | 2400 | 6.9 | 858 |
| 06C | 05/16/2005 | 333 | 151 | | | | <1.0 | <1.0 | **1.1** | <1.0 | <0.50 | <0.50 | 1.94 | 98 | 3.0 | 0.2 | 2700 | 7.0 | 111 |
| 06C | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | **1.1** | <1.0 | <0.50 | <0.50 | 1.36 | 194 | 2.8 | <0.1 | 510 | 7.0 | 68.7 |
| 06C | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | **1.1** | <1.0 | <0.50 | <0.50 | 1.07 | 258 | 2.0 | <0.1 | 2900 | 7.0 | 48.3 |
| 06C | 02/22/2006 | 615 | 433 | | | | <1.0 | <1.0 | <1.0 | <1.0 | **47.7** | <12.3 | 0.88 | 247 | 1.4 | 47.5 | 12300 | 6.6 | 93.4 |
| 06C | 05/18/2006 | 700 | 518 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 4.88 | 129 | 2.0 | 30.6 | 15000 | 6.6 | 36.6 |
| 06C | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **2.3** | 0.93 | 231 | 1.6 | 31.8 | 18900 | 6.6 | 13.4 |
| 06C | 11/29/2006 | 895 | 713 | | | | <0.2 | <0.2 | **0.3** | <0.2 | <1.1 | **1.4** | 2.25 | 192 | 1.8 | 27.3 | 20600 | 6.6 | 46.4 |
| 06C | 02/23/2007 | 981 | 799 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **1.7** | 1.08 | -46 | 4.0 | 25.9 | 18900 | 6.4 | 39.0 |
| 06C | 05/24/2007 | 1071 | 889 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **2.0** | 0.72 | 216 | 3.5 | 20.8 | 20800 | 6.5 | 34.0 |
| 06C | 11/30/2007 | 1261 | 1079 | | | | <0.2 | <0.2 | **0.2** | **0.3** | <1.1 | **2.8** | 1.58 | 174 | 4.2 | 32.6 | 30500 | 6.2 | 40.2 |
| 06C | 05/21/2008 | 1434 | 1252 | | -96 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.91 | -16 | 2.5 | 21.0 | 23800 | 6.3 | 31.9 |
| 06C | 11/25/2008 | 1622 | 1440 | | 92 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 3.39 | -66 | 2.6 | <0.1 | 28700 | 6.8 | 634 |
| 06C | 05/20/2009 | 1798 | 1616 | | 268 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.66 | -28 | 3.5 | <0.8 | 20600 | 6.9 | 39.2 |
| 06C | 11/19/2009 | 1981 | 1799 | | 451 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 1.89 | 26 | NM | <0.1 | 25600 | 6.2 | 42.8 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 09A | 05/03/2004 | -45 | | | | | **150** | **230** | **970** | **37** | <0.50 | <0.50 | 0.46 | 287 | 1.0 | 64.2 | 8.4 | 6.7 | 16.2 |
| 09A | 08/23/2004 | 67 | | | | | <3.0 | **11** | **370** | **150** | **4.2** | <0.50 | 0.40 | 143 | 2.6 | 51.8 | 4.7 | 7.1 | 56.8 |
| 09A | 10/19/2004 | 124 | -58 | | | | <5.0 | **19** | **460** | **220** | **2.7** | <0.50 | 0.53 | 219 | 4.0 | 77.4 | 17 | 6.9 | 19.6 |
| 09A | 02/21/2005 | 249 | 67 | | | | <10 | <10 | **41** | **37** | **1.9** | <0.50 | 0.78 | 169 | 2.0 | <0.5 | 1500 | 7.1 | 2110 |
| 09A | 05/11/2005 | 328 | 146 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 1.53 | 141 | 2.0 | <0.5 | 1700 | 7.2 | 1260 |
| 09A | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 1.58 | 141 | 2.8 | <0.1 | 460 | 6.8 | 156 |
| 09A | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 1.07 | 238 | 2.0 | <0.1 | 2600 | 6.9 | 62.8 |
| 09A | 02/21/2006 | 614 | 432 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11.4 | <12.3 | 0.94 | 332 | 2.6 | 0.2 | 5650 | 6.3 | 58.8 |
| 09A | 05/15/2006 | 697 | 515 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 1.35 | 193 | 2.2 | 63.4 | 15000 | 6.4 | 44.4 |
| 09A | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | **1.2** | <1.1 | **2.1** | 1.55 | 175 | 2.0 | 56.8 | 16800 | 6.4 | 50.0 |
| 09A | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **0.3** | **1.1** | **1.9** | **6.3** | 2.09 | 211 | 3.2 | 52.5 | 15200 | 6.6 | 51.0 |
| 09A | 02/22/2007 | 980 | 798 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **7.8** | 0.65 | -107 | 4.6 | 0.3 | 15300 | 6.4 | 48.8 |
| 09A | 05/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | **2.8** | <1.1 | **4.8** | 0.75 | 91 | 2.6 | 0.1 | 16700 | 6.6 | 43.1 |
| 09A | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **24.5** | 1.01 | 147 | 3.8 | 45.4 | 27600 | 6.4 | 40.6 |
| 09A | 05/19/2008 | 1432 | 1250 | | -98 | | <0.2 | **0.2** | **110** | **85** | **7.8** | **35.6** | 2.26 | -82 | 3.0 | 29.4 | 17100 | 6.7 | 31.0 |
| 09A | 11/24/2008 | 1621 | 1439 | | 91 | | **1.9** | **4.6** | **160** | **42** | **4.0** | **2.1** | 2.61 | -52 | 3.0 | <2.0 | 13700 | 6.2 | 5600 |
| 09A | 05/18/2009 | 1796 | 1614 | | 266 | | <10 | <10 | <10 | <10 | <1.1 | <1.2 | 0.44 | -88 | 2.5 | <2.0 | 18100 | 7.1 | 1620 |
| 09A | 11/16/2009 | 1978 | 1796 | | 448 | | <5.0 | <1.0 | <5.0 | <5.0 | <1.1 | <1.2 | 1.23 | -61 | 2.6 | <1.0 | 16600 | 6.6 | 403 |
| 09A | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 11.09 | 515 | 2.2 | <1.0 | 18700 | 7.0 | 72.8 |
| 09A | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **2.0** | 3.92 | 118 | 2.2 | 0.3 | 24400 | 7.0 | 70.0 |
| 09A | 5/3/2011 | 2511 | 2329 | | 981 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.1 | **2.0** | 2.55 | 33 | 2.0 | <0.2 | 17800 | 6.9 | 44.4 |
| 09A | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **0.2** | <0.2 | <1.1 | **1.2** | 2.23 | -66 | 1.2 | 0.4 | 11800 | 7.0 | 39.4 |
| 09A | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | **0.2** | <0.2 | <1.0 | **13** | 0.57 | 91 | 1.5 | 0.40 | 22000 | 6.4 | 30.5 |
| 09A | 11/14/2012 | 3072 | 2890 | | 1542 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.0 | **11** | 0.02 | -4 | 2.0 | 0.53 | 21000 | 6.6 | 30.9 |
| 09A | 5/21/2013 | 3260 | 3078 | | 1730 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.0 | **16** | 0.32 | -399 | 1.8 | <0.30 | 24000 | 7.8 | 33.0 |
| 09A | 11/12/2013 | 3435 | 3253 | | 1905 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.0 | **10** | 3.87 | -258 | 1.7 | 0.41 | 18000 | 6.5 | 30.2 |
| 09A | 5/7/2014 | 3611 | 3429 | | 2081 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.0 | **29** | 4.46 | -322 | 1.4 | 0.50 | 26000 | 6.7 | 21.5 |
| 09A | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | **15** | 0.12 | -90 | 2.0 | <0.30 | 25000 | 6.6 | 24.8 |
| 09A | 4/29/2015 | 3968 | 3786 | | 2438 | | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | **28** | 0.20 | -63 | 1.4 | 0.58 | 27000 | 6.4 | 17.8 |
| 09A | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | **49** | 0.10 | -38 | 1.0 | 0.57 | 21000 | 6.3 | 21.7 |
| 09A | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | <0.2 | <0.2 | **0.7** | <1.0 | **34** | 0.15 | -105 | 0.8 | <0.30 | 22000 | 6.7 | 33.3 |
| 09A | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | **120** | 0.73 | -89 | NM | <0.30 | 19000 | 6.46 | 17.5 |
| 09A | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | **430** | 1.03 | -118.2 | NM | <0.30 | 20000 | 6.58 | 22.3 |
| 09A | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | <0.2 | **0.4** | **51** | **230** | 0.34 | 17.6 | NM | 0.85 | 21000 | 6.59 | 16.7 |
| 09A | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <0.2 | <0.2 | <0.2 | **2.23** | **3.54** | **575** | 0.08 | -37.1 | NM | 0.107 | 14900 | 6.59 | 25.22 |
| 09A | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **402** | 0.33 | -102.4 | NM | 0.409 | 9960 | 6.64 | 22.61 |
| 09A | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **247** | 0.40 | -77.1 | NM | <0.100 | 11100 | 6.71 | 33.17 |
| 09A | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **123** | 2.72 | -18.7 | NM | 1.11 | 4120 | 6.57 | 21.06 |
| 09A | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | <0.2 | <0.2 | <1.14 | **200** | 0.26 | -67.4 | NM | 0.19 | 4070 | 6.93 | 17.72 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 09A | 11/5/2020 | 5985 | 5803 | | 4455 | 1821 | <0.2 | <0.2 | **0.47** | **1.38** | **29.5** | **216** | 0.71 | -85.7 | NM | 1.86 | 2860 | 6.41 | 13.39 |
| 09A | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.20 | <0.20 | **0.72** | **4.92** | <1.14 | **52.1** | 0.55 | -125.3 | NM | 0.715 | 5320 | 6.78 | 27.53 |
| 09A | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | **0.39** | **378** | **949** | **330** | **328** | 1.24 | -121.9 | NM | 3.55 | 2520 | 6.77 | 10.2 |
| 09B | 05/03/2004 | -45 | | | | | <3.0 | **4.2** | **250** | <3.0 | <0.50 | <0.50 | 0.37 | 269 | 4.0 | 61.4 | 2.7 | 6.8 | 20.7 |
| 09B | 08/23/2004 | 67 | | | | | <5.0 | **16** | **530** | **100** | **0.76** | <0.50 | 0.34 | 174 | 1.4 | 73.0 | 23 | 7.4 | 29.7 |
| 09B | 10/19/2004 | 124 | -58 | | | | <5.0 | **17** | **300** | **340** | **1.4** | <0.50 | 0.30 | 219 | 1.0 | 59.6 | 29 | 7.5 | 24.3 |
| 09B | 02/21/2005 | 249 | 67 | | | | <10 | <10 | **890** | **520** | **1.7** | <0.50 | 0.56 | 160 | 2.8 | 1.0 | 2000 | 6.8 | 608 |
| 09B | 05/11/2005 | 328 | 146 | | | | <1.0 | <1.0 | **12** | **24** | <0.50 | <0.50 | 1.48 | 158 | 3.5 | 0.4 | 9600 | 7.0 | 219 |
| 09B | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | <1.0 | **1.7** | <0.50 | <0.50 | 1.45 | 224 | 2.5 | <0.1 | 400 | 6.7 | 17.6 |
| 09B | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 1.24 | 235 | 1.4 | <0.1 | 3100 | 6.8 | 51.2 |
| 09B | 02/21/2006 | 614 | 432 | | | | <1.0 | <1.0 | <1.0 | **1.3** | <11.4 | <12.3 | 0.90 | 329 | 2.8 | <0.1 | 8730 | 6.3 | 46.4 |
| 09B | 05/15/2006 | 697 | 515 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 1.11 | 191 | 1.8 | 33.9 | 17000 | 6.3 | 45.6 |
| 09B | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.94 | 188 | 1.6 | 55.4 | 19300 | 6.3 | 250 |
| 09B | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **0.3** | **0.5** | <1.1 | <1.2 | 1.76 | 190 | 2.8 | 50.2 | 21800 | 6.5 | 78.2 |
| 09B | 02/22/2007 | 980 | 798 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **1.6** | 0.67 | -80 | 3.5 | 0.2 | 16100 | 6.3 | 64.0 |
| 09B | 05/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **1.4** | 0.76 | 154 | 3.0 | <0.1 | 18700 | 6.5 | 35.3 |
| 09B | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **3.8** | 1.29 | 238 | 2.2 | 58.3 | 29800 | 6.2 | 44.5 |
| 09B | 05/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | **0.2** | **0.4** | <1.1 | **3.0** | 2.34 | -78 | 3.4 | 39.1 | 12900 | 6.4 | 37.3 |
| 09B | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **17.6** | 2.22 | -47 | 3.0 | <1.0 | 27000 | 6.7 | 27.0 |
| 09B | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **6.9** | 0.38 | -38 | 3.5 | <0.5 | 19700 | 6.9 | 37.1 |
| 09B | 11/16/2009 | 1978 | 1796 | | 448 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **16.1** | 1.27 | 12 | 3.5 | <0.1 | 24500 | 6.2 | 28.1 |
| 09C | 05/03/2004 | -45 | | | | | <1.0 | <1.0 | **4.0** | **3.3** | **1.9** | **0.7** | 0.33 | 229 | 4.0 | 19.1 | 350 | 6.8 | 28.5 |
| 09C | 08/23/2004 | 67 | | | | | <1.0 | <1.0 | **1.7** | <1.0 | **1.1** | **2.8** | 0.47 | 114 | 2.6 | 23.2 | 610 | 6.7 | 302 |
| 09C | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | <1.0 | **1.5** | **1.1** | <0.50 | 0.60 | 185 | 3.0 | 12.2 | 620 | 7.0 | 99.6 |
| 09C | 02/21/2005 | 249 | 67 | | | | <1.0 | <1.0 | **1.7** | <1.0 | <0.50 | **1.6** | 0.60 | 154 | 2.0 | <0.1 | 3500 | 6.6 | 300 |
| 09C | 05/11/2005 | 328 | 146 | | | | <1.0 | <1.0 | **1.2** | <1.0 | <0.50 | <0.50 | 1.34 | 138 | 2.5 | <0.1 | 2700 | 6.4 | 44.6 |
| 09C | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | **7.6** | **2.2** | <0.50 | <0.50 | 1.31 | 230 | 2.5 | <0.1 | 360 | 6.7 | 52.0 |
| 09C | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | **1.2** | <1.0 | <0.50 | <0.50 | 1.41 | 228 | 2.4 | <0.1 | 7300 | 6.9 | 50.6 |
| 09C | 02/21/2006 | 614 | 432 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11.4 | <12.3 | 0.78 | 326 | 2.4 | <0.1 | 10300 | 6.5 | 44.2 |
| 09C | 05/15/2006 | 697 | 515 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 1.01 | 192 | 2.0 | 27.9 | 21000 | 7.0 | 42.1 |
| 09C | 08/16/2006 | 790 | 608 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **1.6** | 0.80 | 199 | 1.2 | 28.8 | 22900 | 6.5 | 33.0 |
| 09C | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | <0.2 | <0.2 | <1.1 | **9.1** | 1.40 | 289 | 2.4 | 26.7 | 23500 | 6.5 | 44.0 |
| 09C | 02/22/2007 | 980 | 798 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **3.9** | 0.75 | -32 | 3.6 | 0.2 | 17700 | 6.5 | 33.8 |
| 09C | 05/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **5.4** | 0.52 | 123 | 3.5 | <0.1 | 20600 | 6.6 | 25.4 |
| 09C | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **5.4** | 0.81 | 147 | 3.6 | 27.3 | 30000 | 6.5 | 27.1 |
| 09C | 05/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | <0.2 | **0.2** | <1.1 | **15.2** | 2.11 | -57 | 4.6 | 18.6 | 22800 | 6.5 | 22.3 |
| 09C | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.92 | -44 | 1.8 | <2.0 | 17700 | 6.6 | 334 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 09C | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **4.3** | 0.45 | -44 | 3.5 | <0.5 | 21400 | 7.0 | 24.0 |
| 09C | 11/16/2009 | 1978 | 1796 | | 448 | | <3.0 | <3.0 | <3.0 | <3.0 | <1.1 | **1.9** | 1.27 | -7 | 3.0 | <0.1 | 22400 | 6.4 | 20.7 |
| 10A | 05/03/2004 | -45 | | | | | **29** | **27** | **80** | **6.4** | <0.50 | <0.50 | 0.60 | 108 | 2.0 | 37.8 | 2.8 | 6.8 | 20.0 |
| 10A | 08/23/2004 | 67 | | | | | **14** | **12** | **170** | **4.0** | <0.50 | <0.50 | 0.49 | 181 | 3.5 | 38.9 | 1.1 | 7.0 | 59.6 |
| 10A | 10/19/2004 | 124 | -58 | | | | **15** | **15** | **100** | **23** | <0.50 | <0.50 | 0.66 | 224 | 4.0 | 37.8 | 2.7 | 7.0 | 24.0 |
| 10A | 02/21/2005 | 249 | 67 | | | | **4.7** | **4.8** | **24** | **6.8** | <0.50 | **0.54** | 0.53 | 166 | 3.6 | 24.3 | 430 | 7.0 | 22.4 |
| 10A | 05/11/2005 | 328 | 146 | | | | **4.2** | **5.4** | **26** | **7.2** | <0.50 | <0.50 | 0.95 | 47 | 3.0 | 27.9 | 540 | 7.2 | 25.9 |
| 10A | 08/22/2005 | 431 | 249 | | | | **2.7** | **6.3** | **48** | **76** | <0.50 | <0.50 | 0.73 | 177 | 2.0 | 48.8 | 240 | 7.0 | 31.4 |
| 10A | 11/14/2005 | 515 | 333 | | | | **3.3** | **6.7** | **47** | **73** | <0.50 | <0.50 | 0.91 | 178 | 2.0 | 50.6 | 370 | 7.1 | 34.1 |
| 10A | 02/21/2006 | 614 | 432 | | | | **3.7** | **9.6** | **42** | **150** | <11.4 | <12.3 | 0.54 | 320 | 2.0 | 53.9 | 1130 | 6.8 | 45.8 |
| 10A | 05/15/2006 | 697 | 515 | | | | **1.8** | **3.7** | **63** | **19** | <11 | <12 | 0.67 | 190 | 1.8 | 57.4 | 3100 | 6.8 | 49.2 |
| 10A | 08/16/2006 | 790 | 608 | | | | **1.6** | **1.6** | **38** | **20** | <1.1 | <1.2 | 1.50 | 201 | 1.4 | 57.5 | 1620 | 6.7 | 50.8 |
| 10A | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **7.4** | **9.2** | **2.6** | **2.6** | 2.67 | 201 | 3.0 | 57.9 | 1650 | 6.9 | 56.0 |
| 10A | 02/22/2007 | 980 | 798 | | | | **1.2** | <1.0 | **32** | **35** | <1.1 | <1.2 | 0.57 | -176 | 4.6 | 20.4 | 1370 | 6.8 | 56.4 |
| 10A | 05/22/2007 | 1069 | 887 | | | | **1.1** | <1.0 | **28** | **44** | <1.1 | **1.4** | 0.88 | 73 | 3.0 | 10.2 | 2590 | 6.9 | 47.3 |
| 10A | 11/29/2007 | 1260 | 1078 | | | | **1.2** | <1.0 | **22** | **78** | **4.4** | **3.7** | 0.80 | 106 | 4.2 | 47.9 | 4810 | 6.9 | 47.8 |
| 10A | 05/19/2008 | 1432 | 1250 | | -98 | | <1.0 | <1.0 | **22** | **180** | **7.9** | **4.4** | 2.19 | -177 | 4.0 | 32.5 | 4870 | 7.0 | 33.3 |
| 10A | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | **1.6** | **5.0** | <1.1 | <1.2 | 2.29 | -87 | 3.4 | 1.3 | 16900 | 7.1 | 1200 |
| 10A | 05/18/2009 | 1796 | 1614 | | 266 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.1 | <1.2 | 0.66 | -80 | 3.3 | <1.0 | 17900 | 6.9 | 168 |
| 10A | 11/16/2009 | 1978 | 1796 | | 448 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 3.14 | -40 | 4.2 | <1.0 | 18200 | 6.3 | 69.2 |
| 10A | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 16.23 | 341 | 3.0 | <1.0 | 17600 | 6.8 | 60.4 |
| 10A | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 4.09 | 67 | 2.4 | 0.5 | 22800 | 6.9 | 56.8 |
| 10A | 5/3/2011 | 2511 | 2329 | | 981 | | <2.0 | <2.0 | <2.0 | <2.0 | <1.1 | <1.2 | 2.47 | -21 | 2.5 | <0.2 | 20700 | 6.9 | 41.6 |
| 10A | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **0.2** | **0.4** | <1.1 | <1.2 | 2.45 | -38 | 2.0 | 0.3 | 15400 | 7.1 | 33.8 |
| 10A | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | **0.2** | **0.4** | <1.0 | <1.0 | 0.57 | 88 | 2.5 | 0.32 | 20000 | 6.4 | 38.0 |
| 10A | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | <0.2 | **0.3** | **0.4** | <1.0 | <1.0 | 0.03 | -16 | 2.0 | <0.30 | 19000 | 6.6 | 30.6 |
| 10A | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.2 | <0.2 | **0.2** | **0.3** | <1.0 | <3.0 | 0.35 | -340 | 1.8 | <0.30 | 26000 | 7.5 | 29.5 |
| 10A | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | **0.2** | **0.4** | <1.0 | **2.5** | 3.53 | -242 | 1.4 | 0.38 | 16000 | 6.5 | 29.1 |
| 10A | 5/7/2014 | 3611 | 3429 | | 2081 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.06 | -305 | 2.1 | <0.30 | 26000 | 6.7 | 27.9 |
| 10A | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **0.2** | **0.3** | <1.0 | **5.5** | 0.17 | -134 | 2.0 | <0.30 | 25000 | 6.5 | 26.1 |
| 14A | 05/04/2004 | -44 | | | | | <1.0 | <1.0 | **140** | **110** | <0.50 | <0.50 | 0.53 | -8 | 7.5 | 38.9 | 590 | 6.8 | 20.7 |
| 14A | 08/23/2004 | 67 | | | | | <1.0 | **2.9** | **560** | **180** | **0.89** | **0.67** | 0.54 | 162 | 3.2 | 30.1 | 810 | 6.8 | 22.6 |
| 14A | 10/19/2004 | 124 | -58 | | | | <5.0 | **39** | **1200** | **650** | <0.50 | <0.50 | 0.64 | 69 | 3.0 | 43.3 | 350 | 6.9 | 20.6 |
| 14A | 02/21/2005 | 249 | 67 | -24 | | | <5.0 | <5.0 | **300** | **1000** | **13** | **2.7** | 0.41 | 101 | 1.8 | 3.8 | 1700 | 6.9 | 44.0 |
| 14A | 05/16/2005 | 333 | 151 | 60 | | | <10 | <10 | <10 | <10 | <0.50 | <0.50 | 5.90 | 45 | 4.0 | <2.0 | 590 | 6.4 | 8620 |
| 14A | 08/22/2005 | 431 | 249 | 158 | | | <10 | <10 | <10 | <10 | <0.50 | <0.50 | 1.62 | 234 | 3.0 | <2.0 | 220 | 6.8 | 5380 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| | | 1st | 2nd | 3rd (b) | 4th | 5th | PCE | TCE | cDCE | VC | Ethene | Ethane | DO | ORP | Iron II | Sulfate | Methane | pH | TOC |
| Well | Date | Injection | Injection | Injection | Injection | Injection | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (mg/L) | (mV) | mg/L | (mg/L) | (µg/L) | | (mg/L) |
| 14A | 11/15/2005 | 516 | 334 | 243 | | | <3.0 | <3.0 | **6.0** | <3.0 | <0.50 | <0.50 | 1.26 | 257 | 2.0 | <0.1 | 2500 | 6.4 | 602 |
| 14A | 02/21/2006 | 614 | 432 | 341 | | | <1.0 | <1.0 | <1.0 | <1.0 | <11.4 | <12.3 | 1.36 | 335 | 2.0 | <0.1 | 5400 | 7.4 | 180 |
| 14A | 05/17/2006 | 699 | 517 | 426 | | | <2.0 | <2.0 | **2.1** | <2.0 | <11 | <12 | 1.78 | 76 | 2.8 | 12.0 | 9400 | 6.4 | 67.1 |
| 14A | 08/16/2006 | 790 | 608 | 517 | | | <1.0 | <1.0 | **3.0** | <1.0 | <1.1 | <1.2 | 1.16 | 240 | 1.2 | 16.5 | 6320 | 6.5 | 66.0 |
| 14A | 11/29/2006 | 895 | 713 | 622 | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 1.57 | 248 | 2.8 | 11.8 | 11100 | 6.3 | 72.0 |
| 14A | 02/22/2007 | 980 | 798 | 707 | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.89 | -56 | 7.0 | 0.2 | 7670 | 6.2 | 34.9 |
| 14A | 05/23/2007 | 1070 | 888 | 797 | | | <1.0 | <1.0 | **1.5** | <1.0 | <1.1 | <1.2 | 1.11 | 165 | 3.0 | 8.6 | 10100 | 6.3 | 27.5 |
| 14A | 12/03/2007 | 1264 | 1082 | 991 | | | <1.0 | <1.0 | **1.6** | <1.0 | <1.1 | <1.2 | 2.29 | -86 | 3.2 | 15.9 | 14500 | 6.4 | 55.6 |
| 14A | 05/20/2008 | 1433 | 1251 | 1160 | -97 | | <1.0 | <1.0 | **1.2** | <1.0 | <1.1 | <1.2 | 3.45 | -88 | 3.6 | <0.1 | 12100 | 6.3 | 26.3 |
| 14A | 11/24/2008 | 1621 | 1439 | 1348 | 91 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.79 | -70 | 3.0 | 194 | 14500 | 6.1 | 8.68 |
| 14A | 05/20/2009 | 1798 | 1616 | 1525 | 268 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.41 | -95 | 3.5 | 20.0 | 14400 | 6.3 | 9.83 |
| 14A | 11/17/2009 | 1979 | 1797 | 1706 | 449 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.81 | -18 | 3.2 | 165 | 15800 | 5.7 | 6.22 |
| 14A | 5/24/2010 | 2167 | 1985 | 1894 | 637 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 4.29 | 311 | 2.8 | 5.1 | 14600 | 6.4 | 8.07 |
| 14A | 11/10/2010 | 2337 | 2155 | 2064 | 807 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.47 | 171 | 2.6 | 38.6 | 14300 | 6.8 | 6.88 |
| 14A | 5/5/2011 | 2513 | 2331 | 2240 | 983 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 2.96 | 83 | 1.8 | 8.4 | 15100 | 7.1 | 3.28 |
| 14A | 11/13/2011 | 2705 | 2523 | 2432 | 1175 | | <0.2 | <0.2 | **0.6** | <0.2 | <1.1 | <1.2 | 2.04 | -52 | 1.5 | <0.1 | 7510 | 6.9 | 8.05 |
| 14A | 5/14/2012 | 2888 | 2706 | 2615 | 1358 | | <0.2 | <0.2 | **0.3** | **0.2** | <1.0 | **8.7** | 0.13 | 62 | 2.6 | 3.4 | 16000 | 6.4 | 5.9 |
| 14A | 11/14/2012 | 3072 | 2890 | 2799 | 1542 | | <0.2 | <0.2 | **0.6** | <0.2 | <1.0 | **5.0** | 0.03 | 31 | 1.5 | 79.0 | 16000 | 6.4 | 6.5 |
| 14A | 5/21/2013 | 3260 | 3078 | 2987 | 1730 | | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | **4.8** | 0.24 | -428 | 2.4 | 2.3 | 18000 | 7.4 | 6.5 |
| 14A | 11/12/2013 | 3435 | 3253 | 3162 | 1905 | | <0.2 | <0.2 | **0.5** | <0.2 | <1.0 | **6.3** | 4.46 | -286 | 1.3 | 0.52 | 14000 | 6.4 | 8.0 |
| 14A | 5/7/2014 | 3611 | 3429 | 3338 | 2081 | | <0.2 | <0.2 | **0.3** | **0.3** | <1.0 | **4.6** | 4.39 | -427 | 1.6 | 19.9 | 15000 | 6.8 | 6.5 |
| 14A | 11/5/2014 | 3793 | 3611 | 3520 | 2263 | | <0.2 | <0.2 | **0.4** | **0.2** | <1.0 | **10** | 0.04 | -48 | 2.0 | 23.6 | 15000 | 6.5 | 6.8 |
| 15A | 05/03/2004 | -45 | | | | | <5.0 | <5.0 | <5.0 | <5.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 15A | 10/26/2004 | 131 | -51 | | | | <5.0 | <5.0 | <5.0 | <5.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 15A | 05/16/2005 | 333 | 151 | | | | <5.0 | <5.0 | <5.0 | <5.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 15A | 11/15/2005 | 516 | 334 | | | | <5.0 | <5.0 | <5.0 | <5.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 15A | 05/17/2006 | 699 | 517 | | | | <5.0 | <5.0 | <5.0 | <5.0 | NA | NA | 0.79 | 131 | NA | NA | NA | 6.7 | NA |
| 15A | 11/29/2006 | 895 | 713 | | | | <3.0 | <3.0 | <3.0 | <3.0 | NA | NA | 1.26 | 513 | NA | NA | NA | 6.6 | NA |
| 15A | 05/23/2007 | 1070 | 888 | | | | <1.0 | <1.0 | **1.4** | **2.6** | NA | NA | 1.19 | 144 | NA | NA | NA | 6.7 | NA |
| 15A | 12/03/2007 | 1264 | 1082 | | | | <1.0 | <1.0 | <1.0 | **1.3** | NA | NA | 1.31 | -105 | NA | NA | NA | 6.6 | NA |
| 15A | 05/20/2008 | 1433 | 1251 | | -97 | | <3.0 | <3.0 | <3.0 | <3.0 | NA | NA | 2.57 | -135 | NA | NA | NA | 6.7 | NA |
| 15A | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | <1.0 | <2.0 | NA | NA | 2.07 | -61 | NA | NA | NA | 6.8 | NA |
| 15A | 05/19/2009 | 1797 | 1615 | | 267 | | <3.0 | <3.0 | <3.0 | <3.0 | NA | NA | 0.35 | -33 | NA | NA | NA | 6.9 | NA |
| 15A | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | <1.0 | **1.4** | NA | NA | 0.72 | -0.1 | NA | NA | NA | 6.3 | NA |
| 15A | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | **1.6** | NA | NA | 1.10 | 606 | NA | NA | NA | 6.8 | NA |
| 15A | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | <1.0 | **1.4** | NA | NA | 2.42 | 118 | NA | NA | NA | 7.1 | NA |
| 15A | 5/5/2011 | 2513 | 2331 | | 983 | | <10 | <10 | <10 | <10 | NA | NA | 4.83 | -19 | NA | NA | NA | 7.2 | NA |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 15A | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **0.3** | **1.0** | NA | NA | 4.01 | -41 | NA | NA | NA | 7.3 | NA |
| 15A | 5/14/2012 | 2888 | 2706 | | 1358 | | <1.0 | <1.0 | <1.0 | **1.2** | NA | NA | 0.64 | 56 | NA | NA | NA | 6.7 | NA |
| 15A | 11/13/2012 | 3071 | 2889 | | 1541 | | <0.2 | <0.2 | **0.4** | **0.8** | NA | NA | 0.03 | 23 | NA | NA | NA | 6.8 | NA |
| 15A | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.5 | <0.5 | **0.6** | **1.1** | NA | NA | 0.20 | -394 | NA | NA | NA | 7.4 | NA |
| 15A | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | **0.5** | **0.8** | NA | NA | 3.38 | -267 | NA | NA | NA | 6.7 | NA |
| 15A | 5/7/2014 | 3611 | 3429 | | 2081 | | <0.2 | <0.2 | **0.6** | **1.0** | NA | NA | 3.86 | -351 | NA | NA | NA | 6.9 | NA |
| 15A | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **0.4** | **0.5** | NA | NA | 0.09 | -126 | NA | NA | NA | 6.8 | NA |
| 19A | 05/02/2004 | -46 | -228 | | | | <1.0 | <1.0 | <1.0 | <1.0 | NA | NA | 0.33 | -3 | NA | NA | NA | 6.5 | NA |
| 19A | 02/21/2005 | 249 | 67 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.65 | 180 | NA | 47.4 | 17 | 6.7 | 15.5 |
| 19A | 05/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.63 | 169 | 3.0 | 31.3 | 9.1 | 6.8 | 14.2 |
| 19A | 08/22/2005 | 431 | 249 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.74 | 106 | 3.0 | 68.3 | 16 | 6.6 | 10.5 |
| 19A | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.56 | 201 | 2.6 | 95.9 | 35 | 6.8 | 9.30 |
| 19A | 02/22/2006 | 615 | 433 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11.4 | <12.3 | 0.77 | 65 | 3.0 | 124.0 | 111 | 6.6 | 31.3 |
| 19A | 05/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 1.14 | 56 | 2.0 | 73.4 | 230 | 6.4 | 15.7 |
| 19A | 08/15/2006 | 789 | 607 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.60 | 229 | 2.0 | 47.3 | 202 | 6.4 | 11.5 |
| 19A | 11/27/2006 | 893 | 711 | | | | <0.2 | **0.2** | **0.3** | <0.2 | <1.1 | <1.2 | 0.88 | 264 | 2.0 | 41.9 | 186 | 6.4 | 13.6 |
| 19A | 02/22/2007 | 980 | 798 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.42 | -23 | 3.0 | 20.7 | 248 | 6.2 | 19.8 |
| 19A | 05/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | **5.2** | 0.34 | 277 | 3.5 | 30.8 | 179 | 6.4 | 15.4 |
| 19A | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.67 | 243 | 2.2 | 37.2 | 235 | 6.2 | 14.3 |
| 19A | 05/20/2008 | 1433 | 1251 | | -97 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 3.23 | -79 | 3.8 | 20.9 | 134 | 6.4 | 11.5 |
| 19A | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 1.62 | -61 | 2.0 | 46.1 | 97.8 | 6.4 | 10.6 |
| 19A | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.30 | -28 | 3.2 | 28.6 | 127 | 6.8 | 12.8 |
| 19A | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 1.58 | -2 | 3.4 | 22.1 | 122 | 6.5 | 10.7 |
| 22A | 03/21/2005 | 277 | 95 | 4 | | | <1.0 | <1.0 | **3.5** | **2.0** | <0.50 | <0.50 | 1.86 | 53 | 2.8 | 12.8 | 280 | 7.0 | 11.1 |
| 22A | 05/12/2005 | 329 | 147 | 56 | | | <1.0 | <1.0 | **2.3** | **2.9** | <0.50 | <0.50 | 0.83 | 155 | 2.6 | 1.3 | 300 | 7.1 | 31.3 |
| 22A | 08/22/2005 | 431 | 249 | 158 | | | <1.0 | <1.0 | **2.3** | **3.2** | <0.50 | <0.50 | 0.70 | 170 | 2.6 | 3.0 | 230 | 6.9 | 26.5 |
| 22A | 11/16/2005 | 517 | 335 | 244 | | | <1.0 | <1.0 | **1.4** | **2.2** | <0.50 | <0.50 | 1.67 | 321 | 2.4 | 1.3 | 1300 | 6.3 | 29.9 |
| 22A | 02/22/2006 | 615 | 433 | 342 | | | <1.0 | <1.0 | **1.4** | **3.3** | <11.4 | <12.3 | 0.69 | 97 | 2.0 | 59.0 | 1940 | 6.8 | 32.0 |
| 22A | 05/17/2006 | 699 | 517 | 426 | | | <1.0 | <1.0 | **2.4** | **1.7** | <11 | <12 | 0.67 | 102 | 2.6 | 32.7 | 3600 | 6.8 | 17.6 |
| 22A | 08/15/2006 | 789 | 607 | 516 | | | <1.0 | <1.0 | **1.8** | **2.4** | <1.1 | <1.2 | 0.65 | 239 | 2.0 | 54.7 | 5700 | 6.7 | 24.0 |
| 22A | 11/30/2006 | 896 | 714 | 623 | | | <0.2 | **0.3** | **2.2** | **2.4** | <1.1 | <1.2 | 2.15 | 286 | 2.6 | 40.0 | 4020 | 6.6 | 25.2 |
| 22A | 02/22/2007 | 980 | 798 | 707 | | | <1.0 | <1.0 | **2.5** | **2.3** | <1.1 | <1.2 | 0.53 | -76 | 5.0 | <0.1 | 3000 | 6.6 | 22.4 |
| 22A | 05/23/2007 | 1070 | 888 | 797 | | | <1.0 | <1.0 | **2.5** | **2.7** | <1.1 | <1.2 | 0.30 | 51 | 3.0 | 27.3 | 3510 | 6.8 | 18.2 |
| 22A | 12/03/2007 | 1264 | 1082 | 991 | | | <1.0 | <1.0 | **2.0** | **1.3** | <1.1 | <1.2 | 0.61 | 41 | 2.6 | 12.3 | 2030 | 6.6 | 16.0 |
| 22A | 05/20/2008 | 1433 | 1251 | 1160 | -97 | | <1.0 | <1.0 | **2.6** | **1.9** | <1.1 | <1.2 | 2.83 | -103 | 4.0 | 20.2 | 1540 | 6.7 | 13.8 |
| 22A | 11/23/2008 | 1620 | 1438 | 1347 | 90 | | <1.0 | <1.0 | **2.2** | **3.1** | <1.1 | <1.2 | 1.13 | -70 | 1.8 | 2.6 | 3100 | 6.8 | 19.2 |
| 22A | 05/19/2009 | 1797 | 1615 | 1524 | 267 | | <1.0 | <1.0 | **2.5** | **2.5** | <1.1 | <1.2 | 0.26 | -43 | 3.2 | 3.4 | 3490 | 7.0 | 21.0 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| | | 1st | 2nd | 3rd (b) | 4th | 5th | PCE | TCE | cDCE | VC | Ethene | Ethane | DO | ORP | Iron II | Sulfate | Methane | pH | TOC |
| Well | Date | Injection | Injection | Injection | Injection | Injection | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (mg/L) | (mV) | mg/L | (mg/L) | (µg/L) | | (mg/L) |
| 22A | 11/18/2009 | 1980 | 1798 | 1707 | 450 | | <1.0 | <1.0 | **2.1** | **1.8** | <1.1 | <1.2 | 0.43 | -3.3 | 3.0 | 2.1 | 2060 | 6.4 | 13.8 |
| 22A | 5/24/2010 | 2167 | 1985 | 1894 | 637 | | <1.0 | <1.0 | **1.7** | **1.7** | <1.1 | <1.2 | 6.58 | 204 | 2.4 | 0.6 | 2370 | 7.0 | 15.1 |
| 22A | 11/11/2010 | 2338 | 2156 | 2065 | 808 | | <1.0 | <1.0 | **1.2** | **2.7** | <1.1 | <1.2 | 3.27 | 113 | 2.2 | 0.5 | 4650 | 7.0 | 21.8 |
| 22A | 5/4/2011 | 2512 | 2330 | 2239 | 982 | | <1.0 | <1.0 | **1.1** | **2.2** | <1.1 | <1.2 | 1.96 | 4 | 2.0 | 0.6 | 6350 | 7.0 | 22.4 |
| 22A | 11/13/2011 | 2705 | 2523 | 2432 | 1175 | | <0.2 | <0.2 | **0.9** | **1.7** | <1.1 | <1.2 | 2.89 | -38 | 1.2 | 0.4 | 2510 | 7.3 | 17.6 |
| 22A | 5/14/2012 | 2888 | 2706 | 2615 | 1358 | | <0.2 | <0.2 | **0.6** | **2.0** | <1.0 | **3.3** | 0.03 | 45 | 2.2 | <0.30 | 5100 | 6.8 | 25.4 |
| 22A | 11/14/2012 | 3072 | 2890 | 2799 | 1542 | | <0.2 | <0.2 | **0.5** | **1.8** | <1.0 | **1.7** | 0.03 | 1 | 1.8 | <0.30 | 4400 | 6.9 | 22.7 |
| 22A | 5/20/2013 | 3259 | 3077 | 2986 | 1729 | | <0.2 | <0.2 | **0.4** | **2.0** | <1.0 | **1.6** | 0.24 | -404 | 1.0 | <0.30 | 6100 | 7.7 | 24.6 |
| 22A | 11/12/2013 | 3435 | 3253 | 3162 | 1905 | | <0.2 | <0.2 | **0.5** | **1.7** | <1.0 | **1.1** | 3.69 | -289 | 1.4 | 1.8 | 3500 | 6.7 | 19.8 |
| 22A | 5/7/2014 | 3611 | 3429 | 3338 | 2081 | | <0.2 | <0.2 | **0.5** | **1.6** | <1.0 | <1.0 | 4.8 | -368 | 1.3 | 0.66 | 4200 | 6.8 | 23.6 |
| 22A | 11/5/2014 | 3793 | 3611 | 3520 | 2263 | | <0.2 | <0.2 | **0.4** | **1.5** | <1.0 | **1.5** | 0.13 | -131 | 1.5 | 0.39 | 4800 | 6.8 | 25.8 |
| 22A | 4/29/2015 | 3968 | 3786 | 3695 | 2438 | | <0.2 | <0.2 | **0.6** | **1.5** | <1.0 | <1.0 | 0.09 | -87 | 1.0 | 2.0 | 4300 | 6.5 | 14.8 |
| 22A | 10/27/2015 | 4149 | 3967 | 3876 | 2619 | -15 | <0.2 | <0.2 | **0.5** | **1.5** | <1.0 | <1.0 | 0.07 | -64 | 2.0 | 2.6 | 3500 | 6.6 | 16.7 |
| 22A | 4/19/2016 | 4324 | 4142 | 4051 | 2794 | 160 | <0.2 | <0.2 | **0.5** | <0.2 | <100 | <100 | 0.14 | -163 | 1.0 | 1.9 | 15000 | 7.0 | 2980 |
| 22A | 11/2/2016 | 4521 | 4339 | 4248 | 2991 | 357 | <0.2 | <0.2 | **0.5** | <0.2 | <100 | <100 | 0.37 | -252.6 | NM | <0.30 | 18000 | 7.34 | 542 |
| 22A | 5/2/2017 | 4702 | 4520 | 4429 | 3172 | 538 | <0.2 | <0.2 | **0.4** | **0.3** | <1.0 | <1.0 | 0.41 | -206.8 | NM | <0.30 | 18000 | 7.24 | 300 |
| 22A | 11/8/2017 | 4892 | 4710 | 4619 | 3362 | 728 | <0.2 | <0.2 | **0.6** | **0.3** | <1.0 | **1.8** | 0.32 | -17.5 | NM | <15.0 | 17000 | 7.10 | 277 |
| 22A | 5/1/2018 | 5066 | 4884 | 4793 | 3536 | 902 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 0.08 | -94.7 | NM | <0.5 | 18800 | 7.12 | 297.2 |
| 22A | 11/5/2018 | 5254 | 5072 | 4981 | 3724 | 1090 | <2.0 | <2.0 | <2.0 | <2.0 | <1.14 | <1.23 | 0.89 | -161.9 | NM | <0.10 | 13100 | 6.98 | 191.6 |
| 22A | 5/1/2019 | 5431 | 5249 | 5158 | 3901 | 1267 | <0.2 | <0.2 | **0.52** | <0.2 | <1.14 | <1.23 | 0.22 | -138.2 | NM | 0.51 | 14400 | 7.01 | 179.4 |
| 22A | 11/4/2019 | 5618 | 5436 | 5345 | 4088 | 1454 | <0.2 | <0.2 | **0.49** | **0.21** | <1.14 | <1.23 | 2.94 | -80.6 | NM | 0.344 | 10000 | 6.92 | 172.8 |
| 22A | 5/4/2020 | 5800 | 5618 | 5527 | 4270 | 1636 | <0.2 | <0.2 | **0.58** | **0.30** | <1.14 | <1.23 | 0.85 | -102.8 | NM | 0.140 | 10800 | 6.87 | 112.5 |
| 22A | 11/5/2020 | 5985 | 5803 | 5712 | 4455 | 1821 | <0.2 | <0.2 | **0.43** | <0.2 | <1.14 | <1.23 | 0.74 | -125.8 | NM | 0.132 | 8030 | 6.73 | 61.55 |
| 22A | 5/4/2021 | 6165 | 5983 | 5892 | 4635 | 2001 | <0.20 | <0.20 | **0.40** | <0.20 | <1.14 | <1.23 | 0.65 | -145.7 | NM | <0.100 | 5230 | 6.73 | 77.03 |
| 22A | 11/3/2021 | 6348 | 6166 | 6075 | 4818 | 2184 | <0.20 | <0.20 | <1.00 | <0.70 | <1.14 | <1.23 | 0.44 | 22.2 | NM | <0.100 | 6600 | 6.73 | 25.3 |

# Table 4
## SWMU-20 Cleanup Action Summary—Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | | | | Aquifer Redox Conditions | | | | | Donor Parameters | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (d) | | | | | | | | | | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 | --- | --- | | | | | | | |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) | Ethene (µg/L) | Ethane (µg/L) | DO (mg/L) | ORP (mV) | Iron II mg/L | Sulfate (mg/L) | Methane (µg/L) | pH | TOC (mg/L) |
| 23A | 03/21/2005 | 277 | 95 | 4 | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.63 | 81 | 2.0 | 0.4 | 410 | 7.0 | 33.0 |
| 23A | 05/12/2005 | 329 | 147 | 56 | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.58 | 158 | 2.0 | <0.1 | 260 | 7.2 | 39.9 |
| 23A | 08/22/2005 | 431 | 249 | 158 | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.75 | 130 | 3.4 | 1.5 | 98 | 7.0 | 21.0 |
| 23A | 11/16/2005 | 517 | 335 | 244 | | | <1.0 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | 0.49 | 291 | 2.6 | 4.1 | 140 | 7.2 | 30.8 |
| 23A | 02/22/2006 | 615 | 433 | 342 | | | <1.0 | <1.0 | <1.0 | <1.0 | <11.4 | <12.3 | 0.60 | 127 | 2.2 | 91.8 | 1520 | 6.4 | 34.5 |
| 23A | 05/17/2006 | 699 | 517 | 426 | | | <1.0 | <1.0 | <1.0 | <1.0 | <11 | <12 | 0.60 | 120 | 3.0 | 38.8 | 1700 | 6.7 | 30.0 |
| 23A | 08/15/2006 | 789 | 607 | 516 | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.77 | 256 | 2.2 | 63.9 | 3080 | 6.7 | 32.6 |
| 23A | 11/30/2006 | 896 | 714 | 623 | | | <0.2 | <0.2 | <0.2 | <0.2 | <1.1 | <1.2 | 1.96 | 287 | 2.5 | 40.7 | 1930 | 6.2 | 45.2 |
| 23A | 02/22/2007 | 980 | 798 | 707 | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.40 | -58 | 2.0 | 2.9 | 1360 | 6.5 | 34.6 |
| 23A | 05/23/2007 | 1070 | 888 | 797 | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.41 | 193 | 3.3 | 52.7 | 1850 | 6.4 | 38.7 |
| 23A | 11/30/2007 | 1261 | 1079 | 988 | | | <0.2 | <0.2 | **0.3** | <0.2 | <1.1 | <1.2 | 0.55 | 159 | 2.2 | 81.1 | 4430 | 6.6 | 38.6 |
| 23A | 05/21/2008 | 1434 | 1252 | 1161 | -96 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 3.12 | -28 | 2.2 | 31.7 | 1570 | 6.1 | 29.6 |
| 23A | 11/25/2008 | 1622 | 1440 | 1349 | 92 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 4.22 | -68 | 1.8 | <0.1 | 3270 | 6.8 | 39.0 |
| 23A | 05/19/2009 | 1797 | 1615 | 1524 | 267 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.31 | -3 | 3.2 | 0.1 | 2370 | 6.5 | 39.1 |
| 23A | 11/18/2009 | 1980 | 1798 | 1707 | 450 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.1 | <1.2 | 0.41 | 1 | 2.4 | 1.6 | 1970 | 6.5 | 30.9 |

**Abbreviations and Acronyms:**

µg/L = micrograms per liter
cDCE = cis-1,2-dichloroethene
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
NA = not analyzed
NM = not measured
ORP = oxidation reduction potential
PCE = tetrachloroethene
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride

**Notes:**

(a) Injections occurred on:
6/17/04 (6A, B, C; 9A, B, C)
12/16-17/04 (6A, 6B;9A,9B)
3/17/05 (14A)
8/25-28/08 (6A, 9A, 10A)
10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A)

(b) Conducted at Well MW-14A only.

(c) MW-06A installed June 2004.

(d) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).

Box = exceedance of proposed cleanup level

**Bold** = detected compund

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-8C | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | <1.0 | **2.8** |
| MW-8C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | <1.0 | **3.5** |
| MW-8C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-8C | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-8C | 5/15/2006 | 697 | 515 | | | | <10 | <10 | <10 | <10 |
| MW-8C | 11/27/2006 | 893 | 711 | | | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-8C | 5/21/2007 | 1068 | 886 | | | | <3.0 | <3.0 | <3.0 | <3.0 |
| MW-8C | 11/29/2007 | 1260 | 1078 | | | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-8C | 5/19/2008 | 1432 | 1250 | | -98 | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-8C | 11/23/2008 | 1620 | 1438 | | 90 | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-8C | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-8C | 11/16/2009 | 1978 | 1796 | | 448 | | <3.0 | <3.0 | <3.0 | <3.0 |
| MW-9D | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 5/11/2005 | 328 | 146 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 5/15/2006 | 697 | 515 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 11/27/2006 | 893 | 711 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 5/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-9D | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-9D | 11/16/2009 | 1978 | 1796 | | 448 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-10C | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | **4.3** | **4.0** |
| MW-10C | 10/19/2004 | 124 | -58 | | | | <1.0 | <1.0 | **6.4** | **11** |
| MW-10C | 5/11/2005 | 328 | 146 | | | | <1.0 | <1.0 | **4.0** | **1.9** |
| MW-10C | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | **1.0** |
| MW-10C | 5/15/2006 | 697 | 515 | | | | <1.0 | <1.0 | **1.5** | **2.2** |
| MW-10C | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **1.9** | **2.6** |
| MW-10C | 5/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | **6.7** | **5.8** |
| MW-10C | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | **7.2** | **5.6** |
| MW-10C | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | **15** | **6.9** |
| MW-10C | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | **8.5** | **7.5** |
| MW-10C | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-10C | 11/16/2009 | 1978 | 1796 | | 448 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-10C | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-10C | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | **3.5** | **4.4** |
| MW-10C | 5/3/2011 | 2511 | 2329 | | 981 | | <1.0 | <1.0 | **5.8** | **4.7** |
| MW-10C | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **3.7** | **4.3** |
| MW-10C | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | **5.4** | **4.0** |
| MW-10C | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | <0.2 | **6.1** | **4.4** |
| MW-10C | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.2 | <0.2 | **6.0** | **4.5** |
| MW-10C | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | **3.5** | **3.7** |
| MW-10C | 5/7/2014 | 3611 | 3429 | | 2081 | | <0.2 | <0.2 | **5.4** | **2.9** |
| MW-10C | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **2.6** | **2.5** |
| MW-10C | 4/28/2015 | 3967 | 3785 | | 2437 | | <0.2 | <0.2 | **2.2** | **1.7** |
| MW-10C | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | <0.2 | <0.2 | **1.0** | **1.1** |
| MW-10C | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | <0.2 | **0.5** | <0.2 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-10C | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | **0.5** | <0.2 |
| MW-10C | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | **0.4** | **0.2** |
| MW-10C | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **0.5** | **0.2** |
| MW-10C | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <0.2 | <0.2 | **0.55** | **0.39** |
| MW-10C | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | **0.39** | **0.22** |
| MW-10C | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | **0.53** | **0.46** |
| MW-10C | 11/7/2019 | 5621 | 5439 | | 4091 | 1457 | <0.2 | <0.2 | **0.50** | **0.68** |
| MW-10C | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.40** | **0.51** |
| MW-10C | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **0.34** | **0.43** |
| MW-10C | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **0.26** | **0.30** |
| MW-10C | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | <0.20 | <0.20 | <0.20 |
| MW-11A | 5/2/2004 | -46 | | | | | <1.0 | **2.1** | **21** | <1.0 |
| MW-11A | 10/25/2004 | 130 | -52 | | | | <1.0 | **2.0** | **20** | <1.0 |
| MW-11A | 5/12/2005 | 329 | 147 | | | | <1.0 | **2.0** | **20** | <1.0 |
| MW-11A | 11/15/2005 | 516 | 334 | | | | <1.0 | **2.0** | **22** | <1.0 |
| MW-11A | 5/16/2006 | 698 | 516 | | | | <1.0 | **1.1** | **20** | <1.0 |
| MW-11A | 11/26/2006 | 892 | 710 | | | | <1.0 | **1.5** | **24** | <1.0 |
| MW-11A | 5/22/2007 | 1069 | 887 | | | | <1.0 | **1.5** | **26** | <1.0 |
| MW-11A | 11/27/2007 | 1258 | 1076 | | | | <1.0 | **1.1** | **27** | <1.0 |
| MW-11A | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | **1.2** | **26** | **0.2** |
| MW-11A | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | **1.2** | **33** | <1.0 |
| MW-11A | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | **26** | <1.0 |
| MW-11A | 11/17/2009 | 1979 | 1797 | | 449 | | <1.0 | **1.0** | **30** | <1.0 |
| MW-11A | 5/19/2010 | 2162 | 1980 | | 632 | | <1.0 | **1.1** | **26** | <1.0 |
| MW-11A | 11/8/2010 | 2335 | 2153 | | 805 | | <1.0 | <1.0 | **22** | <1.0 |
| MW-11A | 5/3/2011 | 2511 | 2329 | | 981 | | <1.0 | <1.0 | **22** | <1.0 |
| MW-11A | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | **0.5** | **23** | **0.4** |
| MW-11A | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | **0.7** | **24** | **0.4** |
| MW-11A | 11/14/2012 | 3072 | 2890 | | 1542 | | <2.0 | <2.0 | **25** | <2.0 |
| MW-11A | 5/21/2013 | 3260 | 3078 | | 1730 | | <2.0 | <2.0 | **22** | <2.0 |
| MW-11A | 11/12/2013 | 3435 | 3253 | | 1905 | | <2.0 | <2.0 | **24** | <2.0 |
| MW-11A | 5/7/2014 | 3611 | 3429 | | 2081 | | <2.0 | <2.0 | **19** | <2.0 |
| MW-11A | 11/4/2014 | 3792 | 3610 | | 2262 | | <0.2 | **0.4** | **24** | **0.4** |
| MW-11A | 4/28/2015 | 3967 | 3785 | | 2437 | | <0.2 | **0.5** | **21** | **0.3** |
| MW-11A | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | **0.2** | **0.2** | **19** | **0.4** |
| MW-11A | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | **0.3** | **20** | **0.4** |
| MW-11A | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | **15** | **0.5** |
| MW-11A | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | **0.4** | **18** | **0.6** |
| MW-11A | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | **0.2** | **21** | **0.5** |
| MW-11A | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | **0.26** | **0.26** | **11.8** | **0.35** |
| MW-11A | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | **13.9** | **0.40** |
| MW-11A | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | **0.21** | **10.8** | **0.29** |
| MW-11A | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | **12.5** | **0.42** |
| MW-11A | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | **0.25** | **0.21** | **10.4** | **0.46** |
| MW-11A | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **10.8** | **0.44** |
| MW-11A | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | **0.30** | **0.25** | **7.67** | **0.24** |
| MW-11A | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | **0.23** | <0.20 | **8.21** | **0.42** |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-12A | 5/2/2004 | -46 | | | | | <1.0 | <1.0 | **1.8** | <1.0 |
| MW-12A | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | **4.4** | <1.0 |
| MW-12A | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | **2.0** | <1.0 |
| MW-12A | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | **3.8** | <1.0 |
| MW-12A | 5/16/2006 | 698 | 516 | | | | <1.0 | <1.0 | **1.5** | <1.0 |
| MW-12A | 11/26/2006 | 892 | 710 | | | | <0.2 | **0.7** | **4.4** | <0.2 |
| MW-12A | 5/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | **2.4** | <1.0 |
| MW-12A | 11/27/2007 | 1258 | 1076 | | | | <1.0 | <1.0 | **3.2** | <1.0 |
| MW-12A | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | **0.6** | **3.2** | <0.2 |
| MW-12A | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | **4.7** | <1.0 |
| MW-12A | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | **1.4** | <1.0 |
| MW-12A | 11/17/2009 | 1979 | 1797 | | 449 | | <1.0 | <1.0 | **4.7** | <1.0 |
| MW-12A | 5/19/2010 | 2162 | 1980 | | 632 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-12A | 11/8/2010 | 2335 | 2153 | | 805 | | <1.0 | <1.0 | **4.3** | <1.0 |
| MW-12A | 5/3/2011 | 2511 | 2329 | | 981 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-12A | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | **0.6** | **3.1** | <0.2 |
| MW-12A | 5/14/2012 | 2888 | 2706 | | 1358 | | **0.2** | <0.2 | <0.2 | <0.2 |
| MW-12A | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | **0.4** | **2.1** | <0.2 |
| MW-12A | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.2 | <0.2 | **0.5** | <0.2 |
| MW-12A | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | **0.5** | **2.2** | <0.2 |
| MW-12A | 5/7/2014 | 3611 | 3429 | | 2081 | | **0.3** | <0.2 | <0.2 | <0.2 |
| MW-12A | 11/4/2014 | 3792 | 3610 | | 2262 | | **0.3** | <0.2 | **0.3** | <0.2 |
| MW-13A | 5/2/2004 | -46 | | | | | **5.1** | **4.6** | <1.0 | <1.0 |
| MW-13A | 10/25/2004 | 130 | -52 | | | | **4.3** | **4.0** | <1.0 | <1.0 |
| MW-13A | 5/12/2005 | 329 | 147 | | | | **6.1** | **4.6** | <1.0 | <1.0 |
| MW-13A | 11/14/2005 | 515 | 333 | | | | **6.0** | **4.5** | <1.0 | <1.0 |
| MW-13A | 5/16/2006 | 698 | 516 | | | | **7.1** | **4.6** | <1.0 | <1.0 |
| MW-13A | 11/27/2006 | 893 | 711 | | | | **8.3** | **6.5** | **0.3** | <0.2 |
| MW-13A | 5/21/2007 | 1068 | 886 | | | | **8.2** | **7.0** | **0.4** | <0.2 |
| MW-13A | 11/28/2007 | 1259 | 1077 | | | | **6.4** | **4.2** | <1.0 | <1.0 |
| MW-13A | 5/19/2008 | 1432 | 1250 | | -98 | | **8.7** | **6.8** | **0.3** | <0.2 |
| MW-13A | 11/23/2008 | 1620 | 1438 | | 90 | | **6.5** | **3.7** | <1.0 | <1.0 |
| MW-13A | 05/18/2009 | 1796 | 1614 | | 266 | | **7.7** | **5.6** | <1.0 | <1.0 |
| MW-13A | 11/17/2009 | 1979 | 1797 | | 449 | | **9.2** | **6.0** | <1.0 | <1.0 |
| MW-13A | 5/20/2010 | 2163 | 1981 | | 633 | | **9.4** | **5.3** | <1.0 | <1.0 |
| MW-13A | 11/10/2010 | 2337 | 2155 | | 807 | | **3.6** | **2.8** | <1.0 | <1.0 |
| MW-13A | 5/4/2011 | 2512 | 2330 | | 982 | | **3.9** | **2.4** | <1.0 | <1.0 |
| MW-13A | 11/3/2011 | 2695 | 2513 | | 1165 | | **1.6** | <1.0 | <1.0 | <1.0 |
| MW-13A | 5/14/2012 | 2888 | 2706 | | 1358 | | **2.3** | **0.8** | <0.2 | <0.2 |
| MW-13A | 11/13/2012 | 3071 | 2889 | | 1541 | | **2.2** | **0.8** | <0.2 | <0.2 |
| MW-13A | 5/21/2013 | 3260 | 3078 | | 3078 | | **4.5** | **2.5** | **0.5** | <0.2 |
| MW-13A | 11/12/2013 | 3435 | 3253 | | 3253 | | **2.2** | **0.6** | <0.2 | <0.2 |
| MW-13A | 5/7/2014 | 3611 | 3429 | | 3429 | | **3.1** | **1.3** | <0.2 | <0.2 |
| MW-13A | 11/4/2014 | 3792 | 3610 | | 3610 | | **2.3** | **0.5** | <0.2 | <0.2 |
| MW-13A | 4/28/2015 | 3967 | 3785 | | 3785 | | **1.8** | **0.4** | <0.2 | <0.2 |
| MW-13A | 10/27/2015 | 4149 | 3967 | | 3967 | -15 | **1.5** | **0.3** | <0.2 | <0.2 |
| MW-13A | 4/19/2016 | 4324 | 4142 | | 4142 | 160 | **1.6** | **0.3** | <0.2 | <0.2 |
| MW-13A | 11/1/2016 | 4520 | 4338 | | 4338 | 356 | **2.3** | **0.7** | <0.2 | <0.2 |
| MW-13A | 5/2/2017 | 4702 | 4520 | | 4520 | 538 | **1.1** | <0.2 | <0.2 | <0.2 |
| MW-13A | 11/8/2017 | 4892 | 4710 | | 4710 | 728 | **1.6** | **0.3** | <0.2 | <0.2 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (c) | | | |
| | | | | | | | **5.3** | **1.4** | **134** | **2.4** |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) |
| MW-13A | 5/1/2018 | 5066 | 4884 | | 4884 | 902 | **1.45** | **0.43** | <0.2 | <0.2 |
| MW-13A | 11/5/2018 | 5254 | 5072 | | 5072 | 1090 | **1.91** | **0.58** | <0.2 | <0.2 |
| MW-13A | 5/1/2019 | 5431 | 5249 | | 5249 | 1267 | **1.03** | **0.22** | <0.2 | <0.2 |
| MW-13A | 11/4/2019 | 5618 | 5436 | | 5436 | 1454 | **1.19** | **0.35** | <0.2 | <0.2 |
| MW-13A | 5/4/2020 | 5800 | 5618 | | 5618 | 1636 | **1.31** | **0.31** | <0.2 | <0.2 |
| MW-13A | 11/5/2020 | 5985 | 5803 | | 5803 | 1821 | **2.10** | **0.76** | <0.2 | <0.2 |
| MW-13A | 5/5/2021 | 6166 | 5984 | | 5984 | 2002 | **2.03** | **0.62** | <0.2 | <0.2 |
| MW-13A | 11/3/2021 | 6348 | 6166 | | 6166 | 2184 | **2.81** | **1.31** | <0.20 | <0.20 |
| MW-13C | 5/2/2004 | -46 | | | | | <1.0 | <1.0 | <1.0 | **2.5** |
| MW-13C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | <1.0 | **3.3** |
| MW-13C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 11/14/2005 | 515 | 333 | | | | <1.0 | <1.0 | <1.0 | **3.8** |
| MW-13C | 5/16/2006 | 698 | 516 | | | | <1.0 | <1.0 | <1.0 | **2.2** |
| MW-13C | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **0.8** | **3.4** |
| MW-13C | 5/21/2007 | 1068 | 886 | | | | <0.2 | <0.2 | **0.8** | **4.4** |
| MW-13C | 11/28/2007 | 1259 | 1077 | | | | <1.0 | <1.0 | <1.0 | **2** |
| MW-13C | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | **0.2** | **0.6** |
| MW-13C | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | <1.0 | **2.2** |
| MW-13C | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 11/17/2009 | 1979 | 1797 | | 449 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 5/4/2011 | 2512 | 2330 | | 982 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 11/3/2011 | 2695 | 2513 | | 1165 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-13C | 11/13/2012 | 3071 | 2889 | | 1541 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-13C | 5/21/2013 | 3260 | 3078 | | 1730 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-13C | 11/12/2013 | 3435 | 3253 | | 1905 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-13C | 5/7/2014 | 3611 | 3429 | | 2081 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-13C | 11/4/2014 | 3792 | 3610 | | 2262 | | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-13C | 4/28/2015 | 3967 | 3785 | | 2437 | | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-13C | 10/27/2015 | 4149 | 3967 | | 2619 | -15 | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-13C | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-13C | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-13C | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-13C | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-13C | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <0.2 | <0.2 | <0.2 | **0.25** |
| MW-13C | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-13C | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | <0.2 | **0.22** |
| MW-13C | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-13C | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-13C | 11/5/2020 | 5985 | 5803 | | 4455 | 1821 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-13C | 5/5/2021 | 6166 | 5984 | | 4636 | 2002 | <0.2 | <0.2 | <0.2 | **0.26** |
| MW-13C | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | <0.20 | <0.20 | **0.24** |
| MW-14C | 5/4/2004 | -44 | | | | | <1.0 | <1.0 | **63** | **44** |
| MW-14C | 10/26/2004 | 131 | -51 | -142 | | | <1.0 | <1.0 | **22** | **75** |
| MW-14C | 5/16/2005 | 333 | 151 | 60 | | | <1.0 | <1.0 | **11** | **6.1** |
| MW-14C | 11/15/2005 | 516 | 334 | 243 | | | <1.0 | <1.0 | <1.0 | **1.8** |
| MW-14C | 5/17/2006 | 699 | 517 | 426 | | | <1.0 | <1.0 | <1.0 | <1.0 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-14C | 11/29/2006 | 895 | 713 | 622 | | | <0.2 | <0.2 | <0.2 | **1.0** |
| MW-14C | 5/23/2007 | 1070 | 888 | 797 | | | <1.0 | <1.0 | <1.0 | **2.5** |
| MW-14C | 12/3/2007 | 1264 | 1082 | 991 | | | <1.0 | <1.0 | **1.1** | **11** |
| MW-14C | 5/20/2008 | 1433 | 1251 | 1160 | -97 | | <1.0 | <1.0 | **1.4** | **22** |
| MW-14C | 11/24/2008 | 1621 | 1439 | 1348 | 91 | | <1.0 | <1.0 | <1.0 | **4.3** |
| MW-14C | 05/20/2009 | 1798 | 1616 | 1525 | 268 | | <1.0 | <1.0 | <1.0 | **1.1** |
| MW-14C | 11/17/2009 | 1979 | 1797 | 1706 | 449 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14C | 5/24/2010 | 2167 | 1985 | 1894 | 637 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14C | 11/10/2010 | 2337 | 2155 | 2064 | 807 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14C | 5/5/2011 | 2513 | 2331 | 2240 | 983 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14C | 11/13/2011 | 2705 | 2523 | 2432 | 1175 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 5/14/2012 | 2888 | 2706 | 2615 | 1358 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 11/14/2012 | 3072 | 2890 | 2799 | 1542 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-14C | 5/21/2013 | 3260 | 3078 | 2987 | 1730 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-14C | 11/12/2013 | 3435 | 3253 | 3162 | 1905 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-14C | 5/7/2014 | 3611 | 3429 | 3338 | 2081 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14C | 11/5/2014 | 3793 | 3611 | 3520 | 2263 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 4/29/2015 | 3968 | 3786 | 3695 | 2438 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 10/27/2015 | 4149 | 3967 | 3876 | 2619 | -15 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 4/19/2016 | 4324 | 4142 | 4051 | 2794 | 160 | <0.2 | <0.2 | <0.2 | **0.3** |
| MW-14C | 11/2/2016 | 4521 | 4339 | 4248 | 2991 | 357 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 5/2/2017 | 4702 | 4520 | 4429 | 3172 | 538 | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-14C | 11/8/2017 | 4892 | 4710 | 4619 | 3362 | 728 | <0.2 | <0.2 | **0.2** | **0.2** |
| MW-14C | 5/1/2018 | 5066 | 4884 | 4793 | 3536 | 902 | <0.2 | <0.2 | **0.22** | <0.2 |
| MW-14C | 11/6/2018 | 5255 | 5073 | 4982 | 3725 | 1091 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 5/1/2019 | 5431 | 5249 | 5158 | 3901 | 1267 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 11/4/2019 | 5618 | 5436 | 5345 | 4088 | 1454 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 5/4/2020 | 5800 | 5618 | 5527 | 4270 | 1636 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 11/4/2020 | 5984 | 5802 | 5711 | 4454 | 1820 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 5/4/2021 | 6165 | 5983 | 5892 | 4635 | 2001 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14C | 11/2/2021 | 6347 | 6165 | 6074 | 4817 | 2183 | <0.20 | <0.20 | <0.20 | **0.22** |
| MW-14E | 5/4/2004 | -44 | | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 10/26/2004 | 131 | -51 | -142 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 5/16/2005 | 333 | 151 | 60 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 11/15/2005 | 516 | 334 | 243 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 5/17/2006 | 699 | 517 | 426 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 11/29/2006 | 895 | 713 | 622 | | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-14E | 5/23/2007 | 1070 | 888 | 797 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 12/3/2007 | 1264 | 1082 | 991 | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 5/20/2008 | 1433 | 1251 | 1160 | -97 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 11/24/2008 | 1621 | 1439 | 1348 | 91 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 05/20/2009 | 1798 | 1616 | 1525 | 268 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-14E | 11/17/2009 | 1979 | 1797 | 1706 | 449 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | **9.1** | **11** |
| MW-15C | 10/26/2004 | 131 | -51 | | | | <1.0 | <1.0 | **11** | **17** |
| MW-15C | 5/16/2005 | 333 | 151 | | | | <1.0 | <1.0 | **13** | **6.4** |
| MW-15C | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 5/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 11/29/2006 | 895 | 713 | | | | <0.2 | <0.2 | <0.2 | <0.2 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3 | TCE (µg/L) 1.4 | cDCE (µg/L) 134 | VC (µg/L) 2.4 |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-15C | 5/23/2007 | 1070 | 888 | | | | <1.0 | <1.0 | <1.0 | **2.2** |
| MW-15C | 12/3/2007 | 1264 | 1082 | | | | <1.0 | <1.0 | <1.0 | **2.5** |
| MW-15C | 5/20/2008 | 1433 | 1251 | | -97 | | <1.0 | <1.0 | **1.8** | **6.6** |
| MW-15C | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | **1.9** | **6.6** |
| MW-15C | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 5/5/2011 | 2513 | 2331 | | 983 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15C | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-15C | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-15C | 11/13/2012 | 3071 | 2889 | | 1541 | | <2.0 | **3.2** | <2.0 | <2.0 |
| MW-15C | 5/21/2013 | 3260 | 3078 | | 1730 | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-15C | 11/12/2013 | 3435 | 3253 | | 1905 | | <2.0 | <2.0 | <2.0 | **2.3** |
| MW-15C | 5/7/2014 | 3611 | 3429 | | 2081 | | <2.0 | <2.0 | <2.0 | **2.9** |
| MW-15C | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **0.5** | **2.5** |
| MW-15C | 4/29/2015 | 3968 | 3786 | | 2438 | | <0.2 | <0.2 | **0.6** | **2.4** |
| MW-15C | 10/27/2015 | 4149 | 3967 | | 2619 | -15 | <0.2 | <0.2 | **0.5** | **2.0** |
| MW-15C | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | **0.6** | **1.2** | **0.5** |
| MW-15C | 11/2/2016 | 4521 | 4339 | | 2991 | 357 | <0.2 | **0.3** | **1.7** | **0.7** |
| MW-15C | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | **1.2** | **0.5** |
| MW-15C | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **1.3** | **0.4** |
| MW-15C | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-15C | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-15C | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | **0.57** | **0.29** |
| MW-15C | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | **0.39** | **0.24** |
| MW-15C | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.58** | **1.16** |
| MW-15C | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **0.36** | **0.39** |
| MW-15C | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **0.56** | **1.15** |
| MW-15C | 11/2/2021 | 6347 | 6165 | | 4817 | 2183 | <0.20 | <0.20 | **0.42** | **0.25** |
| MW-15D | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 10/26/2004 | 131 | -51 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 5/16/2005 | 333 | 151 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 5/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 11/29/2006 | 895 | 713 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 5/23/2007 | 1070 | 888 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 12/3/2007 | 1264 | 1082 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 5/20/2008 | 1433 | 1251 | | -97 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 11/24/2008 | 1621 | 1439 | | 91 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-15D | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-16A | 5/2/2004 | -46 | | | | | **1.2** | **1.2** | **2.3** | <1.0 |
| MW-16A | 10/25/2004 | 130 | -52 | | | | **1.2** | **1.3** | **1.8** | <1.0 |
| MW-16A | 5/12/2005 | 329 | 147 | | | | **1.2** | **1.8** | **2.6** | <1.0 |
| MW-16A | 11/15/2005 | 516 | 334 | | | | **1.3** | **2.2** | **2.1** | <1.0 |
| MW-16A | 5/16/2006 | 698 | 516 | | | | **1.0** | **1.4** | **2.3** | <1.0 |
| MW-16A | 11/26/2006 | 892 | 710 | | | | <0.2 | **0.8** | **4.2** | <0.2 |
| MW-16A | 5/22/2007 | 1069 | 887 | | | | **1.1** | **1.3** | **1.9** | <1.0 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-16A | 11/28/2007 | 1259 | 1077 | | | | **1.7** | **1.2** | **1.2** | <1.0 |
| MW-16A | 5/19/2008 | 1432 | 1250 | | -98 | | **1.2** | **1.3** | **1.2** | <0.2 |
| MW-16A | 11/23/2008 | 1620 | 1438 | | 90 | | **1.5** | **1.4** | **1.0** | <1.0 |
| MW-16A | 05/18/2009 | 1796 | 1614 | | 266 | | **1.6** | **1.6** | <1.0 | <1.0 |
| MW-16A | 11/16/2009 | 1978 | 1796 | | 448 | | **2.2** | **1.5** | <1.0 | <1.0 |
| MW-16A | 5/20/2010 | 2163 | 1981 | | 633 | | **1.4** | **1.4** | <1.0 | <1.0 |
| MW-16A | 11/10/2010 | 2337 | 2155 | | 807 | | **1.3** | **1.1** | <1.0 | <1.0 |
| MW-16A | 5/4/2011 | 2512 | 2330 | | 982 | | **1.6** | **1.4** | <1.0 | <1.0 |
| MW-16A | 11/13/2011 | 2705 | 2523 | | 1175 | | **1.4** | **1.3** | **0.5** | <0.2 |
| MW-16A | 5/14/2012 | 2888 | 2706 | | 1358 | | **1.6** | **1.7** | **0.5** | <0.2 |
| MW-16A | 11/14/2012 | 3072 | 2890 | | 1542 | | **1.1** | **1.5** | **0.6** | <0.2 |
| MW-16A | 5/21/2013 | 3260 | 3078 | | 1730 | | **1.4** | **1.5** | <0.5 | <0.5 |
| MW-16A | 11/12/2013 | 3435 | 3253 | | 1905 | | **2.1** | **1.8** | **0.3** | <0.2 |
| MW-16A | 5/8/2014 | 3612 | 3430 | | 2082 | | **1.4** | **1.6** | **0.4** | <0.2 |
| MW-16A | 11/5/2014 | 3793 | 3611 | | 2263 | | **1.6** | **1.5** | **0.4** | <0.2 |
| MW-16A | 4/28/2015 | 3967 | 3785 | | 2437 | | **1.4** | **1.4** | **0.3** | <0.2 |
| MW-16A | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | **1.5** | **1.5** | **0.3** | <0.2 |
| MW-16A | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | **0.8** | **0.7** | **10** | <0.2 |
| MW-16A | 11/2/2016 | 4521 | 4339 | | 2991 | 357 | **0.6** | **0.3** | **14** | **0.5** |
| MW-16A | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | **0.7** | **0.2** | **5.7** | **3.1** |
| MW-16A | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **0.7** | **0.7** |
| MW-16A | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-16A | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-16A | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | **0.35** | <0.2 |
| MW-16A | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | **0.32** | **0.22** |
| MW-16A | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.27** | <0.2 |
| MW-16A | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **0.32** | <0.2 |
| MW-16A | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | **0.21** | <0.2 | **0.28** | <0.2 |
| MW-16A | 11/2/2021 | 6347 | 6165 | | 4817 | 2183 | <0.20 | <0.20 | **0.41** | **0.28** |
| MW-16C | 5/2/2004 | -46 | | | | | <1.0 | <1.0 | **1.7** | **5.4** |
| MW-16C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | **2.4** | **8.5** |
| MW-16C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | **2.8** | **7.7** |
| MW-16C | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | **4.6** | **12** |
| MW-16C | 5/16/2006 | 698 | 516 | | | | <1.0 | <1.0 | **5.2** | **6.3** |
| MW-16C | 11/26/2006 | 892 | 710 | | | | **1.2** | **2.3** | **2.0** | <0.2 |
| MW-16C | 5/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | **8.8** | **10** |
| MW-16C | 11/28/2007 | 1259 | 1077 | | | | <1.0 | <1.0 | **7** | **8.9** |
| MW-16C | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | **7.8** | **7.9** |
| MW-16C | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | **5.3** | **8.8** |
| MW-16C | 05/18/2009 | 1796 | 1614 | | 266 | | <1.0 | <1.0 | **5.0** | **6.3** |
| MW-16C | 11/16/2009 | 1978 | 1796 | | 448 | | <1.0 | <1.0 | **4.9** | **5.6** |
| MW-16C | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | **3.7** | **3.4** |
| MW-16C | 11/10/2010 | 2337 | 2155 | | 807 | | <1.0 | <1.0 | **3.3** | **2.8** |
| MW-16C | 5/4/2011 | 2512 | 2330 | | 982 | | <1.0 | <1.0 | **3.7** | **3.2** |
| MW-16C | 11/13/2011 | 2705 | 2523 | | 1175 | | <0.2 | <0.2 | **3.3** | **2.5** |
| MW-16C | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | **4.8** | **4.2** |
| MW-16C | 11/14/2012 | 3072 | 2890 | | 1542 | | <0.2 | <0.2 | **4.9** | **3.8** |
| MW-16C | 5/21/2013 | 3260 | 3078 | | 1730 | | <0.5 | <0.5 | **3.9** | **2.8** |
| MW-16C | 11/12/2013 | 3435 | 3253 | | 1905 | | <0.2 | <0.2 | **4.4** | **2.1** |
| MW-16C | 5/8/2014 | 3612 | 3430 | | 2082 | | <0.2 | <0.2 | **3.4** | **1.2** |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| | | Elapsed Time from Injections (a) (days) | | | | | Volatile Organic Compounds | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Proposed Groundwater Cleanup Levels (c) | | | |
| | | | | | | | 5.3 | 1.4 | 134 | 2.4 |
| Well | Date | 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | PCE (µg/L) | TCE (µg/L) | cDCE (µg/L) | VC (µg/L) |
| MW-16C | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **3.4** | **1.3** |
| MW-16C | 4/28/2015 | 3967 | 3785 | | 2437 | | <0.2 | <0.2 | **2.2** | **1.2** |
| MW-16C | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | <0.2 | <0.2 | **2.7** | **1.1** |
| MW-16C | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | <0.2 | **0.9** | **0.3** |
| MW-16C | 11/2/2016 | 4521 | 4339 | | 2991 | 357 | <0.2 | <0.2 | **1.9** | **0.3** |
| MW-16C | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | **0.4** | **0.2** |
| MW-16C | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **0.7** | **0.4** |
| MW-16C | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-16C | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | **0.50** | **0.28** |
| MW-16C | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | **0.41** | **0.33** |
| MW-16C | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | **0.58** | **0.48** |
| MW-16C | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **1.72** | **1.32** |
| MW-16C | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **1.71** | **0.89** |
| MW-16C | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **1.59** | **0.81** |
| MW-16C | 11/2/2021 | 6347 | 6165 | | 4817 | 2183 | <0.20 | <0.20 | **1.63** | **0.58** |
| MW-17A | 5/2/2004 | -46 | | | | | **4.8** | **6.5** | **1.0** | <1.0 |
| MW-17A | 10/25/2004 | 130 | -52 | | | | **5.2** | **4.8** | **1.2** | <1.0 |
| MW-17A | 11/15/2005 | 516 | 334 | | | | **4.0** | **5.4** | **1.1** | <1.0 |
| MW-17A | 5/15/2006 | 697 | 515 | | | | **4.2** | **4.4** | <1.0 | <1.0 |
| MW-17A | 11/27/2006 | 893 | 711 | | | | **2.2** | **6.3** | **1.0** | <0.2 |
| MW-17A | 5/21/2007 | 1068 | 886 | | | | **4.7** | **5.3** | **1.0** | <0.2 |
| MW-17A | 11/29/2007 | 1260 | 1078 | | | | **4.2** | **4.3** | <1.0 | <1.0 |
| MW-17A | 5/19/2008 | 1432 | 1250 | | -98 | | **4.3** | **5.1** | **0.8** | <0.2 |
| MW-17A | 11/23/2008 | 1620 | 1438 | | 90 | | **4.2** | **5.2** | **1.2** | <1.0 |
| MW-17A | 05/19/2009 | 1797 | 1615 | | 267 | | **3.2** | **4.9** | **1.4** | <1.0 |
| MW-17A | 11/12/2009 | 1974 | 1792 | | 444 | | **3.7** | **4.5** | **1.1** | <1.0 |
| MW-17A | 5/20/2010 | 2163 | 1981 | | 633 | | **4.0** | **3.1** | <1.0 | <1.0 |
| MW-17A | 11/8/2010 | 2335 | 2153 | | 805 | | **2.3** | **4.8** | **2.3** | <1.0 |
| MW-17A | 5/3/2011 | 2511 | 2329 | | 981 | | **3.1** | **2.2** | **1.5** | <1.0 |
| MW-17A | 11/3/2011 | 2695 | 2513 | | 1165 | | **2.6** | **2.8** | **1.0** | <1.0 |
| MW-17A | 5/14/2012 | 2888 | 2706 | | 1358 | | **3.1** | **2.0** | **0.5** | <0.2 |
| MW-17A | 11/13/2012 | 3071 | 2889 | | 1541 | | **2.8** | **3.5** | **0.9** | <0.2 |
| MW-17A | 5/20/2013 | 3259 | 3077 | | 1729 | | **3.6** | **2.8** | **0.8** | <0.2 |
| MW-17A | 11/4/2014 | 3792 | 3610 | | 2262 | | **3.9** | **3.4** | **1.0** | <0.2 |
| MW-17A | 5/6/2014 | 3610 | 3428 | | 2080 | | **3.6** | **2.6** | **0.4** | <0.2 |
| MW-17A | 11/4/2014 | 3792 | 3610 | | 2262 | | **2.9** | **3.1** | **0.9** | <0.2 |
| MW-17A | 4/28/2015 | 3967 | 3785 | | 2437 | | **3.4** | **2.3** | **0.4** | <0.2 |
| MW-17A | 10/26/2015 | 4148 | 3966 | | 2618 | -16 | **3.4** | **2.6** | **1.1** | <0.2 |
| MW-17A | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <2.0 | <2.0 | **8** | <2.0 |
| MW-17A | 11/1/2016 | 4520 | 4338 | | 2990 | 356 | <2.0 | **0.4** | **8.2** | **0.8** |
| MW-17A | 5/3/2017 | 4703 | 4521 | | 3173 | 539 | <0.2 | <0.2 | **0.8** | **2.2** |
| MW-17A | 11/7/2017 | 4891 | 4709 | | 3361 | 727 | <0.2 | <0.2 | **1.3** | **5.9** |
| MW-17A | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <2.0 | <2.0 | <2.0 | **2.82** |
| MW-17A | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-17A | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | <0.2 | **0.27** |
| MW-17A | 11/5/2019 | 5619 | 5437 | | 4089 | 1455 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-17A | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-17A | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-17A | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-17A | 11/2/2021 | 6347 | 6165 | | 4817 | 2183 | <0.20 | <0.20 | <0.20 | <0.20 |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L) | 1.4 TCE (µg/L) | 134 cDCE (µg/L) | 2.4 VC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-18A | 5/2/2004 | -46 | -228 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 5/2/2004 | -46 | | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 5/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | <0.2 | <0.2 |
| MW-18C | 5/21/2007 | 1068 | 886 | | | | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-18C | 11/28/2007 | 1259 | 1077 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 5/19/2008 | 1432 | 1250 | | -98 | | <0.2 | <0.2 | <0.2 | **0.2** |
| MW-18C | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-18C | 11/17/2009 | 1979 | 1797 | | 449 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 5/2/2004 | -46 | | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 5/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 11/27/2006 | 893 | 711 | | | | <0.2 | <0.2 | **0.3** | <0.2 |
| MW-19C | 5/22/2007 | 1069 | 887 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 5/20/2008 | 1433 | 1251 | | -97 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-19C | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | <1.0 | <1.0 |
| MW-20C | 5/3/2004 | -45 | | | | | <1.0 | <1.0 | **1.4** | **2.4** |
| MW-20C | 10/25/2004 | 130 | -52 | | | | <1.0 | <1.0 | **1.7** | **4.6** |
| MW-20C | 5/12/2005 | 329 | 147 | | | | <1.0 | <1.0 | **1.7** | **2.3** |
| MW-20C | 11/15/2005 | 516 | 334 | | | | <1.0 | <1.0 | **2.1** | **2.9** |
| MW-20C | 5/17/2006 | 699 | 517 | | | | <1.0 | <1.0 | **1.8** | **1.6** |
| MW-20C | 11/29/2006 | 895 | 713 | | | | <0.2 | **0.2** | **2.1** | **1.5** |
| MW-20C | 5/21/2007 | 1068 | 886 | | | | <0.2 | <0.2 | **1.6** | **1.8** |
| MW-20C | 11/29/2007 | 1260 | 1078 | | | | <1.0 | <1.0 | **1.6** | **1.3** |
| MW-20C | 5/20/2008 | 1433 | 1251 | | -97 | | <1.0 | <1.0 | **1.6** | **2.5** |
| MW-20C | 11/23/2008 | 1620 | 1438 | | 90 | | <1.0 | <1.0 | **1.5** | **2.7** |
| MW-20C | 05/19/2009 | 1797 | 1615 | | 267 | | <1.0 | <1.0 | **1.4** | **2.0** |
| MW-20C | 11/18/2009 | 1980 | 1798 | | 450 | | <1.0 | <1.0 | **1.7** | **2.3** |
| MW-20C | 5/20/2010 | 2163 | 1981 | | 633 | | <1.0 | <1.0 | **1.3** | **1.8** |
| MW-20C | 11/8/2010 | 2335 | 2153 | | 805 | | <1.0 | <1.0 | **1.4** | **1.4** |
| MW-20C | 5/4/2011 | 2512 | 2330 | | 982 | | <1.0 | <1.0 | **1.1** | **1.8** |
| MW-20C | 11/3/2011 | 2695 | 2513 | | 1165 | | <1.0 | <1.0 | **1.3** | **2.1** |
| MW-20C | 5/14/2012 | 2888 | 2706 | | 1358 | | <0.2 | <0.2 | **1.2** | **1.5** |
| MW-20C | 11/13/2012 | 3071 | 2889 | | 1541 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-20C | 5/21/2013 | 3260 | 3078 | | 1730 | | <5.0 | <5.0 | <5.0 | <5.0 |
| MW-20C | 11/12/2013 | 3435 | 3253 | | 1905 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-20C | 5/7/2014 | 3611 | 3429 | | 2081 | | <2.0 | <2.0 | <2.0 | <2.0 |
| MW-20C | 11/5/2014 | 3793 | 3611 | | 2263 | | <0.2 | <0.2 | **0.9** | **0.7** |
| MW-20C | 4/28/2015 | 3967 | 3785 | | 2437 | | <0.2 | <0.2 | **0.7** | **1.0** |

# Table 5
## SWMU-20 Cleanup Action Summary—Non-Source Zone
## Boeing Developmental Center
## Tukwila, Washington

| Well | Date | Elapsed Time from Injections (a) (days) 1st Injection | 2nd Injection | 3rd (b) Injection | 4th Injection | 5th Injection | Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3 | TCE (µg/L) 1.4 | cDCE (µg/L) 134 | VC (µg/L) 2.4 |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-20C | 10/27/2015 | 4149 | 3967 | | 2619 | -15 | <0.2 | <0.2 | **1.0** | **0.9** |
| MW-20C | 4/19/2016 | 4324 | 4142 | | 2794 | 160 | <0.2 | **0.2** | **2.2** | **0.3** |
| MW-20C | 11/2/2016 | 4521 | 4339 | | 2991 | 357 | <0.2 | **0.2** | **0.6** | **0.5** |
| MW-20C | 5/2/2017 | 4702 | 4520 | | 3172 | 538 | <0.2 | <0.2 | **1.5** | **0.4** |
| MW-20C | 11/8/2017 | 4892 | 4710 | | 3362 | 728 | <0.2 | <0.2 | **1.5** | **0.5** |
| MW-20C | 5/1/2018 | 5066 | 4884 | | 3536 | 902 | <0.2 | <0.2 | **1.09** | <0.2 |
| MW-20C | 11/5/2018 | 5254 | 5072 | | 3724 | 1090 | <0.2 | <0.2 | **1.02** | **0.25** |
| MW-20C | 5/1/2019 | 5431 | 5249 | | 3901 | 1267 | <0.2 | <0.2 | **1.14** | **0.28** |
| MW-20C | 11/4/2019 | 5618 | 5436 | | 4088 | 1454 | <0.2 | <0.2 | **1.15** | **0.42** |
| MW-20C | 5/4/2020 | 5800 | 5618 | | 4270 | 1636 | <0.2 | <0.2 | **0.90** | **0.29** |
| MW-20C | 11/4/2020 | 5984 | 5802 | | 4454 | 1820 | <0.2 | <0.2 | **0.66** | **0.21** |
| MW-20C | 5/4/2021 | 6165 | 5983 | | 4635 | 2001 | <0.2 | <0.2 | **0.85** | **0.27** |
| MW-20C | 11/3/2021 | 6348 | 6166 | | 4818 | 2184 | <0.20 | <0.20 | **0.62** | **0.24** |

**Abbreviations and Acronyms:**

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
µg/L = micrograms per liter

Box = Exceedance of proposed cleanup level
**Bold** = detected compund

**Notes:**

(a) Injections occurred on:
6/17/04 (6A, B, C; 9A, B, C)
12/16-17/04 (6A, 6B;9A,9B)
3/17/05 (14A)
8/25-28/08 (6A, 9A, 10A)
10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A)

(b) Conducted at Well MW-14A only.

(c) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).

# Table 6
## Performance Monitoring Matrix
## Boeing Developmental Center
## Tukwila, Washington

| Well ID | Frequency | Month(s) | VOCs (8260C) [Non-preserved] | Short-List VOCs - PCE, TCE, cDCE, VC (8260C) [Non-preserved] | Methane, Ethane, Ethene (RSKSOP-175, modified) | AMEE (RSKSOP-175, modified) | TOC (SM5310C) | BTEX (8260C) | TPH-G (NWTPH-G) | Sulfate (EPA 300.0) | Nitrate, Nitrite (EPA 300.0) | Nitrate (EPA 300.0) | Total and Dissolved Arsenic/Copper (200.8 ICP-MS) | Ferrous Iron (Field measurement) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AOC-5** | | | | | | | | | | | | | | | |
| BDC-101 | Semiannual | May/Nov | | | | | | X | X | X | X | | | | |
| BDC-102 | Semiannual | May/Nov | | | | | | X | X | X | X | | | | |
| BDC-103 | Semiannual | May/Nov | | | | | | X | X | X | X | | | | |
| BDC-104 | Semiannual | May/Nov | | | | | | X | X | X | X | | | | |
| MW-17A | Semiannual | May/Nov | X | | | | | | | X | | X | | X | Nitrate contingency monitoring location; VOCs reported for SWMU-20 |
| MW-18A | Semiannual | May/Nov | | | | | | | | X | | X | | X | Nitrate contingency monitoring location |
| MW-21A | Semiannual | May/Nov | | | | | | | | X | | X | | X | Nitrate contingency monitoring location |
| **SWMU-17** | | | | | | | | | | | | | | | |
| BDC-05-02 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-03 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-04 | Semiannual | May/Nov | | X | | X | X | | | X | X | | X | X | Nitrate contingency monitoring location |
| BDC-05-05 | Semiannual | May/Nov | | X | | | X | | | X | | | X | X | |
| BDC-05-07 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-08 | Semiannual | May/Nov | | X | | | X | | | X | | | X | X | |
| BDC-05-09 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-10 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-11 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-12 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-13 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-14 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-15 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-16 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-17 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-18 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-19 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-20 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-21 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |
| BDC-05-22 | Semiannual | May/Nov | | X | | | X | | | X | | | X | X | |
| BDC-05-23 | Semiannual | May/Nov | | X | | | X | | | X | | | X | X | |
| BDC-05-24 | Semiannual | May/Nov | | X | | X | X | | | X | | | X | X | |

# Table 6
## Performance Monitoring Matrix
## Boeing Developmental Center
## Tukwila, Washington

| Well ID | Frequency | Month(s) | VOCs (8260C) [Non-preserved] | Short-List VOCs - PCE, TCE, cDCE, VC (8260C) [Non-preserved] | Methane, Ethane, Ethene (RSKSOP-175, modified) | AMEE (RSKSOP-175, modified) | TOC (SM5310C) | BTEX (8260C) | TPH-G (NWTPH-G) | Sulfate (EPA 300.0) | Nitrate, Nitrite (EPA 300.0) | Nitrate (EPA 300.0) | Total and Dissolved Arsenic/Copper (200.8 ICP-MS) | Ferrous Iron (Field measurement) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SWMU-20** | | | | | | | | | | | | | | | |
| MW-6A | Semiannual | May/Nov | X | | X | | X | | | X | | | | | MNA monitoring location |
| MW-6B | Semiannual | May/Nov | X | | X | | X | | | X | | | | | MNA monitoring location |
| MW-9A | Semiannual | May/Nov | X | | X | | X | | | X | | | | | MNA monitoring location |
| MW-10C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-11A | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-13A | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-13C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-14C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-15C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-16A | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-16C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-20C | Semiannual | May/Nov | X | | | | | | | | | | | | |
| MW-22A | Semiannual | May/Nov | X | | X | | X | | | X | | | | | MNA monitoring location |

**Notes:**

Analytical method designated in parentheses following each anaylte name (e.g. "8260C").
Laboratory services changed to Analytical Resources, Inc. per client (January 2018).
Nitrate contingency monitoring locations are only sampled for nitrate if upgradient action levels are exceeded.
Matrix updated May 2020:
MW-17A sampled as part of AOC-05, but VOCs at this well are reported for SWMU-20.
Samples at MW-17A for VOC analysis collected in non-preserved containers.
Unused columns removed.

**Abbreviations and Acronyms:**

AMEE = acetylene, methane, ethane, and ethene
AOC = area of concern
BTEX = benzene, toluene, ethylbenzene, and xylenes
cDCE = *cis* -1,2-dichloroethene
MNA = monitored natural attenuation
PCE = tetrachloroethene
SWMU = solid waste management unit
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride
VOCs = volatile organic compounds

APPENDIX A

# Laboratory Reports

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

25 May 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21E0055 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

21E0055

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ Seattle/Edmonds (425) 778-0907 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ _____

Date 5/4/21
Page 1 of 1

Turnaround Time: Standard X
Accelerated _____

Project Name DR Regional GW
Project No. 0025217.099.039
Project Location/Event AOC-5 / May 2021
Sampler's Name Jered Newcomb / Armando Huerta
Project Contact Chris Kimmel / Jennifer Parsons
Send Results To Chris Kimmel / Jennifer Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D)* | BTEX (8260C) | TPH-G (NWTPH-Gx) | Sulfate (E300.0) | Nitrate & Nitrite (300.0)** | Nitrate (300.0)** | Effluvescent | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip Blanks1-210504 | 5/4/21 | — | AQ | 6 | X | X | X | | | | | |
| BDC-104-210504 | 5/4/21 | 846 | AQ | 6 | | X | X | X | X | | | |
| BDC-103-210504 | | 847 | AQ | 6 | | X | X | X | X | | | |
| BDC-DUP2-210504 | | 800 | AQ | 6 | | X | X | X | X | | | |
| BDC-102-210504 | | 931 | AQ | 6 | | X | X | X | X | | | |
| BDC-101-210504 | | 942 | AQ | 6 | | X | X | X | X | | | |
| MW-21A-210504 | | 1016 | AQ | 1 | | | | X | | X | | |
| MW-17A-210504 | | 1037 | AQ | 4 | X | | | X | | X | X | |
| MW-18A-210504 | | 1056 | AQ | 1 | | | | X | | X | | |

☐ Allow water samples to settle, collect aliquot from clear portion
☐ NWTPH-Dx - Acid wash cleanup
☐ - Silica gel cleanup
☐ Dissolved metal samples were field filtered

Other *Boeing 69 List
** 48 hour hold for Nitrate.
▲ Non-preserved

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jered Newcomb | Printed Name Jacob Lathe | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 5/4/21 Time 16:05 | Date 05/04/2021 Time 1605 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TripBlanks1-210504 | 21E0055-01 | Water | 04-May-2021 08:00 | 04-May-2021 16:05 |
| BDC-104-210504 | 21E0055-02 | Water | 04-May-2021 08:46 | 04-May-2021 16:05 |
| BDC-103-210504 | 21E0055-03 | Water | 04-May-2021 08:47 | 04-May-2021 16:05 |
| BDC-DUP2-210504 | 21E0055-04 | Water | 04-May-2021 08:00 | 04-May-2021 16:05 |
| BDC-102-210504 | 21E0055-05 | Water | 04-May-2021 09:31 | 04-May-2021 16:05 |
| BDC-101-210504 | 21E0055-06 | Water | 04-May-2021 09:42 | 04-May-2021 16:05 |
| MW-21A-210504 | 21E0055-07 | Water | 04-May-2021 10:16 | 04-May-2021 16:05 |
| MW-17A-210504 | 21E0055-08 | Water | 04-May-2021 10:37 | 04-May-2021 16:05 |
| MW-18A-210504 | 21E0055-09 | Water | 04-May-2021 10:56 | 04-May-2021 16:05 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

# Work Order Case Narrative

**Gasoline by NWTPH-g (GC/MS)**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times with the exception of nitrate and nitrite which were originally set up within the holding time but due an instrument halt error the samples required a re-analysis.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

**WORK ORDER**

21E0055

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH |
|---|---|---|
| 21E0055-01 A | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-01 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-01 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-01 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-01 E | VOA Vial, Clear, 40 mL | Bubble |
| 21E0055-01 F | VOA Vial, Clear, 40 mL | |
| 21E0055-02 A | Small OJ, 500 mL | |
| 21E0055-02 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-02 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-02 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-02 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-02 F | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-03 A | Small OJ, 500 mL | |
| 21E0055-03 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-03 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-03 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-03 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-03 F | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-04 A | Small OJ, 500 mL | |
| 21E0055-04 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-04 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-04 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-04 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-04 F | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-05 A | Small OJ, 500 mL | |
| 21E0055-05 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-05 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-05 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-05 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-05 F | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-06 A | Small OJ, 500 mL | |
| 21E0055-06 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-06 C | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-06 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0055-06 E | VOA Vial, Clear, 40 mL, HCL | |

Reviewed By Date

**WORK ORDER**

21E0055

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

| | |
|---|---|
| 21E0055-06 F | VOA Vial, Clear, 40 mL, HCL |
| 21E0055-07 A | Small OJ, 500 mL |
| 21E0055-08 A | Small OJ, 500 mL |
| 21E0055-08 B | VOA Vial, Clear, 40 mL |
| 21E0055-08 C | VOA Vial, Clear, 40 mL |
| 21E0055-08 D | VOA Vial, Clear, 40 mL |
| 21E0055-09 A | Small OJ, 500 mL |

Bubble

Preservation Confirmed By

05/05/2021
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

DC Regional Gw

ARI Client: Landau/Boeing  Project Name: AOC-5

COC No(s): _____ (NA)  Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21E0055  Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1605  3.3  4.8  ____  ____  ____  ____

If cooler temperature is out of compliance fill out form 00070F  Temp Gun ID#: DOO 206

Cooler Accepted by: JSm  Date: 05/04/2021  Time: 1605

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? | (Bubble Wrap) (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | (YES) | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | | (YES) | NO |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | (NA) | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 04/29/2021 | |

Were the sample(s) split by ARI? (NA) YES  Date/Time: _____  Equipment: _____  Split by: _____

Samples Logged by: JSm  Date: 05/05/2021  Time: 1400  Labels checked by: JSm

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

vials w/ air bubbles marked on pres sheet, lab to determine sizes.

By: JSm  Date: 05/05/2021

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**TripBlanks1-210504**

**21E0055-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:00

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 18:20

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-01 F

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**TripBlanks1-210504**

**21E0055-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:00

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 18:20

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *102* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.3* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## TripBlanks1-210504

**21E0055-01 (Water)**

### Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 08:00
Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 12:25

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-01 B
Preparation Batch: BJE0208 — Sample Size: 10 mL
Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *93.6* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-104-210504**

**21E0055-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 16:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-02 C

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.0* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-104-210504**

**21E0055-02 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 16:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-02 C

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.0* | *%* | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-104-210504**

**21E0055-02 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:46

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 20:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-02 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | 6.24 | mg/L | H |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-104-210504**

**21E0055-02RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:46

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 08:48

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-02RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 17.4 | mg/L | D |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-103-210504**

**21E0055-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-03 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.4* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-103-210504**

**21E0055-03 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 08:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-03 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *93.7* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-103-210504**

**21E0055-03 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:47

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 20:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-03 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-103-210504**

**21E0055-03RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:47

Instrument: IC930 Analyst: CDE — Analyzed: 05/07/2021 16:38

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-03RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 24 | 2.40 | 2.40 | 62.3 | mg/L | H, D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-103-210504**

**21E0055-03RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:47

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 09:08

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-03RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 20 | 2.00 | 2.00 | 99.4 | mg/L | D |



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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-DUP2-210504**

**21E0055-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:00

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:30

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-04 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *91.2* | *%* | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-DUP2-210504**

**21E0055-04 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 08:00

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:30

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-04 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.7* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-DUP2-210504**

**21E0055-04 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:00

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 21:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-04 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-DUP2-210504**

**21E0055-04RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:00

Instrument: IC930 Analyst: CDE — Analyzed: 05/07/2021 16:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-04RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 24 | 2.40 | 2.40 | 62.5 | mg/L | H, D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-DUP2-210504**

**21E0055-04RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:00

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 09:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-04RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 20 | 2.00 | 2.00 | 100 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-102-210504**

**21E0055-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 09:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:52

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-05 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *91.8* | *%* | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-102-210504**

**21E0055-05 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 09:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 17:52

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-05 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *91.8* | *%* | |



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**BDC-102-210504**

**21E0055-05 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 09:31

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 21:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-05 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 5 | 0.500 | 0.500 | 16.5 | mg/L | H, D |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 5 | 0.500 | 0.500 | ND | mg/L | H, U |



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**BDC-102-210504**

**21E0055-05RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 09:31

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 09:47

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-05RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 44.4 | mg/L | D |



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**BDC-101-210504**

**21E0055-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 09:42

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 18:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-06 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.7* | *%* | |



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**BDC-101-210504**

**21E0055-06 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/04/2021 09:42

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 18:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-06 B

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.7* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-101-210504**

**21E0055-06 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 09:42

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 21:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-06 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-101-210504**

**21E0055-06RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 09:42

Instrument: IC930 Analyst: CDE — Analyzed: 05/07/2021 17:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-06RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 11 | 1.10 | 1.10 | 15.3 | mg/L | H, D |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**BDC-101-210504**

**21E0055-06RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 09:42

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 10:07

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-06RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 47.7 | mg/L | D |



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**MW-21A-210504**

**21E0055-07 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:16

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 22:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-07 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

| | | |
|---|---|---|
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**MW-21A-210504**

**21E0055-07RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:16

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 11:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-07RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 6.46 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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**MW-17A-210504**

**21E0055-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 10:37

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:37

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0055-08 D

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 7.04 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | 0.21 | ug/L | |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |



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**MW-17A-210504**

**21E0055-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 10:37

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:37

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *100* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *102* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**MW-17A-210504**

**21E0055-08 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:37

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 23:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-08 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 5 | 0.500 | 0.500 | ND | mg/L | H, U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**MW-17A-210504**

**21E0055-08RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:37

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 11:47

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-08RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | ND | mg/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**MW-18A-210504**

**21E0055-09 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:56

Instrument: IC930 Analyst: CDE — Analyzed: 05/06/2021 23:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-09 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

**MW-18A-210504**

**21E0055-09RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 10:56

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 12:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0055-09RE2 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | 14.4 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.97 | | ug/L | *5.00* | | *99.5* | *80-129* | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | |
| *Surrogate: Toluene-d8* | 4.92 | | ug/L | *5.00* | | *98.3* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.73 | | ug/L | *5.00* | | *94.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| Chloromethane | 8.00 | 0.50 | ug/L | 10.0 | | 80.0 | 60-138 | | | |
| Vinyl Chloride | 8.19 | 0.20 | ug/L | 10.0 | | 81.9 | 66-133 | | | |
| Bromomethane | 8.60 | 1.00 | ug/L | 10.0 | | 86.0 | 72-131 | | | |
| Chloroethane | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 60-155 | | | |
| Trichlorofluoromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 62-141 | | | |
| Acrolein | 42.1 | 5.00 | ug/L | 50.0 | | 84.3 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 76-129 | | | |
| Acetone | 37.9 | 5.00 | ug/L | 50.0 | | 75.8 | 58-142 | | | |
| 1,1-Dichloroethene | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 69-135 | | | |
| Iodomethane | 8.21 | 1.00 | ug/L | 10.0 | | 82.1 | 56-147 | | | |
| Methylene Chloride | 8.10 | 1.00 | ug/L | 10.0 | | 81.0 | 65-135 | | | |
| Acrylonitrile | 6.74 | 1.00 | ug/L | 10.0 | | 67.4 | 64-134 | | | |
| Carbon Disulfide | 8.42 | 0.20 | ug/L | 10.0 | | 84.2 | 78-125 | | | |
| trans-1,2-Dichloroethene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 78-128 | | | |
| Vinyl Acetate | 9.09 | 0.20 | ug/L | 10.0 | | 90.9 | 55-138 | | | |
| 1,1-Dichloroethane | 8.38 | 0.20 | ug/L | 10.0 | | 83.8 | 76-124 | | | |
| 2-Butanone | 38.7 | 5.00 | ug/L | 50.0 | | 77.5 | 61-140 | | | |
| 2,2-Dichloropropane | 8.85 | 0.20 | ug/L | 10.0 | | 88.5 | 66-147 | | | |
| cis-1,2-Dichloroethene | 8.67 | 0.20 | ug/L | 10.0 | | 86.7 | 80-121 | | | |
| Chloroform | 8.31 | 0.20 | ug/L | 10.0 | | 83.1 | 80-122 | | | |
| Bromochloromethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 8.35 | 0.20 | ug/L | 10.0 | | 83.5 | 79-123 | | | |
| 1,1-Dichloropropene | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 80-127 | | | |
| Carbon tetrachloride | 8.49 | 0.20 | ug/L | 10.0 | | 84.9 | 53-137 | | | |
| 1,2-Dichloroethane | 8.34 | 0.20 | ug/L | 10.0 | | 83.4 | 75-123 | | | |
| Benzene | 8.83 | 0.20 | ug/L | 10.0 | | 88.3 | 80-120 | | | |
| Trichloroethene | 8.74 | 0.20 | ug/L | 10.0 | | 87.4 | 80-120 | | | |
| 1,2-Dichloropropane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 80-120 | | | |
| Bromodichloromethane | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 80-121 | | | |
| Dibromomethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-120 | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 4-Methyl-2-Pentanone | 43.6 | 5.00 | ug/L | 50.0 | | 87.2 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.15 | 0.20 | ug/L | 10.0 | | 91.5 | 80-124 | | | |
| Toluene | 8.65 | 0.20 | ug/L | 10.0 | | 86.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.12 | 0.20 | ug/L | 10.0 | | 91.2 | 71-127 | | | |
| 2-Hexanone | 41.8 | 5.00 | ug/L | 50.0 | | 83.6 | 69-133 | | | |
| 1,1,2-Trichloroethane | 8.29 | 0.20 | ug/L | 10.0 | | 82.9 | 80-121 | | | |
| 1,3-Dichloropropane | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| Tetrachloroethene | 8.87 | 0.20 | ug/L | 10.0 | | 88.7 | 80-120 | | | |
| Dibromochloromethane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 65-135 | | | |
| 1,2-Dibromoethane | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-121 | | | |
| Chlorobenzene | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-120 | | | |
| Ethylbenzene | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 8.69 | 0.20 | ug/L | 10.0 | | 86.9 | 80-120 | | | |
| m,p-Xylene | 18.6 | 0.40 | ug/L | 20.0 | | 93.2 | 80-121 | | | |
| o-Xylene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-121 | | | |
| Styrene | 9.56 | 0.20 | ug/L | 10.0 | | 95.6 | 80-124 | | | |
| Bromoform | 8.68 | 0.20 | ug/L | 10.0 | | 86.8 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.26 | 0.20 | ug/L | 10.0 | | 82.6 | 77-123 | | | |
| 1,2,3-Trichloropropane | 8.21 | 0.50 | ug/L | 10.0 | | 82.1 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 7.98 | 1.00 | ug/L | 10.0 | | 79.8 | 55-129 | | | |
| n-Propylbenzene | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 78-130 | | | |
| Bromobenzene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 80-120 | | | |
| Isopropyl Benzene | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 80-128 | | | |
| 2-Chlorotoluene | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 78-122 | | | |
| 4-Chlorotoluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-121 | | | |
| t-Butylbenzene | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 9.65 | 0.20 | ug/L | 10.0 | | 96.5 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-127 | | | |
| s-Butylbenzene | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 78-129 | | | |
| 4-Isopropyl Toluene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 79-130 | | | |
| 1,3-Dichlorobenzene | 8.97 | 0.20 | ug/L | 10.0 | | 89.7 | 80-120 | | | |
| 1,4-Dichlorobenzene | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| n-Butylbenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 74-129 | | | |
| 1,2-Dichlorobenzene | 8.73 | 0.20 | ug/L | 10.0 | | 87.3 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.15 | 0.50 | ug/L | 10.0 | | 81.5 | 62-123 | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 1,2,4-Trichlorobenzene | 9.74 | 0.50 | ug/L | 10.0 | | 97.4 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 58-123 | | | |
| Naphthalene | 8.14 | 0.50 | ug/L | 10.0 | | 81.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 9.54 | 0.50 | ug/L | 10.0 | | 95.4 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.75 | | ug/L | *5.00* | | *95.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Chloromethane | 9.14 | 0.50 | ug/L | 10.0 | | 91.4 | 60-138 | 13.40 | 30 | |
| Vinyl Chloride | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 66-133 | 18.20 | 30 | |
| Bromomethane | 10.2 | 1.00 | ug/L | 10.0 | | 102 | 72-131 | 17.20 | 30 | |
| Chloroethane | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 60-155 | 17.20 | 30 | |
| Trichlorofluoromethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 62-141 | 9.00 | 30 | |
| Acrolein | 49.2 | 5.00 | ug/L | 50.0 | | 98.5 | 52-190 | 15.50 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 76-129 | 15.90 | 30 | |
| Acetone | 46.0 | 5.00 | ug/L | 50.0 | | 91.9 | 58-142 | 19.30 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 17.00 | 30 | |
| Iodomethane | 9.50 | 1.00 | ug/L | 10.0 | | 95.0 | 56-147 | 14.60 | 30 | |
| Methylene Chloride | 9.57 | 1.00 | ug/L | 10.0 | | 95.7 | 65-135 | 16.70 | 30 | |
| Acrylonitrile | 9.09 | 1.00 | ug/L | 10.0 | | 90.9 | 64-134 | 29.70 | 30 | |
| Carbon Disulfide | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 78-125 | 16.70 | 30 | |
| trans-1,2-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-128 | 16.20 | 30 | |
| Vinyl Acetate | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 55-138 | 19.30 | 30 | |
| 1,1-Dichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 76-124 | 17.50 | 30 | |
| 2-Butanone | 48.7 | 5.00 | ug/L | 50.0 | | 97.5 | 61-140 | 22.90 | 30 | |
| 2,2-Dichloropropane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 66-147 | 17.40 | 30 | |
| cis-1,2-Dichloroethene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | 18.70 | 30 | |
| Chloroform | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 80-122 | 17.00 | 30 | |
| Bromochloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 16.40 | 30 | |
| 1,1,1-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 79-123 | 19.20 | 30 | |
| 1,1-Dichloropropene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-127 | 17.80 | 30 | |
| Carbon tetrachloride | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 53-137 | 16.20 | 30 | |
| 1,2-Dichloroethane | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 75-123 | 17.10 | 30 | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Benzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 17.60 | 30 | |
| Trichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| 1,2-Dichloropropane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 16.40 | 30 | |
| Bromodichloromethane | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 80-121 | 15.50 | 30 | |
| Dibromomethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 16.50 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 20.30 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 17.20 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 16.60 | 30 | |
| trans-1,3-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 71-127 | 13.50 | 30 | |
| 2-Hexanone | 52.3 | 5.00 | ug/L | 50.0 | | 105 | 69-133 | 22.30 | 30 | |
| 1,1,2-Trichloroethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 18.60 | 30 | |
| 1,3-Dichloropropane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 13.60 | 30 | |
| Dibromochloromethane | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 65-135 | 15.20 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 19.70 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 15.30 | 30 | |
| Ethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 13.40 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.90 | 30 | |
| m,p-Xylene | 21.8 | 0.40 | ug/L | 20.0 | | 109 | 80-121 | 15.70 | 30 | |
| o-Xylene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-121 | 14.90 | 30 | |
| Styrene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-124 | 14.50 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 19.30 | 30 | |
| 1,1,2,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 77-123 | 21.00 | 30 | |
| 1,2,3-Trichloropropane | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 76-125 | 20.50 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.0 | 1.00 | ug/L | 10.0 | | 100 | 55-129 | 22.50 | 30 | |
| n-Propylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-130 | 15.40 | 30 | |
| Bromobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 18.40 | 30 | |
| Isopropyl Benzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-128 | 16.00 | 30 | |
| 2-Chlorotoluene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-122 | 15.90 | 30 | |
| 4-Chlorotoluene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 15.90 | 30 | |
| t-Butylbenzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 78-125 | 16.30 | 30 | |
| 1,3,5-Trimethylbenzene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 80-129 | 16.30 | 30 | |
| 1,2,4-Trimethylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 80-127 | 16.50 | 30 | |
| s-Butylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 78-129 | 16.60 | 30 | |
| 4-Isopropyl Toluene | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 79-130 | 16.40 | 30 | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| 1,3-Dichlorobenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 15.70 | 30 | |
| 1,4-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.70 | 30 | |
| n-Butylbenzene | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 74-129 | 16.20 | 30 | |
| 1,2-Dichlorobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.30 | 30 | |
| 1,2-Dibromo-3-chloropropane | 9.99 | 0.50 | ug/L | 10.0 | | 99.9 | 62-123 | 20.30 | 30 | |
| 1,2,4-Trichlorobenzene | 11.3 | 0.50 | ug/L | 10.0 | | 113 | 64-124 | 15.20 | 30 | |
| Hexachloro-1,3-Butadiene | 11.5 | 0.50 | ug/L | 10.0 | | 115 | 58-123 | 12.60 | 30 | |
| Naphthalene | 9.85 | 0.50 | ug/L | 10.0 | | 98.5 | 50-134 | 19.00 | 30 | |
| 1,2,3-Trichlorobenzene | 11.4 | 0.50 | ug/L | 10.0 | | 114 | 49-133 | 18.00 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.89 | | ug/L | *5.00* | | *97.8* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.92 | | ug/L | *5.00* | | *98.4* | *80-120* | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.06 | | ug/L | *5.00* | | *101* | *80-129* | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | |
| *Surrogate: Toluene-d8* | 4.89 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.69 | | ug/L | *5.00* | | *93.8* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.16 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| Chloromethane | 8.36 | 0.50 | ug/L | 10.0 | | 83.6 | 60-138 | | | |
| Vinyl Chloride | 8.84 | 0.20 | ug/L | 10.0 | | 88.4 | 66-133 | | | |
| Bromomethane | 8.89 | 1.00 | ug/L | 10.0 | | 88.9 | 72-131 | | | |
| Chloroethane | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 60-155 | | | |
| Trichlorofluoromethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 62-141 | | | |
| Acrolein | 43.3 | 5.00 | ug/L | 50.0 | | 86.6 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 76-129 | | | |
| Acetone | 40.8 | 5.00 | ug/L | 50.0 | | 81.7 | 58-142 | | | |
| 1,1-Dichloroethene | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 69-135 | | | |
| Iodomethane | 8.93 | 1.00 | ug/L | 10.0 | | 89.3 | 56-147 | | | |
| Methylene Chloride | 8.57 | 1.00 | ug/L | 10.0 | | 85.7 | 65-135 | | | |
| Acrylonitrile | 7.82 | 1.00 | ug/L | 10.0 | | 78.2 | 64-134 | | | Q |
| Carbon Disulfide | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 78-125 | | | |
| trans-1,2-Dichloroethene | 9.18 | 0.20 | ug/L | 10.0 | | 91.8 | 78-128 | | | |
| Vinyl Acetate | 9.40 | 0.20 | ug/L | 10.0 | | 94.0 | 55-138 | | | |
| 1,1-Dichloroethane | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 76-124 | | | |
| 2-Butanone | 42.4 | 5.00 | ug/L | 50.0 | | 84.8 | 61-140 | | | |
| 2,2-Dichloropropane | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 66-147 | | | |
| cis-1,2-Dichloroethene | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 80-121 | | | |
| Chloroform | 9.01 | 0.20 | ug/L | 10.0 | | 90.1 | 80-122 | | | |
| Bromochloromethane | 9.41 | 0.20 | ug/L | 10.0 | | 94.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 9.30 | 0.20 | ug/L | 10.0 | | 93.0 | 79-123 | | | |
| 1,1-Dichloropropene | 9.71 | 0.20 | ug/L | 10.0 | | 97.1 | 80-127 | | | |
| Carbon tetrachloride | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 53-137 | | | |
| 1,2-Dichloroethane | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 75-123 | | | |
| Benzene | 9.58 | 0.20 | ug/L | 10.0 | | 95.8 | 80-120 | | | |
| Trichloroethene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-120 | | | |
| 1,2-Dichloropropane | 9.21 | 0.20 | ug/L | 10.0 | | 92.1 | 80-120 | | | |
| Bromodichloromethane | 9.10 | 0.20 | ug/L | 10.0 | | 91.0 | 80-121 | | | |
| Dibromomethane | 9.35 | 0.20 | ug/L | 10.0 | | 93.5 | 80-120 | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 4-Methyl-2-Pentanone | 47.5 | 5.00 | ug/L | 50.0 | | 95.0 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 80-124 | | | |
| Toluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 71-127 | | | |
| 2-Hexanone | 44.5 | 5.00 | ug/L | 50.0 | | 89.0 | 69-133 | | | |
| 1,1,2-Trichloroethane | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 80-121 | | | |
| 1,3-Dichloropropane | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| Tetrachloroethene | 9.47 | 0.20 | ug/L | 10.0 | | 94.7 | 80-120 | | | |
| Dibromochloromethane | 9.23 | 0.20 | ug/L | 10.0 | | 92.3 | 65-135 | | | |
| 1,2-Dibromoethane | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 80-121 | | | |
| Chlorobenzene | 9.33 | 0.20 | ug/L | 10.0 | | 93.3 | 80-120 | | | |
| Ethylbenzene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9.42 | 0.20 | ug/L | 10.0 | | 94.2 | 80-120 | | | |
| m,p-Xylene | 19.8 | 0.40 | ug/L | 20.0 | | 99.0 | 80-121 | | | |
| o-Xylene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | | | |
| Styrene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-124 | | | |
| Bromoform | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.94 | 0.20 | ug/L | 10.0 | | 89.4 | 77-123 | | | |
| 1,2,3-Trichloropropane | 9.05 | 0.50 | ug/L | 10.0 | | 90.5 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 9.15 | 1.00 | ug/L | 10.0 | | 91.5 | 55-129 | | | |
| n-Propylbenzene | 9.84 | 0.20 | ug/L | 10.0 | | 98.4 | 78-130 | | | |
| Bromobenzene | 9.20 | 0.20 | ug/L | 10.0 | | 92.0 | 80-120 | | | |
| Isopropyl Benzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-128 | | | |
| 2-Chlorotoluene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 78-122 | | | |
| 4-Chlorotoluene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-121 | | | |
| t-Butylbenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-127 | | | |
| s-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-129 | | | |
| 4-Isopropyl Toluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 79-130 | | | |
| 1,3-Dichlorobenzene | 9.50 | 0.20 | ug/L | 10.0 | | 95.0 | 80-120 | | | |
| 1,4-Dichlorobenzene | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| n-Butylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 74-129 | | | |
| 1,2-Dichlorobenzene | 9.27 | 0.20 | ug/L | 10.0 | | 92.7 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.85 | 0.50 | ug/L | 10.0 | | 88.5 | 62-123 | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 1,2,4-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 9.93 | 0.50 | ug/L | 10.0 | | 99.3 | 58-123 | | | |
| Naphthalene | 8.74 | 0.50 | ug/L | 10.0 | | 87.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Chloromethane | 9.31 | 0.50 | ug/L | 10.0 | | 93.1 | 60-138 | 10.80 | 30 | |
| Vinyl Chloride | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 66-133 | 11.90 | 30 | |
| Bromomethane | 9.99 | 1.00 | ug/L | 10.0 | | 99.9 | 72-131 | 11.70 | 30 | |
| Chloroethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 60-155 | 5.94 | 30 | |
| Trichlorofluoromethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 62-141 | 6.70 | 30 | |
| Acrolein | 48.7 | 5.00 | ug/L | 50.0 | | 97.4 | 52-190 | 11.80 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 76-129 | 9.42 | 30 | |
| Acetone | 46.9 | 5.00 | ug/L | 50.0 | | 93.9 | 58-142 | 13.90 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 10.20 | 30 | |
| Iodomethane | 9.80 | 1.00 | ug/L | 10.0 | | 98.0 | 56-147 | 9.29 | 30 | |
| Methylene Chloride | 9.41 | 1.00 | ug/L | 10.0 | | 94.1 | 65-135 | 9.33 | 30 | |
| Acrylonitrile | 8.91 | 1.00 | ug/L | 10.0 | | 89.1 | 64-134 | 13.10 | 30 | Q |
| Carbon Disulfide | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-125 | 9.93 | 30 | |
| trans-1,2-Dichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 78-128 | 8.29 | 30 | |
| Vinyl Acetate | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 55-138 | 10.80 | 30 | |
| 1,1-Dichloroethane | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 76-124 | 7.82 | 30 | |
| 2-Butanone | 49.3 | 5.00 | ug/L | 50.0 | | 98.6 | 61-140 | 15.00 | 30 | |
| 2,2-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 66-147 | 6.18 | 30 | |
| cis-1,2-Dichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | 11.10 | 30 | |
| Chloroform | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 80-122 | 9.29 | 30 | |
| Bromochloromethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 6.85 | 30 | |
| 1,1,1-Trichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 79-123 | 7.08 | 30 | |
| 1,1-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-127 | 7.29 | 30 | |
| Carbon tetrachloride | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 53-137 | 7.44 | 30 | |
| 1,2-Dichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 75-123 | 9.52 | 30 | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Benzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 6.92 | 30 | |
| Trichloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.02 | 30 | |
| 1,2-Dichloropropane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-120 | 8.16 | 30 | |
| Bromodichloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 9.48 | 30 | |
| Dibromomethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.62 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 11.90 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 8.58 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.27 | 30 | |
| trans-1,3-Dichloropropene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 71-127 | 7.33 | 30 | |
| 2-Hexanone | 54.2 | 5.00 | ug/L | 50.0 | | 108 | 69-133 | 19.60 | 30 | |
| 1,1,2-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 10.50 | 30 | |
| 1,3-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.97 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.11 | 30 | |
| Dibromochloromethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 65-135 | 10.30 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 10.30 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 9.05 | 30 | |
| Ethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 9.00 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.55 | 30 | |
| m,p-Xylene | 21.5 | 0.40 | ug/L | 20.0 | | 108 | 80-121 | 8.46 | 30 | |
| o-Xylene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 10.10 | 30 | |
| Styrene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-124 | 5.07 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 10.20 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 77-123 | 10.90 | 30 | |
| 1,2,3-Trichloropropane | 9.96 | 0.50 | ug/L | 10.0 | | 99.6 | 76-125 | 9.61 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.3 | 1.00 | ug/L | 10.0 | | 103 | 55-129 | 12.20 | 30 | |
| n-Propylbenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-130 | 8.05 | 30 | |
| Bromobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 8.52 | 30 | |
| Isopropyl Benzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-128 | 8.79 | 30 | |
| 2-Chlorotoluene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 78-122 | 8.45 | 30 | |
| 4-Chlorotoluene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-121 | 9.07 | 30 | |
| t-Butylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-125 | 7.93 | 30 | |
| 1,3,5-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-129 | 8.21 | 30 | |
| 1,2,4-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-127 | 6.97 | 30 | |
| s-Butylbenzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 78-129 | 7.55 | 30 | |
| 4-Isopropyl Toluene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 79-130 | 7.82 | 30 | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| 1,3-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 6.54 | 30 | |
| 1,4-Dichlorobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 7.74 | 30 | |
| n-Butylbenzene | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 74-129 | 8.58 | 30 | |
| 1,2-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 9.02 | 30 | |
| 1,2-Dibromo-3-chloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 62-123 | 14.40 | 30 | |
| 1,2,4-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 64-124 | 8.66 | 30 | |
| Hexachloro-1,3-Butadiene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 58-123 | 9.19 | 30 | |
| Naphthalene | 9.64 | 0.50 | ug/L | 10.0 | | 96.4 | 50-134 | 9.74 | 30 | |
| 1,2,3-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 49-133 | 8.52 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.99 | | ug/L | *5.00* | | *99.7* | *80-120* | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0208 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0208-BLK1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 11:21 | | | | | | |
| Gasoline Range Organics (Tol-Nap) | ND | 100 | ug/L | | | | | | | U |
| *Surrogate: Toluene-d8* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.66 | | ug/L | *5.00* | | *93.3* | *80-120* | | | |
| **Blank (BJE0208-BLK2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 11:21 | | | | | | |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Xylenes, total | ND | 0.60 | ug/L | | | | | | | U |
| *Surrogate: Toluene-d8* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.59 | | ug/L | *5.00* | | *91.8* | *80-120* | | | |
| **LCS (BJE0208-BS1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 09:33 | | | | | | |
| Gasoline Range Organics (Tol-Nap) | 967 | 100 | ug/L | 1000 | | 96.7 | 72-128 | | | |
| *Surrogate: Toluene-d8* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.99 | | ug/L | *5.00* | | *99.8* | *80-120* | | | |
| **LCS (BJE0208-BS2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 09:54 | | | | | | |
| Benzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | | | |
| Toluene | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-120 | | | |
| Ethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | | | |
| m,p-Xylene | 21.3 | 0.40 | ug/L | 20.0 | | 107 | 80-121 | | | |
| o-Xylene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-121 | | | |
| Xylenes, total | 32.2 | 0.60 | ug/L | 30.0 | | 107 | 76-127 | | | |
| *Surrogate: Toluene-d8* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS Dup (BJE0208-BSD1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:16 | | | | | | |
| Gasoline Range Organics (Tol-Nap) | 1050 | 100 | ug/L | 1000 | | 105 | 72-128 | 7.96 | 30 | |
| *Surrogate: Toluene-d8* | 5.00 | | ug/L | *5.00* | | *99.9* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.94 | | ug/L | *5.00* | | *98.8* | *80-120* | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0208 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0208-BSD2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:37 | | | | | | |
| Benzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-120 | 4.13 | 30 | |
| Toluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | 4.21 | 30 | |
| Ethylbenzene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | 2.73 | 30 | |
| m,p-Xylene | 21.9 | 0.40 | ug/L | 20.0 | | 110 | 80-121 | 2.82 | 30 | |
| o-Xylene | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 80-121 | 4.00 | 30 | |
| Xylenes, total | 33.2 | 0.60 | ug/L | 30.0 | | 111 | 76-127 | 3.22 | 30 | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Wet Chemistry - Quality Control

### Batch BJE0113 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0113-BLK1)** | | | | Prepared: 05-May-2021 Analyzed: 07-May-2021 20:56 | | | | | | | |
| Nitrate-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| Nitrite-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **Blank (BJE0113-BLK2)** | | | | Prepared: 05-May-2021 Analyzed: 12-May-2021 23:31 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJE0113-BS1)** | | | | Prepared: 05-May-2021 Analyzed: 07-May-2021 21:16 | | | | | | | |
| Nitrate-N | 4.67 | 0.100 | 0.100 | mg/L | 5.00 | | 93.4 | 90-110 | | | |
| Nitrite-N | 5.15 | 0.100 | 0.100 | mg/L | 5.00 | | 103 | 90-110 | | | |
| **LCS (BJE0113-BS2)** | | | | Prepared: 05-May-2021 Analyzed: 12-May-2021 23:51 | | | | | | | |
| Sulfate | 4.61 | 0.100 | 0.100 | mg/L | 5.00 | | 92.2 | 90-110 | | | |



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 300.0 in Water*** | |
| Nitrate-N | DoD-ELAP,WADOE,NELAP |
| Nitrate-N | DoD-ELAP,WA-DW,NELAP |
| Nitrite-N | DoD-ELAP,WADOE,NELAP |
| Nitrite-N | DoD-ELAP,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WADOE,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloromethane | DoD-ELAP,ADEC,NELAP |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP |
| Bromomethane | DoD-ELAP,ADEC,NELAP |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

| | |
|---|---|
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

| | |
|---|---|
| Toluene | DoD-ELAP,ADEC,NELAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP |
| o-Xylene | DoD-ELAP,ADEC,NELAP |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP |
| n-Propylbenzene | DoD-ELAP,NELAP |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

| | |
|---|---|
| Isopropyl Benzene | DoD-ELAP,NELAP |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP |
| n-Hexane | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

| | |
|---|---|
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |
| 2-Pentanone | |

***NWTPHg in Water***

| | |
|---|---|
| Gasoline Range Organics (Tol-Nap) | DoD-ELAP |
| Gasoline Range Organics (Tol-Nap) | WADOE,DoD-ELAP |
| Gasoline Range Organics (2MP-TMB) | WADOE,DoD-ELAP |
| Gasoline Range Organics (2MP-TMB) | DoD-ELAP |
| Gasoline Range Organics (Tol-C12) | WADOE,DoD-ELAP |
| Gasoline Range Organics (Tol-C12) | DoD-ELAP |
| Gasoline Range Organics (C6-C10) | WADOE,ADEC,DoD-ELAP |
| Gasoline Range Organics (C6-C10) | ADEC,DoD-ELAP |
| Gasoline Range Organics (C5-C12) | WADOE,DoD-ELAP |
| Gasoline Range Organics (C5-C12) | DoD-ELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 25-May-2021 18:01 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| H | Hold time violation - Hold time was exceeded. |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

07 December 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21K0037 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

211-0037

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11-02-2021
Page 1 of 1

Turnaround Time:
Standard X
Accelerated _____

Project Name DC Regional GW
Project No. 002521.7.099.039
Project Location/Event AOC-5 / November 2021
Sampler's Name Armando Huerta-Avila
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____
Shipment Method: Dropoff
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D)* | BETX (8260D) | TPH-Dx (NWTPH-Dx) | Sulfate (E300.0) | Nitrate/Nitrite (300.0) | Nitrate (300.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| BDC-DUP2-211102 | 11/1/21 | 830 | AQ | 6 | | X | X | X | X | |
| BDC-103-211102 | 11/2/21 | 833 | AQ | 6 | | X | X | X | X | |
| BDC-104-211102 | 11/2/21 | 930 | AQ | 6 | | X | X | X | X | |
| BDC-102-211102 | 11/2/21 | 1000 | AQ | 6 | | X | X | X | X | |
| BDC-101-211102 | 11/2/21 | 1040 | AQ | 6 | | X | X | X | X | |
| MW-21A-211102 | 11/2/21 | 1114 | AQ | 1 | | | | X | | X |
| MW-18A-211102 | 11/2/21 | 1145 | AQ | 1 | | | | X | | X |
| MW-17A-211102 | 11/2/21 | 1243 | AQ | 4 | X | | | X | | X |
| Trip Blanks | — | — | AQ | 6 | X | X | X | | | |

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other * Non-preserved

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Raven Barbera | Printed Name | Printed Name |
| Company LAI | Company AR1 | Company | Company |
| Date 11-2-2021 Time 1540 | Date 11/2/21 Time 1540 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| BDC-DUP2-211102 | 21K0037-01 | Water | 02-Nov-2021 08:30 | 02-Nov-2021 15:40 |
| BDC-103-211102 | 21K0037-02 | Water | 02-Nov-2021 08:33 | 02-Nov-2021 15:40 |
| BDC-104-210504 | 21K0037-03 | Water | 02-Nov-2021 09:20 | 02-Nov-2021 15:40 |
| BDC-102-211102 | 21K0037-04 | Water | 02-Nov-2021 10:00 | 02-Nov-2021 15:40 |
| BDC-101-211102 | 21K0037-05 | Water | 02-Nov-2021 10:40 | 02-Nov-2021 15:40 |
| MW-21A-211102 | 21K0037-06 | Water | 02-Nov-2021 11:19 | 02-Nov-2021 15:40 |
| MW-18A-211102 | 21K0037-07 | Water | 02-Nov-2021 11:45 | 02-Nov-2021 15:40 |
| MW-17A-211102 | 21K0037-08 | Water | 02-Nov-2021 12:45 | 02-Nov-2021 15:40 |
| Trip Blanks | 21K0037-09 | Water | 02-Nov-2021 08:30 | 02-Nov-2021 15:40 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

# Work Order Case Narrative

**Gasoline by NWTPH-g (GC/MS)**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times with the exception of samples 21K0037-07 and 21K0037-08 which were originally analyzed in hold and re-analyzed out of hold due to high bracketing CCVs for sulfate. The sulfate results have been flagged with an "H" qualifer.

Initial and continuing calibrations were within method requirements with the exception of CCVs 1 and 2 which bracket samples 21K0037-07 and 21K0037-08 and are out of control high for sulfate. The samples were re-analyzed outside of the holding time and both runs have been reported.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: Landau  Project Name: DC Regional GW

COC No(s): _____ NA  Delivered by: Fed-Ex UPS Courier ~~Hand Delivered~~ Other: _____

Assigned ARI Job No: 21K0037  Tracking No: _____ NA

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | NO |
| Were custody papers included with the cooler? | YES | NO |
| Were custody papers properly filled out (ink, signed, etc.) | YES | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1540  1.1

If cooler temperature is out of compliance fill out form 00070F  Temp Gun ID#: DOO 2565

Cooler Accepted by: RD  Date: 11/2/21  Time: 1540

*Complete custody forms and attach all shipping documents*

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | NO |
| What kind of packing material was used? | Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | YES | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | Not |
| Did all bottles arrive in good condition (unbroken)? | | YES | NO |
| Were all bottle labels complete and legible? | | YES | NO |
| Did the number of containers listed on COC match with the number of containers received? | | YES | NO |
| Did all bottle labels and tags agree with custody papers? | | YES | NO |
| Were all bottles used correct for the requested analyses? | | YES | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | NA | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | NO |
| Was sufficient amount of sample sent in each bottle? | | YES | NO |
| Date VOC Trip Blank was made at ARI | NA | _____ | |

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: DL  Date: 11/02/21  Time: 1623  Labels checked by: _____

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

*Additional Notes, Discrepancies, & Resolutions:*

By: Date:

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-DUP2-211102**

**21K0037-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 08:30

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 14:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-01 E

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | 1.11 | ug/L | |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | 34.8 | ug/L | |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | 11.0 | ug/L | |
| o-Xylene | 95-47-6 | 1 | 0.20 | 0.84 | ug/L | |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | 11.9 | ug/L | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *101* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-DUP2-211102**

**21K0037-01 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 08:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 22:13

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-01 B

Preparation Batch: BJK0102 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | 580 | ug/L | |
| HC ID: GAS | | | | | | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.4* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *101* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-DUP2-211102**

**21K0037-01 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 08:30

Instrument: IC930 Analyst: CDE — Analyzed: 11/02/2021 22:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-01 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-DUP2-211102**

**21K0037-01RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 08:30

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 05:19

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-01RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 20 | 2.00 | 2.00 | 119 | mg/L | D |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-103-211102**

**21K0037-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 08:33

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 15:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-02 D

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | 1.07 | ug/L | |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | 33.5 | ug/L | |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | 10.7 | ug/L | |
| o-Xylene | 95-47-6 | 1 | 0.20 | 0.80 | ug/L | |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | 11.5 | ug/L | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *96.2* | *%* | |

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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-103-211102**

**21K0037-02 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 08:33

Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 22:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-02 B

Preparation Batch: BJK0102 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | 570 | ug/L | |
| HC ID: GAS | | | | | | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *100* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-103-211102**

**21K0037-02 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 08:33

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 00:01

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-02 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-103-211102**

**21K0037-02RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 08:33

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 05:39

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-02RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 20 | 2.00 | 2.00 | 118 | mg/L | D |

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|---|---|---|
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-104-210504**

**21K0037-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 09:20

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 15:21

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-03 B

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.4* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-104-210504**

**21K0037-03 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 09:20

Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 23:04

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-03 D

Preparation Batch: BJK0102 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *98.2* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-104-210504**

**21K0037-03 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 09:20

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 00:21

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-03 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-104-210504**

**21K0037-03RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 09:20

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 05:55

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-03RE3 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.134 | mg/L | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-102-211102**

**21K0037-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 10:00

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 15:42

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-04 B

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *93.0* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-102-211102**

**21K0037-04 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 10:00

Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 23:29

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-04 F

Preparation Batch: BJK0102 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *100* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-102-211102**

**21K0037-04 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 10:00

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 00:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-04 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-102-211102**

**21K0037-04RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 10:00

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 06:18

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-04RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 12.4 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-101-211102**

**21K0037-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 10:40

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 16:04

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-05 B

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | 1 | 0.20 | 0.35 | ug/L | |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Xylenes, total | 1330-20-7 | 1 | 0.60 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.6* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-101-211102**

**21K0037-05 (Water)**

## Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 10:40

Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 23:54

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-05 E

Preparation Batch: BJK0102 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.0* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.9* | *%* | |

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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-101-211102**

**21K0037-05 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 10:40

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 01:01

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-05 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | 3.31 | mg/L | |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**BDC-101-211102**

**21K0037-05RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 10:40

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 06:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-05RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 19.2 | mg/L | D |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-21A-211102**

**21K0037-06 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 11:19

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 01:21

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-06 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-21A-211102**

**21K0037-06RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 11:19

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 06:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-06RE2 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 2 | 0.200 | 0.200 | 8.94 | mg/L | D |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-18A-211102**

**21K0037-07 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 11:45

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 01:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-07 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-18A-211102**

**21K0037-07RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 11:45

Instrument: IC930 Analyst: BF — Analyzed: 11/19/2021 10:53

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-07RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 2.67 | mg/L | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-18A-211102**

**21K0037-07RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 11:45

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 06:55

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-07RE3 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 3.25 | mg/L | H |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 12:45

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 18:19

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-08 B

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 6.27 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 12:45

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 18:19

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *86.8* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *94.2* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 12:45

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 18:19

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *91.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *101* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 12:45

Instrument: IC930 Analyst: CDE — Analyzed: 11/03/2021 02:01

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-08 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 12:45

Instrument: IC930 Analyst: BF — Analyzed: 11/19/2021 11:13

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-08RE1 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.313 | mg/L | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**MW-17A-211102**

**21K0037-08RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/02/2021 12:45

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 07:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0037-08RE3 A

Preparation Batch: BJK0067 — Sample Size: 10 mL

Prepared: 11/02/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.443 | mg/L | H |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## Trip Blanks

**21K0037-09 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 08:30

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 10:21

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-09 A

Preparation Batch: BJK0075 — Sample Size: 10 mL

Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## Trip Blanks

**21K0037-09 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 08:30

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 10:21

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *93.3* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.6* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## Trip Blanks

**21K0037-09 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 08:30

Instrument: NT2 Analyst: LH — Analyzed: 11/03/2021 10:21

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *94.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *103* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## Trip Blanks

**21K0037-09 (Water)**

### Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/02/2021 08:30
Instrument: NT3 Analyst: PKC — Analyzed: 11/03/2021 19:17

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0037-09 B
Preparation Batch: BJK0102 — Sample Size: 10 mL
Prepared: 11/03/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Gasoline Range Organics (Tol-Nap) | GRO | 1 | 100 | ND | ug/L | U |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.9* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0075-BLK1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 09:37 | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0075-BLK1)** | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 09:37 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Xylenes, total | ND | 0.60 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 2.00 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0075-BLK1)** | | | | Prepared: 03-Nov-2021 | | Analyzed: 03-Nov-2021 09:37 | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.76 | | ug/L | *5.00* | | *95.1* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.91 | | ug/L | *5.00* | | *98.2* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.62 | | ug/L | *5.00* | | *92.4* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.30 | | ug/L | *5.00* | | *106* | *80-120* | | | |
| **LCS (BJK0075-BS1)** | | | | Prepared: 03-Nov-2021 | | Analyzed: 03-Nov-2021 08:14 | | | | |
| Chloromethane | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 60-138 | | | |
| Vinyl Chloride | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 66-133 | | | |
| Bromomethane | 9.82 | 1.00 | ug/L | 10.0 | | 98.2 | 72-131 | | | |
| Chloroethane | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 60-155 | | | |
| Trichlorofluoromethane | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 62-141 | | | |
| Acrolein | 49.5 | 5.00 | ug/L | 50.0 | | 99.0 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 76-129 | | | |
| Acetone | 57.4 | 5.00 | ug/L | 50.0 | | 115 | 58-142 | | | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | | | |
| Iodomethane | 10.1 | 1.00 | ug/L | 10.0 | | 101 | 56-147 | | | |
| Methylene Chloride | 9.54 | 1.00 | ug/L | 10.0 | | 95.4 | 65-135 | | | |
| Acrylonitrile | 9.67 | 1.00 | ug/L | 10.0 | | 96.7 | 64-134 | | | |
| Carbon Disulfide | 9.56 | 0.20 | ug/L | 10.0 | | 95.6 | 78-125 | | | |
| trans-1,2-Dichloroethene | 9.40 | 0.20 | ug/L | 10.0 | | 94.0 | 78-128 | | | |
| Vinyl Acetate | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 55-138 | | | |
| 1,1-Dichloroethane | 9.94 | 0.20 | ug/L | 10.0 | | 99.4 | 76-124 | | | |
| 2-Butanone | 57.6 | 5.00 | ug/L | 50.0 | | 115 | 61-140 | | | |
| 2,2-Dichloropropane | 9.34 | 0.20 | ug/L | 10.0 | | 93.4 | 66-147 | | | |
| cis-1,2-Dichloroethene | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 80-121 | | | |
| Chloroform | 9.68 | 0.20 | ug/L | 10.0 | | 96.8 | 80-122 | | | |
| Bromochloromethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |
| 1,1,1-Trichloroethane | 9.91 | 0.20 | ug/L | 10.0 | | 99.1 | 79-123 | | | |
| 1,1-Dichloropropene | 9.64 | 0.20 | ug/L | 10.0 | | 96.4 | 80-127 | | | |
| Carbon tetrachloride | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 53-137 | | | |
| 1,2-Dichloroethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 75-123 | | | |
| Benzene | 9.91 | 0.20 | ug/L | 10.0 | | 99.1 | 80-120 | | | |
| Trichloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | | | |
| 1,2-Dichloropropane | 9.67 | 0.20 | ug/L | 10.0 | | 96.7 | 80-120 | | | |
| Bromodichloromethane | 9.65 | 0.20 | ug/L | 10.0 | | 96.5 | 80-121 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0075-BS1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 08:14 | | | | | | |
| Dibromomethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| 4-Methyl-2-Pentanone | 51.6 | 5.00 | ug/L | 50.0 | | 103 | 67-133 | | | |
| cis-1,3-Dichloropropene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-124 | | | |
| Toluene | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 71-127 | | | |
| 2-Hexanone | 54.4 | 5.00 | ug/L | 50.0 | | 109 | 69-133 | | | |
| 1,1,2-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |
| 1,3-Dichloropropane | 9.58 | 0.20 | ug/L | 10.0 | | 95.8 | 80-120 | | | |
| Tetrachloroethene | 9.63 | 0.20 | ug/L | 10.0 | | 96.3 | 80-120 | | | |
| Dibromochloromethane | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 65-135 | | | |
| 1,2-Dibromoethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | | | |
| Chlorobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | | | |
| Ethylbenzene | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9.76 | 0.20 | ug/L | 10.0 | | 97.6 | 80-120 | | | |
| m,p-Xylene | 19.7 | 0.40 | ug/L | 20.0 | | 98.6 | 80-121 | | | |
| o-Xylene | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-121 | | | |
| Xylenes, total | 29.6 | 0.60 | ug/L | 30.0 | | 98.8 | 76-127 | | | |
| Styrene | 9.47 | 0.20 | ug/L | 10.0 | | 94.7 | 80-124 | | | |
| Bromoform | 9.30 | 0.20 | ug/L | 10.0 | | 93.0 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 9.34 | 0.20 | ug/L | 10.0 | | 93.4 | 77-123 | | | |
| 1,2,3-Trichloropropane | 9.96 | 0.50 | ug/L | 10.0 | | 99.6 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 8.75 | 1.00 | ug/L | 10.0 | | 87.5 | 55-129 | | | |
| n-Propylbenzene | 9.74 | 0.20 | ug/L | 10.0 | | 97.4 | 78-130 | | | |
| Bromobenzene | 9.71 | 0.20 | ug/L | 10.0 | | 97.1 | 80-120 | | | |
| Isopropyl Benzene | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-128 | | | |
| 2-Chlorotoluene | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 78-122 | | | |
| 4-Chlorotoluene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | | | |
| t-Butylbenzene | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 9.69 | 0.20 | ug/L | 10.0 | | 96.9 | 80-127 | | | |
| s-Butylbenzene | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 78-129 | | | |
| 4-Isopropyl Toluene | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 79-130 | | | |
| 1,3-Dichlorobenzene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-120 | | | |
| 1,4-Dichlorobenzene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 80-120 | | | |
| n-Butylbenzene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 74-129 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0075-BS1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 08:14 | | | | | | |
| 1,2-Dichlorobenzene | 9.91 | 0.20 | ug/L | 10.0 | | 99.1 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.57 | 0.50 | ug/L | 10.0 | | 85.7 | 62-123 | | | |
| 1,2,4-Trichlorobenzene | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 8.45 | 2.00 | ug/L | 10.0 | | 84.5 | 58-123 | | | |
| Naphthalene | 8.97 | 0.50 | ug/L | 10.0 | | 89.7 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.7 | 0.50 | ug/L | 10.0 | | 107 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.74 | | ug/L | *5.00* | | *94.8* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.92 | | ug/L | *5.00* | | *98.4* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.08 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| **LCS Dup (BJK0075-BSD1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 08:55 | | | | | | |
| Chloromethane | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 60-138 | 0.72 | 30 | |
| Vinyl Chloride | 9.80 | 0.20 | ug/L | 10.0 | | 98.0 | 66-133 | 2.54 | 30 | |
| Bromomethane | 9.87 | 1.00 | ug/L | 10.0 | | 98.7 | 72-131 | 0.60 | 30 | |
| Chloroethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 60-155 | 2.18 | 30 | |
| Trichlorofluoromethane | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 62-141 | 6.03 | 30 | |
| Acrolein | 52.2 | 5.00 | ug/L | 50.0 | | 104 | 52-190 | 5.20 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.63 | 0.20 | ug/L | 10.0 | | 96.3 | 76-129 | 3.71 | 30 | |
| Acetone | 60.7 | 5.00 | ug/L | 50.0 | | 121 | 58-142 | 5.52 | 30 | |
| 1,1-Dichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 69-135 | 0.82 | 30 | |
| Iodomethane | 9.96 | 1.00 | ug/L | 10.0 | | 99.6 | 56-147 | 1.14 | 30 | |
| Methylene Chloride | 9.26 | 1.00 | ug/L | 10.0 | | 92.6 | 65-135 | 2.99 | 30 | |
| Acrylonitrile | 9.66 | 1.00 | ug/L | 10.0 | | 96.6 | 64-134 | 0.12 | 30 | |
| Carbon Disulfide | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 78-125 | 0.08 | 30 | |
| trans-1,2-Dichloroethene | 9.13 | 0.20 | ug/L | 10.0 | | 91.3 | 78-128 | 2.86 | 30 | |
| Vinyl Acetate | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 55-138 | 4.18 | 30 | |
| 1,1-Dichloroethane | 9.78 | 0.20 | ug/L | 10.0 | | 97.8 | 76-124 | 1.55 | 30 | |
| 2-Butanone | 58.8 | 5.00 | ug/L | 50.0 | | 118 | 61-140 | 2.01 | 30 | |
| 2,2-Dichloropropane | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 66-147 | 3.28 | 30 | |
| cis-1,2-Dichloroethene | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 80-121 | 0.21 | 30 | |
| Chloroform | 9.62 | 0.20 | ug/L | 10.0 | | 96.2 | 80-122 | 0.61 | 30 | |
| Bromochloromethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | 3.82 | 30 | |
| 1,1,1-Trichloroethane | 9.82 | 0.20 | ug/L | 10.0 | | 98.2 | 79-123 | 0.98 | 30 | |
| 1,1-Dichloropropene | 9.33 | 0.20 | ug/L | 10.0 | | 93.3 | 80-127 | 3.25 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0075-BSD1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 08:55 | | | | | | |
| Carbon tetrachloride | 9.01 | 0.20 | ug/L | 10.0 | | 90.1 | 53-137 | 5.96 | 30 | |
| 1,2-Dichloroethane | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 75-123 | 1.70 | 30 | |
| Benzene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | 3.06 | 30 | |
| Trichloroethene | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-120 | 2.49 | 30 | |
| 1,2-Dichloropropane | 9.20 | 0.20 | ug/L | 10.0 | | 92.0 | 80-120 | 5.02 | 30 | |
| Bromodichloromethane | 9.31 | 0.20 | ug/L | 10.0 | | 93.1 | 80-121 | 3.56 | 30 | |
| Dibromomethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 2.08 | 30 | |
| 4-Methyl-2-Pentanone | 51.2 | 5.00 | ug/L | 50.0 | | 102 | 67-133 | 0.74 | 30 | |
| cis-1,3-Dichloropropene | 9.70 | 0.20 | ug/L | 10.0 | | 97.0 | 80-124 | 4.03 | 30 | |
| Toluene | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 80-120 | 0.23 | 30 | |
| trans-1,3-Dichloropropene | 9.54 | 0.20 | ug/L | 10.0 | | 95.4 | 71-127 | 8.45 | 30 | |
| 2-Hexanone | 54.5 | 5.00 | ug/L | 50.0 | | 109 | 69-133 | 0.22 | 30 | |
| 1,1,2-Trichloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-121 | 0.73 | 30 | |
| 1,3-Dichloropropane | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | 0.33 | 30 | |
| Tetrachloroethene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | 0.26 | 30 | |
| Dibromochloromethane | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 65-135 | 0.06 | 30 | |
| 1,2-Dibromoethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | 0.42 | 30 | |
| Chlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 1.46 | 30 | |
| Ethylbenzene | 9.67 | 0.20 | ug/L | 10.0 | | 96.7 | 80-120 | 0.50 | 30 | |
| 1,1,1,2-Tetrachloroethane | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-120 | 3.20 | 30 | |
| m,p-Xylene | 19.5 | 0.40 | ug/L | 20.0 | | 97.7 | 80-121 | 0.89 | 30 | |
| o-Xylene | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 80-121 | 0.27 | 30 | |
| Xylenes, total | 29.5 | 0.60 | ug/L | 30.0 | | 98.3 | 76-127 | 0.50 | 30 | |
| Styrene | 9.22 | 0.20 | ug/L | 10.0 | | 92.2 | 80-124 | 2.60 | 30 | |
| Bromoform | 9.41 | 0.20 | ug/L | 10.0 | | 94.1 | 51-134 | 1.13 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.34 | 0.20 | ug/L | 10.0 | | 93.4 | 77-123 | 0.01 | 30 | |
| 1,2,3-Trichloropropane | 9.37 | 0.50 | ug/L | 10.0 | | 93.7 | 76-125 | 6.08 | 30 | |
| trans-1,4-Dichloro 2-Butene | 8.18 | 1.00 | ug/L | 10.0 | | 81.8 | 55-129 | 6.71 | 30 | |
| n-Propylbenzene | 9.54 | 0.20 | ug/L | 10.0 | | 95.4 | 78-130 | 2.02 | 30 | |
| Bromobenzene | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-120 | 2.23 | 30 | |
| Isopropyl Benzene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-128 | 2.44 | 30 | |
| 2-Chlorotoluene | 9.43 | 0.20 | ug/L | 10.0 | | 94.3 | 78-122 | 1.62 | 30 | |
| 4-Chlorotoluene | 9.67 | 0.20 | ug/L | 10.0 | | 96.7 | 80-121 | 3.41 | 30 | |
| t-Butylbenzene | 9.78 | 0.20 | ug/L | 10.0 | | 97.8 | 78-125 | 1.00 | 30 | |
| 1,3,5-Trimethylbenzene | 9.52 | 0.20 | ug/L | 10.0 | | 95.2 | 80-129 | 0.79 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0075 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0075-BSD1)** | | | | Prepared: 03-Nov-2021 Analyzed: 03-Nov-2021 08:55 | | | | | | |
| 1,2,4-Trimethylbenzene | 9.62 | 0.20 | ug/L | 10.0 | | 96.2 | 80-127 | 0.73 | 30 | |
| s-Butylbenzene | 9.32 | 0.20 | ug/L | 10.0 | | 93.2 | 78-129 | 2.65 | 30 | |
| 4-Isopropyl Toluene | 9.68 | 0.20 | ug/L | 10.0 | | 96.8 | 79-130 | 2.74 | 30 | |
| 1,3-Dichlorobenzene | 9.62 | 0.20 | ug/L | 10.0 | | 96.2 | 80-120 | 3.63 | 30 | |
| 1,4-Dichlorobenzene | 9.70 | 0.20 | ug/L | 10.0 | | 97.0 | 80-120 | 2.24 | 30 | |
| n-Butylbenzene | 9.17 | 0.20 | ug/L | 10.0 | | 91.7 | 74-129 | 3.46 | 30 | |
| 1,2-Dichlorobenzene | 9.69 | 0.20 | ug/L | 10.0 | | 96.9 | 80-120 | 2.20 | 30 | |
| 1,2-Dibromo-3-chloropropane | 7.88 | 0.50 | ug/L | 10.0 | | 78.8 | 62-123 | 8.35 | 30 | |
| 1,2,4-Trichlorobenzene | 9.85 | 0.50 | ug/L | 10.0 | | 98.5 | 64-124 | 3.56 | 30 | |
| Hexachloro-1,3-Butadiene | 8.39 | 2.00 | ug/L | 10.0 | | 83.9 | 58-123 | 0.71 | 30 | |
| Naphthalene | 8.93 | 0.50 | ug/L | 10.0 | | 89.3 | 50-134 | 0.49 | 30 | |
| 1,2,3-Trichlorobenzene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 49-133 | 5.74 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.78 | | ug/L | *5.00* | | *95.6* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.94 | | ug/L | *5.00* | | *98.8* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.88 | | ug/L | *5.00* | | *97.6* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.97 | | ug/L | *5.00* | | *99.4* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0102 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0102-BLK1)** | | | | Prepared: 03-Nov-2021 | Analyzed: 03-Nov-2021 18:26 | | | | | |
| Gasoline Range Organics (Tol-Nap) | ND | 100 | ug/L | | | | | | | U |
| *Surrogate: Toluene-d8* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.90 | | ug/L | *5.00* | | *97.9* | *80-120* | | | |
| **LCS (BJK0102-BS1)** | | | | Prepared: 03-Nov-2021 | Analyzed: 03-Nov-2021 16:21 | | | | | |
| Gasoline Range Organics (Tol-Nap) | 1080 | 100 | ug/L | 1000 | | 108 | 72-128 | | | |
| *Surrogate: Toluene-d8* | 5.08 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.93 | | ug/L | *5.00* | | *98.7* | *80-120* | | | |
| **LCS Dup (BJK0102-BSD1)** | | | | Prepared: 03-Nov-2021 | Analyzed: 03-Nov-2021 17:11 | | | | | |
| Gasoline Range Organics (Tol-Nap) | 1050 | 100 | ug/L | 1000 | | 105 | 72-128 | 3.17 | 30 | |
| *Surrogate: Toluene-d8* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

**Analysis by: Analytical Resources, LLC**

## Wet Chemistry - Quality Control

### Batch BJK0067 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0067-BLK1)** | | | | Prepared: 02-Nov-2021 Analyzed: 02-Nov-2021 20:01 | | | | | | | |
| Nitrate-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| Nitrite-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJK0067-BS1)** | | | | Prepared: 02-Nov-2021 Analyzed: 02-Nov-2021 20:21 | | | | | | | |
| Nitrate-N | 4.98 | 0.100 | 0.100 | mg/L | 5.00 | | 99.7 | 90-110 | | | |
| Nitrite-N | 5.14 | 0.100 | 0.100 | mg/L | 5.00 | | 103 | 90-110 | | | |
| Sulfate | 4.57 | 0.100 | 0.100 | mg/L | 5.00 | | 91.4 | 90-110 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 300.0 in Water*** | |
| Nitrate-N | DoD-ELAP,WADOE,WA-DW,NELAP |
| Nitrite-N | DoD-ELAP,WADOE,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WADOE,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

| | |
|---|---|
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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|---|---|
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |

***NWTPHg in Water***

| | |
|---|---|
| Gasoline Range Organics (Tol-Nap) | WADOE,DoD-ELAP |
| Gasoline Range Organics (2MP-TMB) | WADOE,DoD-ELAP |
| Gasoline Range Organics (Tol-C12) | WADOE,DoD-ELAP |
| Gasoline Range Organics (C6-C10) | WADOE,ADEC,DoD-ELAP |
| Gasoline Range Organics (C5-C12) | WADOE,DoD-ELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |
| WADOE | WA Dept of Ecology | C558 | 06/30/2022 |
| WA-DW | Ecology - Drinking Water | C558 | 06/30/2022 |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 07-Dec-2021 14:26 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| H | Hold time violation - Hold time was exceeded. |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

03 June 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21E0064 | N/A |

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I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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21E0064

LANDAU ASSOCIATES

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☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ _____

Date 5/5/21
Page 1 of 1

Turnaround Time: Standard X
Accelerated _____

Project Name DC Regional GW
Project No. 0025217.099.039
Project Location/Event JWMU-17/May 2021
Sampler's Name Jered Newcomb / Armando Huerta
Project Contact Chris Kimmel / Jennifer Parsons
Send Results To Chris Kimmel / Jennifer Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

Testing Parameters

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D)* ▲ | AMEE (RSKSOP-175 Mod) | TOC (SM5310C) | Sulfate (E300.0) | Nitrate, Nitrite (300.0) | Total & Diss. Arsenic, Copper (200.8)** Effervescent | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip Blanks 3-210505 | 5/5/21 | — | AQ | 4 | X | X | | | | | | | | | | |
| BDC-05-23-210505 | | 931 | AQ | 7 | X | | X | X | | X | | | | | | |
| BDC-05-17-210505 | | 937 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-18-210505 | | 1021 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-16-210505 | | 1032 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-21-210505 | | 1111 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-15-210505 | | 1127 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-20-210505 | | 1221 | AQ | 9 | X | X | X | X | | X | X | | | | | |
| BDC-05-14-210505 | | 1227 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-22-210505 | | 1306 | AQ | 7 | X | | X | X | | X | | | | | | |
| BDC-05-24-210505 | | 1322 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-05-210505 | | 1356 | AQ | 7 | X | X | X | X | | X | | | | | | |
| BDC-05-13-210505 | | 1407 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-02-210505 | | 1441 | AQ | 9 | X | X | X | X | | X | X | | | | | |
| BDC-05-12-210505 | | 1447 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-DUP3-210505 | | 800 | AQ | 9 | X | X | X | X | | X | | | | | | |
| BDC-05-04-210505 | | 1531 | AQ | 9 | X | X | X | X | X | X | | | | | | |

3.4, 2.8, 4.3, 1.7

Observations/Comments

☐ Allow water samples to settle, collect aliquot from clear portion
☐ NWTPH-Dx - Acid wash cleanup
☐ - Silica gel cleanup
X Dissolved metal samples were field filtered

Other * PCE, TCE, cDCE, VC
** 200.8 ICP-MS
▲ Non-preserved

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jered Newcomb | Printed Name Jacob Leafty | Printed Name | Printed Name |
| Company LAT | Company ARI | Company | Company |
| Date 5/5/21 Time 15:56 | Date 05/05/2021 Time 1556 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TripBlanks3-210505 | 21E0064-01 | Water | 05-May-2021 15:31 | 05-May-2021 15:56 |
| BDC-05-23-210505 | 21E0064-02 | Water | 05-May-2021 09:31 | 05-May-2021 15:56 |
| BDC-05-23-210505 | 21E0064-03 | Water | 05-May-2021 09:31 | 05-May-2021 15:56 |
| BDC-05-17-210505 | 21E0064-04 | Water | 05-May-2021 09:37 | 05-May-2021 15:56 |
| BDC-05-17-210505 | 21E0064-05 | Water | 05-May-2021 09:37 | 05-May-2021 15:56 |
| BDC-05-18-210505 | 21E0064-06 | Water | 05-May-2021 10:21 | 05-May-2021 15:56 |
| BDC-05-18-210505 | 21E0064-07 | Water | 05-May-2021 10:21 | 05-May-2021 15:56 |
| BDC-05-16-210505 | 21E0064-08 | Water | 05-May-2021 10:32 | 05-May-2021 15:56 |
| BDC-05-16-210505 | 21E0064-09 | Water | 05-May-2021 10:32 | 05-May-2021 15:56 |
| BDC-05-21-210505 | 21E0064-10 | Water | 05-May-2021 11:11 | 05-May-2021 15:56 |
| BDC-05-21-210505 | 21E0064-11 | Water | 05-May-2021 11:11 | 05-May-2021 15:56 |
| BDC-05-15-210505 | 21E0064-12 | Water | 05-May-2021 11:27 | 05-May-2021 15:56 |
| BDC-05-15-210505 | 21E0064-13 | Water | 05-May-2021 11:27 | 05-May-2021 15:56 |
| BDC-05-20-210505 | 21E0064-14 | Water | 05-May-2021 12:21 | 05-May-2021 15:56 |
| BDC-05-20-210505 | 21E0064-15 | Water | 05-May-2021 12:21 | 05-May-2021 15:56 |
| BDC-05-14-210505 | 21E0064-16 | Water | 05-May-2021 12:27 | 05-May-2021 15:56 |
| BDC-05-14-210505 | 21E0064-17 | Water | 05-May-2021 12:27 | 05-May-2021 15:56 |
| BDC-05-22-210505 | 21E0064-18 | Water | 05-May-2021 13:06 | 05-May-2021 15:56 |
| BDC-05-22-210505 | 21E0064-19 | Water | 05-May-2021 13:06 | 05-May-2021 15:56 |
| BDC-05-24-210505 | 21E0064-20 | Water | 05-May-2021 13:22 | 05-May-2021 15:56 |
| BDC-05-24-210505 | 21E0064-21 | Water | 05-May-2021 13:22 | 05-May-2021 15:56 |
| BDC-05-05-210505 | 21E0064-22 | Water | 05-May-2021 13:56 | 05-May-2021 15:56 |
| BDC-05-05-210505 | 21E0064-23 | Water | 05-May-2021 13:56 | 05-May-2021 15:56 |
| BDC-05-13-210505 | 21E0064-24 | Water | 05-May-2021 14:07 | 05-May-2021 15:56 |
| BDC-05-13-210505 | 21E0064-25 | Water | 05-May-2021 14:07 | 05-May-2021 15:56 |
| BDC-05-02-210505 | 21E0064-26 | Water | 05-May-2021 14:41 | 05-May-2021 15:56 |
| BDC-05-02-210505 | 21E0064-27 | Water | 05-May-2021 14:41 | 05-May-2021 15:56 |
| BDC-05-12-210505 | 21E0064-28 | Water | 05-May-2021 14:47 | 05-May-2021 15:56 |
| BDC-05-12-210505 | 21E0064-29 | Water | 05-May-2021 14:47 | 05-May-2021 15:56 |
| BDC-DUP3-210505 | 21E0064-30 | Water | 05-May-2021 08:00 | 05-May-2021 15:56 |
| BDC-DUP3-210505 | 21E0064-31 | Water | 05-May-2021 08:00 | 05-May-2021 15:56 |
| BDC-05-04-210505 | 21E0064-32 | Water | 05-May-2021 15:31 | 05-May-2021 15:56 |
| BDC-05-04-210505 | 21E0064-33 | Water | 05-May-2021 15:31 | 05-May-2021 15:56 |



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The relative percent difference (RPD) were within control limits.

**Total and Dissolved Metals - EPA Method 200.8**

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

**WORK ORDER**

21E0064

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH |
|---|---|---|
| 21E0064-01 A | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-01 B | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-01 C | VOA Vial, Clear, 40 mL | |
| 21E0064-01 D | VOA Vial, Clear, 40 mL | |
| 21E0064-02 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-02 B | Small OJ, 500 mL | |
| 21E0064-02 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-02 D | VOA Vial, Clear, 40 mL | |
| 21E0064-02 E | VOA Vial, Clear, 40 mL | |
| 21E0064-02 F | VOA Vial, Clear, 40 mL | |
| 21E0064-03 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-04 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-04 B | Small OJ, 500 mL | |
| 21E0064-04 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-04 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-04 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-04 F | VOA Vial, Clear, 40 mL | |
| 21E0064-04 G | VOA Vial, Clear, 40 mL | |
| 21E0064-04 H | VOA Vial, Clear, 40 mL | |
| 21E0064-05 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-06 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-06 B | Small OJ, 500 mL | |
| 21E0064-06 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-06 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-06 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-06 F | VOA Vial, Clear, 40 mL | |
| 21E0064-06 G | VOA Vial, Clear, 40 mL | |
| 21E0064-06 H | VOA Vial, Clear, 40 mL | |
| 21E0064-07 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-08 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-08 B | Small OJ, 500 mL | |
| 21E0064-08 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-08 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-08 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-08 F | VOA Vial, Clear, 40 mL | |

Reviewed By

Date

**WORK ORDER**

21E0064

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

| | | |
|---|---|---|
| 21E0064-08 G | VOA Vial, Clear, 40 mL | |
| 21E0064-08 H | VOA Vial, Clear, 40 mL | |
| 21E0064-09 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-10 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-10 B | Small OJ, 500 mL | |
| 21E0064-10 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-10 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-10 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-10 F | VOA Vial, Clear, 40 mL | |
| 21E0064-10 G | VOA Vial, Clear, 40 mL | |
| 21E0064-10 H | VOA Vial, Clear, 40 mL | |
| 21E0064-11 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-12 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-12 B | Small OJ, 500 mL | |
| 21E0064-12 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-12 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-12 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-12 F | VOA Vial, Clear, 40 mL | |
| 21E0064-12 G | VOA Vial, Clear, 40 mL | |
| 21E0064-12 H | VOA Vial, Clear, 40 mL | |
| 21E0064-13 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-14 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-14 B | Small OJ, 500 mL | |
| 21E0064-14 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-14 D | VOA Vial, Clear, 40 mL, HCL | Efferes. |
| 21E0064-14 E | VOA Vial, Clear, 40 mL, HCL | Efferes. |
| 21E0064-14 F | VOA Vial, Clear, 40 mL | Efferes. |
| 21E0064-14 G | VOA Vial, Clear, 40 mL | Efferes. |
| 21E0064-14 H | VOA Vial, Clear, 40 mL | Efferes. |
| 21E0064-15 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-16 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-16 B | Small OJ, 500 mL | |
| 21E0064-16 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-16 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-16 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-16 F | VOA Vial, Clear, 40 mL | |
| 21E0064-16 G | VOA Vial, Clear, 40 mL | |

Reviewed By

Date

**WORK ORDER**

21E0064

| | |
|---|---|
| **Client: The Boeing Company [Developmental Center]** | **Project Manager: Kelly Bottem** |
| **Project: Boeing Regional GW Developmental Center** | **Project Number: Boeing Regional GW Developmental Center** |

| | | |
|---|---|---|
| 21E0064-16 H | VOA Vial, Clear, 40 mL | |
| 21E0064-17 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-18 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-18 B | Small OJ, 500 mL | |
| 21E0064-18 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-18 D | VOA Vial, Clear, 40 mL | |
| 21E0064-18 E | VOA Vial, Clear, 40 mL | |
| 21E0064-18 F | VOA Vial, Clear, 40 mL | |
| 21E0064-19 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-20 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-20 B | Small OJ, 500 mL | |
| 21E0064-20 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-20 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-20 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-20 F | VOA Vial, Clear, 40 mL | |
| 21E0064-20 G | VOA Vial, Clear, 40 mL | |
| 21E0064-20 H | VOA Vial, Clear, 40 mL | |
| 21E0064-21 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-22 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-22 B | Small OJ, 500 mL | |
| 21E0064-22 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-22 D | VOA Vial, Clear, 40 mL | |
| 21E0064-22 E | VOA Vial, Clear, 40 mL | |
| 21E0064-22 F | VOA Vial, Clear, 40 mL | |
| 21E0064-23 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-24 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-24 B | Small OJ, 500 mL | |
| 21E0064-24 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-24 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-24 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-24 F | VOA Vial, Clear, 40 mL | |
| 21E0064-24 G | VOA Vial, Clear, 40 mL | |
| 21E0064-24 H | VOA Vial, Clear, 40 mL | |
| 21E0064-25 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-26 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-26 B | Small OJ, 500 mL | |
| 21E0064-26 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |

Reviewed By

Date

**WORK ORDER**

21E0064

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

| | | |
|---|---|---|
| 21E0064-26 D | VOA Vial, Clear, 40 mL, HCL | Effeves. |
| 21E0064-26 E | VOA Vial, Clear, 40 mL, HCL | Effeves. |
| 21E0064-26 F | VOA Vial, Clear, 40 mL | Effeves |
| 21E0064-26 G | VOA Vial, Clear, 40 mL | Effeves |
| 21E0064-26 H | VOA Vial, Clear, 40 mL | Effeves. |
| 21E0064-27 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-28 A | HDPE NM, 500 mL, 1:1 HNO3 | |
| 21E0064-28 B | Small OJ, 500 mL | |
| 21E0064-28 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-28 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-28 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-28 F | VOA Vial, Clear, 40 mL | |
| 21E0064-28 G | VOA Vial, Clear, 40 mL | |
| 21E0064-28 H | VOA Vial, Clear, 40 mL | |
| 21E0064-29 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-30 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-30 B | Small OJ, 500 mL | |
| 21E0064-30 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-30 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-30 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-30 F | VOA Vial, Clear, 40 mL | |
| 21E0064-30 G | VOA Vial, Clear, 40 mL | |
| 21E0064-30 H | VOA Vial, Clear, 40 mL | |
| 21E0064-31 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |
| 21E0064-32 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 Pass |
| 21E0064-32 B | Small OJ, 500 mL | |
| 21E0064-32 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 Pass |
| 21E0064-32 D | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-32 E | VOA Vial, Clear, 40 mL, HCL | |
| 21E0064-32 F | VOA Vial, Clear, 40 mL | |
| 21E0064-32 G | VOA Vial, Clear, 40 mL | |
| 21E0064-32 H | VOA Vial, Clear, 40 mL | |
| 21E0064-33 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 Pass |

KD
Preservation Confirmed By

5/6/21
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

Developmental Center Glw

ARI Client: Landau/Battery  Project Name: SWMU-17

COC No(s): _____ (NA)  Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21E0064  Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1556  3.4 2.8 4.3 1.7 ___ ___

If cooler temperature is out of compliance fill out form 00070F  Temp Gun ID#: D00 (D006)

Cooler Accepted by: JG  Date: 05/05/2021  Time: 1556

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? | (Bubble Wrap) (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | (YES) | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | KD | YES | (NO) |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | NA | (YES) | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 4/29/21 | |

Were the sample(s) split by ARI? (NA) YES  Date/Time: _____  Equipment: _____  Split by: _____

Samples Logged by: KD  Date: 5/6/21  Time: 0808  Labels checked by: KD

***** Notify Project Manager of discrepancies or concerns *****

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

- Vials contained air bubbles, please see preservation sheet.
- Received an addition HCl vial for sample BDC-05-12-21050S

By: KD  Date: 5/6/21

| | | |
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**TripBlanks3-210505**

**21E0064-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 15:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/06/2021 23:03

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-01 C

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *87.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**TripBlanks3-210505**

**21E0064-01 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 15:31

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 09:24

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-01 A

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *109* | *%* | |

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**BDC-05-23-210505**

**21E0064-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 09:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/06/2021 23:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-02 E

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.36 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.87 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *88.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-23-210505**

**21E0064-02 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 09:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:20

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-02 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 22.5 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-23-210505**

**21E0064-02 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 09:31

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 18:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-02 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 1.06 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-23-210505**

**21E0064-02 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 09:31

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 04:21

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-02 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 6.71 | mg/L | |



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**BDC-05-23-210505**

**21E0064-03 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 09:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 00:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-03 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 21.6 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.326 | ug/L | J |



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**BDC-05-17-210505**

**21E0064-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 09:37

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 00:10

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-04 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.47 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.4* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *87.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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**BDC-05-17-210505**

**21E0064-04 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 09:37

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 09:37

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-04 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 14000 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *97.4* | *%* | |



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**BDC-05-17-210505**

**21E0064-04 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 09:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-04 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 30.2 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.434 | ug/L | J |



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**BDC-05-17-210505**

**21E0064-04 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 09:37

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 19:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-04 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-17-210505**

**21E0064-04 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 09:37

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 05:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-04 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 18.24 | mg/L | D |



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**BDC-05-17-210505**

**21E0064-05 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 09:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 00:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-05 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 31.0 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-18-210505**

**21E0064-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 10:21

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 00:32

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-06 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.89 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 1.80 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 3.16 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *115* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *87.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-18-210505**

**21E0064-06 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 10:21

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 09:50

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-06 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 297 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *95.1* | *%* | |



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**BDC-05-18-210505**

**21E0064-06 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 10:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 22:49

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-06 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 1.02 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.997 | ug/L | |



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**BDC-05-18-210505**

**21E0064-06 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 10:21

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 05:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-06 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 1.68 | mg/L | |

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-18-210505**

**21E0064-06RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 10:21

Instrument: IC930 Analyst: CDE — Analyzed: 05/19/2021 20:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-06RE1 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 4 | 0.400 | 0.400 | 19.1 | mg/L | D |



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**BDC-05-18-210505**

**21E0064-07 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 10:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:03

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-07 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.229 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 1.66 | ug/L | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**BDC-05-16-210505**

**21E0064-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 10:32

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 00:54

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-08 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.52 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *117* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *87.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-16-210505**

**21E0064-08 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 10:32

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 10:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-08 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 13400 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *96.9* | *%* | |



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**BDC-05-16-210505**

**21E0064-08 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 10:32

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 22:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-08 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 26.0 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.175 | ug/L | J |



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**BDC-05-16-210505**

**21E0064-08 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 10:32

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 20:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-08 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-16-210505**

**21E0064-08 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 10:32

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 06:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-08 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 14.50 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-16-210505**

**21E0064-09 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 10:32

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:08

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-09 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 25.7 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.246 | ug/L | J |



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**BDC-05-21-210505**

**21E0064-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 11:11

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 01:16

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-10 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.91 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.21 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *88.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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**BDC-05-21-210505**

**21E0064-10 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 11:11

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 10:17

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-10 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5460 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *96.2* | *%* | |



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**BDC-05-21-210505**

**21E0064-10 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 11:11

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:06

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-10 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 12.4 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.266 | ug/L | J |



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**BDC-05-21-210505**

**21E0064-10 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 11:11

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 21:14

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-10 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.171 | mg/L | |

| | | |
|---|---|---|
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**BDC-05-21-210505**

**21E0064-10 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 11:11

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 07:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-10 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 14.43 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-21-210505**

**21E0064-11 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 11:11

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-11 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 10.7 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.464 | ug/L | J |



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**BDC-05-15-210505**

**21E0064-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 11:27

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 01:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-12 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.28 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.4* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *87.1* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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**BDC-05-15-210505**

**21E0064-12 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 11:27

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 10:30

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-12 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 11100 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *92.7* | *%* | |

| | | |
|---|---|---|
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**BDC-05-15-210505**

**21E0064-12 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 11:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:11

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-12 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 53.6 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.434 | ug/L | J |



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**BDC-05-15-210505**

**21E0064-12 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 11:27

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 21:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-12 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-15-210505**

**21E0064-12 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 11:27

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 07:53

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-12 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 21.69 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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**BDC-05-15-210505**

**21E0064-13 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 11:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:17

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-13 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 49.1 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-20-210505**

**21E0064-14 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 12:21

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 02:00

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-14 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.75 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *115* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-20-210505**

**21E0064-14 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 12:21

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 10:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-14 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 10400 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *94.3* | *%* | |



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**BDC-05-20-210505**

**21E0064-14 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 12:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 22:58

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-14 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 20.6 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.503 | ug/L | |



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**BDC-05-20-210505**

**21E0064-14 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 12:21

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 21:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-14 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |



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**BDC-05-20-210505**

**21E0064-14 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 12:21

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 08:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-14 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 12.13 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-20-210505**

**21E0064-15 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 12:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:22

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-15 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 21.6 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.493 | ug/L | J |



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**BDC-05-14-210505**

**21E0064-16 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 12:27

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 02:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-16 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.32 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *119* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *86.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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**BDC-05-14-210505**

**21E0064-16 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 12:27

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 13:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-16 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 8360 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *93.7* | *%* | |



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**BDC-05-14-210505**

**21E0064-16 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 12:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:15

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-16 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 49.5 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.243 | ug/L | J |



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**BDC-05-14-210505**

**21E0064-16 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 12:27

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 22:14

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-16 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 1.19 | mg/L | |



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**BDC-05-14-210505**

**21E0064-16 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 12:27

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 08:41

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-16 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 23.09 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-14-210505**

**21E0064-17 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 12:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-17 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 49.5 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.185 | ug/L | J |



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**BDC-05-22-210505**

**21E0064-18 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 13:06

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 02:45

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-18 D

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 2.26 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 3.38 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *121* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.4* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *85.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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**BDC-05-22-210505**

**21E0064-18 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:06

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 23:03

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-18 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 48.2 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-22-210505**

**21E0064-18 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 13:06

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 22:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-18 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |



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**BDC-05-22-210505**

**21E0064-18 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 13:06

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 09:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-18 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 10.12 | mg/L | D |



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**BDC-05-22-210505**

**21E0064-19 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:06

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-19 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 49.0 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.365 | ug/L | J |



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**BDC-05-24-210505**

**21E0064-20 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 13:22

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 03:07

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-20 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.32 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *85.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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**BDC-05-24-210505**

**21E0064-20 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 13:22

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 11:10

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-20 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5970 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *92.5* | *%* | |



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**BDC-05-24-210505**

**21E0064-20 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:22

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 23:07

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-20 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 7.35 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.222 | ug/L | J |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**BDC-05-24-210505**

**21E0064-20 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 13:22

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 22:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-20 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.498 | mg/L | |

| | | |
|---|---|---|
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**BDC-05-24-210505**

**21E0064-20 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 13:22

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 09:23

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-20 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 9.04 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-24-210505**

**21E0064-21 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:22

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 01:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-21 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 6.44 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.197 | ug/L | J |



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**BDC-05-05-210505**

**21E0064-22 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 13:56

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 03:29

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-22 D

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.62 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.35 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *119* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *86.3* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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**BDC-05-05-210505**

**21E0064-22 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:56

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 23:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-22 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.638 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 2.74 | ug/L | |



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**BDC-05-05-210505**

**21E0064-22 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 13:56

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 09:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-22 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 1.87 | mg/L | |



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**BDC-05-05-210505**

**21E0064-22RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 13:56

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 13:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-22RE1 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | 22.6 | mg/L | D |



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**BDC-05-05-210505**

**21E0064-23 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 13:56

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 02:03

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-23 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.345 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 2.31 | ug/L | |



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**BDC-05-13-210505**

**21E0064-24 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 14:07

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 03:51

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-24 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.52 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *119* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *85.3* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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**BDC-05-13-210505**

**21E0064-24 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 14:07

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 11:23

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-24 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 11800 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 4.78 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *99.2* | *%* | |



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**BDC-05-13-210505**

**21E0064-24 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:07

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-24 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 16.1 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.354 | ug/L | J |



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**BDC-05-13-210505**

**21E0064-24 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 14:07

Instrument: IC930 Analyst: CDE — Analyzed: 05/17/2021 23:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-24 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |



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**BDC-05-13-210505**

**21E0064-24 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 14:07

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 10:10

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-24 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 11.23 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-13-210505**

**21E0064-25 (Water)**

**Metals and Metallic Compounds (dissolved)**

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:07

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 02:08

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-25 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 14.9 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-02-210505**

**21E0064-26 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 14:41

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 04:12

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-26 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.54 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.98 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.52 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *119* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *93.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
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**BDC-05-02-210505**

**21E0064-26 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 14:41

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 12:03

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-26 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7600 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *83.4* | *%* | |



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**BDC-05-02-210505**

**21E0064-26 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:41

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 00:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-26 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 5 | 0.187 | 1.00 | 10.4 | ug/L | D |
| Copper | 7440-50-8 | 5 | 0.865 | 2.50 | 27.4 | ug/L | D |

| | | |
|---|---|---|
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**BDC-05-02-210505**

**21E0064-26 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 14:41

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 10:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-26 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 20 | 10.00 | 10.00 | 484.4 | mg/L | D |



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**BDC-05-02-210505**

**21E0064-26RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 14:41

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 14:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-26RE1 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 38 | 3.80 | 3.80 | 25.7 | mg/L | D |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

**BDC-05-02-210505**

**21E0064-27 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:41

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 00:23

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-27 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 5 | 0.187 | 1.00 | 9.11 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 5 | 0.865 | 2.50 | 2.91 | ug/L | D |



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**BDC-05-12-210505**

**21E0064-28 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 14:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 04:34

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-28 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.0* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *85.3* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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**BDC-05-12-210505**

**21E0064-28 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 14:47

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 12:16

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-28 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 8580 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *95.8* | *%* | |



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**BDC-05-12-210505**

**21E0064-28 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:47

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 23:53

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-28 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.59 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.423 | ug/L | J |



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**BDC-05-12-210505**

**21E0064-28 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 14:47

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 10:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-28 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 8.52 | mg/L | |



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**BDC-05-12-210505**

**21E0064-28RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 14:47

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 14:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-28RE1 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 6 | 0.600 | 0.600 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-12-210505**

**21E0064-29 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 14:47

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 02:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-29 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.71 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-DUP3-210505**

**21E0064-30 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:00

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 04:56

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-30 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.0* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *84.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-DUP3-210505**

**21E0064-30 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 08:00

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 12:29

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-30 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 8780 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *96.7* | *%* | |



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**BDC-DUP3-210505**

**21E0064-30 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 08:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/14/2021 23:58

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-30 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.49 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.524 | ug/L | |



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**BDC-DUP3-210505**

**21E0064-30 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 08:00

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 12:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-30 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 8.86 | mg/L | |

| | | |
|---|---|---|
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**BDC-DUP3-210505**

**21E0064-30RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 08:00

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 15:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-30RE1 B

Preparation Batch: BJE0407 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 6 | 0.600 | 0.600 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-DUP3-210505**

**21E0064-31 (Water)**

**Metals and Metallic Compounds (dissolved)**

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 08:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 02:18

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-31 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.64 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.185 | ug/L | J |



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**BDC-05-04-210505**

**21E0064-32 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 15:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 05:18

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-32 F

Preparation Batch: BJE0157 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.41 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.88 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-04-210505**

**21E0064-32 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/05/2021 15:31

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2021 12:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0064-32 D

Preparation Batch: BJE0286 — Sample Size: 10 mL

Prepared: 05/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7500 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *88.1* | *%* | |



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**BDC-05-04-210505**

**21E0064-32 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 15:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/15/2021 01:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-32 A 01

Preparation Batch: BJE0351 — Sample Size: 25 mL

Prepared: 05/14/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 5 | 0.187 | 1.00 | 31.5 | ug/L | D |
| Copper | 7440-50-8 | 5 | 0.865 | 2.50 | 42.8 | ug/L | D |

| | | |
|---|---|---|
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**21E0064-32 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 15:31

Instrument: IC930 Analyst: CDE — Analyzed: 05/07/2021 06:01

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-32 B

Preparation Batch: BJE0155 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 5 | 0.500 | 0.500 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 5 | 0.500 | 0.500 | ND | mg/L | U |



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**BDC-05-04-210505**

**21E0064-32 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/05/2021 15:31

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 12:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-32 C

Preparation Batch: BJE0220 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 20 | 10.00 | 10.00 | 141.7 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-04-210505**

**21E0064-32RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/05/2021 15:31

Instrument: IC930 Analyst: CDE — Analyzed: 05/28/2021 13:50

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0064-32RE3 B

Preparation Batch: BJE0155 — Sample Size: 10 mL

Prepared: 05/06/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 5.24 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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**BDC-05-04-210505**

**21E0064-33 (Water)**

**Metals and Metallic Compounds (dissolved)**

Method: EPA 200.8 UCT-KED — Sampled: 05/05/2021 15:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/08/2021 00:29

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0064-33 A 01

Preparation Batch: BJE0156 — Sample Size: 25 mL

Prepared: 05/07/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 21.0 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | 2.39 | ug/L | D |



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## Volatile Organic Compounds - Quality Control

### Batch BJE0157 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0157-BLK1)** | | | | Prepared: 06-May-2021 Analyzed: 06-May-2021 22:40 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.85 | | ug/L | *5.00* | | *117* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.88 | | ug/L | *5.00* | | *97.6* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.43 | | ug/L | *5.00* | | *88.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| **LCS (BJE0157-BS1)** | | | | Prepared: 06-May-2021 Analyzed: 06-May-2021 21:33 | | | | | | |
| Vinyl Chloride | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 66-133 | | | |
| cis-1,2-Dichloroethene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-121 | | | |
| Trichloroethene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-120 | | | |
| Tetrachloroethene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.56 | | ug/L | *5.00* | | *111* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.95 | | ug/L | *5.00* | | *99.0* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.74 | | ug/L | *5.00* | | *94.8* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.17 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS Dup (BJE0157-BSD1)** | | | | Prepared: 06-May-2021 Analyzed: 06-May-2021 21:56 | | | | | | |
| Vinyl Chloride | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 66-133 | 1.70 | 30 | |
| cis-1,2-Dichloroethene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-121 | 0.03 | 30 | |
| Trichloroethene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-120 | 0.68 | 30 | |
| Tetrachloroethene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | 0.98 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.66 | | ug/L | *5.00* | | *113* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.83 | | ug/L | *5.00* | | *96.6* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.97 | | ug/L | *5.00* | | *99.4* | *80-120* | | | |



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## Dissolved Gases - Quality Control

### Batch BJE0286 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0286-BLK1)** | | | | Prepared: 12-May-2021 Analyzed: 12-May-2021 08:31 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 2050 | | ug/L | *1800* | | *114* | *72-122* | | | |
| **LCS (BJE0286-BS1)** | | | | Prepared: 12-May-2021 Analyzed: 12-May-2021 07:13 | | | | | | |
| Methane | 676 | 0.65 | ug/L | 656 | | 103 | 80-120 | | | |
| Ethane | 1370 | 1.23 | ug/L | 1230 | | 111 | 80-120 | | | |
| Ethene | 1070 | 1.14 | ug/L | 1150 | | 93.4 | 80-120 | | | |
| Acetylene | 954 | 1.06 | ug/L | 1060 | | 90.0 | 73-123 | | | |
| *Surrogate: Propane* | 2060 | | ug/L | *1800* | | *114* | *62-122* | | | |
| **LCS Dup (BJE0286-BSD1)** | | | | Prepared: 12-May-2021 Analyzed: 12-May-2021 07:27 | | | | | | |
| Methane | 680 | 0.65 | ug/L | 656 | | 104 | 80-120 | 0.68 | 30 | |
| Ethane | 1360 | 1.23 | ug/L | 1230 | | 111 | 80-120 | 0.72 | 30 | |
| Ethene | 1070 | 1.14 | ug/L | 1150 | | 93.3 | 80-120 | 0.08 | 30 | |
| Acetylene | 973 | 1.06 | ug/L | 1060 | | 91.8 | 73-123 | 2.02 | 30 | |
| *Surrogate: Propane* | 2020 | | ug/L | *1800* | | *112* | *62-122* | | | |
| **Duplicate (BJE0286-DUP1)** | | **Source: 21E0064-04** | | Prepared: 12-May-2021 Analyzed: 12-May-2021 12:56 | | | | | | |
| Methane | 14900 | 0.65 | ug/L | | 14000 | | | 6.20 | 30 | |
| Ethane | ND | 1.23 | ug/L | | ND | | | | | U |
| Ethene | ND | 1.14 | ug/L | | ND | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | ND | | | | | U |
| *Surrogate: Propane* | 1500 | | ug/L | *1800* | *1750* | *83.1* | *72-122* | | | |
| **Duplicate (BJE0286-DUP2)** | | **Source: 21E0064-08** | | Prepared: 12-May-2021 Analyzed: 12-May-2021 13:09 | | | | | | |
| Methane | 14400 | 0.65 | ug/L | | 13400 | | | 6.67 | 30 | |
| Ethane | ND | 1.23 | ug/L | | ND | | | | | U |
| Ethene | ND | 1.14 | ug/L | | ND | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | ND | | | | | U |
| *Surrogate: Propane* | 1630 | | ug/L | *1800* | *1740* | *90.7* | *72-122* | | | |



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## Metals and Metallic Compounds - Quality Control

### Batch BJE0351 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0351-BLK1)** | | | | | Prepared: 14-May-2021 Analyzed: 14-May-2021 15:56 | | | | | | | |
| Arsenic | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJE0351-BS1)** | | | | | Prepared: 14-May-2021 Analyzed: 14-May-2021 16:00 | | | | | | | |
| Arsenic | 75a | 23.9 | 0.0373 | 0.200 | ug/L | 25.0 | | 95.7 | 80-120 | | | |
| Copper | 63 | 26.5 | 0.173 | 0.500 | ug/L | 25.0 | | 106 | 80-120 | | | |
| Copper | 65 | 26.4 | 0.350 | 0.500 | ug/L | 25.0 | | 105 | 80-120 | | | |
| **Duplicate (BJE0351-DUP1)** | | | **Source: 21E0064-02** | | Prepared: 14-May-2021 Analyzed: 15-May-2021 00:25 | | | | | | | |
| Arsenic | 75a | 22.0 | 0.0373 | 0.200 | ug/L | | 22.5 | | | 2.46 | 20 | |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | ND | | | | | U |
| **Matrix Spike (BJE0351-MS1)** | | | **Source: 21E0064-02** | | Prepared: 14-May-2021 Analyzed: 15-May-2021 00:30 | | | | | | | |
| Arsenic | 75a | 45.0 | 0.0373 | 0.200 | ug/L | 25.0 | 22.5 | 89.9 | 75-125 | | | |
| Copper | 63 | 25.5 | 0.173 | 0.500 | ug/L | 25.0 | ND | 102 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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## Metals and Metallic Compounds (dissolved) - Quality Control

### Batch BJE0156 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0156-BLK1)** | | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:47 | | | | | | | |
| Arsenic, Dissolved | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper, Dissolved | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper, Dissolved | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJE0156-BS1)** | | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:51 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.7 | 0.0373 | 0.200 | ug/L | 25.0 | | 98.7 | 80-120 | | | |
| Copper, Dissolved | 63 | 26.4 | 0.173 | 0.500 | ug/L | 25.0 | | 105 | 80-120 | | | |
| Copper, Dissolved | 65 | 26.6 | 0.350 | 0.500 | ug/L | 25.0 | | 106 | 80-120 | | | |



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## Wet Chemistry - Quality Control

### Batch BJE0155 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0155-BLK1)** | | | | Prepared: 06-May-2021 Analyzed: 07-May-2021 10:41 | | | | | | | |
| Nitrate-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| Nitrite-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **Blank (BJE0155-BLK3)** | | | | Prepared: 06-May-2021 Analyzed: 21-May-2021 17:15 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJE0155-BS1)** | | | | Prepared: 06-May-2021 Analyzed: 07-May-2021 11:01 | | | | | | | |
| Nitrate-N | 4.76 | 0.100 | 0.100 | mg/L | 5.00 | | 95.2 | 90-110 | | | |
| Nitrite-N | 5.24 | 0.100 | 0.100 | mg/L | 5.00 | | 105 | 90-110 | | | |
| **LCS (BJE0155-BS3)** | | | | Prepared: 06-May-2021 Analyzed: 21-May-2021 17:35 | | | | | | | |
| Sulfate | 4.92 | 0.100 | 0.100 | mg/L | 5.00 | | 98.4 | 90-110 | | | |
| **Duplicate (BJE0155-DUP4)** | | **Source: 21E0064-32RE2** | | Prepared: 06-May-2021 Analyzed: 20-May-2021 17:32 | | | | | | | |
| Sulfate | ND | 0.800 | 0.800 | mg/L | | 3.05 | | | | | U |
| **Duplicate (BJE0155-DUP5)** | | **Source: 21E0064-32RE3** | | Prepared: 06-May-2021 Analyzed: 28-May-2021 14:10 | | | | | | | |
| Sulfate | 5.32 | 0.100 | 0.100 | mg/L | | 5.24 | | | 1.44 | 20 | |
| **Matrix Spike (BJE0155-MS5)** | | **Source: 21E0064-32RE2** | | Prepared: 06-May-2021 Analyzed: 21-May-2021 17:55 | | | | | | | |
| Sulfate | 6.93 | 0.100 | 0.100 | mg/L | 4.00 | 3.05 | 97.1 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Matrix Spike Dup (BJE0155-MSD5)** | | **Source: 21E0064-32RE2** | | Prepared: 06-May-2021 Analyzed: 21-May-2021 18:15 | | | | | | | |
| Sulfate | 6.93 | 0.100 | 0.100 | mg/L | 4.00 | 3.05 | 97.0 | 75-125 | 0.03 | 20 | |

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## Wet Chemistry - Quality Control

### Batch BJE0220 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0220-BLK1)** | | | | Prepared: 10-May-2021 Analyzed: 11-May-2021 03:39 | | | | | | | |
| Total Organic Carbon | ND | 0.50 | 0.50 | mg/L | | | | | | | U |
| **LCS (BJE0220-BS1)** | | | | Prepared: 10-May-2021 Analyzed: 11-May-2021 04:01 | | | | | | | |
| Total Organic Carbon | 19.81 | 0.50 | 0.50 | mg/L | 20.00 | | 99.1 | 90-110 | | | |
| **Duplicate (BJE0220-DUP1)** | | **Source: 21E0064-02** | | Prepared: 10-May-2021 Analyzed: 11-May-2021 04:41 | | | | | | | |
| Total Organic Carbon | 6.84 | 0.50 | 0.50 | mg/L | | 6.71 | | | 1.85 | 20 | |
| **Matrix Spike (BJE0220-MS1)** | | **Source: 21E0064-02** | | Prepared: 10-May-2021 Analyzed: 11-May-2021 05:00 | | | | | | | |
| Total Organic Carbon | 21.75 | 0.50 | 0.50 | mg/L | 20.00 | 6.71 | 75.2 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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## Wet Chemistry - Quality Control

### Batch BJE0407 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0407-BLK1)** | | | | | Prepared: 17-May-2021 Analyzed: 17-May-2021 17:13 | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJE0407-BS1)** | | | | | Prepared: 17-May-2021 Analyzed: 17-May-2021 17:33 | | | | | | |
| Sulfate | 4.59 | 0.100 | 0.100 | mg/L | 5.00 | | 91.7 | 90-110 | | | |
| **Duplicate (BJE0407-DUP1)** | | **Source: 21E0064-02** | | | Prepared: 17-May-2021 Analyzed: 17-May-2021 18:33 | | | | | | |
| Sulfate | 1.05 | 0.100 | 0.100 | mg/L | | 1.06 | | | 0.76 | 20 | |
| **Matrix Spike (BJE0407-MS1)** | | **Source: 21E0064-02** | | | Prepared: 17-May-2021 Analyzed: 17-May-2021 18:53 | | | | | | |
| Sulfate | 2.83 | 0.100 | 0.100 | mg/L | 2.00 | 1.06 | 88.3 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Matrix Spike Dup (BJE0407-MSD1)** | | **Source: 21E0064-02** | | | Prepared: 17-May-2021 Analyzed: 17-May-2021 19:14 | | | | | | |
| Sulfate | 2.79 | 0.100 | 0.100 | mg/L | 2.00 | 1.06 | 86.5 | 75-125 | 1.25 | 20 | |

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## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 200.8 UCT-KED in Water*** | |
| Arsenic-75a | NELAP,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,DoD-ELAP |
| Copper-63 | NELAP,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,DoD-ELAP |
| Copper-65 | NELAP,WADOE,DoD-ELAP |
| Copper-65 | NELAP,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,DoD-ELAP |
| Copper-63 | NELAP,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,DoD-ELAP |
| Copper-65 | NELAP,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,DoD-ELAP |
| ***EPA 300.0 in Water*** | |
| Nitrate-N | DoD-ELAP,WADOE,NELAP |
| Nitrate-N | DoD-ELAP,WA-DW,NELAP |
| Nitrite-N | DoD-ELAP,WADOE,NELAP |
| Nitrite-N | DoD-ELAP,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WADOE,NELAP |
| Sulfate | DoD-ELAP,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |



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| | |
|---|---|
| Acetone | DoD-ELAP,ADEC,NELAP |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

| | |
|---|---|
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| Toluene | DoD-ELAP,ADEC,NELAP |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| 2-Hexanone | DoD-ELAP,NELAP |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

| | |
|---|---|
| Styrene | DoD-ELAP,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP |
| Isopropyl Benzene | DoD-ELAP,NELAP |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

| | |
|---|---|
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |
| 2-Pentanone | |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Methane | NELAP |
| Ethane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |
| Acetylene | NELAP |

***SM 5310 B-00 in Water***

| | |
|---|---|
| Total Organic Carbon | WADOE,NELAP |
| Total Organic Carbon | WA-DW,NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 03-Jun-2021 10:37 |

## Notes and Definitions

| | |
|---|---|
| D | The reported value is from a dilution |
| J | Estimated concentration value detected below the reporting limit. |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

24 May 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21E0088 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

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21E0088

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ Seattle/Edmonds (425) 778-0907 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ _____

Date 5/6/21
Page 1 of 1

Turnaround Time:
Standard x
Accelerated _____

Project Name DC Regional GW Project No. 0025217.099.039
Project Location/Event SWMU-17/ May 2021
Sampler's Name Jered Newcomb / Armando Huerta
Project Contact Chris Kimmel / Jennifer Parsons
Send Results To Chris Kimmel / Jennifer Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D)* | AMEE (RSK SOP-175 Mod) | TOC (SM5310C) | Sulfate (E300.0) | Nitrate + Nitrite (300.0) | Total & Dissolved Arsenic ** | Effervescent copper ** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TripBlanks-5-210506 | 5/6/21 | — | AQ | 4 | X | X | | | | | |
| BDC-05-09-210506 | | 856 | AQ | 9 | X | X | X | X | | X | X |
| BDC-05-07-210506 | | 936 | AQ | 9 | X | X | X | X | | X | |
| BDC-05-10-210506 | | 1021 | AQ | 9 | X | X | X | X | | X | X |
| BDC-05-08-210506 | | 1037 | AQ | 7 | X | | X | X | | X | |
| BDC-05-11-210506 | | 1101 | AQ | 9 | X | X | X | X | | X | X |
| BDC-05-19-210506 | | 1117 | AQ | 9 | X | X | X | X | | X | |
| BDC-05-03-210506 | | 1146 | AQ | 9 | X | X | X | X | | X | X |

Observations/Comments

_ Allow water samples to settle, collect aliquot from clear portion ☐
_ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
X Dissolved metal samples were field filtered

Other * PCE, TCE, cDCE, VC
** 200.8 ICP-MS

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jered Newcomb | Printed Name Jacob Hatte | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 5/6/21 Time 12:23 | Date 05/06/2021 Time 1223 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TripBlanks5-210506 | 21E0088-01 | Water | 06-May-2021 08:56 | 06-May-2021 12:23 |
| BDC-05-09-210506 | 21E0088-02 | Water | 06-May-2021 08:56 | 06-May-2021 12:23 |
| BDC-05-09-210506 | 21E0088-03 | Water | 06-May-2021 08:56 | 06-May-2021 12:23 |
| BDC-05-07-210506 | 21E0088-04 | Water | 06-May-2021 09:36 | 06-May-2021 12:23 |
| BDC-05-07-210506 | 21E0088-05 | Water | 06-May-2021 09:36 | 06-May-2021 12:23 |
| BDC-05-10-210506 | 21E0088-06 | Water | 06-May-2021 10:21 | 06-May-2021 12:23 |
| BDC-05-10-210506 | 21E0088-07 | Water | 06-May-2021 10:21 | 06-May-2021 12:23 |
| BDC-05-08-210506 | 21E0088-08 | Water | 06-May-2021 10:27 | 06-May-2021 12:23 |
| BDC-05-08-210506 | 21E0088-09 | Water | 06-May-2021 10:27 | 06-May-2021 12:23 |
| BDC-05-11-210506 | 21E0088-10 | Water | 06-May-2021 11:01 | 06-May-2021 12:23 |
| BDC-05-11-210506 | 21E0088-11 | Water | 06-May-2021 11:01 | 06-May-2021 12:23 |
| BDC-05-19-210506 | 21E0088-12 | Water | 06-May-2021 11:17 | 06-May-2021 12:23 |
| BDC-05-19-210506 | 21E0088-13 | Water | 06-May-2021 11:17 | 06-May-2021 12:23 |
| BDC-05-03-210506 | 21E0088-14 | Water | 06-May-2021 11:46 | 06-May-2021 12:23 |
| BDC-05-03-210506 | 21E0088-15 | Water | 06-May-2021 11:46 | 06-May-2021 12:23 |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Total and Dissolved Metals - EPA Method 200.8**

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.



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**WORK ORDER**

21E0088

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH | |
|---|---|---|---|
| 21E0088-01 A | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-01 B | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-01 C | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0088-01 D | VOA Vial, Clear, 40 mL | | |
| 21E0088-02 A | Small OJ, 500 mL | | |
| 21E0088-02 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-02 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-02 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-02 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-02 F | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0088-02 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-02 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-03 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-04 A | Small OJ, 500 mL | | |
| 21E0088-04 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-04 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-04 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-04 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-04 F | VOA Vial, Clear, 40 mL | | |
| 21E0088-04 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-04 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-05 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-06 A | Small OJ, 500 mL | | |
| 21E0088-06 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-06 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-06 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-06 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-06 F | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0088-06 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-06 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-07 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-08 A | Small OJ, 500 mL | | |
| 21E0088-08 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-08 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-08 D | VOA Vial, Clear, 40 mL | | |

Reviewed By

Date

**WORK ORDER**

21E0088

**Client:** The Boeing Company |Developmental Center| **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

| | | | |
|---|---|---|---|
| 21E0088-08 E | VOA Vial, Clear, 40 mL | | |
| 21E0088-08 F | VOA Vial, Clear, 40 mL | | |
| 21E0088-09 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-10 A | Small OJ, 500 mL | | |
| 21E0088-10 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-10 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-10 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-10 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-10 F | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0088-10 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-10 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-11 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-12 A | Small OJ, 500 mL | | |
| 21E0088-12 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-12 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-12 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-12 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-12 F | VOA Vial, Clear, 40 mL | | |
| 21E0088-12 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-12 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-13 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21E0088-14 A | Small OJ, 500 mL | | |
| 21E0088-14 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0088-14 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21E0088-14 D | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21E0088-14 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0088-14 F | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0088-14 G | VOA Vial, Clear, 40 mL | | |
| 21E0088-14 H | VOA Vial, Clear, 40 mL | | |
| 21E0088-15 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |

Preservation Confirmed By

05/06/2021
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

DC Regional Ch

ARI Client: Landau

Project Name: SWMU-17

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21E0088

Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1223 — 5.1 5.3 ___ ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 5206

Cooler Accepted by: JS Date: 05/06/2021 Time: 1223

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? | (Bubble Wrap) (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | (YES) | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | | (YES) | NO |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | NA | (YES) | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 04/29/2021 | |

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 05/06/2021 Time: 1521 Labels checked by: JS

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

By: Date:

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## TripBlanks5-210506

**21E0088-01 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 08:56
Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 11:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-01 D
Preparation Batch: BJE0208 — Sample Size: 10 mL
Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *101* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.0* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *89.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## TripBlanks5-210506

**21E0088-01 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 08:56
Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 17:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-01 A
Preparation Batch: BJE0268 — Sample Size: 10 mL
Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *106* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-09-210506**

**21E0088-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 08:56

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 14:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-02 F

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.96 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.26 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *102* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *102* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-09-210506**

**21E0088-02 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 08:56

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 16:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-02 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 4790 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 4.38 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *102* | *%* | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-09-210506**

**21E0088-02 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 08:56

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 22:55

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-02 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.59 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.713 | ug/L | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-09-210506**

**21E0088-02 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 08:56

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 03:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-02 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 25.20 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-09-210506**

**21E0088-02RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 08:56

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 21:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-02RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 3 | 0.300 | 0.300 | 1.47 | mg/L | D |



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**BDC-05-09-210506**

**21E0088-03 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 08:56

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 19:28

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-03 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 2.76 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | ND | ug/L | U |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 09:36

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 14:36

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-04 G

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.24 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *102* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-04 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 09:36

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 16:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-04 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 4890 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *96.3* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-04 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 09:36

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 23:00

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-04 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.30 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 2.87 | ug/L | |



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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-04 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 09:36

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 03:52

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-04 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 43.63 | mg/L | D |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-04RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 09:36

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 22:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-04RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 8 | 0.800 | 0.800 | 1.44 | mg/L | D |



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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-07-210506**

**21E0088-05 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 09:36

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/12/2021 19:05

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-05 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 2.63 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.313 | ug/L | J |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-10-210506**

**21E0088-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 10:21

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 14:58

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-06 F

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.18 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.40 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *99.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-10-210506**

**21E0088-06 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 10:21

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 16:36

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-06 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6900 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 3.59 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *97.3* | *%* | |



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**BDC-05-10-210506**

**21E0088-06 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 10:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/17/2021 21:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-06 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 5.56 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 4.89 | ug/L | |



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**BDC-05-10-210506**

**21E0088-06 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 10:21

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 04:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-06 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 12.71 | mg/L | |

| | | |
|---|---|---|
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**21E0088-06RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 10:21

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 22:48

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-06RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-10-210506**

**21E0088-07 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 10:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 19:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-07 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 5.08 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.282 | ug/L | J |



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**BDC-05-08-210506**

**21E0088-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 10:27

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 15:19

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-08 D

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-08-210506**

**21E0088-08 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 10:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 23:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-08 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 5.50 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.488 | ug/L | J |



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**BDC-05-08-210506**

**21E0088-08 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 10:27

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 04:33

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-08 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.50 | 0.50 | 6.78 | mg/L | |



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**21E0088-08RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 10:27

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 23:08

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-08RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | ND | mg/L | U |



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**BDC-05-08-210506**

**21E0088-09 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 10:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 19:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-09 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 5.03 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |



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**BDC-05-11-210506**

**21E0088-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 11:01

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 15:41

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-10 G

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.80 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *101* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *98.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *100* | *%* | |



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**21E0088-10 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 11:01

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 16:49

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-10 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 9480 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 8.40 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *100* | *%* | |



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**21E0088-10 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:01

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 23:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-10 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 12.4 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.264 | ug/L | J |



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**BDC-05-11-210506**

**21E0088-10 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 11:01

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 04:53

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-10 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 11.19 | mg/L | D |

| | | |
|---|---|---|
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**21E0088-10RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 11:01

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 23:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-10RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 4 | 0.400 | 0.400 | ND | mg/L | U |

| | | |
|---|---|---|
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**BDC-05-11-210506**

**21E0088-11 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:01

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 20:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-11 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 12.5 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | ND | ug/L | U |



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**BDC-05-19-210506**

**21E0088-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 11:17

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 16:03

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-12 F

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.26 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *104* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *95.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *90.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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**BDC-05-19-210506**

**21E0088-12 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 11:17

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 17:02

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-12 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 13000 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 5.56 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *93.8* | *%* | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-19-210506**

**21E0088-12 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 23:18

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-12 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 11.2 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.267 | ug/L | J |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-19-210506**

**21E0088-12 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 11:17

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 05:15

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-12 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 16.28 | mg/L | D |



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**BDC-05-19-210506**

**21E0088-12RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 11:17

Instrument: IC930 Analyst: CDE — Analyzed: 05/20/2021 23:47

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-12RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | ND | mg/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-19-210506**

**21E0088-13 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 20:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-13 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 9.33 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | ND | ug/L | U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-03-210506**

**21E0088-14 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/06/2021 11:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/10/2021 16:25

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-14 F

Preparation Batch: BJE0208 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.74 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.39 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *98.0* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-03-210506**

**21E0088-14 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/06/2021 11:46

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 17:55

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0088-14 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 11100 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *90.3* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

**BDC-05-03-210506**

**21E0088-14 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:46

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/13/2021 23:24

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-14 C 01

Preparation Batch: BJE0318 — Sample Size: 25 mL

Prepared: 05/12/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 5 | 0.187 | 1.00 | 21.2 | ug/L | D |
| Copper | 7440-50-8 | 5 | 0.865 | 2.50 | 52.8 | ug/L | D |



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**BDC-05-03-210506**

**21E0088-14 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/06/2021 11:46

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/20/2021 05:42

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-14 B

Preparation Batch: BJE0473 — Sample Size: 20 mL

Prepared: 05/19/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 20 | 10.00 | 10.00 | 129.0 | mg/L | D |

| | | |
|---|---|---|
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**BDC-05-03-210506**

**21E0088-14RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/06/2021 11:46

Instrument: IC930 Analyst: CDE — Analyzed: 05/21/2021 00:07

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0088-14RE1 A

Preparation Batch: BJE0417 — Sample Size: 10 mL

Prepared: 05/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | 5.28 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-03-210506**

**21E0088-15 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/06/2021 11:46

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/11/2021 20:15

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21E0088-15 A 01

Preparation Batch: BJE0264 — Sample Size: 25 mL

Prepared: 05/11/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 5 | 0.187 | 1.00 | 14.4 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 5 | 0.865 | 2.50 | 2.55 | ug/L | D |



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## Volatile Organic Compounds - Quality Control

### Batch BJE0208 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0208-BLK2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 11:21 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.98 | | ug/L | *5.00* | | *99.6* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.59 | | ug/L | *5.00* | | *91.8* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.7* | *80-120* | | | |
| **LCS (BJE0208-BS2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 09:54 | | | | | | |
| Vinyl Chloride | 9.50 | 0.20 | ug/L | 10.0 | | 95.0 | 66-133 | | | |
| cis-1,2-Dichloroethene | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 80-121 | | | |
| Trichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| Tetrachloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.66 | | ug/L | *5.00* | | *93.2* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.01 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.04 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS Dup (BJE0208-BSD2)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:37 | | | | | | |
| Vinyl Chloride | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 66-133 | 6.24 | 30 | |
| cis-1,2-Dichloroethene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | 4.00 | 30 | |
| Trichloroethene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 3.56 | 30 | |
| Tetrachloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 0.27 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.83 | | ug/L | *5.00* | | *96.6* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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## Dissolved Gases - Quality Control

### Batch BJE0268 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: PB

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0268-BLK1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 13:35 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1990 | | ug/L | *1800* | | *111* | *72-122* | | | |
| **LCS (BJE0268-BS1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 12:55 | | | | | | |
| Methane | 649 | 0.65 | ug/L | 656 | | 98.9 | 80-120 | | | |
| Ethane | 1310 | 1.23 | ug/L | 1230 | | 107 | 80-120 | | | |
| Ethene | 1030 | 1.14 | ug/L | 1150 | | 89.8 | 80-120 | | | |
| Acetylene | 945 | 1.06 | ug/L | 1060 | | 89.2 | 73-123 | | | |
| *Surrogate: Propane* | 1670 | | ug/L | *1800* | | *92.5* | *62-122* | | | |
| **LCS Dup (BJE0268-BSD1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 13:08 | | | | | | |
| Methane | 648 | 0.65 | ug/L | 656 | | 98.7 | 80-120 | 0.18 | 30 | |
| Ethane | 1310 | 1.23 | ug/L | 1230 | | 107 | 80-120 | 0.09 | 30 | |
| Ethene | 1030 | 1.14 | ug/L | 1150 | | 89.7 | 80-120 | 0.06 | 30 | |
| Acetylene | 935 | 1.06 | ug/L | 1060 | | 88.2 | 73-123 | 1.14 | 30 | |
| *Surrogate: Propane* | 2040 | | ug/L | *1800* | | *113* | *62-122* | | | |



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## Metals and Metallic Compounds - Quality Control

### Batch BJE0318 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0318-BLK1)** | | | | | Prepared: 12-May-2021 Analyzed: 13-May-2021 19:25 | | | | | | | |
| Arsenic | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJE0318-BS1)** | | | | | Prepared: 12-May-2021 Analyzed: 13-May-2021 19:30 | | | | | | | |
| Arsenic | 75a | 24.9 | 0.0373 | 0.200 | ug/L | 25.0 | | 99.5 | 80-120 | | | |
| Copper | 63 | 26.0 | 0.173 | 0.500 | ug/L | 25.0 | | 104 | 80-120 | | | |
| Copper | 65 | 25.5 | 0.350 | 0.500 | ug/L | 25.0 | | 102 | 80-120 | | | |



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## Metals and Metallic Compounds (dissolved) - Quality Control

### Batch BJE0264 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0264-BLK1)** | | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 18:51 | | | | | | | |
| Arsenic, Dissolved | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper, Dissolved | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper, Dissolved | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJE0264-BS1)** | | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 18:56 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.2 | 0.0373 | 0.200 | ug/L | 25.0 | | 96.9 | 80-120 | | | |
| Copper, Dissolved | 63 | 26.5 | 0.173 | 0.500 | ug/L | 25.0 | | 106 | 80-120 | | | |
| Copper, Dissolved | 65 | 25.9 | 0.350 | 0.500 | ug/L | 25.0 | | 104 | 80-120 | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## Wet Chemistry - Quality Control

### Batch BJE0417 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0417-BLK2)** | | | | Prepared: 17-May-2021 Analyzed: 21-May-2021 19:54 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJE0417-BS2)** | | | | Prepared: 17-May-2021 Analyzed: 21-May-2021 20:54 | | | | | | | |
| Sulfate | 4.88 | 0.100 | 0.100 | mg/L | 5.00 | | 97.6 | 90-110 | | | |
| **Duplicate (BJE0417-DUP2)** | | **Source: 21E0088-02RE1** | | Prepared: 17-May-2021 Analyzed: 20-May-2021 21:49 | | | | | | | |
| Sulfate | 1.47 | 0.300 | 0.300 | mg/L | | 1.47 | | | 0.00 | | D |
| **Matrix Spike (BJE0417-MS2)** | | **Source: 21E0088-02RE1** | | Prepared: 17-May-2021 Analyzed: 20-May-2021 22:09 | | | | | | | |
| Sulfate | 3.09 | 0.300 | 0.300 | mg/L | 2.00 | 1.47 | 81.0 | 75-125 | | | D |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## Wet Chemistry - Quality Control

### Batch BJE0473 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0473-BLK1)** | Prepared: 19-May-2021 Analyzed: 19-May-2021 22:50 | | | | | | | | | | |
| Total Organic Carbon | ND | 0.50 | 0.50 | mg/L | | | | | | | U |
| **LCS (BJE0473-BS1)** | Prepared: 19-May-2021 Analyzed: 19-May-2021 23:09 | | | | | | | | | | |
| Total Organic Carbon | 19.53 | 0.50 | 0.50 | mg/L | 20.00 | | 97.7 | 90-110 | | | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 200.8 UCT-KED in Water*** | |
| Arsenic-75a | NELAP,WADOE,DoD-ELAP |
| Arsenic-75a | NELAP,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,DoD-ELAP |
| Copper-65 | NELAP,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,DoD-ELAP |
| Arsenic-75a | NELAP,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,DoD-ELAP |
| Copper-63 | NELAP,WADOE,DoD-ELAP |
| Copper-63 | NELAP,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,DoD-ELAP |
| Copper-65 | NELAP,WA-DW,DoD-ELAP |
| ***EPA 300.0 in Water*** | |
| Sulfate | DoD-ELAP,WADOE,NELAP |
| Sulfate | DoD-ELAP,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloromethane | DoD-ELAP,ADEC,NELAP |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP |
| Acrolein | DoD-ELAP,NELAP |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

| | |
|---|---|
| Iodomethane | DoD-ELAP,NELAP |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| Chloroform | DoD-ELAP,ADEC,NELAP |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

| | |
|---|---|
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| Toluene | DoD-ELAP,ADEC,NELAP |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP |

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

| | |
|---|---|
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| n-Butylbenzene | DoD-ELAP,NELAP |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP |



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| | | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

| | |
|---|---|
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | |
| n-Hexane | WADOE |
| 2-Pentanone | |
| 2-Pentanone | WADOE |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Methane | NELAP |
| Ethane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |
| Acetylene | NELAP |

***SM 5310 B-00 in Water***

| | |
|---|---|
| Total Organic Carbon | WADOE,NELAP |
| Total Organic Carbon | WA-DW,NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 24-May-2021 18:40 |

## Notes and Definitions

| | |
|---|---|
| D | The reported value is from a dilution |
| J | Estimated concentration value detected below the reporting limit. |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

02 December 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21K0065 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

21K0065

LANDAU ASSOCIATES

# Chain-of-Custody Record

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ]

Date 11/3/2021

Page 1 of 1

Turnaround Time: Standard X Accelerated

Project Name DC Regional GW Project No. 001521.099.039

Project Location/Event SW-MW-17 / November 2021

Sampler's Name Armando Huerta / Samantha

Project Contact Chris Kimmel / Jen Parsons

Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements:

Shipment Method: Dropoff

Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260) | AMEF (RSK-175 modified) | TOC (SM5310C) | Sulfate (E300.0) | Nitrate, nitrite (300.0) | T. and D. Arsenic (6020) | Effervescent | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BDC-05-05-211103 | 11/3/21 | 1230 | AQ | 7 | X | | X | X | | X | | |
| BDC-05-02-211103 | 11/3/21 | 1320 | AQ | 9 | X | X | X | X | | X | X | |
| BDC-05-04-211103 | 11/3/21 | 1358 | AQ | 9 | X | X | X | X | X | X | | |
| BDC-05-09-211103 | 11/3/21 | 1403 | AQ | 9 | X | X | X | X | | X | | |
| BDC-05-10-211103 | 11/3/21 | 1435 | AQ | 9 | X | X | X | X | | X | | |
| BDC-05-07-211103 | 11/3/21 | 1458 | AQ | 9 | X | X | X | X | | X | | |
| Trip Blanks | — | — | AQ | 4 | X | X | | | | | | |

Allow water samples to settle, collect aliquot from clear portion ☐

NWTPH-Dx - Acid wash cleanup ☐

- Silica gel cleanup ☐

Dissolved metal samples were field filtered

Other * PCE, TCE, cDCE, VC

Non Perserved

** Field Filtered

(200.8 ICP-MS)

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Raven Barbera | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 11/3/2021 Time 1556 | Date 11/3/21 Time 1556 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| BDC-05-05-211103 | 21K0065-01 | Water | 03-Nov-2021 12:30 | 03-Nov-2021 15:56 |
| BDC-05-05-211103 | 21K0065-02 | Water | 03-Nov-2021 12:30 | 03-Nov-2021 15:56 |
| BDC-05-02-211103 | 21K0065-03 | Water | 03-Nov-2021 13:20 | 03-Nov-2021 15:56 |
| BDC-05-02-211103 | 21K0065-04 | Water | 03-Nov-2021 13:20 | 03-Nov-2021 15:56 |
| BDC-05-04-211103 | 21K0065-05 | Water | 03-Nov-2021 13:58 | 03-Nov-2021 15:56 |
| BDC-05-04-211103 | 21K0065-06 | Water | 03-Nov-2021 13:58 | 03-Nov-2021 15:56 |
| BDC-05-09-211103 | 21K0065-07 | Water | 03-Nov-2021 14:03 | 03-Nov-2021 15:56 |
| BDC-05-09-211103 | 21K0065-08 | Water | 03-Nov-2021 14:03 | 03-Nov-2021 15:56 |
| BDC-05-10-211103 | 21K0065-09 | Water | 03-Nov-2021 14:35 | 03-Nov-2021 15:56 |
| BDC-05-10-211103 | 21K0065-10 | Water | 03-Nov-2021 14:35 | 03-Nov-2021 15:56 |
| BDC-05-07-211103 | 21K0065-11 | Water | 03-Nov-2021 14:58 | 03-Nov-2021 15:56 |
| BDC-05-07-211103 | 21K0065-12 | Water | 03-Nov-2021 14:58 | 03-Nov-2021 15:56 |
| Trip Blanks | 21K0065-13 | Water | 03-Nov-2021 12:30 | 03-Nov-2021 15:56 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

# Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits.

**Total and Dissolved Metals - EPA Method 200.8**

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on tyhe associated forms.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

TOC was subcontracted due to instrument failure.

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms. Samples were re-analyzed with surrogates in control with the exception of the sample duplicate which was not re-analyzed.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

**Analytical Resources, LLC**
Analytical Chemists and Consultants

Printed: 11/3/2021 5:08:43PM

**WORK ORDER**

21K0065

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH | |
|---|---|---|---|
| 21K0065-01 A | HDPE NM, 500 mL | | |
| 21K0065-01 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-01 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-01 D | VOA Vial, Clear, 40 mL | | |
| 21K0065-01 E | VOA Vial, Clear, 40 mL | | |
| 21K0065-01 F | VOA Vial, Clear, 40 mL | | |
| 21K0065-02 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21K0065-03 A | HDPE NM, 500 mL | | |
| 21K0065-03 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-03 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-03 D | VOA Vial, Clear, 40 mL | Bubble | |
| 21K0065-03 E | VOA Vial, Clear, 40 mL | Bubble | |
| 21K0065-03 F | VOA Vial, Clear, 40 mL | Bubble | |
| 21K0065-03 G | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21K0065-03 H | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21K0065-04 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21K0065-05 A | HDPE NM, 500 mL | | |
| 21K0065-05 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-05 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-05 D | VOA Vial, Clear, 40 mL | | |
| 21K0065-05 E | VOA Vial, Clear, 40 mL | | |
| 21K0065-05 F | VOA Vial, Clear, 40 mL | | |
| 21K0065-05 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-05 H | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-06 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21K0065-07 A | HDPE NM, 500 mL | | |
| 21K0065-07 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-07 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-07 D | VOA Vial, Clear, 40 mL | | |
| 21K0065-07 E | VOA Vial, Clear, 40 mL | | |
| 21K0065-07 F | VOA Vial, Clear, 40 mL | | |
| 21K0065-07 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-07 H | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-08 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |

Reviewed By

Date

**WORK ORDER**

21K0065

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client: The Boeing Company [Developmental Center]** **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** **Project Number: Boeing Regional GW Developmental Center**

| | | | |
|---|---|---|---|
| 21K0065-09 A | HDPE NM, 500 mL | | |
| 21K0065-09 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-09 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-09 D | VOA Vial, Clear, 40 mL | Bubble | |
| 21K0065-09 E | VOA Vial, Clear, 40 mL | | |
| 21K0065-09 F | VOA Vial, Clear, 40 mL | | |
| 21K0065-09 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-09 H | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-10 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21K0065-11 A | HDPE NM, 500 mL | | |
| 21K0065-11 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0065-11 C | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass |
| 21K0065-11 D | VOA Vial, Clear, 40 mL | | |
| 21K0065-11 E | VOA Vial, Clear, 40 mL | | |
| 21K0065-11 F | VOA Vial, Clear, 40 mL | | |
| 21K0065-11 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-11 H | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-12 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | Pass |
| 21K0065-13 A | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21K0065-13 B | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21K0065-13 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0065-13 D | VOA Vial, Clear, 40 mL, HCL | | |

JS
Preservation Confirmed By

11/03/2021
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: Landau

Project Name: DC Regional GW ~~WW~~ RM 11/3/21

COC No(s): ~~NA~~

Delivered by: Fed-Ex UPS Courier ~~Hand Delivered~~ Other: _____

Assigned ARI Job No: 21K0065

Tracking No: ~~NA~~

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | NO |
| Were custody papers included with the cooler? | YES | NO |
| Were custody papers properly filled out (ink, signed, etc.) | YES | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1556 6.0

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 2565

Cooler Accepted by: RM Date: 11/3/21 Time: 1556

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | NO |
| What kind of packing material was used? ... | Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: | | |
| Was sufficient ice used (if appropriate)? | NA | YES | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | Not |
| Did all bottles arrive in good condition (unbroken)? | | YES | NO |
| Were all bottle labels complete and legible? | | YES | NO |
| Did the number of containers listed on COC match with the number of containers received? | | YES | NO |
| Did all bottle labels and tags agree with custody papers? | | YES | NO |
| Were all bottles used correct for the requested analyses? | | YES | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... | NA | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | NO |
| Was sufficient amount of sample sent in each bottle? | | YES | NO |
| Date VOC Trip Blank was made at ARI | NA | 10/27/2021 | |

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 11/03/2021 Time: 1657 Labels checked by: JS

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

vials w/air bubbles marked on preservation sheet, lab to determine sizes.

By: JS Date: 11/03/2021

**SPECTRA** Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

11/19/2021

Analytical Resources, LLC.
4611 South 134th Place
Suite 100
Tukwila, WA 98168

Project: 21K0065
Sample Matrix: Water
Date Sampled: 11/03/2021
Date Received: 11/12/2021
Spectra Project: 2021110388

| Client ID | Spectra # | Analyte | Result | Units | Method | Analyzed |
|---|---|---|---|---|---|---|
| 21K0065-01 | 1 | Total Organic Carbon | 4.8 | mg/L | SM 5310 B | 11/16/2021 |
| 21K0065-03 | 2 | Total Organic Carbon | 604 | mg/L | SM 5310 B | 11/16/2021 |
| 21K0065-05 | 3 | Total Organic Carbon | 39.4 | mg/L | SM 5310 B | 11/16/2021 |
| 21K0065-07 | 4 | Total Organic Carbon | 14.5 | mg/L | SM 5310 B | 11/16/2021 |
| 21K0065-09 | 5 | Total Organic Carbon | 14.6 | mg/L | SM 5310 B | 11/16/2021 |
| 21K0065-11 | 6 | Total Organic Carbon | 32.2 | mg/L | SM 5310 B | 11/16/2021 |

SPECTRA LABORATORIES

Ben Frans, Laboratory Manager



a7/scj

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

November 16, 2021

Analytical Resources, Inc.
4611 South 134th Place
Suite 100
Tukwila, WA. 98168

Units: mg/L
Spectra Project: 2021110388
Applies to Spectra #'s: 1-6

## QUALITY CONTROL RESULTS

### Total Organic Carbon in Water - SM 5310B

#### Method Blank

Date Analyzed: 11/16/2021

| | Blank |
|---|---|
| Total Organic Carbon | < 0.5 |

#### Laboratory Control Sample (LCS)

Date Analyzed: 11/16/2021

| | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Total Organic Carbon | 10.0 | 10.09 | 100.9 |

LCS Recovery limits 75-125%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 11/16/2021
Sample Spiked: 2021110386-1

| | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4.65 | 10.0 | 14.82 | 101.7 | 14.76 | 101.1 | 0.6 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

Spectra Laboratories

**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0065**

2021110388

**SENDING LABORATORY:**

Analytical Resources, LLC
4611 S. 134th Place, Suite 100
Tukwila, WA 98168
Phone: (206) 695-6200
Fax: (206) 695-6202
Project Manager: Kelly Bottem
E-Mail: kelly.bottem@arilabs.com

**RECEIVING LABORATORY:**

Spectra Laboratories
2221 Ross Way
Tacoma, WA 98421
Phone :253-272-4850
Fax: -

**PLEASE SEND DATA TO subdata@arilabs.com**

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0065-01** **Sampled: 11/03/21 12:30 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 12:30 | | |
| *Containers Supplied:* **21K0065-01 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0065-03** **Sampled: 11/03/21 13:20 Matrix: Water** | | | | **Client note: Effervesent** |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 13:20 | | |
| *Containers Supplied:* **21K0065-03 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0065-05** **Sampled: 11/03/21 13:58 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 13:58 | | |
| *Containers Supplied:* **21K0065-05 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0065-07** **Sampled: 11/03/21 14:03 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 14:03 | | |
| *Containers Supplied:* **21K0065-07 B** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| CB | 11/12/21 2:46PM | | 11.12.21 1446 |
| Released By | Date | Received By | Date |

**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0065**

202111103588

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0065-09** **Sampled: 11/03/21 14:35 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 14:35 | | |
| *Containers Supplied:* | | | | |
| **21K0065-09 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0065-11** **Sampled: 11/03/21 14:58 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 14:58 | | |
| *Containers Supplied:* | | | | |
| **21K0065-11 B** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| [signature] | 11/12/21 2:46pm | [signature] | 11.12.21 1440 |
| Released By | Date | Received By | Date |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-05-211103**

**21K0065-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 12:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 13:50

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-01 D

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.29 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 1.27 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.80 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *108* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *102* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *97.8* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-05-211103**

**21K0065-01 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 12:30

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 00:06

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-01 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.541 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 2.86 | ug/L | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-05-211103**

**21K0065-01RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 12:30

Instrument: IC930 Analyst: BF — Analyzed: 11/26/2021 16:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-01RE3 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | 21.9 | mg/L | D |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-05-211103**

**21K0065-02 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 12:30

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-02 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.455 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 3.22 | ug/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 13:20

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 14:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-03 D

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.57 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.45 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *106* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *100* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-03 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 13:20

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 12:08

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-03 G

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 9270 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *57.8* | *%* | * |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-03 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 13:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:46

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-03 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 5 | 0.187 | 1.00 | 14.6 | ug/L | D |
| Copper | 7440-50-8 | 5 | 0.865 | 2.50 | 31.7 | ug/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-03RE1 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 13:20

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2021 15:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-03RE1 G

Preparation Batch: BJK0245 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 8990 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *68.5* | *%* | * |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-03RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 13:20

Instrument: IC930 Analyst: BF — Analyzed: 11/19/2021 09:08

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-03RE2 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 2.17 | mg/L | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-02-211103**

**21K0065-04 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 13:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:43

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-04 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 5 | 0.187 | 1.00 | 11.4 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 5 | 0.865 | 2.50 | 1.43 | ug/L | J, D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 13:58

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 14:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-05 E

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.34 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.98 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *102* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.7* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-05 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 13:58

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 12:26

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-05 G

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6630 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *77.0* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-05 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 13:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:51

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-05 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 2 | 0.0746 | 0.400 | 38.6 | ug/L | D |
| Copper | 7440-50-8 | 2 | 0.346 | 1.00 | 36.1 | ug/L | D |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-05 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 13:58

Instrument: IC930 Analyst: CDE — Analyzed: 11/04/2021 17:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-05 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrate-N | 14797-55-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Nitrite-N | 14797-65-0 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-05RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 13:58

Instrument: IC930 Analyst: CDE — Analyzed: 11/06/2021 22:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-05RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 1.06 | mg/L | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-04-211103**

**21K0065-06 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 13:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-06 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 21.2 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | 0.682 | ug/L | J, D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-09-211103**

**21K0065-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 14:03

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 15:06

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-07 D

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.05 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *102* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *100* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-09-211103**

**21K0065-07 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 14:03

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 13:20

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-07 H

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5740 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 2.63 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *79.8* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-09-211103**

**21K0065-07 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:03

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:59

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-07 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.06 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.646 | ug/L | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-09-211103**

**21K0065-07RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 14:03

Instrument: IC930 Analyst: CDE — Analyzed: 11/06/2021 23:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-07RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.413 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-09-211103**

**21K0065-08 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:03

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:08

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-08 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.31 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.175 | ug/L | J |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 14:35

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 15:31

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-09 E

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.43 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.24 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *107* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-09 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 14:35

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 13:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-09 G

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6320 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 4.65 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *63.8* | *%* | * |

**Analytical Resources, LLC**
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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-09 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 00:03

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-09 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 10.2 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 10.3 | ug/L | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-09RE1 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 14:35

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2021 16:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-09RE1 G

Preparation Batch: BJK0245 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6620 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 5.49 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *83.6* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-09RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 14:35

Instrument: IC930 Analyst: CDE — Analyzed: 11/06/2021 23:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-09RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-10-211103**

**21K0065-10 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:11

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-10 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 8.28 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.586 | ug/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-07-211103**

**21K0065-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 14:58

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 15:57

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-11 D

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *104* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.1* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-07-211103**

**21K0065-11 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 14:58

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 13:56

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-11 G

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5190 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *74.6* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-07-211103**

**21K0065-11 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:54

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-11 C 01

Preparation Batch: BJK0458 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 2 | 0.0746 | 0.400 | 2.76 | ug/L | D |
| Copper | 7440-50-8 | 2 | 0.346 | 1.00 | 5.03 | ug/L | D |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-07-211103**

**21K0065-11RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 14:58

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 00:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0065-11RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.404 | mg/L | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**BDC-05-07-211103**

**21K0065-12 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/03/2021 14:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/19/2021 23:03

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0065-12 A 02

Preparation Batch: BJK0495 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 2.27 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

## Trip Blanks

**21K0065-13 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 12:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 13:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-13 B

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *109* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.5* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

## Trip Blanks

**21K0065-13 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 12:30
Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 11:50

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0065-13 C
Preparation Batch: BJK0151 — Sample Size: 10 mL
Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *89.0* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0125-BLK1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 12:35 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.36 | | ug/L | *5.00* | | *107* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.94 | | ug/L | *5.00* | | *98.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.18 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| **LCS (BJK0125-BS1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 10:53 | | | | | | |
| Vinyl Chloride | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 66-133 | | | |
| cis-1,2-Dichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |
| Trichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| Tetrachloroethene | 9.63 | 0.20 | ug/L | 10.0 | | 96.3 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.00 | | ug/L | *5.00* | | *100* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.25 | | ug/L | *5.00* | | *105* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.06 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.5* | *80-120* | | | |
| **LCS Dup (BJK0125-BSD1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 11:44 | | | | | | |
| Vinyl Chloride | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 66-133 | 0.14 | 30 | |
| cis-1,2-Dichloroethene | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 80-121 | 1.90 | 30 | |
| Trichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-120 | 0.89 | 30 | |
| Tetrachloroethene | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 80-120 | 0.97 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.28 | | ug/L | *5.00* | | *106* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.95 | | ug/L | *5.00* | | *99.0* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.6* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0151 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0151-BLK1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 09:10 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1500 | | ug/L | *1800* | | *83.2* | *72-122* | | | |
| **LCS (BJK0151-BS1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 08:34 | | | | | | |
| Methane | 327 | 0.65 | ug/L | 328 | | 99.8 | 80-120 | | | |
| Ethane | 646 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 586 | 1.14 | ug/L | 575 | | 102 | 80-120 | | | |
| Acetylene | 505 | 1.06 | ug/L | 530 | | 95.3 | 73-123 | | | |
| *Surrogate: Propane* | 1450 | | ug/L | *1800* | | *80.5* | *62-122* | | | |
| **LCS Dup (BJK0151-BSD1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 08:52 | | | | | | |
| Methane | 346 | 0.65 | ug/L | 328 | | 105 | 80-120 | 5.39 | 30 | |
| Ethane | 684 | 1.23 | ug/L | 615 | | 111 | 80-120 | 5.75 | 30 | |
| Ethene | 616 | 1.14 | ug/L | 575 | | 107 | 80-120 | 4.99 | 30 | |
| Acetylene | 526 | 1.06 | ug/L | 530 | | 99.2 | 73-123 | 4.09 | 30 | |
| *Surrogate: Propane* | 1630 | | ug/L | *1800* | | *90.8* | *62-122* | | | |
| **Duplicate (BJK0151-DUP2)** | **Source: 21K0065-05** | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 13:02 | | | | | | |
| Methane | 6000 | 0.65 | ug/L | | 6630 | | | 9.88 | 30 | |
| Ethane | ND | 1.23 | ug/L | | ND | | | | | U |
| Ethene | ND | 1.14 | ug/L | | ND | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | ND | | | | | U |
| *Surrogate: Propane* | 1280 | | ug/L | *1800* | *1390* | *70.9* | *72-122* | | | * |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0245 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0245-BLK1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:28 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1570 | | ug/L | *1800* | | *87.1* | *72-122* | | | |
| **LCS (BJK0245-BS1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 08:52 | | | | | | |
| Methane | 328 | 0.65 | ug/L | 328 | | 99.9 | 80-120 | | | |
| Ethane | 643 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 580 | 1.14 | ug/L | 575 | | 101 | 80-120 | | | |
| Acetylene | 473 | 1.06 | ug/L | 530 | | 89.3 | 73-123 | | | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.6* | *62-122* | | | |
| **LCS Dup (BJK0245-BSD1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:10 | | | | | | |
| Methane | 306 | 0.65 | ug/L | 328 | | 93.3 | 80-120 | 6.83 | 30 | |
| Ethane | 601 | 1.23 | ug/L | 615 | | 97.7 | 80-120 | 6.84 | 30 | |
| Ethene | 543 | 1.14 | ug/L | 575 | | 94.5 | 80-120 | 6.59 | 30 | |
| Acetylene | 456 | 1.06 | ug/L | 530 | | 86.0 | 73-123 | 3.70 | 30 | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.4* | *62-122* | | | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds - Quality Control

### Batch BJK0458 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0458-BLK1)** | | | | | | Prepared: 17-Nov-2021 Analyzed: 19-Nov-2021 22:06 | | | | | | |
| Arsenic | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0458-BS1)** | | | | | | Prepared: 17-Nov-2021 Analyzed: 19-Nov-2021 22:10 | | | | | | |
| Arsenic | 75a | 24.8 | 0.0373 | 0.200 | ug/L | 25.0 | | 99.0 | 80-120 | | | |
| Copper | 63 | 26.8 | 0.173 | 0.500 | ug/L | 25.0 | | 107 | 80-120 | | | |
| Copper | 65 | 27.4 | 0.350 | 0.500 | ug/L | 25.0 | | 110 | 80-120 | | | |
| **Duplicate (BJK0458-DUP1)** | | | **Source: 21K0065-01** | | | Prepared: 17-Nov-2021 Analyzed: 20-Nov-2021 00:10 | | | | | | |
| Arsenic | 75a | 0.602 | 0.0373 | 0.200 | ug/L | | 0.541 | | | 10.70 | 20 | |
| Copper | 63 | 3.04 | 0.173 | 0.500 | ug/L | | 2.86 | | | 6.04 | 20 | |
| **Matrix Spike (BJK0458-MS1)** | | | **Source: 21K0065-01** | | | Prepared: 17-Nov-2021 Analyzed: 20-Nov-2021 00:14 | | | | | | |
| Arsenic | 75a | 25.6 | 0.0373 | 0.200 | ug/L | 25.0 | 0.541 | 100 | 75-125 | | | |
| Copper | 63 | 29.0 | 0.173 | 0.500 | ug/L | 25.0 | 2.86 | 105 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds (dissolved) - Quality Control

### Batch BJK0495 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0495-BLK1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 19-Nov-2021 22:53 | | | | | | | |
| Arsenic, Dissolved | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper, Dissolved | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper, Dissolved | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0495-BS1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 19-Nov-2021 22:56 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.1 | 0.0373 | 0.200 | ug/L | 25.0 | | 96.4 | 80-120 | | | |
| Copper, Dissolved | 63 | 25.8 | 0.173 | 0.500 | ug/L | 25.0 | | 103 | 80-120 | | | |
| Copper, Dissolved | 65 | 25.9 | 0.350 | 0.500 | ug/L | 25.0 | | 104 | 80-120 | | | |
| **Duplicate (BJK0495-DUP1)** | | | **Source: 21K0065-02** | | Prepared: 18-Nov-2021 Analyzed: 19-Nov-2021 23:19 | | | | | | | |
| Arsenic, Dissolved | 75a | 0.472 | 0.0373 | 0.200 | ug/L | | 0.455 | | | 3.67 | 20 | |
| Copper, Dissolved | 63 | 2.45 | 0.173 | 0.500 | ug/L | | 3.22 | | | 27.10 | 20 | * |
| **Matrix Spike (BJK0495-MS1)** | | | **Source: 21K0065-02** | | Prepared: 18-Nov-2021 Analyzed: 19-Nov-2021 23:23 | | | | | | | |
| Arsenic, Dissolved | 75a | 25.1 | 0.0373 | 0.200 | ug/L | 25.0 | 0.455 | 98.4 | 75-125 | | | |
| Copper, Dissolved | 63 | 27.4 | 0.173 | 0.500 | ug/L | 25.0 | 3.22 | 96.7 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

**Analysis by: Analytical Resources, LLC**

## Wet Chemistry - Quality Control

### Batch BJK0134 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0134-BLK1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 15:56 | | | | | | | |
| Nitrate-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| Nitrite-N | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **Blank (BJK0134-BLK2)** | | | | Prepared: 04-Nov-2021 Analyzed: 19-Nov-2021 07:29 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJK0134-BS1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 16:17 | | | | | | | |
| Nitrate-N | 4.99 | 0.100 | 0.100 | mg/L | 5.00 | | 99.8 | 90-110 | | | |
| Nitrite-N | 5.16 | 0.100 | 0.100 | mg/L | 5.00 | | 103 | 90-110 | | | |
| **LCS (BJK0134-BS2)** | | | | Prepared: 04-Nov-2021 Analyzed: 19-Nov-2021 07:49 | | | | | | | |
| Sulfate | 4.74 | 0.100 | 0.100 | mg/L | 5.00 | | 94.9 | 90-110 | | | |
| **Duplicate (BJK0134-DUP1)** | | **Source: 21K0065-01** | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 16:56 | | | | | | | |
| Nitrate-N | ND | 1.00 | 1.00 | mg/L | | ND | | | | | U |
| Nitrite-N | ND | 1.00 | 1.00 | mg/L | | ND | | | | | U |
| **Duplicate (BJK0134-DUP4)** | | **Source: 21K0065-01RE3** | | Prepared: 04-Nov-2021 Analyzed: 26-Nov-2021 16:36 | | | | | | | |
| Sulfate | 21.1 | 0.500 | 0.500 | mg/L | | 21.9 | | | 3.69 | 20 | D |
| **Matrix Spike (BJK0134-MS1)** | | **Source: 21K0065-01** | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 17:16 | | | | | | | |
| Nitrate-N | 16.7 | 2.00 | 2.00 | mg/L | 20.0 | ND | 83.2 | 75-125 | | | D |
| Nitrite-N | 16.6 | 2.00 | 2.00 | mg/L | 20.1 | ND | 82.9 | 75-125 | | | D |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Matrix Spike (BJK0134-MS4)** | | **Source: 21K0065-01RE3** | | Prepared: 04-Nov-2021 Analyzed: 26-Nov-2021 16:56 | | | | | | | |
| Sulfate | 61.8 | 1.00 | 1.00 | mg/L | 50.0 | 21.9 | 79.8 | 75-125 | | | D |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 200.8 UCT-KED in Water*** | |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| ***EPA 300.0 in Water*** | |
| Nitrate-N | DoD-ELAP,WADOE,WA-DW,NELAP |
| Nitrite-N | DoD-ELAP,WADOE,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WADOE,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

| | |
|---|---|
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

| | |
|---|---|
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |
| WADOE | WA Dept of Ecology | C558 | 06/30/2022 |
| WA-DW | Ecology - Drinking Water | C558 | 06/30/2022 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 14:40 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| J | Estimated concentration value detected below the reporting limit. |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| Y1 | Raised reporting limit due to interference |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

09 December 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21K0130 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

ARI work order 21K0130

# Chain-of-Custody Record

LANDAU ASSOCIATES

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080

Date 11-5-2021 Page 1 of 1

Turnaround Time: Standard X Accelerated

Project Name DC Regional GW Project No. 001217.099.039

Project Location/Event SWMU-17 / November 2021

Sampler's Name Armando / Samantha

Project Contact Chris Kimmel / Jen Parsons

Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements:

Shipment Method: DHL

Stored on ice: (Yes) No

Testing Parameters

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (SW8260D) | AMEE (RSK-175 MOD) | TCL (SW8270E) | T and D Arsenic (SW6020B) | Silica LL (SW6020B) | | | | | | | | | | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BDC-05-18-211105 | 11/5/21 | 823 | AQ | 9 | X | X | X | X | X | | | | | | | | | | Allow water samples to settle, collect aliquot from clear portion ☐ |
| BDC-05-21-211105 | | 923 | | 9 | X | X | X | X | X | | | | | | | | | | NWTPH-Dx - Acid wash cleanup ☐ |
| BDC-05-23-211105 | | 953 | | 7 | X | | X | X | X | | | | | | | | | | - Silica gel cleanup ☐ |
| BDC-05-20-211105 | | 1007 | | 9 | X | X | X | X | X | | | | | | | | | | X Dissolved metal samples were field filtered |
| BDC-05-12-211105 | | 1008 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-DUP3-211105 | | 1000 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-11-211105 | | 918 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-08-211105 | | 1118 | | 7 | X | | X | X | X | | | | | | | | | | Other 8 VOCs, TCE, DCE, VC |
| BDC-05-17-211105 | | 1137 | | 9 | X | X | X | X | X | | | | | | | | | | Non-filtered |
| BDC-05-16-211105 | | 1213 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-03-211105 | | 1228 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-19-211105 | | 1337 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-13-211105 | | 1318 | | 9 | X | X | X | X | X | | | | | | | | | | |
| BDC-05-22-211105 | | 1053 | | 7 | X | | X | X | X | | | | | | | | | | DR (1008 TCP MS) |
| ~~BDC-05-14-211105~~ | | | | | | | | | | | | | | | | | | | Field Filtered |
| ~~BDC-05-24-211105~~ | | | | | | | | | | | | | | | | | | | |
| Trip Blanks | | | AQ | 4 | X | X | | | | | | | | | | | | | |
| BDC-05-15-211105 | 11/5/21 | 12:57 | | | X | X | X | X | X | | | | | | | | | | |

AHA

DRJ 11/8/21

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Raven Barberg | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 11-5-2021 Time 1519 | Date 11/5/21 Time 1519 | Date Time | Date Time |

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10/2018

ARI WORK ORDER 21K0130

# Chain-of-Custody Record

LANDAU ASSOCIATES

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Date 11-5-2021

Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name DC Regional GW Project No. 00215H7.099.039

Project Location/Event SWMU-17 / November 2021

Sampler's Name Armando / Samantha

Project Contact Chris Kimmel / Jen Parsons

Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____

Shipment Method: Drop off

Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D) | AMEC (RSKSOP-175 mod) | TOC (SM5310C) | T. and D. Arsenic (200.8) | Silicate (EPA 300.0) | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| BDC-05-18-211105 | 11/5/21 | 823 | GW | 9 | X | X | X | X | X | |
| BDC-05-21-211105 | | 923 | | 9 | X | X | X | X | X | |
| BDC-05-23-211105 | | 953 | | 7 | X | | X | X | X | |
| BDC-05-20-211105 | | 1007 | | 9 | X | X | X | X | X | |
| BDC-05-12-211105 | | 1008 | | 9 | X | X | X | X | X | |
| BDC-DUP3-211105 | | 1000 | | 9 | X | X | X | X | X | |
| BDC-05-11-211105 | | 918 | | 9 | X | X | X | X | X | |
| BDC-05-08-211105 | | 1118 | | 7 | X | | X | X | X | |
| BDC-05-17-211105 | | 1137 | | 9 | X | X | X | X | X | |
| BDC-05-16-211105 | | 1213 | | 9 | X | X | X | X | X | |
| BDC-05-03-211105 | | 1228 | | 9 | X | X | X | X | X | |
| BDC-05-19-211105 | | 1337 | | 9 | X | X | X | X | X | |
| BDC-05-13-211105 | | 1318 | | 9 | X | X | X | X | X | |
| BDC-05-22-211105 | | 1053 | | 7 | X | | X | X | X | |
| ~~BDC-05-14-211105~~ | | | | | | | | | | AHA |
| ~~BDC-05-24-211105~~ | | | | | | | | | | |
| Trip Blanks | — | — | GW | 4 | X | X | | | | |

Testing Parameters

Observations/Comments

- ___ Allow water samples to settle, collect aliquot from clear portion ☐
- ___ NWTPH-Dx - Acid wash cleanup ☐
  - Silica gel cleanup ☐
- X Dissolved metal samples were field filtered

Other ~~DO~~ PCE, TCE, DCE, VC non-preserved

~~DO~~ (200.8 ICP-MS) field filtered

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Raven Barberry | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 11-5-2021 Time 1519 | Date 11/5/21 Time 1519 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| BDC-05-18-211105 | 21K0130-01 | Water | 05-Nov-2021 08:23 | 05-Nov-2021 15:19 |
| BDC-05-18-211105 | 21K0130-02 | Water | 05-Nov-2021 08:23 | 05-Nov-2021 15:19 |
| BDC-05-21-211105 | 21K0130-03 | Water | 05-Nov-2021 09:23 | 05-Nov-2021 15:19 |
| BDC-05-21-211105 | 21K0130-04 | Water | 05-Nov-2021 09:23 | 05-Nov-2021 15:19 |
| BDC-05-23-211105 | 21K0130-05 | Water | 05-Nov-2021 09:53 | 05-Nov-2021 15:19 |
| BDC-05-23-211105 | 21K0130-06 | Water | 05-Nov-2021 09:53 | 05-Nov-2021 15:19 |
| BDC-05-20-211105 | 21K0130-07 | Water | 05-Nov-2021 10:07 | 05-Nov-2021 15:19 |
| BDC-05-20-211105 | 21K0130-08 | Water | 05-Nov-2021 10:07 | 05-Nov-2021 15:19 |
| BDC-05-12-211105 | 21K0130-09 | Water | 05-Nov-2021 10:08 | 05-Nov-2021 15:19 |
| BDC-05-12-211105 | 21K0130-10 | Water | 05-Nov-2021 10:08 | 05-Nov-2021 15:19 |
| BDC-DUP3-211105 | 21K0130-11 | Water | 05-Nov-2021 10:00 | 05-Nov-2021 15:19 |
| BDC-DUP3-211105 | 21K0130-12 | Water | 05-Nov-2021 10:00 | 05-Nov-2021 15:19 |
| BDC-05-11-211105 | 21K0130-13 | Water | 05-Nov-2021 09:18 | 05-Nov-2021 15:19 |
| BDC-05-11-211105 | 21K0130-14 | Water | 05-Nov-2021 10:00 | 05-Nov-2021 15:19 |
| BDC-05-08-211105 | 21K0130-15 | Water | 05-Nov-2021 11:18 | 05-Nov-2021 15:19 |
| BDC-05-08-211105 | 21K0130-16 | Water | 05-Nov-2021 11:18 | 05-Nov-2021 15:19 |
| BDC-05-17-211105 | 21K0130-17 | Water | 05-Nov-2021 11:37 | 05-Nov-2021 15:19 |
| BDC-05-17-211105 | 21K0130-18 | Water | 05-Nov-2021 11:37 | 05-Nov-2021 15:19 |
| BDC-05-16-211105 | 21K0130-19 | Water | 05-Nov-2021 12:13 | 05-Nov-2021 15:19 |
| BDC-05-16-211105 | 21K0130-20 | Water | 05-Nov-2021 12:13 | 05-Nov-2021 15:19 |
| BDC-05-03-211105 | 21K0130-21 | Water | 05-Nov-2021 12:28 | 05-Nov-2021 15:19 |
| BDC-05-03-211105 | 21K0130-22 | Water | 05-Nov-2021 12:28 | 05-Nov-2021 15:19 |
| BDC-05-19-211105 | 21K0130-23 | Water | 05-Nov-2021 13:37 | 05-Nov-2021 15:19 |
| BDC-05-19-211105 | 21K0130-24 | Water | 05-Nov-2021 13:37 | 05-Nov-2021 15:19 |
| BDC-05-13-211105 | 21K0130-25 | Water | 05-Nov-2021 13:18 | 05-Nov-2021 15:19 |
| BDC-05-13-211105 | 21K0130-26 | Water | 05-Nov-2021 13:37 | 05-Nov-2021 15:19 |
| BDC-05-22-211105 | 21K0130-27 | Water | 05-Nov-2021 10:53 | 05-Nov-2021 15:19 |
| BDC-05-22-211105 | 21K0130-28 | Water | 05-Nov-2021 10:53 | 05-Nov-2021 15:19 |
| TRIP BLANKS | 21K0130-29 | Water | 05-Nov-2021 00:00 | 05-Nov-2021 15:19 |
| BDC-05-15-211105 | 21K0130-30 | Water | 05-Nov-2021 12:57 | 05-Nov-2021 15:19 |
| BDC-05-15-211105 | 21K0130-31 | Water | 05-Nov-2021 12:57 | 05-Nov-2021 15:19 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Total and Dissolved Metals - EPA Method 200.8**

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times with the exception of the re-analysis of samples 21K0130-23, 25, 27 and 30 for sulfate.

Initial and continuing calibrations were within method requirements with the exception of the bracketing sulfate CCVs which were out of control low at 87.74% and 86.62% in association with samples 21K0130-23,25,27 and 30.
The samples were re-analyzed outside of the holding time and flagged with an "H" qualifer.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Due to instrument failure TOC was subcontracted for analysis.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of surrogates in sample 21K0130-07 which failed low. The sample was re-analyzed with surrogate recovery in control.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**WORK ORDER**

21K0130

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH |
|---|---|---|
| 21K0130-01 A | HDPE NM, 500 mL | |
| 21K0130-01 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-01 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-01 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-01 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-01 F | VOA Vial, Clear, 40 mL | |
| 21K0130-01 G | VOA Vial, Clear, 40 mL | |
| 21K0130-01 H | VOA Vial, Clear, 40 mL | |
| 21K0130-02 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-03 A | HDPE NM, 500 mL | |
| 21K0130-03 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-03 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-03 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-03 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-03 F | VOA Vial, Clear, 40 mL | |
| 21K0130-03 G | VOA Vial, Clear, 40 mL | |
| 21K0130-03 H | VOA Vial, Clear, 40 mL | |
| 21K0130-04 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-05 A | HDPE NM, 500 mL | |
| 21K0130-05 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-05 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-05 D | VOA Vial, Clear, 40 mL | |
| 21K0130-05 E | VOA Vial, Clear, 40 mL | |
| 21K0130-05 F | VOA Vial, Clear, 40 mL | |
| 21K0130-06 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-07 A | HDPE NM, 500 mL | |
| 21K0130-07 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-07 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-07 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-07 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-07 F | VOA Vial, Clear, 40 mL | |
| 21K0130-07 G | VOA Vial, Clear, 40 mL | |
| 21K0130-07 H | VOA Vial, Clear, 40 mL | |
| 21K0130-08 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |

Reviewed By

Date

**WORK ORDER**

21K0130

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client: The Boeing Company [Developmental Center]** **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** **Project Number: Boeing Regional GW Developmental Center**

| | | |
|---|---|---|
| 21K0130-09 A | HDPE NM, 500 mL | |
| 21K0130-09 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-09 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-09 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-09 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-09 F | VOA Vial, Clear, 40 mL | |
| 21K0130-09 G | VOA Vial, Clear, 40 mL | |
| 21K0130-09 H | VOA Vial, Clear, 40 mL | |
| 21K0130-10 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-11 A | HDPE NM, 500 mL | |
| 21K0130-11 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-11 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-11 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-11 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-11 F | VOA Vial, Clear, 40 mL | |
| 21K0130-11 G | VOA Vial, Clear, 40 mL | |
| 21K0130-11 H | VOA Vial, Clear, 40 mL | |
| 21K0130-12 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-13 A | HDPE NM, 500 mL | |
| 21K0130-13 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-13 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-13 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-13 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-13 F | VOA Vial, Clear, 40 mL | |
| 21K0130-13 G | VOA Vial, Clear, 40 mL | |
| 21K0130-13 H | VOA Vial, Clear, 40 mL | |
| 21K0130-14 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-15 A | HDPE NM, 500 mL | |
| 21K0130-15 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-15 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-15 D | VOA Vial, Clear, 40 mL | |
| 21K0130-15 E | VOA Vial, Clear, 40 mL | |
| 21K0130-15 F | VOA Vial, Clear, 40 mL | |
| 21K0130-16 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-17 A | HDPE NM, 500 mL | |
| 21K0130-17 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |

Reviewed By

Date

**WORK ORDER**

21K0130

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client: The Boeing Company [Developmental Center]** **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** **Project Number: Boeing Regional GW Developmental Center**

| | | |
|---|---|---|
| 21K0130-17 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-17 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-17 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-17 F | VOA Vial, Clear, 40 mL | |
| 21K0130-17 G | VOA Vial, Clear, 40 mL | |
| 21K0130-17 H | VOA Vial, Clear, 40 mL | |
| 21K0130-18 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 Pass |
| 21K0130-19 A | HDPE NM, 500 mL | |
| 21K0130-19 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-19 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-19 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-19 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-19 F | VOA Vial, Clear, 40 mL | |
| 21K0130-19 G | VOA Vial, Clear, 40 mL | |
| 21K0130-19 H | VOA Vial, Clear, 40 mL | |
| 21K0130-20 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-21 A | HDPE NM, 500 mL | |
| 21K0130-21 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-21 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-21 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-21 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-21 F | VOA Vial, Clear, 40 mL | |
| 21K0130-21 G | VOA Vial, Clear, 40 mL | |
| 21K0130-21 H | VOA Vial, Clear, 40 mL | |
| 21K0130-22 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-23 A | HDPE NM, 500 mL | |
| 21K0130-23 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-23 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-23 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-23 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-23 F | VOA Vial, Clear, 40 mL | |
| 21K0130-23 G | VOA Vial, Clear, 40 mL | |
| 21K0130-23 H | VOA Vial, Clear, 40 mL | |
| 21K0130-24 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-25 A | HDPE NM, 500 mL | |
| 21K0130-25 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |

Reviewed By

Date

**WORK ORDER**

21K0130

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client: The Boeing Company [Developmental Center]** **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** **Project Number: Boeing Regional GW Developmental Center**

| | | |
|---|---|---|
| 21K0130-25 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-25 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-25 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-25 F | VOA Vial, Clear, 40 mL | |
| 21K0130-25 G | VOA Vial, Clear, 40 mL | |
| 21K0130-25 H | VOA Vial, Clear, 40 mL | |
| 21K0130-26 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-27 A | HDPE NM, 500 mL | |
| 21K0130-27 B | HDPE NM, 500 mL, 1:1 HNO3 | L2 pass |
| 21K0130-27 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-27 D | VOA Vial, Clear, 40 mL | |
| 21K0130-27 E | VOA Vial, Clear, 40 mL | |
| 21K0130-27 F | VOA Vial, Clear, 40 mL | |
| 21K0130-28 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |
| 21K0130-29 A | VOA Vial, Clear, 40 mL | |
| 21K0130-29 B | VOA Vial, Clear, 40 mL | |
| 21K0130-29 C | VOA Vial, Clear, 40 mL | |
| 21K0130-29 D | VOA Vial, Clear, 40 mL | |
| 21K0130-30 A | HDPE NM, 500 mL | |
| 21K0130-30 B | HDPE NM, 1000 mL, 1:1 HNO3 | L2 pass |
| 21K0130-30 C | Glass NM, Amber, 250 mL, 9N H2SO4 | L2 pass |
| 21K0130-30 D | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-30 E | VOA Vial, Clear, 40 mL, HCL | |
| 21K0130-30 F | VOA Vial, Clear, 40 mL | |
| 21K0130-30 G | VOA Vial, Clear, 40 mL | |
| 21K0130-30 H | VOA Vial, Clear, 40 mL | |
| 21K0130-31 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | L2 pass |

Preservation Confirmed By

11/8/21
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: Landau

Project Name: DC Regional GW

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21K0130

Tracking No: _____ NA

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | NO |
| Were custody papers included with the cooler? | YES | NO |
| Were custody papers properly filled out (ink, signed, etc.) | YES | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1519 — 1.6 1.3 1.1 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: ~~DOO~~ 5009708

Cooler Accepted by: RB Date: 11/5/21 Time: 1519

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | NO |
| What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____ | | | |
| Was sufficient ice used (if appropriate)? | NA | YES | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | Not |
| Did all bottles arrive in good condition (unbroken)? | | YES | NO |
| Were all bottle labels complete and legible? | | YES | NO |
| Did the number of containers listed on COC match with the number of containers received? | | YES | NO |
| Did all bottle labels and tags agree with custody papers? | | YES | NO |
| Were all bottles used correct for the requested analyses? | | YES | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... | NA | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | NO |
| Was sufficient amount of sample sent in each bottle? | | YES | NO |
| Date VOC Trip Blank was made at ARI | NA | _____ | |

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: LB Date: 11/8/21 Time: 11:19 08 11/8/21 Labels checked by: _____

** ***Notify Project Manager of discrepancies or concerns*** **

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

BDC-OS-IS-211105 was in cooler
3 HDPE 1 250 Ag Vials not listed on COC

By: LB Date: 11/8/21

**SPECTRA** Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

12/01/2021

Analytical Resources, LLC.
4611 South 134th Place
Suite 100
Tukwila, WA 98168

Project: 21K0130
Sample Matrix: Water
Date Sampled: 11/05/2021
Date Received: 11/12/2021
Spectra Project: 2021110391

| Client ID | Spectra # | Analyte | Result | Units | Method | Analyzed |
|---|---|---|---|---|---|---|
| 21K0130-01 | 1 | Total Organic Carbon | 1.8 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-03 | 2 | Total Organic Carbon | 8.4 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-05 | 3 | Total Organic Carbon | 6.4 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-07 | 4 | Total Organic Carbon | 10.8 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-09 | 5 | Total Organic Carbon | 7.7 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-11 | 6 | Total Organic Carbon | 7.3 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-13 | 7 | Total Organic Carbon | 7.1 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-15 | 8 | Total Organic Carbon | 7.8 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-17 | 9 | Total Organic Carbon | 17.8 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-19 | 10 | Total Organic Carbon | 16.7 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-21 | 11 | Total Organic Carbon | 80.8 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-23 | 12 | Total Organic Carbon | 14.2 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-25 | 13 | Total Organic Carbon | 15.9 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-27 | 14 | Total Organic Carbon | 6.0 | mg/L | SM 5310 B | 11/29/2021 |
| 21K0130-30 | 15 | Total Organic Carbon | 25.9 | mg/L | SM 5310 B | 11/29/2021 |

SPECTRA LABORATORIES

Ben Frans, Laboratory Manager



a7/scj

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

November 29, 2021

Analytical Resources, Inc.
4611 South 134th Place
Suite 100
Tukwila, WA. 98168

Units: mg/L
Spectra Project: 2021110391
Applies to Spectra #'s: 1-15

## QUALITY CONTROL RESULTS

### Total Organic Carbon in Water - SM 5310B

#### Method Blank

Date Analyzed: 11/29/2021

| | Blank |
|---|---|
| Total Organic Carbon | < 0.5 |

#### Laboratory Control Sample (LCS)

Date Analyzed: 11/29/2021

| | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Total Organic Carbon | 10.0 | 9.86 | 98.6 |

LCS Recovery limits 75-125%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 11/29/2021
Sample Spiked: 2021110392-1

| | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 39.64 | 10.0 | 49.51 | 98.7 | 49.95 | 103.1 | 4.4 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

Spectra Laboratories

**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0130**

202110391

**SENDING LABORATORY:**

Analytical Resources, LLC
4611 S. 134th Place, Suite 100
Tukwila, WA 98168
Phone: (206) 695-6200
Fax: (206) 695-6202
Project Manager: Kelly Bottem
E-Mail: kelly.bottem@arilabs.com

**RECEIVING LABORATORY:**

Spectra Laboratories
2221 Ross Way
Tacoma, WA 98421
Phone :253-272-4850
Fax: -

**PLEASE SEND DATA TO subdata@arilabs.com**

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0130-01** **Sampled: 11/05/21 08:23 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 08:23 | | |
| *Containers Supplied:* | | | | |
| **21K0130-01 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-03** **Sampled: 11/05/21 09:23 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 09:23 | | |
| *Containers Supplied:* | | | | |
| **21K0130-03 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-05** **Sampled: 11/05/21 09:53 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 09:53 | | |
| *Containers Supplied:* | | | | |
| **21K0130-05 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-07** **Sampled: 11/05/21 10:07 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 10:07 | | |
| *Containers Supplied:* | | | | |
| **21K0130-07 C** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| 11/12/21 2:46pm | | 11.12.21 | 1446 |
| Released By | Date | Received By | Date |

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0130**

202111039 1

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0130-09** **Sampled: 11/05/21 10:08 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 10:08 | | |
| *Containers Supplied:* | | | | |
| **21K0130-09 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-11** **Sampled: 11/05/21 10:00 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 10:00 | | |
| *Containers Supplied:* | | | | |
| **21K0130-11 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-13** **Sampled: 11/05/21 09:18 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 09:18 | | |
| *Containers Supplied:* | | | | |
| **21K0130-13 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-15** **Sampled: 11/05/21 11:18 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 11:18 | | |
| *Containers Supplied:* | | | | |
| **21K0130-15 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-17** **Sampled: 11/05/21 11:37 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 11:37 | | |
| *Containers Supplied:* | | | | |
| **21K0130-17 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-19** **Sampled: 11/05/21 12:13 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 12:13 | | |
| *Containers Supplied:* | | | | |
| **21K0130-19 C** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| CB 11/12/21 2:46pm | | LAA 11.12.21 | 1446 |
| | | | |
| Released By | Date | Received By | Date |

Analytical Resources, Incorporated
Analytical Chemists and Consultants

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0130**

202111039A

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0130-21** **Sampled: 11/05/21 12:28 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 12:28 | | |
| *Containers Supplied:* | | | | |
| **21K0130-21 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-23** **Sampled: 11/05/21 13:37 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 13:37 | | |
| *Containers Supplied:* | | | | |
| **21K0130-23 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-25** **Sampled: 11/05/21 13:18 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 13:18 | | |
| *Containers Supplied:* | | | | |
| **21K0130-25 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-27** **Sampled: 11/05/21 10:53 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 10:53 | | |
| *Containers Supplied:* | | | | |
| **21K0130-27 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0130-30** **Sampled: 11/05/21 12:57 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/03/21 12:57 | | |
| *Containers Supplied:* | | | | |
| **21K0130-30 C** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| LB | 11/12/21 2:46pm | | 11.12.21 1446 |
| Released By | Date | Received By | Date |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 08:23

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 16:04

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-01 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.88 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 1.54 | ug/L | |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 2.44 | ug/L | |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *108* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.1* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.5* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-01 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 08:23

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 15:08

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-01 E

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 513 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *78.3* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-01 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 08:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:47

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-01 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 1.52 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.964 | ug/L | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-01 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 08:23

Instrument: IC930 Analyst: BF — Analyzed: 11/12/2021 17:53

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-01 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 5.82 | mg/L | |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-01 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 08:23

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-01

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 1.8 | mg/L | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-18-211105**

**21K0130-02 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 08:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:12

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-02 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 0.319 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.679 | ug/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-21-211105**

**21K0130-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 09:23

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 16:29

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-03 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.47 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *117* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *96.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *97.5* | *%* | |

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**BDC-05-21-211105**

**21K0130-03 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 09:23

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 15:26

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-03 E

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5210 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *72.2* | *%* | |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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**BDC-05-21-211105**

**21K0130-03 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 09:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:50

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-03 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 6.63 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.309 | ug/L | J |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-21-211105**

**21K0130-03 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 09:23

Instrument: IC930 Analyst: BF — Analyzed: 11/12/2021 18:53

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-03 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.487 | mg/L | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-21-211105**

**21K0130-03 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 09:23

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-03

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 8.4 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-21-211105**

**21K0130-04 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 09:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 04:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-04 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 6.92 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.253 | ug/L | J |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-23-211105**

**21K0130-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 09:53

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 16:54

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-05 E

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.72 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.44 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *107* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-23-211105**

**21K0130-05 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 09:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:53

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-05 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 19.1 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-23-211105**

**21K0130-05 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 09:53

Instrument: IC930 Analyst: BF — Analyzed: 11/12/2021 19:13

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-05 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.622 | mg/L | |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-23-211105**

**21K0130-05 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 09:53

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-05

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 6.4 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-23-211105**

**21K0130-06 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 09:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 04:57

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-06 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 18.0 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 10:07

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 17:19

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-07 F

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.59 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *113* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *99.3* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *97.1* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 10:07

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2021 10:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-07 D

Preparation Batch: BJK0245 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 10300 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *69.9* | *%* | * |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:07

Instrument: ICPMS2 Analyst: SKD — Analyzed: 11/22/2021 18:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-07 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 17.5 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.521 | ug/L | |

**Analytical Resources, LLC**
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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 10:07

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-07

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 10.8 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07RE1 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 10:07

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 15:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-07RE1 G

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 13900 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *84.5* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-07RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 10:07

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 07:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-07RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-20-211105**

**21K0130-08 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:07

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-08 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 17.2 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 10:08

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 17:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-09 F

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.21 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *111* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.6* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-09 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 10:08

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 16:02

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-09 E

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7460 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *82.3* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-09 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:08

Instrument: ICPMS2 Analyst: SKD — Analyzed: 11/22/2021 18:40

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-09 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.66 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.631 | ug/L | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-09 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 10:08

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-09

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 7.7 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-09RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 10:08

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 07:55

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-09RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-12-211105**

**21K0130-10 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:08

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:02

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-10 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.80 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-DUP3-211105**

**21K0130-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 10:00

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 18:10

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-11 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.21 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *121* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.1* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-DUP3-211105**

**21K0130-11 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 10:00

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 16:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-11 E

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7910 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *85.7* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-DUP3-211105**

**21K0130-11 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 22:32

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-11 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 3.43 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.331 | ug/L | J |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-DUP3-211105**

**21K0130-11 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 10:00

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-11

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 7.3 | mg/L | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## BDC-DUP3-211105

**21K0130-11RE2 (Water)**

### Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 10:00
Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 08:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-11RE2 A
Preparation Batch: BJK0342 — Sample Size: 10 mL
Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-DUP3-211105**

**21K0130-12 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:05

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-12 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.76 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 09:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 18:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-13 F

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.39 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *114* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.5* | *%* | |

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# Analytical Report

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-13 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 09:18

Instrument: FID6 Analyst: LH — Analyzed: 11/12/2021 16:56

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-13 E

Preparation Batch: BJK0313 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7190 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 3.21 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *86.3* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-13 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 09:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 22:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-13 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 9.34 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.238 | ug/L | J |

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# Analytical Report

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-13 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 09:18

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-13

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 7.1 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-13RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 09:18

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 08:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-13RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-11-211105**

**21K0130-14 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:07

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-14 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 8.71 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-08-211105**

**21K0130-15 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 11:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 19:00

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-15 E

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.25 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *116* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-08-211105**

**21K0130-15 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 11:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 22:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-15 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 9.21 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 4.30 | ug/L | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-08-211105**

**21K0130-15 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 11:18

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-15

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 7.8 | mg/L | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-08-211105**

**21K0130-15RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 11:18

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 08:56

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-15RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-08-211105**

**21K0130-16 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 11:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:10

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-16 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.84 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-17 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 11:37

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 19:25

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-17 F

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.42 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *113* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-17 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 11:37

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 11:05

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-17 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 12200 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *81.6* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-17 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 11:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 22:42

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-17 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 34.4 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.458 | ug/L | J |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-17 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 11:37

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-17

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 17.8 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-17RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 11:37

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 09:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-17RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-17-211105**

**21K0130-18 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 11:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:32

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-18 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 32.5 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-19 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 12:13

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 19:50

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-19 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.49 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *110* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.7* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-19 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 12:13

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 11:59

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-19 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 8990 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *75.0* | *%* | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-19 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:13

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:24

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-19 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 25.1 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.206 | ug/L | J |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-19 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 12:13

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-19

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 16.7 | mg/L | |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-19RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 12:13

Instrument: IC930 Analyst: BF — Analyzed: 12/03/2021 09:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-19RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-16-211105**

**21K0130-20 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:13

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-20 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 23.0 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-21 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 12:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 20:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-21 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.53 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.23 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *116* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *94.7* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-21 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 12:28

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 12:17

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-21 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6140 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 2.76 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *75.8* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-21 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:28

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-21 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 5 | 0.187 | 1.00 | 17.2 | ug/L | D |
| Copper | 7440-50-8 | 5 | 0.865 | 2.50 | 83.9 | ug/L | D |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-21 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 12:28

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-21

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 80.8 | mg/L | |

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# Analytical Report

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-21RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 12:28

Instrument: IC930 Analyst: BF — Analyzed: 11/26/2021 20:54

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-21RE2 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 2 | 0.200 | 0.200 | 10.8 | mg/L | D |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-03-211105**

**21K0130-22 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:28

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:20

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-22 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 2 | 0.0746 | 0.400 | 11.2 | ug/L | D |
| Copper, Dissolved | 7440-50-8 | 2 | 0.346 | 1.00 | 5.35 | ug/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 13:37

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 20:40

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-23 G

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.23 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *126* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.4* | *%* | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 13:37

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 12:35

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-23 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7710 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 2.31 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *81.1* | *%* | |

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# Analytical Report

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 13:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:27

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-23 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 8.86 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.404 | ug/L | J |

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 13:37

Instrument: IC930 Analyst: BF — Analyzed: 11/12/2021 22:59

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-23 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 13:37

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-23

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 14.2 | mg/L | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-19-211105**

**21K0130-23RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 13:37

Instrument: IC930 Analyst: BF — Analyzed: 12/07/2021 14:30

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-23RE3 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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**BDC-05-19-211105**

**21K0130-24 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 13:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:37

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-24 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 7.67 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | 0.185 | ug/L | J |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 13:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 21:06

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-25 F

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.51 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *110* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.8* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *90.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.4* | *%* | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 13:18

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 12:53

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-25 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7160 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 5.87 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *78.3* | *%* | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 13:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:30

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-25 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 16.6 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.255 | ug/L | J |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 13:18

Instrument: IC930 Analyst: BF — Analyzed: 11/12/2021 23:19

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-25 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 13:18

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-25

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 15.9 | mg/L | |

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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-25RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 13:18

Instrument: IC930 Analyst: BF — Analyzed: 12/07/2021 14:50

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-25RE3 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-13-211105**

**21K0130-26 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 13:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:40

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-26 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 11.9 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-27 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 10:53

Instrument: NT3 Analyst: PKC — Analyzed: 11/09/2021 21:31

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-27 D

Preparation Batch: BJK0226 — Sample Size: 10 mL

Prepared: 11/09/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.94 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 1.10 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-27 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:33

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-27 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 25.5 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.204 | ug/L | J |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-27 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 10:53

Instrument: IC930 Analyst: BF — Analyzed: 11/13/2021 00:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-27 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-27 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 10:53

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-27

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 6 | mg/L | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-27RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 10:53

Instrument: IC930 Analyst: BF — Analyzed: 12/07/2021 15:10

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-27RE3 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-22-211105**

**21K0130-28 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 10:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:42

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-28 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 23.6 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## TRIP BLANKS

**21K0130-29 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 00:00
Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2021 13:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-29 C
Preparation Batch: BJK0262 — Sample Size: 10 mL
Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *112* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *110* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## TRIP BLANKS

**21K0130-29 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 00:00
Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 13:11

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-29 B
Preparation Batch: BJK0434 — Sample Size: 10 mL
Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *89.7* | *%* | |

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# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/05/2021 12:57

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2021 16:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-30 G

Preparation Batch: BJK0262 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.26 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *121* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *98.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *98.3* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/05/2021 12:57

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 13:29

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0130-30 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 7230 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 2.34 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *72.1* | *%* | |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:57

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2021 23:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-30 B 01

Preparation Batch: BJK0493 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 63.5 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.635 | ug/L | |

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 12:57

Instrument: IC930 Analyst: BF — Analyzed: 11/13/2021 01:04

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-30 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/05/2021 12:57

Instrument: SLAB Analyst: — Analyzed: 11/29/2021 00:00

**Analysis by: Spectra Laboratories**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-30

Preparation Batch: B112921

Prepared: 11/29/2021 Final Volume:

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 1 | 0.5 | 0.5 | 25.9 | mg/L | |

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# Analytical Report

| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-30RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/05/2021 12:57

Instrument: IC930 Analyst: BF — Analyzed: 12/07/2021 17:10

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0130-30RE3 A

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | H, U |

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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**BDC-05-15-211105**

**21K0130-31 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/05/2021 12:57

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 05:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0130-31 A 01

Preparation Batch: BJK0494 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 56.0 | ug/L | |
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0226 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0226-BLK2)** | | | | Prepared: 09-Nov-2021 Analyzed: 09-Nov-2021 13:07 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.55 | | ug/L | *5.00* | | *111* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.88 | | ug/L | *5.00* | | *97.5* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.78 | | ug/L | *5.00* | | *95.6* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.94 | | ug/L | *5.00* | | *98.7* | *80-120* | | | |
| **LCS (BJK0226-BS2)** | | | | Prepared: 09-Nov-2021 Analyzed: 09-Nov-2021 11:27 | | | | | | |
| Vinyl Chloride | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 66-133 | | | |
| cis-1,2-Dichloroethene | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 80-121 | | | |
| Trichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| Tetrachloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.34 | | ug/L | *5.00* | | *107* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.00 | | ug/L | *5.00* | | *99.9* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.79 | | ug/L | *5.00* | | *95.9* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| **LCS Dup (BJK0226-BSD2)** | | | | Prepared: 09-Nov-2021 Analyzed: 09-Nov-2021 12:17 | | | | | | |
| Vinyl Chloride | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 66-133 | 2.30 | 30 | |
| cis-1,2-Dichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 2.24 | 30 | |
| Trichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-120 | 1.36 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 0.93 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.27 | | ug/L | *5.00* | | *105* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.92 | | ug/L | *5.00* | | *98.3* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.92 | | ug/L | *5.00* | | *98.4* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.06 | | ug/L | *5.00* | | *101* | *80-120* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0262 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0262-BLK1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 12:51 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.75 | | ug/L | *5.00* | | *115* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.99 | | ug/L | *5.00* | | *99.8* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.60 | | ug/L | *5.00* | | *91.9* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.13 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS (BJK0262-BS1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 11:10 | | | | | | |
| Vinyl Chloride | 9.81 | 0.20 | ug/L | 10.0 | | 98.1 | 66-133 | | | |
| cis-1,2-Dichloroethene | 8.96 | 0.20 | ug/L | 10.0 | | 89.6 | 80-121 | | | |
| Trichloroethene | 8.71 | 0.20 | ug/L | 10.0 | | 87.1 | 80-120 | | | |
| Tetrachloroethene | 8.88 | 0.20 | ug/L | 10.0 | | 88.8 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.56 | | ug/L | *5.00* | | *111* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.14 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-120* | | | |
| **LCS Dup (BJK0262-BSD1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 12:00 | | | | | | |
| Vinyl Chloride | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 66-133 | 2.05 | 30 | |
| cis-1,2-Dichloroethene | 9.35 | 0.20 | ug/L | 10.0 | | 93.5 | 80-121 | 4.33 | 30 | |
| Trichloroethene | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 80-120 | 3.73 | 30 | |
| Tetrachloroethene | 8.91 | 0.20 | ug/L | 10.0 | | 89.1 | 80-120 | 0.41 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 6.03 | | ug/L | *5.00* | | *121* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.15 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.88 | | ug/L | *5.00* | | *97.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.08 | | ug/L | *5.00* | | *102* | *80-120* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0245 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0245-BLK1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:28 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1570 | | ug/L | *1800* | | *87.1* | *72-122* | | | |
| **LCS (BJK0245-BS1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 08:52 | | | | | | |
| Methane | 328 | 0.65 | ug/L | 328 | | 99.9 | 80-120 | | | |
| Ethane | 643 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 580 | 1.14 | ug/L | 575 | | 101 | 80-120 | | | |
| Acetylene | 473 | 1.06 | ug/L | 530 | | 89.3 | 73-123 | | | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.6* | *62-122* | | | |
| **LCS Dup (BJK0245-BSD1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:10 | | | | | | |
| Methane | 306 | 0.65 | ug/L | 328 | | 93.3 | 80-120 | 6.83 | 30 | |
| Ethane | 601 | 1.23 | ug/L | 615 | | 97.7 | 80-120 | 6.84 | 30 | |
| Ethene | 543 | 1.14 | ug/L | 575 | | 94.5 | 80-120 | 6.59 | 30 | |
| Acetylene | 456 | 1.06 | ug/L | 530 | | 86.0 | 73-123 | 3.70 | 30 | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.4* | *62-122* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0313 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0313-BLK1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 09:20 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1540 | | ug/L | *1800* | | *85.8* | *72-122* | | | |
| **LCS (BJK0313-BS1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 08:44 | | | | | | |
| Methane | 332 | 0.65 | ug/L | 328 | | 101 | 80-120 | | | |
| Ethane | 669 | 1.23 | ug/L | 615 | | 109 | 80-120 | | | |
| Ethene | 600 | 1.14 | ug/L | 575 | | 104 | 80-120 | | | |
| Acetylene | 497 | 1.06 | ug/L | 530 | | 93.7 | 73-123 | | | |
| *Surrogate: Propane* | 1710 | | ug/L | *1800* | | *95.3* | *62-122* | | | |
| **LCS Dup (BJK0313-BSD1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 09:02 | | | | | | |
| Methane | 297 | 0.65 | ug/L | 328 | | 90.6 | 80-120 | 11.30 | 30 | |
| Ethane | 581 | 1.23 | ug/L | 615 | | 94.4 | 80-120 | 14.20 | 30 | |
| Ethene | 525 | 1.14 | ug/L | 575 | | 91.3 | 80-120 | 13.40 | 30 | |
| Acetylene | 438 | 1.06 | ug/L | 530 | | 82.6 | 73-123 | 12.60 | 30 | |
| *Surrogate: Propane* | 1560 | | ug/L | *1800* | | *86.7* | *62-122* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0434 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0434-BLK1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:46 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1740 | | ug/L | *1800* | | *96.8* | *72-122* | | | |
| **LCS (BJK0434-BS1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:10 | | | | | | |
| Methane | 352 | 0.65 | ug/L | 328 | | 107 | 80-120 | | | |
| Ethane | 697 | 1.23 | ug/L | 615 | | 113 | 80-120 | | | |
| Ethene | 626 | 1.14 | ug/L | 575 | | 109 | 80-120 | | | |
| Acetylene | 517 | 1.06 | ug/L | 530 | | 97.6 | 73-123 | | | |
| *Surrogate: Propane* | 1790 | | ug/L | *1800* | | *99.5* | *62-122* | | | |
| **LCS Dup (BJK0434-BSD1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:28 | | | | | | |
| Methane | 349 | 0.65 | ug/L | 328 | | 106 | 80-120 | 0.80 | 30 | |
| Ethane | 690 | 1.23 | ug/L | 615 | | 112 | 80-120 | 1.09 | 30 | |
| Ethene | 623 | 1.14 | ug/L | 575 | | 108 | 80-120 | 0.56 | 30 | |
| Acetylene | 518 | 1.06 | ug/L | 530 | | 97.7 | 73-123 | 0.16 | 30 | |
| *Surrogate: Propane* | 1780 | | ug/L | *1800* | | *99.0* | *62-122* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds - Quality Control

### Batch BJK0493 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0493-BLK1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 04:28 | | | | | | | |
| Arsenic | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0493-BS1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 04:30 | | | | | | | |
| Arsenic | 75a | 24.7 | 0.0373 | 0.200 | ug/L | 25.0 | | 98.8 | 80-120 | | | |
| Copper | 63 | 28.1 | 0.173 | 0.500 | ug/L | 25.0 | | 113 | 80-120 | | | |
| Copper | 65 | 28.3 | 0.350 | 0.500 | ug/L | 25.0 | | 113 | 80-120 | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds (dissolved) - Quality Control

### Batch BJK0494 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0494-BLK1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 04:23 | | | | | | | |
| Arsenic, Dissolved | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper, Dissolved | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper, Dissolved | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0494-BS1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 04:25 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.7 | 0.0373 | 0.200 | ug/L | 25.0 | | 98.8 | 80-120 | | | |
| Copper, Dissolved | 63 | 27.9 | 0.173 | 0.500 | ug/L | 25.0 | | 111 | 80-120 | | | |
| Copper, Dissolved | 65 | 27.8 | 0.350 | 0.500 | ug/L | 25.0 | | 111 | 80-120 | | | |
| **Duplicate (BJK0494-DUP1)** | | | **Source: 21K0130-02** | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 05:15 | | | | | | | |
| Arsenic, Dissolved | 75a | 0.297 | 0.0373 | 0.200 | ug/L | | 0.319 | | | 7.14 | 20 | |
| Copper, Dissolved | 63 | 0.658 | 0.173 | 0.500 | ug/L | | 0.679 | | | 3.14 | 20 | |
| **Matrix Spike (BJK0494-MS1)** | | | **Source: 21K0130-02** | | Prepared: 18-Nov-2021 Analyzed: 20-Nov-2021 05:18 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.3 | 0.0373 | 0.200 | ug/L | 25.0 | 0.319 | 96.1 | 75-125 | | | |
| Copper, Dissolved | 63 | 26.8 | 0.173 | 0.500 | ug/L | 25.0 | 0.679 | 104 | 75-125 | | | |

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Analytical Resources, LLC**

## Wet Chemistry - Quality Control

### Batch BJK0342 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0342-BLK1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 16:33 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJK0342-BS1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 16:53 | | | | | | | |
| Sulfate | 4.66 | 0.100 | 0.100 | mg/L | 5.00 | | 93.2 | 90-110 | | | |
| **Duplicate (BJK0342-DUP1)** | | **Source: 21K0130-01** | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 18:13 | | | | | | | |
| Sulfate | 5.82 | 0.100 | 0.100 | mg/L | | 5.82 | | | 0.05 | 20 | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

**Analysis by: Spectra Laboratories**

## Wet Chemistry - Quality Control

### Batch B112921 - No Prep Wet Chem

Instrument: SLAB Analyst:

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BLK (B112921-BLK1)** | | | | Prepared: 29-Nov-2021 Analyzed: 29-Nov-2021 00:00 | | | | | | | |
| Total Organic Carbon | ND | 0.5 | 0.5 | mg/L | | | | - | | | U |
| **BS (B112921-BS1)** | | | | Prepared: 29-Nov-2021 Analyzed: 29-Nov-2021 00:00 | | | | | | | |
| Total Organic Carbon | 9.86 | 0.5 | 0.5 | mg/L | | | 98.6 | 90-110 | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 200.8 UCT-KED in Water*** | |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| ***EPA 300.0 in Water*** | |
| Sulfate | DoD-ELAP,WADOE,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

| | |
|---|---|
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

| | |
|---|---|
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |
| WADOE | WA Dept of Ecology | C558 | 06/30/2022 |
| WA-DW | Ecology - Drinking Water | C558 | 06/30/2022 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 11:28 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| H | Hold time violation - Hold time was exceeded. |
| J | Estimated concentration value detected below the reporting limit. |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

09 December 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21K0146 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

ARI Job #: 21K0146

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11-8-2021
Page 1 of 1

Turnaround Time:
Standard X
Accelerated _____

Project Name DC Regional GW
Project No. 001517-099-039
Project Location/Event SWMU-17 / November 2021
Sampler's Name Armando Huerta
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D) SIM | Ammonia (SM4500-NH3 G) | Total Mn (SM3030) | Ferrous Fe | Sulfate (E300.0) | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| BDC-05-14-211108 | 11/8/21 | 840 | AQ | 9 | X | X | X | X | X | |
| BDC-05-24-211108 | 11/8/21 | 917 | AQ | 9 | X | X | X | X | X | |
| Trip Blanks | — | — | AQ | 4 | X | X | | | | |

Testing Parameters

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

X Dissolved metal samples were field filtered

Other * PCE, TCE, DCE, VC
non perserved

** (200.8 ICP-MS)
Field filtered

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Isabelle Bradley | Printed Name | Printed Name |
| Company LAI | Company ARI | Company | Company |
| Date 11-8-2021 Time 931 | Date 11/8/21 Time 9:31 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| BDC-05-14-211108 | 21K0146-01 | Water | 08-Nov-2021 08:40 | 08-Nov-2021 09:31 |
| BDC-05-14-211108 | 21K0146-02 | Water | 08-Nov-2021 08:40 | 08-Nov-2021 09:31 |
| BDC-05-24-211108 | 21K0146-03 | Water | 08-Nov-2021 09:17 | 08-Nov-2021 09:31 |
| BDC-05-24-211108 | 21K0146-04 | Water | 08-Nov-2021 09:17 | 08-Nov-2021 09:31 |
| Trip Blanks | 21K0146-05 | Water | 08-Nov-2021 08:40 | 08-Nov-2021 09:31 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Total and Dissolved Metals - EPA Method 200.8**

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

TOC was subcontracted for analysis due to instrument failure.

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

Initial and continuing calibrations were within method requirements with the exception of the CCV which bracketed sample 21K0146-01 which was out of control low at 54.1%. The sample was re-analyzed with QC in control.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

**Printed: 11/9/2021 8:59:14AM**

**WORK ORDER**

21K0146

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH | |
|---|---|---|---|
| 21K0146-01 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 | Pass (P) |
| 21K0146-01 B | HDPE NM, 500 mL | | |
| 21K0146-01 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | P |
| 21K0146-01 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-01 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-01 F | VOA Vial, Clear, 40 mL | | |
| 21K0146-01 G | VOA Vial, Clear, 40 mL | | |
| 21K0146-01 H | VOA Vial, Clear, 40 mL | | |
| 21K0146-02 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | P |
| 21K0146-03 A | HDPE NM, 500 mL, 1:1 HNO3 | <2 | P |
| 21K0146-03 B | HDPE NM, 500 mL | | |
| 21K0146-03 C | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | P |
| 21K0146-03 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-03 E | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-03 F | VOA Vial, Clear, 40 mL | | |
| 21K0146-03 G | VOA Vial, Clear, 40 mL | | |
| 21K0146-03 H | VOA Vial, Clear, 40 mL | | |
| 21K0146-04 A | HDPE NM, 500 mL, 1:1 HNO3 (FF) | <2 | P |
| 21K0146-05 A | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-05 B | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0146-05 C | VOA Vial, Clear, 40 mL, HCL | bubble | |

RM
Preservation Confirmed By

11/9/21
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: DC Regional GW

Project Name: _____

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21K0146

Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 0.4

Time _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 25608

Cooler Accepted by: _____ Date: 11/8/21 Time: 9:31

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? | (Bubble Wrap) Wet Ice Gel Packs Baggies Foam Block Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | YES | (NO) |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | RP 11/9/21 | (YES) | (NO) |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | NA | (YES) | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 10/27/21 | |

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: RP Date: 11/9/21 Time: 0844 Labels checked by: _____

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

3 trip blanks instead of 4 listed on COC

By: RP Date: 11/9/21

Analytical Resources, Incorporated
Analytical Chemists and Consultants

# Cooler Temperature Compliance Form

**ARI Work Order:** 21K0146

**Cooler#:** _____ **Temperature(°C):** 6.6 C

| Sample ID | Bottle Count | Bottle Type |
|---|---|---|
| | | |
| Samples recieved above 6.6°C | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Cooler#:** _____ **Temperature(°C):** _____

| Sample ID | Bottle Count | Bottle Type |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Cooler#:** _____ **Temperature(°C):** _____

| Sample ID | Bottle Count | Bottle Type |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Cooler#:** _____ **Temperature(°C):** _____

| Sample ID | Bottle Count | Bottle Type |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Completed by: _____ Date: 11/8/21 Time: 9:31

**SPECTRA** Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

11/24/2021

Analytical Resources, LLC.
4611 South 134th Place
Suite 100
Tukwila, WA 98168

Project: 21K0146
Sample Matrix: Water
Date Sampled: 11/08/2021
Date Received: 11/12/2021
Spectra Project: 2021110390

| Client ID | Spectra # | Analyte | Result | Units | Method | Analyzed |
|---|---|---|---|---|---|---|
| 21K0146-01 | 1 | Total Organic Carbon | 25.2 | mg/L | SM 5310 B | 11/19/2021 |
| 21K0146-03 | 2 | Total Organic Carbon | 8.1 | mg/L | SM 5310 B | 11/19/2021 |

SPECTRA LABORATORIES

Ben Frans, Laboratory Manager



a7/scj

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

November 19, 2021

Analytical Resources, Inc.
4611 South 134th Place
Suite 100
Tukwila, WA. 98168

Units: mg/L
Spectra Project: 2021110390
Applies to Spectra #'s: 1-2

## QUALITY CONTROL RESULTS

### Total Organic Carbon in Water - SM 5310B

#### Method Blank

Date Analyzed: 11/19/2021

| | Blank |
|---|---|
| Total Organic Carbon | < 0.5 |

#### Laboratory Control Sample (LCS)

Date Analyzed: 11/19/2021

| | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Total Organic Carbon | 10.0 | 9.84 | 98.4 |

LCS Recovery limits 75-125%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 11/19/2021
Sample Spiked: 2021110389-1

| | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 5.37 | 10.0 | 15.86 | 104.9 | 15.43 | 100.6 | 4.2 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

Spectra Laboratories

**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0146**

2021110390

**SENDING LABORATORY:**

Analytical Resources, LLC
4611 S. 134th Place, Suite 100
Tukwila, WA 98168
Phone: (206) 695-6200
Fax: (206) 695-6202
Project Manager: Kelly Bottem
E-Mail: kelly.bottem@arilabs.com

**RECEIVING LABORATORY:**

Spectra Laboratories
2221 Ross Way
Tacoma, WA 98421
Phone :253-272-4850
Fax: -

**PLEASE SEND DATA TO subdata@arilabs.com**

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0146-01** **Sampled: 11/08/21 08:40 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/06/21 08:40 | | |
| *Containers Supplied:* | | | | |
| **21K0146-01 C** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0146-03** **Sampled: 11/08/21 09:17 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/23/21 | 12/06/21 09:17 | | |
| *Containers Supplied:* | | | | |
| **21K0146-03 C** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| [signature] | 11/12/21 2:46pm | [signature] | 11.12.21 1446 |
| Released By | Date | Received By | Date |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2021 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2021 17:22

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-01 G

Preparation Batch: BJK0262 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.27 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *121* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *99.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-01 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2021 08:40

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2021 14:29

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-01 D

Preparation Batch: BJK0245 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 9970 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 4.11 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *75.4* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-01 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2021 08:40

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 03:05

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-01 A 01

Preparation Batch: BJK0459 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 2 | 0.0746 | 0.400 | 42.0 | ug/L | D |
| Copper | 7440-50-8 | 2 | 0.346 | 1.00 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-01RE1 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2021 08:40

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 11:23

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-01RE1 F

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 9150 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 3.70 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *88.1* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-01RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2021 08:40

Instrument: IC930 Analyst: BF — Analyzed: 12/06/2021 15:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0146-01RE2 B

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-14-211108**

**21K0146-02 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2021 08:40

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/23/2021 01:23

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-02 A 02

Preparation Batch: BJK0506 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 44.0 | ug/L | |

Instrument: ICPMS2 Analyst: SKD — Analyzed: 11/23/2021 20:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-02 A 02

Preparation Batch: BJK0506 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-24-211108**

**21K0146-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2021 09:17

Instrument: NT3 Analyst: PKC — Analyzed: 11/11/2021 18:57

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-03 G

Preparation Batch: BJK0307 — Sample Size: 10 mL

Prepared: 11/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.33 | ug/L | |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *103* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *101* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.8* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-24-211108**

**21K0146-03 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2021 09:17

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2021 11:41

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-03 E

Preparation Batch: BJK0434 — Sample Size: 10 mL

Prepared: 11/17/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6650 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *78.8* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-24-211108**

**21K0146-03 (Water)**

## Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2021 09:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/20/2021 03:07

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-03 A 01

Preparation Batch: BJK0459 — Sample Size: 25 mL

Prepared: 11/17/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.54 | ug/L | |
| Copper | 7440-50-8 | 1 | 0.173 | 0.500 | 0.368 | ug/L | J |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-24-211108**

**21K0146-03RE2 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2021 09:17

Instrument: IC930 Analyst: BF — Analyzed: 12/06/2021 16:05

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0146-03RE2 B

Preparation Batch: BJK0342 — Sample Size: 10 mL

Prepared: 11/12/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

**Analytical Resources, LLC**
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# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**BDC-05-24-211108**

**21K0146-04 (Water)**

## Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2021 09:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/23/2021 01:25

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-04 A 02

Preparation Batch: BJK0506 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic, Dissolved | 7440-38-2 | 1 | 0.0373 | 0.200 | 4.15 | ug/L | |

Instrument: ICPMS2 Analyst: SKD — Analyzed: 11/23/2021 20:42

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21K0146-04 A 02

Preparation Batch: BJK0506 — Sample Size: 25 mL

Prepared: 11/18/2021 — Final Volume: 25 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Copper, Dissolved | 7440-50-8 | 1 | 0.173 | 0.500 | ND | ug/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
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## Trip Blanks

**21K0146-05 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2021 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2021 14:06

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0146-05 B

Preparation Batch: BJK0262 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *100* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

## Trip Blanks

**21K0146-05 (Water)**

### Dissolved Gases

Method: EPA RSK-175
Instrument: FID6 Analyst: LH

Sampled: 11/08/2021 08:40
Analyzed: 11/17/2021 10:47

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BJK0434
Prepared: 11/17/2021
Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 21K0146-05 C

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| Acetylene | 74-86-2 | 1 | 1.06 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *93.7* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0262 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0262-BLK1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 12:51 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.75 | | ug/L | *5.00* | | *115* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.99 | | ug/L | *5.00* | | *99.8* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.60 | | ug/L | *5.00* | | *91.9* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.13 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS (BJK0262-BS1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 11:10 | | | | | | |
| Vinyl Chloride | 9.81 | 0.20 | ug/L | 10.0 | | 98.1 | 66-133 | | | |
| cis-1,2-Dichloroethene | 8.96 | 0.20 | ug/L | 10.0 | | 89.6 | 80-121 | | | |
| Trichloroethene | 8.71 | 0.20 | ug/L | 10.0 | | 87.1 | 80-120 | | | |
| Tetrachloroethene | 8.88 | 0.20 | ug/L | 10.0 | | 88.8 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.56 | | ug/L | *5.00* | | *111* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.14 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-120* | | | |
| **LCS Dup (BJK0262-BSD1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 12:00 | | | | | | |
| Vinyl Chloride | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 66-133 | 2.05 | 30 | |
| cis-1,2-Dichloroethene | 9.35 | 0.20 | ug/L | 10.0 | | 93.5 | 80-121 | 4.33 | 30 | |
| Trichloroethene | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 80-120 | 3.73 | 30 | |
| Tetrachloroethene | 8.91 | 0.20 | ug/L | 10.0 | | 89.1 | 80-120 | 0.41 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 6.03 | | ug/L | *5.00* | | *121* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.15 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.88 | | ug/L | *5.00* | | *97.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.08 | | ug/L | *5.00* | | *102* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0307 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0307-BLK1)** | | | | Prepared: 11-Nov-2021 Analyzed: 11-Nov-2021 16:51 | | | | | | |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.95 | | ug/L | *5.00* | | *99.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.18 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.25 | | ug/L | *5.00* | | *105* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.18 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| **LCS (BJK0307-BS1)** | | | | Prepared: 11-Nov-2021 Analyzed: 11-Nov-2021 14:55 | | | | | | |
| Vinyl Chloride | 9.01 | 0.20 | ug/L | 10.0 | | 90.1 | 66-133 | | | |
| cis-1,2-Dichloroethene | 9.22 | 0.20 | ug/L | 10.0 | | 92.2 | 80-121 | | | |
| Trichloroethene | 9.74 | 0.20 | ug/L | 10.0 | | 97.4 | 80-120 | | | |
| Tetrachloroethene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.64 | | ug/L | *5.00* | | *92.8* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.20 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.60 | | ug/L | *5.00* | | *112* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.81 | | ug/L | *5.00* | | *96.3* | *80-120* | | | |
| **LCS Dup (BJK0307-BSD1)** | | | | Prepared: 11-Nov-2021 Analyzed: 11-Nov-2021 16:01 | | | | | | |
| Vinyl Chloride | 9.43 | 0.20 | ug/L | 10.0 | | 94.3 | 66-133 | 4.51 | 30 | |
| cis-1,2-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 8.52 | 30 | |
| Trichloroethene | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 80-120 | 2.46 | 30 | |
| Tetrachloroethene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | 2.00 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.82 | | ug/L | *5.00* | | *96.3* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.18 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.11 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.78 | | ug/L | *5.00* | | *95.7* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0245 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0245-BLK1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:28 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1570 | | ug/L | *1800* | | *87.1* | *72-122* | | | |
| **LCS (BJK0245-BS1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 08:52 | | | | | | |
| Methane | 328 | 0.65 | ug/L | 328 | | 99.9 | 80-120 | | | |
| Ethane | 643 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 580 | 1.14 | ug/L | 575 | | 101 | 80-120 | | | |
| Acetylene | 473 | 1.06 | ug/L | 530 | | 89.3 | 73-123 | | | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.6* | *62-122* | | | |
| **LCS Dup (BJK0245-BSD1)** | | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 09:10 | | | | | | |
| Methane | 306 | 0.65 | ug/L | 328 | | 93.3 | 80-120 | 6.83 | 30 | |
| Ethane | 601 | 1.23 | ug/L | 615 | | 97.7 | 80-120 | 6.84 | 30 | |
| Ethene | 543 | 1.14 | ug/L | 575 | | 94.5 | 80-120 | 6.59 | 30 | |
| Acetylene | 456 | 1.06 | ug/L | 530 | | 86.0 | 73-123 | 3.70 | 30 | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.4* | *62-122* | | | |
| **Duplicate (BJK0245-DUP1)** | **Source: 21K0146-01** | | | Prepared: 10-Nov-2021 Analyzed: 10-Nov-2021 14:48 | | | | | | |
| Methane | 10600 | 0.65 | ug/L | | 9970 | | | 6.08 | 30 | |
| Ethane | 4.16 | 1.23 | ug/L | | 4.11 | | | 1.06 | 30 | |
| Ethene | ND | 1.14 | ug/L | | ND | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | ND | | | | | U |
| *Surrogate: Propane* | 1340 | | ug/L | *1800* | *1360* | *74.3* | *72-122* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0434 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0434-BLK1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:46 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| Acetylene | ND | 1.06 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1740 | | ug/L | *1800* | | *96.8* | *72-122* | | | |
| **LCS (BJK0434-BS1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:10 | | | | | | |
| Methane | 352 | 0.65 | ug/L | 328 | | 107 | 80-120 | | | |
| Ethane | 697 | 1.23 | ug/L | 615 | | 113 | 80-120 | | | |
| Ethene | 626 | 1.14 | ug/L | 575 | | 109 | 80-120 | | | |
| Acetylene | 517 | 1.06 | ug/L | 530 | | 97.6 | 73-123 | | | |
| *Surrogate: Propane* | 1790 | | ug/L | *1800* | | *99.5* | *62-122* | | | |
| **LCS Dup (BJK0434-BSD1)** | | | | Prepared: 17-Nov-2021 Analyzed: 17-Nov-2021 09:28 | | | | | | |
| Methane | 349 | 0.65 | ug/L | 328 | | 106 | 80-120 | 0.80 | 30 | |
| Ethane | 690 | 1.23 | ug/L | 615 | | 112 | 80-120 | 1.09 | 30 | |
| Ethene | 623 | 1.14 | ug/L | 575 | | 108 | 80-120 | 0.56 | 30 | |
| Acetylene | 518 | 1.06 | ug/L | 530 | | 97.7 | 73-123 | 0.16 | 30 | |
| *Surrogate: Propane* | 1780 | | ug/L | *1800* | | *99.0* | *62-122* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds - Quality Control

### Batch BJK0459 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0459-BLK1)** | | | | | | Prepared: 17-Nov-2021 Analyzed: 20-Nov-2021 00:46 | | | | | | |
| Arsenic | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0459-BS1)** | | | | | | Prepared: 17-Nov-2021 Analyzed: 20-Nov-2021 00:49 | | | | | | |
| Arsenic | 75a | 25.5 | 0.0373 | 0.200 | ug/L | 25.0 | | 102 | 80-120 | | | |
| Copper | 63 | 28.2 | 0.173 | 0.500 | ug/L | 25.0 | | 113 | 80-120 | | | |
| Copper | 65 | 28.1 | 0.350 | 0.500 | ug/L | 25.0 | | 113 | 80-120 | | | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Metals and Metallic Compounds (dissolved) - Quality Control

### Batch BJK0506 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: SKD

| QC Sample/Analyte | Isotope | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0506-BLK1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 22-Nov-2021 19:34 | | | | | | | |
| Arsenic, Dissolved | 75a | ND | 0.0373 | 0.200 | ug/L | | | | | | | U |
| Copper, Dissolved | 63 | ND | 0.173 | 0.500 | ug/L | | | | | | | U |
| Copper, Dissolved | 65 | ND | 0.350 | 0.500 | ug/L | | | | | | | U |
| **LCS (BJK0506-BS1)** | | | | | Prepared: 18-Nov-2021 Analyzed: 22-Nov-2021 19:39 | | | | | | | |
| Arsenic, Dissolved | 75a | 24.0 | 0.0373 | 0.200 | ug/L | 25.0 | | 95.8 | 80-120 | | | |
| Copper, Dissolved | 63 | 25.1 | 0.173 | 0.500 | ug/L | 25.0 | | 100 | 80-120 | | | |
| Copper, Dissolved | 65 | 25.7 | 0.350 | 0.500 | ug/L | 25.0 | | 103 | 80-120 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

**Analysis by: Analytical Resources, LLC**

## Wet Chemistry - Quality Control

### Batch BJK0342 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0342-BLK1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 16:33 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJK0342-BS1)** | | | | Prepared: 12-Nov-2021 Analyzed: 12-Nov-2021 16:53 | | | | | | | |
| Sulfate | 4.66 | 0.100 | 0.100 | mg/L | 5.00 | | 93.2 | 90-110 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 200.8 UCT-KED in Water*** | |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Arsenic-75a | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-63 | NELAP,WADOE,WA-DW,DoD-ELAP |
| Copper-65 | NELAP,WADOE,WA-DW,DoD-ELAP |
| ***EPA 300.0 in Water*** | |
| Sulfate | DoD-ELAP,WADOE,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

| | |
|---|---|
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

| | |
|---|---|
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |
| WADOE | WA Dept of Ecology | C558 | 06/30/2022 |
| WA-DW | Ecology - Drinking Water | C558 | 06/30/2022 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 09-Dec-2021 09:52 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| J | Estimated concentration value detected below the reporting limit. |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

20 May 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21E0056 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

21E0056

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ **Seattle/Edmonds** (425) 778-0907 ☐ **Spokane** (509) 327-9737
☐ **Tacoma** (253) 926-2493 ☐ **Portland** (503) 542-1080
☐ _____

Date 5/4/21
Page 1 of 1

Turnaround Time:
Standard x
Accelerated _____

Project Name DC Regional GW Project No. 025217.099.039
Project Location/Event SWMU-20 / May 2021
Sampler's Name Jered Newcomb / Armando Huerta
Project Contact Chris Kimmel / Jennifer Parsons
Send Results To Chris Kimmel / Jennifer Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (8260D)* ◆ | MEE (RSK-175 Mod)** | TOC (SM5310C) | Sulfate (E300.0) | Ferrous Iron | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| Trip Blanks 2-210504 | 5/4/21 | — | AQ | 4 | X | X | | | | |
| MW-6A-210504 | 5/4/21 | 1211 | AQ | 7 | X | X | X | X | | |
| MW-16C-210504 | | 1147 | AQ | 3 | X | | | | | |
| MW-16A-210504 | | 1217 | AQ | 3 | X | | | | | |
| MW-6B-210504 | | 1301 | AQ | 7 | X | X | X | X | | |
| MW-20C-210504 | | 1347 | AQ | 3 | X | | | | | |
| MW-9A-210504 | | 1401 | AQ | 7 | X | X | X | X | | |
| BDC-DUP1-210504 | | 810 | AQ | 7 | X | X | X | X | | |
| MW-11A-210504 | | 1422 | AQ | 3 | X | | | | | |
| MW-10C-210504 | | 1436 | AQ | 3 | X | | | | | |
| MW-22A-210504 | | 1506 | AQ | 7 | X | X | X | X | X | |
| MW-14C-210504 | | 1507 | AQ | 3 | X | | | | | |
| MW-15C-210504 | | 1536 | AQ | 3 | X | | | | X | |

Testing Parameters

Observations/Comments

☐ Allow water samples to settle, collect aliquot from clear portion
☐ NWTPH-Dx - Acid wash cleanup
☐ - Silica gel cleanup
☐ Dissolved metal samples were field filtered

Other * Boeing 69 List
** Methane, Ethane, Ethene
◆ Non-preserved

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jered Newcomb | Printed Name | Printed Name | Printed Name |
| Company LAI | Company | Company | Company |
| Date 5/4/21 Time 16:05 | Date 05/04/2021 Time 1605 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TripBlanks2-210504 | 21E0056-01 | Water | 04-May-2021 08:10 | 04-May-2021 16:05 |
| MW-6A-210504 | 21E0056-02 | Water | 04-May-2021 12:11 | 04-May-2021 16:05 |
| MW-16C-210504 | 21E0056-03 | Water | 04-May-2021 11:47 | 04-May-2021 16:05 |
| MW-16A-210504 | 21E0056-04 | Water | 04-May-2021 12:17 | 04-May-2021 16:05 |
| MW-6B-210504 | 21E0056-05 | Water | 04-May-2021 13:01 | 04-May-2021 16:05 |
| MW-20C-210504 | 21E0056-06 | Water | 04-May-2021 13:47 | 04-May-2021 16:05 |
| MW-9A-210504 | 21E0056-07 | Water | 04-May-2021 14:01 | 04-May-2021 16:05 |
| BDC-DUP1-210504 | 21E0056-08 | Water | 04-May-2021 08:10 | 04-May-2021 16:05 |
| MW-11A-210504 | 21E0056-09 | Water | 04-May-2021 14:22 | 04-May-2021 16:05 |
| MW-10C-210504 | 21E0056-10 | Water | 04-May-2021 14:36 | 04-May-2021 16:05 |
| MW-22A-210504 | 21E0056-11 | Water | 04-May-2021 15:06 | 04-May-2021 16:05 |
| MW-14C-210504 | 21E0056-12 | Water | 04-May-2021 15:07 | 04-May-2021 16:05 |
| MW-15C-210504 | 21E0056-13 | Water | 04-May-2021 15:36 | 04-May-2021 16:05 |



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

The sample duplicate relative percent difference (RPD) were within advisory control limits.

**WORK ORDER**

21E0056

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH | |
|---|---|---|---|
| 21E0056-01 A | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-01 B | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-01 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-01 D | VOA Vial, Clear, 40 mL | | |
| 21E0056-02 A | Small OJ, 500 mL | | |
| 21E0056-02 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0056-02 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-02 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-02 E | VOA Vial, Clear, 40 mL | | |
| 21E0056-02 F | VOA Vial, Clear, 40 mL | | |
| 21E0056-02 G | VOA Vial, Clear, 40 mL | | |
| 21E0056-03 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-03 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-03 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-04 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-04 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-04 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-05 A | Small OJ, 500 mL | | |
| 21E0056-05 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0056-05 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-05 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-05 E | VOA Vial, Clear, 40 mL | | |
| 21E0056-05 F | VOA Vial, Clear, 40 mL | | |
| 21E0056-05 G | VOA Vial, Clear, 40 mL | | |
| 21E0056-06 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-06 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-06 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-07 A | Small OJ, 500 mL | | |
| 21E0056-07 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0056-07 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-07 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-07 E | VOA Vial, Clear, 40 mL | | |
| 21E0056-07 F | VOA Vial, Clear, 40 mL | | |
| 21E0056-07 G | VOA Vial, Clear, 40 mL | | |
| 21E0056-08 A | Small OJ, 500 mL | | |

Reviewed By

Date

**WORK ORDER**

21E0056

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

| | | | |
|---|---|---|---|
| 21E0056-08 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0056-08 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-08 D | VOA Vial, Clear, 40 mL, HCL | | |
| 21E0056-08 E | VOA Vial, Clear, 40 mL | | |
| 21E0056-08 F | VOA Vial, Clear, 40 mL | | |
| 21E0056-08 G | VOA Vial, Clear, 40 mL | | |
| 21E0056-09 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-09 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-09 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-10 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-10 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-10 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-11 A | Small OJ, 500 mL | | |
| 21E0056-11 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21E0056-11 C | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21E0056-11 D | VOA Vial, Clear, 40 mL, HCL | Bubble | |
| 21E0056-11 E | VOA Vial, Clear, 40 mL | | |
| 21E0056-11 F | VOA Vial, Clear, 40 mL | | |
| 21E0056-11 G | VOA Vial, Clear, 40 mL | | |
| 21E0056-12 A | VOA Vial, Clear, 40 mL | | |
| 21E0056-12 B | VOA Vial, Clear, 40 mL | | |
| 21E0056-12 C | VOA Vial, Clear, 40 mL | | |
| 21E0056-13 A | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0056-13 B | VOA Vial, Clear, 40 mL | Bubble | |
| 21E0056-13 C | VOA Vial, Clear, 40 mL | | |

Preservation Confirmed By

05/05/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: Landau/Boeing

COC No(s): _____ (NA)

Assigned ARI Job No: 21E0056

Project Name: DC Regional Gw SWMU-20

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1605 — 3.3 4.8 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D00 (D06)

Cooler Accepted by: JS Date: 05/04/2021 Time: 1605

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? ... (Bubble Wrap) Wet Ice Gel Packs (Baggies) Foam Block Paper Other: _____ | | | |
| Was sufficient ice used (if appropriate)? | NA | (YES) | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | | (YES) | NO |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... | NA | (YES) | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 04/29/2021 | |

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 05/05/2021 Time: 1443 Labels checked by: JS

** ***Notify Project Manager of discrepancies or concerns*** **

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

vials w/air bubbles marked on preservation sheet, lab to determine sizes.

By: JS Date: 05/05/2021

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**TripBlanks2-210504**

**21E0056-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:10

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 17:58

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-01 C

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**TripBlanks2-210504**

**21E0056-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:10

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 17:58

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *98.6* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.3* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *96.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |



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

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**TripBlanks2-210504**

**21E0056-01 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 08:10

Instrument: FID6 Analyst: PB — Analyzed: 05/10/2021 13:54

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-01 A

Preparation Batch: BJE0224 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *109* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6A-210504**

**21E0056-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 12:11

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:05

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-02 E

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.46 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.23 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6A-210504**

**21E0056-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 12:11

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:05

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *105* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.9* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## MW-6A-210504

**21E0056-02 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 12:11
Instrument: FID6 Analyst: PB — Analyzed: 05/10/2021 17:53

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-02 C
Preparation Batch: BJE0224 — Sample Size: 10 mL
Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 739 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *95.1* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6A-210504**

**21E0056-02 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/04/2021 12:11

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/10/2021 22:52

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-02 B

Preparation Batch: BJE0219 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 5 | 2.50 | 2.50 | 28.13 | mg/L | D |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6A-210504**

**21E0056-02RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 12:11

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 12:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-02RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 5 | 0.500 | 0.500 | 22.3 | mg/L | D |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-16C-210504**

**21E0056-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 11:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:27

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-03 A

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.81 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 1.59 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-16C-210504**

**21E0056-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 11:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:27

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *105* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.4* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-16A-210504**

**21E0056-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 12:17

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:49

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-04 B

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.20 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.28 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-16A-210504**

**21E0056-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 12:17

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 19:49

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.21 | ug/L | |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *101* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *97.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6B-210504**

**21E0056-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 13:01

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:12

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-05 E

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.88 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 7.47 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.49 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6B-210504**

**21E0056-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 13:01

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:12

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *101* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.7* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *102* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *102* | *%* | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6B-210504**

**21E0056-05 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 13:01

Instrument: FID6 Analyst: PB — Analyzed: 05/10/2021 18:06

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-05 C

Preparation Batch: BJE0224 — Sample Size: 10 mL

Prepared: 05/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 1040 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *95.9* | *%* | |



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6B-210504**

**21E0056-05 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/04/2021 13:01

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/10/2021 23:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-05 B

Preparation Batch: BJE0219 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 20 | 10.00 | 10.00 | 227.9 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-6B-210504**

**21E0056-05RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 13:01

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 12:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-05RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 2.68 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-20C-210504**

**21E0056-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 13:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:34

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-06 A

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.27 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.85 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-20C-210504**

**21E0056-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 13:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:34

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *91.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-9A-210504**

**21E0056-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:01

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:57

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-07 E

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 4.92 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.26 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.72 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-9A-210504**

**21E0056-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:01

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 20:57

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | 0.25 | ug/L | |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | 0.82 | ug/L | |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-9A-210504**

**21E0056-07 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 14:01

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 15:16

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-07 C

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5320 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 52.1 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *97.4* | *%* | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-9A-210504**

**21E0056-07 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/04/2021 14:01

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/10/2021 23:57

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-07 B

Preparation Batch: BJE0219 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 10 | 5.00 | 5.00 | 27.53 | mg/L | D |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-9A-210504**

**21E0056-07RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 14:01

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 13:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-07RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.715 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**BDC-DUP1-210504**

**21E0056-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:10

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 21:19

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-08 E

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 5.04 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.24 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.74 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**BDC-DUP1-210504**

**21E0056-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 08:10

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 21:19

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | 0.28 | ug/L | |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *93.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *106* | *%* | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**BDC-DUP1-210504**

**21E0056-08 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 08:10

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 15:56

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-08 C

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6050 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 56.3 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *86.4* | *%* | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**BDC-DUP1-210504**

**21E0056-08 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/04/2021 08:10

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 00:23

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-08 B

Preparation Batch: BJE0219 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 10 | 5.00 | 5.00 | 26.69 | mg/L | D |



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

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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**BDC-DUP1-210504**

**21E0056-08RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 08:10

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 13:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-08RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.605 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-11A-210504**

**21E0056-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:22

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 21:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-09 A

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.24 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 7.67 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.25 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-11A-210504**

**21E0056-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:22

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 21:42

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.30 | ug/L | |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *107* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *92.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *104* | *%* | |



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

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-10C-210504**

**21E0056-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:36

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 22:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-10 A

Preparation Batch: BJE0195 — Sample Size: 10 mL

Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.30 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.26 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-10C-210504**

**21E0056-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 14:36

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 22:04

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *106* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *89.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *99.4* | *%* | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-22A-210504**

**21E0056-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:06

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 12:30

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-11 F

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.40 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | 0.47 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | 0.74 | ug/L | |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-22A-210504**

**21E0056-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:06

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 12:30

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | 4.07 | ug/L | |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | 3.12 | ug/L | |
| o-Xylene | 95-47-6 | 1 | 0.20 | 4.99 | ug/L | |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | 0.57 | ug/L | |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | 2.10 | ug/L | |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | 12.2 | ug/L | |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | 10.5 | ug/L | |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | 0.35 | ug/L | |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | 19.8 | ug/L | |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *104* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.1* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *104* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-22A-210504**

**21E0056-11 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/04/2021 15:06

Instrument: FID6 Analyst: PB — Analyzed: 05/11/2021 15:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-11 D

Preparation Batch: BJE0268 — Sample Size: 10 mL

Prepared: 05/11/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 5230 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *89.4* | *%* | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-22A-210504**

**21E0056-11 (Water)**

## Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/04/2021 15:06

Instrument: TOC-LCSH Analyst: BF — Analyzed: 05/11/2021 00:49

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-11 B

Preparation Batch: BJE0219 — Sample Size: 20 mL

Prepared: 05/10/2021 — Final Volume: 20 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | 20 | 10.00 | 10.00 | 77.03 | mg/L | D |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-22A-210504**

**21E0056-11RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 05/04/2021 15:06

Instrument: IC930 Analyst: CDE — Analyzed: 05/13/2021 13:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21E0056-11RE1 A

Preparation Batch: BJE0113 — Sample Size: 10 mL

Prepared: 05/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-14C-210504**

**21E0056-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:07

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 12:52

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-12 C

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-14C-210504**

**21E0056-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:07

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 12:52

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *93.6* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *95.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *106* | *%* | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-15C-210504**

**21E0056-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:36

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0056-13 A

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.15 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.28 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.56 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

**MW-15C-210504**

**21E0056-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/04/2021 15:36

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:14

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *96.5* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *103* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.97 | | ug/L | *5.00* | | *99.5* | *80-129* | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | |
| *Surrogate: Toluene-d8* | 4.92 | | ug/L | *5.00* | | *98.3* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.73 | | ug/L | *5.00* | | *94.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| Chloromethane | 8.00 | 0.50 | ug/L | 10.0 | | 80.0 | 60-138 | | | |
| Vinyl Chloride | 8.19 | 0.20 | ug/L | 10.0 | | 81.9 | 66-133 | | | |
| Bromomethane | 8.60 | 1.00 | ug/L | 10.0 | | 86.0 | 72-131 | | | |
| Chloroethane | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 60-155 | | | |
| Trichlorofluoromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 62-141 | | | |
| Acrolein | 42.1 | 5.00 | ug/L | 50.0 | | 84.3 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 76-129 | | | |
| Acetone | 37.9 | 5.00 | ug/L | 50.0 | | 75.8 | 58-142 | | | |
| 1,1-Dichloroethene | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 69-135 | | | |
| Iodomethane | 8.21 | 1.00 | ug/L | 10.0 | | 82.1 | 56-147 | | | |
| Methylene Chloride | 8.10 | 1.00 | ug/L | 10.0 | | 81.0 | 65-135 | | | |
| Acrylonitrile | 6.74 | 1.00 | ug/L | 10.0 | | 67.4 | 64-134 | | | |
| Carbon Disulfide | 8.42 | 0.20 | ug/L | 10.0 | | 84.2 | 78-125 | | | |
| trans-1,2-Dichloroethene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 78-128 | | | |
| Vinyl Acetate | 9.09 | 0.20 | ug/L | 10.0 | | 90.9 | 55-138 | | | |
| 1,1-Dichloroethane | 8.38 | 0.20 | ug/L | 10.0 | | 83.8 | 76-124 | | | |
| 2-Butanone | 38.7 | 5.00 | ug/L | 50.0 | | 77.5 | 61-140 | | | |
| 2,2-Dichloropropane | 8.85 | 0.20 | ug/L | 10.0 | | 88.5 | 66-147 | | | |
| cis-1,2-Dichloroethene | 8.67 | 0.20 | ug/L | 10.0 | | 86.7 | 80-121 | | | |
| Chloroform | 8.31 | 0.20 | ug/L | 10.0 | | 83.1 | 80-122 | | | |
| Bromochloromethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 8.35 | 0.20 | ug/L | 10.0 | | 83.5 | 79-123 | | | |
| 1,1-Dichloropropene | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 80-127 | | | |
| Carbon tetrachloride | 8.49 | 0.20 | ug/L | 10.0 | | 84.9 | 53-137 | | | |
| 1,2-Dichloroethane | 8.34 | 0.20 | ug/L | 10.0 | | 83.4 | 75-123 | | | |
| Benzene | 8.83 | 0.20 | ug/L | 10.0 | | 88.3 | 80-120 | | | |
| Trichloroethene | 8.74 | 0.20 | ug/L | 10.0 | | 87.4 | 80-120 | | | |
| 1,2-Dichloropropane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 80-120 | | | |
| Bromodichloromethane | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 80-121 | | | |
| Dibromomethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-120 | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 4-Methyl-2-Pentanone | 43.6 | 5.00 | ug/L | 50.0 | | 87.2 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.15 | 0.20 | ug/L | 10.0 | | 91.5 | 80-124 | | | |
| Toluene | 8.65 | 0.20 | ug/L | 10.0 | | 86.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.12 | 0.20 | ug/L | 10.0 | | 91.2 | 71-127 | | | |
| 2-Hexanone | 41.8 | 5.00 | ug/L | 50.0 | | 83.6 | 69-133 | | | |
| 1,1,2-Trichloroethane | 8.29 | 0.20 | ug/L | 10.0 | | 82.9 | 80-121 | | | |
| 1,3-Dichloropropane | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| Tetrachloroethene | 8.87 | 0.20 | ug/L | 10.0 | | 88.7 | 80-120 | | | |
| Dibromochloromethane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 65-135 | | | |
| 1,2-Dibromoethane | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-121 | | | |
| Chlorobenzene | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-120 | | | |
| Ethylbenzene | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 8.69 | 0.20 | ug/L | 10.0 | | 86.9 | 80-120 | | | |
| m,p-Xylene | 18.6 | 0.40 | ug/L | 20.0 | | 93.2 | 80-121 | | | |
| o-Xylene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-121 | | | |
| Styrene | 9.56 | 0.20 | ug/L | 10.0 | | 95.6 | 80-124 | | | |
| Bromoform | 8.68 | 0.20 | ug/L | 10.0 | | 86.8 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.26 | 0.20 | ug/L | 10.0 | | 82.6 | 77-123 | | | |
| 1,2,3-Trichloropropane | 8.21 | 0.50 | ug/L | 10.0 | | 82.1 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 7.98 | 1.00 | ug/L | 10.0 | | 79.8 | 55-129 | | | |
| n-Propylbenzene | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 78-130 | | | |
| Bromobenzene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 80-120 | | | |
| Isopropyl Benzene | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 80-128 | | | |
| 2-Chlorotoluene | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 78-122 | | | |
| 4-Chlorotoluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-121 | | | |
| t-Butylbenzene | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 9.65 | 0.20 | ug/L | 10.0 | | 96.5 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-127 | | | |
| s-Butylbenzene | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 78-129 | | | |
| 4-Isopropyl Toluene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 79-130 | | | |
| 1,3-Dichlorobenzene | 8.97 | 0.20 | ug/L | 10.0 | | 89.7 | 80-120 | | | |
| 1,4-Dichlorobenzene | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| n-Butylbenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 74-129 | | | |
| 1,2-Dichlorobenzene | 8.73 | 0.20 | ug/L | 10.0 | | 87.3 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.15 | 0.50 | ug/L | 10.0 | | 81.5 | 62-123 | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 1,2,4-Trichlorobenzene | 9.74 | 0.50 | ug/L | 10.0 | | 97.4 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 58-123 | | | |
| Naphthalene | 8.14 | 0.50 | ug/L | 10.0 | | 81.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 9.54 | 0.50 | ug/L | 10.0 | | 95.4 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.75 | | ug/L | *5.00* | | *95.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Chloromethane | 9.14 | 0.50 | ug/L | 10.0 | | 91.4 | 60-138 | 13.40 | 30 | |
| Vinyl Chloride | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 66-133 | 18.20 | 30 | |
| Bromomethane | 10.2 | 1.00 | ug/L | 10.0 | | 102 | 72-131 | 17.20 | 30 | |
| Chloroethane | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 60-155 | 17.20 | 30 | |
| Trichlorofluoromethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 62-141 | 9.00 | 30 | |
| Acrolein | 49.2 | 5.00 | ug/L | 50.0 | | 98.5 | 52-190 | 15.50 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 76-129 | 15.90 | 30 | |
| Acetone | 46.0 | 5.00 | ug/L | 50.0 | | 91.9 | 58-142 | 19.30 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 17.00 | 30 | |
| Iodomethane | 9.50 | 1.00 | ug/L | 10.0 | | 95.0 | 56-147 | 14.60 | 30 | |
| Methylene Chloride | 9.57 | 1.00 | ug/L | 10.0 | | 95.7 | 65-135 | 16.70 | 30 | |
| Acrylonitrile | 9.09 | 1.00 | ug/L | 10.0 | | 90.9 | 64-134 | 29.70 | 30 | |
| Carbon Disulfide | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 78-125 | 16.70 | 30 | |
| trans-1,2-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-128 | 16.20 | 30 | |
| Vinyl Acetate | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 55-138 | 19.30 | 30 | |
| 1,1-Dichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 76-124 | 17.50 | 30 | |
| 2-Butanone | 48.7 | 5.00 | ug/L | 50.0 | | 97.5 | 61-140 | 22.90 | 30 | |
| 2,2-Dichloropropane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 66-147 | 17.40 | 30 | |
| cis-1,2-Dichloroethene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | 18.70 | 30 | |
| Chloroform | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 80-122 | 17.00 | 30 | |
| Bromochloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 16.40 | 30 | |
| 1,1,1-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 79-123 | 19.20 | 30 | |
| 1,1-Dichloropropene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-127 | 17.80 | 30 | |
| Carbon tetrachloride | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 53-137 | 16.20 | 30 | |
| 1,2-Dichloroethane | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 75-123 | 17.10 | 30 | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Benzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 17.60 | 30 | |
| Trichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| 1,2-Dichloropropane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 16.40 | 30 | |
| Bromodichloromethane | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 80-121 | 15.50 | 30 | |
| Dibromomethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 16.50 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 20.30 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 17.20 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 16.60 | 30 | |
| trans-1,3-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 71-127 | 13.50 | 30 | |
| 2-Hexanone | 52.3 | 5.00 | ug/L | 50.0 | | 105 | 69-133 | 22.30 | 30 | |
| 1,1,2-Trichloroethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 18.60 | 30 | |
| 1,3-Dichloropropane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 13.60 | 30 | |
| Dibromochloromethane | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 65-135 | 15.20 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 19.70 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 15.30 | 30 | |
| Ethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 13.40 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.90 | 30 | |
| m,p-Xylene | 21.8 | 0.40 | ug/L | 20.0 | | 109 | 80-121 | 15.70 | 30 | |
| o-Xylene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-121 | 14.90 | 30 | |
| Styrene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-124 | 14.50 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 19.30 | 30 | |
| 1,1,2,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 77-123 | 21.00 | 30 | |
| 1,2,3-Trichloropropane | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 76-125 | 20.50 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.0 | 1.00 | ug/L | 10.0 | | 100 | 55-129 | 22.50 | 30 | |
| n-Propylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-130 | 15.40 | 30 | |
| Bromobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 18.40 | 30 | |
| Isopropyl Benzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-128 | 16.00 | 30 | |
| 2-Chlorotoluene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-122 | 15.90 | 30 | |
| 4-Chlorotoluene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 15.90 | 30 | |
| t-Butylbenzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 78-125 | 16.30 | 30 | |
| 1,3,5-Trimethylbenzene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 80-129 | 16.30 | 30 | |
| 1,2,4-Trimethylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 80-127 | 16.50 | 30 | |
| s-Butylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 78-129 | 16.60 | 30 | |
| 4-Isopropyl Toluene | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 79-130 | 16.40 | 30 | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| 1,3-Dichlorobenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 15.70 | 30 | |
| 1,4-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.70 | 30 | |
| n-Butylbenzene | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 74-129 | 16.20 | 30 | |
| 1,2-Dichlorobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.30 | 30 | |
| 1,2-Dibromo-3-chloropropane | 9.99 | 0.50 | ug/L | 10.0 | | 99.9 | 62-123 | 20.30 | 30 | |
| 1,2,4-Trichlorobenzene | 11.3 | 0.50 | ug/L | 10.0 | | 113 | 64-124 | 15.20 | 30 | |
| Hexachloro-1,3-Butadiene | 11.5 | 0.50 | ug/L | 10.0 | | 115 | 58-123 | 12.60 | 30 | |
| Naphthalene | 9.85 | 0.50 | ug/L | 10.0 | | 98.5 | 50-134 | 19.00 | 30 | |
| 1,2,3-Trichlorobenzene | 11.4 | 0.50 | ug/L | 10.0 | | 114 | 49-133 | 18.00 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.89 | | ug/L | *5.00* | | *97.8* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.92 | | ug/L | *5.00* | | *98.4* | *80-120* | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.06 | | ug/L | *5.00* | | *101* | *80-129* | | | |



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

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | |
| *Surrogate: Toluene-d8* | 4.89 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.69 | | ug/L | *5.00* | | *93.8* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.16 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| Chloromethane | 8.36 | 0.50 | ug/L | 10.0 | | 83.6 | 60-138 | | | |
| Vinyl Chloride | 8.84 | 0.20 | ug/L | 10.0 | | 88.4 | 66-133 | | | |
| Bromomethane | 8.89 | 1.00 | ug/L | 10.0 | | 88.9 | 72-131 | | | |
| Chloroethane | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 60-155 | | | |
| Trichlorofluoromethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 62-141 | | | |
| Acrolein | 43.3 | 5.00 | ug/L | 50.0 | | 86.6 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 76-129 | | | |
| Acetone | 40.8 | 5.00 | ug/L | 50.0 | | 81.7 | 58-142 | | | |
| 1,1-Dichloroethene | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 69-135 | | | |
| Iodomethane | 8.93 | 1.00 | ug/L | 10.0 | | 89.3 | 56-147 | | | |
| Methylene Chloride | 8.57 | 1.00 | ug/L | 10.0 | | 85.7 | 65-135 | | | |
| Acrylonitrile | 7.82 | 1.00 | ug/L | 10.0 | | 78.2 | 64-134 | | | Q |
| Carbon Disulfide | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 78-125 | | | |
| trans-1,2-Dichloroethene | 9.18 | 0.20 | ug/L | 10.0 | | 91.8 | 78-128 | | | |
| Vinyl Acetate | 9.40 | 0.20 | ug/L | 10.0 | | 94.0 | 55-138 | | | |
| 1,1-Dichloroethane | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 76-124 | | | |
| 2-Butanone | 42.4 | 5.00 | ug/L | 50.0 | | 84.8 | 61-140 | | | |
| 2,2-Dichloropropane | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 66-147 | | | |
| cis-1,2-Dichloroethene | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 80-121 | | | |
| Chloroform | 9.01 | 0.20 | ug/L | 10.0 | | 90.1 | 80-122 | | | |
| Bromochloromethane | 9.41 | 0.20 | ug/L | 10.0 | | 94.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 9.30 | 0.20 | ug/L | 10.0 | | 93.0 | 79-123 | | | |
| 1,1-Dichloropropene | 9.71 | 0.20 | ug/L | 10.0 | | 97.1 | 80-127 | | | |
| Carbon tetrachloride | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 53-137 | | | |
| 1,2-Dichloroethane | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 75-123 | | | |
| Benzene | 9.58 | 0.20 | ug/L | 10.0 | | 95.8 | 80-120 | | | |
| Trichloroethene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-120 | | | |
| 1,2-Dichloropropane | 9.21 | 0.20 | ug/L | 10.0 | | 92.1 | 80-120 | | | |
| Bromodichloromethane | 9.10 | 0.20 | ug/L | 10.0 | | 91.0 | 80-121 | | | |
| Dibromomethane | 9.35 | 0.20 | ug/L | 10.0 | | 93.5 | 80-120 | | | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 4-Methyl-2-Pentanone | 47.5 | 5.00 | ug/L | 50.0 | | 95.0 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 80-124 | | | |
| Toluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 71-127 | | | |
| 2-Hexanone | 44.5 | 5.00 | ug/L | 50.0 | | 89.0 | 69-133 | | | |
| 1,1,2-Trichloroethane | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 80-121 | | | |
| 1,3-Dichloropropane | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| Tetrachloroethene | 9.47 | 0.20 | ug/L | 10.0 | | 94.7 | 80-120 | | | |
| Dibromochloromethane | 9.23 | 0.20 | ug/L | 10.0 | | 92.3 | 65-135 | | | |
| 1,2-Dibromoethane | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 80-121 | | | |
| Chlorobenzene | 9.33 | 0.20 | ug/L | 10.0 | | 93.3 | 80-120 | | | |
| Ethylbenzene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9.42 | 0.20 | ug/L | 10.0 | | 94.2 | 80-120 | | | |
| m,p-Xylene | 19.8 | 0.40 | ug/L | 20.0 | | 99.0 | 80-121 | | | |
| o-Xylene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | | | |
| Styrene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-124 | | | |
| Bromoform | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.94 | 0.20 | ug/L | 10.0 | | 89.4 | 77-123 | | | |
| 1,2,3-Trichloropropane | 9.05 | 0.50 | ug/L | 10.0 | | 90.5 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 9.15 | 1.00 | ug/L | 10.0 | | 91.5 | 55-129 | | | |
| n-Propylbenzene | 9.84 | 0.20 | ug/L | 10.0 | | 98.4 | 78-130 | | | |
| Bromobenzene | 9.20 | 0.20 | ug/L | 10.0 | | 92.0 | 80-120 | | | |
| Isopropyl Benzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-128 | | | |
| 2-Chlorotoluene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 78-122 | | | |
| 4-Chlorotoluene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-121 | | | |
| t-Butylbenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-127 | | | |
| s-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-129 | | | |
| 4-Isopropyl Toluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 79-130 | | | |
| 1,3-Dichlorobenzene | 9.50 | 0.20 | ug/L | 10.0 | | 95.0 | 80-120 | | | |
| 1,4-Dichlorobenzene | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| n-Butylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 74-129 | | | |
| 1,2-Dichlorobenzene | 9.27 | 0.20 | ug/L | 10.0 | | 92.7 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.85 | 0.50 | ug/L | 10.0 | | 88.5 | 62-123 | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 1,2,4-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 9.93 | 0.50 | ug/L | 10.0 | | 99.3 | 58-123 | | | |
| Naphthalene | 8.74 | 0.50 | ug/L | 10.0 | | 87.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Chloromethane | 9.31 | 0.50 | ug/L | 10.0 | | 93.1 | 60-138 | 10.80 | 30 | |
| Vinyl Chloride | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 66-133 | 11.90 | 30 | |
| Bromomethane | 9.99 | 1.00 | ug/L | 10.0 | | 99.9 | 72-131 | 11.70 | 30 | |
| Chloroethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 60-155 | 5.94 | 30 | |
| Trichlorofluoromethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 62-141 | 6.70 | 30 | |
| Acrolein | 48.7 | 5.00 | ug/L | 50.0 | | 97.4 | 52-190 | 11.80 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 76-129 | 9.42 | 30 | |
| Acetone | 46.9 | 5.00 | ug/L | 50.0 | | 93.9 | 58-142 | 13.90 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 10.20 | 30 | |
| Iodomethane | 9.80 | 1.00 | ug/L | 10.0 | | 98.0 | 56-147 | 9.29 | 30 | |
| Methylene Chloride | 9.41 | 1.00 | ug/L | 10.0 | | 94.1 | 65-135 | 9.33 | 30 | |
| Acrylonitrile | 8.91 | 1.00 | ug/L | 10.0 | | 89.1 | 64-134 | 13.10 | 30 | Q |
| Carbon Disulfide | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-125 | 9.93 | 30 | |
| trans-1,2-Dichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 78-128 | 8.29 | 30 | |
| Vinyl Acetate | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 55-138 | 10.80 | 30 | |
| 1,1-Dichloroethane | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 76-124 | 7.82 | 30 | |
| 2-Butanone | 49.3 | 5.00 | ug/L | 50.0 | | 98.6 | 61-140 | 15.00 | 30 | |
| 2,2-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 66-147 | 6.18 | 30 | |
| cis-1,2-Dichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | 11.10 | 30 | |
| Chloroform | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 80-122 | 9.29 | 30 | |
| Bromochloromethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 6.85 | 30 | |
| 1,1,1-Trichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 79-123 | 7.08 | 30 | |
| 1,1-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-127 | 7.29 | 30 | |
| Carbon tetrachloride | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 53-137 | 7.44 | 30 | |
| 1,2-Dichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 75-123 | 9.52 | 30 | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Benzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 6.92 | 30 | |
| Trichloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.02 | 30 | |
| 1,2-Dichloropropane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-120 | 8.16 | 30 | |
| Bromodichloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 9.48 | 30 | |
| Dibromomethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.62 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 11.90 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 8.58 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.27 | 30 | |
| trans-1,3-Dichloropropene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 71-127 | 7.33 | 30 | |
| 2-Hexanone | 54.2 | 5.00 | ug/L | 50.0 | | 108 | 69-133 | 19.60 | 30 | |
| 1,1,2-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 10.50 | 30 | |
| 1,3-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.97 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.11 | 30 | |
| Dibromochloromethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 65-135 | 10.30 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 10.30 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 9.05 | 30 | |
| Ethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 9.00 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.55 | 30 | |
| m,p-Xylene | 21.5 | 0.40 | ug/L | 20.0 | | 108 | 80-121 | 8.46 | 30 | |
| o-Xylene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 10.10 | 30 | |
| Styrene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-124 | 5.07 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 10.20 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 77-123 | 10.90 | 30 | |
| 1,2,3-Trichloropropane | 9.96 | 0.50 | ug/L | 10.0 | | 99.6 | 76-125 | 9.61 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.3 | 1.00 | ug/L | 10.0 | | 103 | 55-129 | 12.20 | 30 | |
| n-Propylbenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-130 | 8.05 | 30 | |
| Bromobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 8.52 | 30 | |
| Isopropyl Benzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-128 | 8.79 | 30 | |
| 2-Chlorotoluene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 78-122 | 8.45 | 30 | |
| 4-Chlorotoluene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-121 | 9.07 | 30 | |
| t-Butylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-125 | 7.93 | 30 | |
| 1,3,5-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-129 | 8.21 | 30 | |
| 1,2,4-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-127 | 6.97 | 30 | |
| s-Butylbenzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 78-129 | 7.55 | 30 | |
| 4-Isopropyl Toluene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 79-130 | 7.82 | 30 | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| 1,3-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 6.54 | 30 | |
| 1,4-Dichlorobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 7.74 | 30 | |
| n-Butylbenzene | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 74-129 | 8.58 | 30 | |
| 1,2-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 9.02 | 30 | |
| 1,2-Dibromo-3-chloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 62-123 | 14.40 | 30 | |
| 1,2,4-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 64-124 | 8.66 | 30 | |
| Hexachloro-1,3-Butadiene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 58-123 | 9.19 | 30 | |
| Naphthalene | 9.64 | 0.50 | ug/L | 10.0 | | 96.4 | 50-134 | 9.74 | 30 | |
| 1,2,3-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 49-133 | 8.52 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.99 | | ug/L | *5.00* | | *99.7* | *80-120* | | | |



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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Dissolved Gases - Quality Control

### Batch BJE0224 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: PB

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0224-BLK1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:56 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1960 | | ug/L | *1800* | | *109* | *72-122* | | | |
| **LCS (BJE0224-BS1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:16 | | | | | | |
| Methane | 662 | 0.65 | ug/L | 656 | | 101 | 80-120 | | | |
| Ethane | 1340 | 1.23 | ug/L | 1230 | | 109 | 80-120 | | | |
| Ethene | 1050 | 1.14 | ug/L | 1150 | | 91.3 | 80-120 | | | |
| *Surrogate: Propane* | 1980 | | ug/L | *1800* | | *110* | *62-122* | | | |
| **LCS Dup (BJE0224-BSD1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 10:30 | | | | | | |
| Methane | 659 | 0.65 | ug/L | 656 | | 100 | 80-120 | 0.48 | 30 | |
| Ethane | 1350 | 1.23 | ug/L | 1230 | | 110 | 80-120 | 0.88 | 30 | |
| Ethene | 1060 | 1.14 | ug/L | 1150 | | 92.3 | 80-120 | 1.15 | 30 | |
| *Surrogate: Propane* | 2050 | | ug/L | *1800* | | *114* | *62-122* | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Dissolved Gases - Quality Control

### Batch BJE0268 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: PB

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0268-BLK1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 13:35 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1990 | | ug/L | *1800* | | *111* | *72-122* | | | |
| **LCS (BJE0268-BS1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 12:55 | | | | | | |
| Methane | 649 | 0.65 | ug/L | 656 | | 98.9 | 80-120 | | | |
| Ethane | 1310 | 1.23 | ug/L | 1230 | | 107 | 80-120 | | | |
| Ethene | 1030 | 1.14 | ug/L | 1150 | | 89.8 | 80-120 | | | |
| *Surrogate: Propane* | 1670 | | ug/L | *1800* | | *92.5* | *62-122* | | | |
| **LCS Dup (BJE0268-BSD1)** | | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 13:08 | | | | | | |
| Methane | 648 | 0.65 | ug/L | 656 | | 98.7 | 80-120 | 0.18 | 30 | |
| Ethane | 1310 | 1.23 | ug/L | 1230 | | 107 | 80-120 | 0.09 | 30 | |
| Ethene | 1030 | 1.14 | ug/L | 1150 | | 89.7 | 80-120 | 0.06 | 30 | |
| *Surrogate: Propane* | 2040 | | ug/L | *1800* | | *113* | *62-122* | | | |
| **Duplicate (BJE0268-DUP1)** | **Source: 21E0056-07** | | | Prepared: 11-May-2021 Analyzed: 11-May-2021 15:30 | | | | | | |
| Methane | 5530 | 0.65 | ug/L | | 5320 | | | 3.87 | 30 | |
| Ethane | 54.7 | 1.23 | ug/L | | 52.1 | | | 4.90 | 30 | |
| Ethene | ND | 1.14 | ug/L | | ND | | | | | U |
| *Surrogate: Propane* | 1750 | | ug/L | *1800* | *1750* | *97.1* | *72-122* | | | |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Wet Chemistry - Quality Control

### Batch BJE0113 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0113-BLK2)** | Prepared: 05-May-2021 Analyzed: 12-May-2021 23:31 | | | | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJE0113-BS2)** | Prepared: 05-May-2021 Analyzed: 12-May-2021 23:51 | | | | | | | | | | |
| Sulfate | 4.61 | 0.100 | 0.100 | mg/L | 5.00 | | 92.2 | 90-110 | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Wet Chemistry - Quality Control

### Batch BJE0219 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0219-BLK1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 18:11 | | | | | | | |
| Total Organic Carbon | ND | 0.50 | 0.50 | mg/L | | | | | | | U |
| **LCS (BJE0219-BS1)** | | | | Prepared: 10-May-2021 Analyzed: 10-May-2021 18:29 | | | | | | | |
| Total Organic Carbon | 19.65 | 0.50 | 0.50 | mg/L | 20.00 | | 98.3 | 90-110 | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 300.0 in Water*** | |
| Sulfate | DoD-ELAP,WA-DW,NELAP |
| Sulfate | DoD-ELAP,WADOE,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloromethane | DoD-ELAP,ADEC,NELAP |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| Iodomethane | DoD-ELAP,NELAP |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

| | |
|---|---|
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP |
| Chloroform | DoD-ELAP,ADEC,NELAP |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

| | |
|---|---|
| 2-Hexanone | DoD-ELAP,NELAP |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP |
| Bromoform | DoD-ELAP,NELAP |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP |
| Bromobenzene | DoD-ELAP,NELAP |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

| | |
|---|---|
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| n-Butylbenzene | DoD-ELAP,NELAP |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP |
| n-Hexane | WADOE |
| n-Hexane | |
| 2-Pentanone | WADOE |
| 2-Pentanone | |

***EPA RSK-175 in Water***



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

| | |
|---|---|
| Methane | NELAP |
| Methane | NELAP |
| Ethane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |
| Acetylene | NELAP |

***SM 5310 B-00 in Water***

| | |
|---|---|
| Total Organic Carbon | WA-DW,NELAP |
| Total Organic Carbon | WADOE,NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |



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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 20-May-2021 09:06 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

10 May 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21E0078 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

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21E0078

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ Seattle/Edmonds (425) 778-0907 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ _____

Date 5/6/21
Page 1 of 1

Turnaround Time:
Standard X
Accelerated _____

Project Name DR Regional GW
Project No. 0025217.099.039
Project Location/Event SWMU-20/ May 2021
Sampler's Name Jered Newcomb / Armando Huerta
Project Contact Chris Kimmel / Jennifer Parsons
Send Results To Chris Kimmel / Jennifer Parsons

Special Handling Requirements: _____
Shipment Method: Prop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | Testing Parameters: VOCs (8260D)*▲ | THEE (RSK SOP-175 MOD)*▲ | TOC | E Harvey Scent | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|
| Trip Blanks 4-210505 | 5/5/21 | — | AQ | 2 | X | | | | |
| MW-13A-210505 | ↓ | 847 | ↓ | 3 | X | | | | |
| MW-13C-210505 | ↓ | 846 | ↓ | 3 | X | | | X | |

Observations/Comments:
- ___ Allow water samples to settle, collect aliquot from clear portion ☐
- ___ NWTPH-Dx - Acid wash cleanup ☐ - Silica gel cleanup ☐
- ___ Dissolved metal samples were field filtered

Other * Boeing 69 list
▲ Non-preserved

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jered Newcomb | Printed Name | Printed Name | Printed Name |
| Company LAI | Company API | Company | Company |
| Date 5/5/21 Time 15:56 | Date 05/05/2021 Time 1556 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TripBlanks4-210505 | 21E0078-01 | Water | 05-May-2021 08:46 | 05-May-2021 15:56 |
| MW-13A-210505 | 21E0078-02 | Water | 05-May-2021 08:47 | 05-May-2021 15:56 |
| MW-13C-210505 | 21E0078-03 | Water | 05-May-2021 08:46 | 05-May-2021 15:56 |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.



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**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**Printed: 05/06/2021 13:37:33**

**WORK ORDER**

21E0078

**Client: The Boeing Company [Developmental Center]** | **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** | **Project Number: Boeing Regional GW Developmental Center**

**Report To:**
The Boeing Company [Developmental Center]
Carl Bach
P.O. Box 3707 MC 9U4-26
Seattle, WA 98124
Phone: (206) 898-0438
Fax: -

**Invoice To:**
The Boeing Company [Developmental Center]
Carl Bach
P.O. Box 3707 MC 9U4-26
Seattle, WA 98124
Phone :(206) 898-0438
Fax: -

Date Due: 20-May-2021 18:00 (10 day TAT)

Received By: Jacob Walter | Date Received: 05-May-2021 15:56

Logged In By: Jacob Walter | Date Logged In: 06-May-2021 13:35

Samples Received at: **2.8°C**

| | | | |
|---|---|---|---|
| Intact, properly signed and dated custody seals attached to outside of cooler(s) | No | Custody papers included with the cooler | Yes |
| Custody papers properly filled out (in, signed, analyses requested, etc) | Yes | Was a temperature blank included in the cooler | No |
| Was sufficient ice used (if appropriate) | Yes | All bottles sealed in individual plastic bags | No |
| All bottles arrived in good condition (unbroken) | Yes | All bottle labels complete and legible | Yes |
| Number of containers listed on COC match number received | Yes | Bottle labels and tags agree with COC | Yes |
| Correct bottles used for the requested analyses | Yes | All VOC vials free of air bubbles | No |
| Analyses/bottles require preservation (attach preservation sheet excluding VOC) | No | Sufficient amount of sample sent in each bottle | Yes |
| Sample split at ARI | No | | |

| | | | | | |
|---|---|---|---|---|---|
| **21E0078-01 TripBlanks4-210505 [Water] Sampled 05-May-2021 08:46** | | | | Three versions | |
| 8260D VOA | 05/20/2021 | 10 | 05/12/2021 | | |
| **21E0078-02 MW-13A-210505 [Water] Sampled 05-May-2021 08:47** | | | | Three versions | |
| 8260D VOA | 05/20/2021 | 10 | 05/12/2021 | | |
| **21E0078-03 MW-13C-210505 [Water] Sampled 05-May-2021 08:46** | | | | Three versions | |
| 8260D VOA | 05/20/2021 | 10 | 05/12/2021 | | Effervescent |

## Preservation Confirmation

| Container ID | Container Type | pH |
|---|---|---|
| 21E0078-01 A | VOA Vial, Clear, 40 mL | Bubble |
| 21E0078-01 B | VOA Vial, Clear, 40 mL | Bubble |
| 21E0078-02 A | VOA Vial, Clear, 40 mL | |
| 21E0078-02 B | VOA Vial, Clear, 40 mL | |
| 21E0078-02 C | VOA Vial, Clear, 40 mL | |
| 21E0078-03 A | VOA Vial, Clear, 40 mL | Bubble |
| 21E0078-03 B | VOA Vial, Clear, 40 mL | Bubble |
| 21E0078-03 C | VOA Vial, Clear, 40 mL | |

JA — Preservation Confirmed By

05/06/2021 — Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

# Cooler Receipt Form

Developmental Center Gw

ARI Client: Landau/Seeley  Project Name: SWMU-20

COC No(s): _____ (NA)  Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 2160078  Tracking No: _____ (NA)

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | (NO) |
| Were custody papers included with the cooler? | (YES) | NO |
| Were custody papers properly filled out (ink, signed, etc.) | (YES) | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1556  3.4 2.8 4.3 1.7 ___ ___

If cooler temperature is out of compliance fill out form 00070F  Temp Gun ID#: D00 (D06)

Cooler Accepted by: JS  Date: 05/05/2021  Time: 1556

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | (NO) |
| What kind of packing material was used? | (Bubble Wrap) (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____ | | |
| Was sufficient ice used (if appropriate)? | NA | (YES) | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | (Not) |
| Did all bottles arrive in good condition (unbroken)? | | (YES) | NO |
| Were all bottle labels complete and legible? | | (YES) | NO |
| Did the number of containers listed on COC match with the number of containers received? | | (YES) | NO |
| Did all bottle labels and tags agree with custody papers? | | (YES) | NO |
| Were all bottles used correct for the requested analyses? | | (YES) | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) | (NA) | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | (NO) |
| Was sufficient amount of sample sent in each bottle? | | (YES) | NO |
| Date VOC Trip Blank was made at ARI | NA | 04/29/2021 | |

Were the sample(s) split by ARI? (NA) YES  Date/Time: _____  Equipment: _____  Split by: _____

Samples Logged by: JS  Date: 05/06/2021  Time: 1331  Labels checked by: JS

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

vials w/air bubbles marked on the preservation sheet, lab to determine sizes.

By: JS  Date: 05/06/2021

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## TripBlanks4-210505

**21E0078-01 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:46
Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 18:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0078-01 B
Preparation Batch: BJE0195 — Sample Size: 10 mL
Prepared: 05/07/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |



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

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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

**TripBlanks4-210505**

**21E0078-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/07/2021 18:42

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *103* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.2* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *94.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

**MW-13A-210505**

**21E0078-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:59

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0078-02 B

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.62 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

**MW-13A-210505**

**21E0078-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:47

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 13:59

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 2.03 | ug/L | |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *105* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.0* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *90.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *101* | *%* | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

**MW-13C-210505**

**21E0078-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 14:21

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21E0078-03 B

Preparation Batch: BJE0197 — Sample Size: 10 mL

Prepared: 05/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.26 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.31 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

**MW-13C-210505**

**21E0078-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/05/2021 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 05/08/2021 14:21

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 0.50 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *108* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.6* | *%* | |
| *Surrogate: 4-Bromofluorobenzene* | | | *80-120 %* | *96.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | | *80-120 %* | *103* | *%* | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.97 | | ug/L | *5.00* | | *99.5* | *80-129* | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0195-BLK1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 17:36 | | | | | | |
| *Surrogate: Toluene-d8* | 4.92 | | ug/L | *5.00* | | *98.3* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.73 | | ug/L | *5.00* | | *94.5* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| Chloromethane | 8.00 | 0.50 | ug/L | 10.0 | | 80.0 | 60-138 | | | |
| Vinyl Chloride | 8.19 | 0.20 | ug/L | 10.0 | | 81.9 | 66-133 | | | |
| Bromomethane | 8.60 | 1.00 | ug/L | 10.0 | | 86.0 | 72-131 | | | |
| Chloroethane | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 60-155 | | | |
| Trichlorofluoromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 62-141 | | | |
| Acrolein | 42.1 | 5.00 | ug/L | 50.0 | | 84.3 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 76-129 | | | |
| Acetone | 37.9 | 5.00 | ug/L | 50.0 | | 75.8 | 58-142 | | | |
| 1,1-Dichloroethene | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 69-135 | | | |
| Iodomethane | 8.21 | 1.00 | ug/L | 10.0 | | 82.1 | 56-147 | | | |
| Methylene Chloride | 8.10 | 1.00 | ug/L | 10.0 | | 81.0 | 65-135 | | | |
| Acrylonitrile | 6.74 | 1.00 | ug/L | 10.0 | | 67.4 | 64-134 | | | |
| Carbon Disulfide | 8.42 | 0.20 | ug/L | 10.0 | | 84.2 | 78-125 | | | |
| trans-1,2-Dichloroethene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 78-128 | | | |
| Vinyl Acetate | 9.09 | 0.20 | ug/L | 10.0 | | 90.9 | 55-138 | | | |
| 1,1-Dichloroethane | 8.38 | 0.20 | ug/L | 10.0 | | 83.8 | 76-124 | | | |
| 2-Butanone | 38.7 | 5.00 | ug/L | 50.0 | | 77.5 | 61-140 | | | |
| 2,2-Dichloropropane | 8.85 | 0.20 | ug/L | 10.0 | | 88.5 | 66-147 | | | |
| cis-1,2-Dichloroethene | 8.67 | 0.20 | ug/L | 10.0 | | 86.7 | 80-121 | | | |
| Chloroform | 8.31 | 0.20 | ug/L | 10.0 | | 83.1 | 80-122 | | | |
| Bromochloromethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 8.35 | 0.20 | ug/L | 10.0 | | 83.5 | 79-123 | | | |
| 1,1-Dichloropropene | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 80-127 | | | |
| Carbon tetrachloride | 8.49 | 0.20 | ug/L | 10.0 | | 84.9 | 53-137 | | | |
| 1,2-Dichloroethane | 8.34 | 0.20 | ug/L | 10.0 | | 83.4 | 75-123 | | | |
| Benzene | 8.83 | 0.20 | ug/L | 10.0 | | 88.3 | 80-120 | | | |
| Trichloroethene | 8.74 | 0.20 | ug/L | 10.0 | | 87.4 | 80-120 | | | |
| 1,2-Dichloropropane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 80-120 | | | |
| Bromodichloromethane | 8.44 | 0.20 | ug/L | 10.0 | | 84.4 | 80-121 | | | |
| Dibromomethane | 8.51 | 0.20 | ug/L | 10.0 | | 85.1 | 80-120 | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 4-Methyl-2-Pentanone | 43.6 | 5.00 | ug/L | 50.0 | | 87.2 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.15 | 0.20 | ug/L | 10.0 | | 91.5 | 80-124 | | | |
| Toluene | 8.65 | 0.20 | ug/L | 10.0 | | 86.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.12 | 0.20 | ug/L | 10.0 | | 91.2 | 71-127 | | | |
| 2-Hexanone | 41.8 | 5.00 | ug/L | 50.0 | | 83.6 | 69-133 | | | |
| 1,1,2-Trichloroethane | 8.29 | 0.20 | ug/L | 10.0 | | 82.9 | 80-121 | | | |
| 1,3-Dichloropropane | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| Tetrachloroethene | 8.87 | 0.20 | ug/L | 10.0 | | 88.7 | 80-120 | | | |
| Dibromochloromethane | 8.53 | 0.20 | ug/L | 10.0 | | 85.3 | 65-135 | | | |
| 1,2-Dibromoethane | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-121 | | | |
| Chlorobenzene | 8.72 | 0.20 | ug/L | 10.0 | | 87.2 | 80-120 | | | |
| Ethylbenzene | 9.04 | 0.20 | ug/L | 10.0 | | 90.4 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 8.69 | 0.20 | ug/L | 10.0 | | 86.9 | 80-120 | | | |
| m,p-Xylene | 18.6 | 0.40 | ug/L | 20.0 | | 93.2 | 80-121 | | | |
| o-Xylene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-121 | | | |
| Styrene | 9.56 | 0.20 | ug/L | 10.0 | | 95.6 | 80-124 | | | |
| Bromoform | 8.68 | 0.20 | ug/L | 10.0 | | 86.8 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.26 | 0.20 | ug/L | 10.0 | | 82.6 | 77-123 | | | |
| 1,2,3-Trichloropropane | 8.21 | 0.50 | ug/L | 10.0 | | 82.1 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 7.98 | 1.00 | ug/L | 10.0 | | 79.8 | 55-129 | | | |
| n-Propylbenzene | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 78-130 | | | |
| Bromobenzene | 8.54 | 0.20 | ug/L | 10.0 | | 85.4 | 80-120 | | | |
| Isopropyl Benzene | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 80-128 | | | |
| 2-Chlorotoluene | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 78-122 | | | |
| 4-Chlorotoluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-121 | | | |
| t-Butylbenzene | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 9.65 | 0.20 | ug/L | 10.0 | | 96.5 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-127 | | | |
| s-Butylbenzene | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 78-129 | | | |
| 4-Isopropyl Toluene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 79-130 | | | |
| 1,3-Dichlorobenzene | 8.97 | 0.20 | ug/L | 10.0 | | 89.7 | 80-120 | | | |
| 1,4-Dichlorobenzene | 8.75 | 0.20 | ug/L | 10.0 | | 87.5 | 80-120 | | | |
| n-Butylbenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 74-129 | | | |
| 1,2-Dichlorobenzene | 8.73 | 0.20 | ug/L | 10.0 | | 87.3 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.15 | 0.50 | ug/L | 10.0 | | 81.5 | 62-123 | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0195-BS1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:08 | | | | | | |
| 1,2,4-Trichlorobenzene | 9.74 | 0.50 | ug/L | 10.0 | | 97.4 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 58-123 | | | |
| Naphthalene | 8.14 | 0.50 | ug/L | 10.0 | | 81.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 9.54 | 0.50 | ug/L | 10.0 | | 95.4 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.75 | | ug/L | *5.00* | | *95.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Chloromethane | 9.14 | 0.50 | ug/L | 10.0 | | 91.4 | 60-138 | 13.40 | 30 | |
| Vinyl Chloride | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 66-133 | 18.20 | 30 | |
| Bromomethane | 10.2 | 1.00 | ug/L | 10.0 | | 102 | 72-131 | 17.20 | 30 | |
| Chloroethane | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 60-155 | 17.20 | 30 | |
| Trichlorofluoromethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 62-141 | 9.00 | 30 | |
| Acrolein | 49.2 | 5.00 | ug/L | 50.0 | | 98.5 | 52-190 | 15.50 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 76-129 | 15.90 | 30 | |
| Acetone | 46.0 | 5.00 | ug/L | 50.0 | | 91.9 | 58-142 | 19.30 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 17.00 | 30 | |
| Iodomethane | 9.50 | 1.00 | ug/L | 10.0 | | 95.0 | 56-147 | 14.60 | 30 | |
| Methylene Chloride | 9.57 | 1.00 | ug/L | 10.0 | | 95.7 | 65-135 | 16.70 | 30 | |
| Acrylonitrile | 9.09 | 1.00 | ug/L | 10.0 | | 90.9 | 64-134 | 29.70 | 30 | |
| Carbon Disulfide | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 78-125 | 16.70 | 30 | |
| trans-1,2-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-128 | 16.20 | 30 | |
| Vinyl Acetate | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 55-138 | 19.30 | 30 | |
| 1,1-Dichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 76-124 | 17.50 | 30 | |
| 2-Butanone | 48.7 | 5.00 | ug/L | 50.0 | | 97.5 | 61-140 | 22.90 | 30 | |
| 2,2-Dichloropropane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 66-147 | 17.40 | 30 | |
| cis-1,2-Dichloroethene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | 18.70 | 30 | |
| Chloroform | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 80-122 | 17.00 | 30 | |
| Bromochloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 16.40 | 30 | |
| 1,1,1-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 79-123 | 19.20 | 30 | |
| 1,1-Dichloropropene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-127 | 17.80 | 30 | |
| Carbon tetrachloride | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 53-137 | 16.20 | 30 | |
| 1,2-Dichloroethane | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 75-123 | 17.10 | 30 | |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| Benzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 17.60 | 30 | |
| Trichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| 1,2-Dichloropropane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 16.40 | 30 | |
| Bromodichloromethane | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 80-121 | 15.50 | 30 | |
| Dibromomethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 16.50 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 20.30 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 17.20 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 16.60 | 30 | |
| trans-1,3-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 71-127 | 13.50 | 30 | |
| 2-Hexanone | 52.3 | 5.00 | ug/L | 50.0 | | 105 | 69-133 | 22.30 | 30 | |
| 1,1,2-Trichloroethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 18.60 | 30 | |
| 1,3-Dichloropropane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.60 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 13.60 | 30 | |
| Dibromochloromethane | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 65-135 | 15.20 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 19.70 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 15.30 | 30 | |
| Ethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 13.40 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.90 | 30 | |
| m,p-Xylene | 21.8 | 0.40 | ug/L | 20.0 | | 109 | 80-121 | 15.70 | 30 | |
| o-Xylene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-121 | 14.90 | 30 | |
| Styrene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-124 | 14.50 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 19.30 | 30 | |
| 1,1,2,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 77-123 | 21.00 | 30 | |
| 1,2,3-Trichloropropane | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 76-125 | 20.50 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.0 | 1.00 | ug/L | 10.0 | | 100 | 55-129 | 22.50 | 30 | |
| n-Propylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-130 | 15.40 | 30 | |
| Bromobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 18.40 | 30 | |
| Isopropyl Benzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-128 | 16.00 | 30 | |
| 2-Chlorotoluene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-122 | 15.90 | 30 | |
| 4-Chlorotoluene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 15.90 | 30 | |
| t-Butylbenzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 78-125 | 16.30 | 30 | |
| 1,3,5-Trimethylbenzene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 80-129 | 16.30 | 30 | |
| 1,2,4-Trimethylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 80-127 | 16.50 | 30 | |
| s-Butylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 78-129 | 16.60 | 30 | |
| 4-Isopropyl Toluene | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 79-130 | 16.40 | 30 | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0195 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0195-BSD1)** | | | | Prepared: 07-May-2021 Analyzed: 07-May-2021 16:30 | | | | | | |
| 1,3-Dichlorobenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 15.70 | 30 | |
| 1,4-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 14.70 | 30 | |
| n-Butylbenzene | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 74-129 | 16.20 | 30 | |
| 1,2-Dichlorobenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 16.30 | 30 | |
| 1,2-Dibromo-3-chloropropane | 9.99 | 0.50 | ug/L | 10.0 | | 99.9 | 62-123 | 20.30 | 30 | |
| 1,2,4-Trichlorobenzene | 11.3 | 0.50 | ug/L | 10.0 | | 113 | 64-124 | 15.20 | 30 | |
| Hexachloro-1,3-Butadiene | 11.5 | 0.50 | ug/L | 10.0 | | 115 | 58-123 | 12.60 | 30 | |
| Naphthalene | 9.85 | 0.50 | ug/L | 10.0 | | 98.5 | 50-134 | 19.00 | 30 | |
| 1,2,3-Trichlorobenzene | 11.4 | 0.50 | ug/L | 10.0 | | 114 | 49-133 | 18.00 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.89 | | ug/L | *5.00* | | *97.8* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.07 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.92 | | ug/L | *5.00* | | *98.4* | *80-120* | | | |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 0.50 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.06 | | ug/L | *5.00* | | *101* | *80-129* | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJE0197-BLK1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 11:24 | | | | | | |
| *Surrogate: Toluene-d8* | 4.89 | | ug/L | *5.00* | | *97.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.69 | | ug/L | *5.00* | | *93.8* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.16 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| Chloromethane | 8.36 | 0.50 | ug/L | 10.0 | | 83.6 | 60-138 | | | |
| Vinyl Chloride | 8.84 | 0.20 | ug/L | 10.0 | | 88.4 | 66-133 | | | |
| Bromomethane | 8.89 | 1.00 | ug/L | 10.0 | | 88.9 | 72-131 | | | |
| Chloroethane | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 60-155 | | | |
| Trichlorofluoromethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 62-141 | | | |
| Acrolein | 43.3 | 5.00 | ug/L | 50.0 | | 86.6 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 76-129 | | | |
| Acetone | 40.8 | 5.00 | ug/L | 50.0 | | 81.7 | 58-142 | | | |
| 1,1-Dichloroethene | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 69-135 | | | |
| Iodomethane | 8.93 | 1.00 | ug/L | 10.0 | | 89.3 | 56-147 | | | |
| Methylene Chloride | 8.57 | 1.00 | ug/L | 10.0 | | 85.7 | 65-135 | | | |
| Acrylonitrile | 7.82 | 1.00 | ug/L | 10.0 | | 78.2 | 64-134 | | | Q |
| Carbon Disulfide | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 78-125 | | | |
| trans-1,2-Dichloroethene | 9.18 | 0.20 | ug/L | 10.0 | | 91.8 | 78-128 | | | |
| Vinyl Acetate | 9.40 | 0.20 | ug/L | 10.0 | | 94.0 | 55-138 | | | |
| 1,1-Dichloroethane | 9.05 | 0.20 | ug/L | 10.0 | | 90.5 | 76-124 | | | |
| 2-Butanone | 42.4 | 5.00 | ug/L | 50.0 | | 84.8 | 61-140 | | | |
| 2,2-Dichloropropane | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 66-147 | | | |
| cis-1,2-Dichloroethene | 9.19 | 0.20 | ug/L | 10.0 | | 91.9 | 80-121 | | | |
| Chloroform | 9.01 | 0.20 | ug/L | 10.0 | | 90.1 | 80-122 | | | |
| Bromochloromethane | 9.41 | 0.20 | ug/L | 10.0 | | 94.1 | 80-121 | | | |
| 1,1,1-Trichloroethane | 9.30 | 0.20 | ug/L | 10.0 | | 93.0 | 79-123 | | | |
| 1,1-Dichloropropene | 9.71 | 0.20 | ug/L | 10.0 | | 97.1 | 80-127 | | | |
| Carbon tetrachloride | 9.37 | 0.20 | ug/L | 10.0 | | 93.7 | 53-137 | | | |
| 1,2-Dichloroethane | 9.14 | 0.20 | ug/L | 10.0 | | 91.4 | 75-123 | | | |
| Benzene | 9.58 | 0.20 | ug/L | 10.0 | | 95.8 | 80-120 | | | |
| Trichloroethene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-120 | | | |
| 1,2-Dichloropropane | 9.21 | 0.20 | ug/L | 10.0 | | 92.1 | 80-120 | | | |
| Bromodichloromethane | 9.10 | 0.20 | ug/L | 10.0 | | 91.0 | 80-121 | | | |
| Dibromomethane | 9.35 | 0.20 | ug/L | 10.0 | | 93.5 | 80-120 | | | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 4-Methyl-2-Pentanone | 47.5 | 5.00 | ug/L | 50.0 | | 95.0 | 67-133 | | | |
| cis-1,3-Dichloropropene | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 80-124 | | | |
| Toluene | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 80-120 | | | |
| trans-1,3-Dichloropropene | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 71-127 | | | |
| 2-Hexanone | 44.5 | 5.00 | ug/L | 50.0 | | 89.0 | 69-133 | | | |
| 1,1,2-Trichloroethane | 9.06 | 0.20 | ug/L | 10.0 | | 90.6 | 80-121 | | | |
| 1,3-Dichloropropane | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| Tetrachloroethene | 9.47 | 0.20 | ug/L | 10.0 | | 94.7 | 80-120 | | | |
| Dibromochloromethane | 9.23 | 0.20 | ug/L | 10.0 | | 92.3 | 65-135 | | | |
| 1,2-Dibromoethane | 9.55 | 0.20 | ug/L | 10.0 | | 95.5 | 80-121 | | | |
| Chlorobenzene | 9.33 | 0.20 | ug/L | 10.0 | | 93.3 | 80-120 | | | |
| Ethylbenzene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9.42 | 0.20 | ug/L | 10.0 | | 94.2 | 80-120 | | | |
| m,p-Xylene | 19.8 | 0.40 | ug/L | 20.0 | | 99.0 | 80-121 | | | |
| o-Xylene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | | | |
| Styrene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-124 | | | |
| Bromoform | 9.45 | 0.20 | ug/L | 10.0 | | 94.5 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 8.94 | 0.20 | ug/L | 10.0 | | 89.4 | 77-123 | | | |
| 1,2,3-Trichloropropane | 9.05 | 0.50 | ug/L | 10.0 | | 90.5 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 9.15 | 1.00 | ug/L | 10.0 | | 91.5 | 55-129 | | | |
| n-Propylbenzene | 9.84 | 0.20 | ug/L | 10.0 | | 98.4 | 78-130 | | | |
| Bromobenzene | 9.20 | 0.20 | ug/L | 10.0 | | 92.0 | 80-120 | | | |
| Isopropyl Benzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-128 | | | |
| 2-Chlorotoluene | 9.61 | 0.20 | ug/L | 10.0 | | 96.1 | 78-122 | | | |
| 4-Chlorotoluene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-121 | | | |
| t-Butylbenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-127 | | | |
| s-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-129 | | | |
| 4-Isopropyl Toluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 79-130 | | | |
| 1,3-Dichlorobenzene | 9.50 | 0.20 | ug/L | 10.0 | | 95.0 | 80-120 | | | |
| 1,4-Dichlorobenzene | 9.28 | 0.20 | ug/L | 10.0 | | 92.8 | 80-120 | | | |
| n-Butylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 74-129 | | | |
| 1,2-Dichlorobenzene | 9.27 | 0.20 | ug/L | 10.0 | | 92.7 | 80-120 | | | |
| 1,2-Dibromo-3-chloropropane | 8.85 | 0.50 | ug/L | 10.0 | | 88.5 | 62-123 | | | |



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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJE0197-BS1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:17 | | | | | | |
| 1,2,4-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 9.93 | 0.50 | ug/L | 10.0 | | 99.3 | 58-123 | | | |
| Naphthalene | 8.74 | 0.50 | ug/L | 10.0 | | 87.4 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.09 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.00 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Chloromethane | 9.31 | 0.50 | ug/L | 10.0 | | 93.1 | 60-138 | 10.80 | 30 | |
| Vinyl Chloride | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 66-133 | 11.90 | 30 | |
| Bromomethane | 9.99 | 1.00 | ug/L | 10.0 | | 99.9 | 72-131 | 11.70 | 30 | |
| Chloroethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 60-155 | 5.94 | 30 | |
| Trichlorofluoromethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 62-141 | 6.70 | 30 | |
| Acrolein | 48.7 | 5.00 | ug/L | 50.0 | | 97.4 | 52-190 | 11.80 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 76-129 | 9.42 | 30 | |
| Acetone | 46.9 | 5.00 | ug/L | 50.0 | | 93.9 | 58-142 | 13.90 | 30 | |
| 1,1-Dichloroethene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 69-135 | 10.20 | 30 | |
| Iodomethane | 9.80 | 1.00 | ug/L | 10.0 | | 98.0 | 56-147 | 9.29 | 30 | |
| Methylene Chloride | 9.41 | 1.00 | ug/L | 10.0 | | 94.1 | 65-135 | 9.33 | 30 | |
| Acrylonitrile | 8.91 | 1.00 | ug/L | 10.0 | | 89.1 | 64-134 | 13.10 | 30 | Q |
| Carbon Disulfide | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 78-125 | 9.93 | 30 | |
| trans-1,2-Dichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 78-128 | 8.29 | 30 | |
| Vinyl Acetate | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 55-138 | 10.80 | 30 | |
| 1,1-Dichloroethane | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 76-124 | 7.82 | 30 | |
| 2-Butanone | 49.3 | 5.00 | ug/L | 50.0 | | 98.6 | 61-140 | 15.00 | 30 | |
| 2,2-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 66-147 | 6.18 | 30 | |
| cis-1,2-Dichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | 11.10 | 30 | |
| Chloroform | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 80-122 | 9.29 | 30 | |
| Bromochloromethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 6.85 | 30 | |
| 1,1,1-Trichloroethane | 9.98 | 0.20 | ug/L | 10.0 | | 99.8 | 79-123 | 7.08 | 30 | |
| 1,1-Dichloropropene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-127 | 7.29 | 30 | |
| Carbon tetrachloride | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 53-137 | 7.44 | 30 | |
| 1,2-Dichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 75-123 | 9.52 | 30 | |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| Benzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 6.92 | 30 | |
| Trichloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.02 | 30 | |
| 1,2-Dichloropropane | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-120 | 8.16 | 30 | |
| Bromodichloromethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-121 | 9.48 | 30 | |
| Dibromomethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.62 | 30 | |
| 4-Methyl-2-Pentanone | 53.5 | 5.00 | ug/L | 50.0 | | 107 | 67-133 | 11.90 | 30 | |
| cis-1,3-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | 8.58 | 30 | |
| Toluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.27 | 30 | |
| trans-1,3-Dichloropropene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 71-127 | 7.33 | 30 | |
| 2-Hexanone | 54.2 | 5.00 | ug/L | 50.0 | | 108 | 69-133 | 19.60 | 30 | |
| 1,1,2-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 10.50 | 30 | |
| 1,3-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 8.97 | 30 | |
| Tetrachloroethene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.11 | 30 | |
| Dibromochloromethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 65-135 | 10.30 | 30 | |
| 1,2-Dibromoethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | 10.30 | 30 | |
| Chlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 9.05 | 30 | |
| Ethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 9.00 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 7.55 | 30 | |
| m,p-Xylene | 21.5 | 0.40 | ug/L | 20.0 | | 108 | 80-121 | 8.46 | 30 | |
| o-Xylene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 10.10 | 30 | |
| Styrene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-124 | 5.07 | 30 | |
| Bromoform | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 51-134 | 10.20 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 77-123 | 10.90 | 30 | |
| 1,2,3-Trichloropropane | 9.96 | 0.50 | ug/L | 10.0 | | 99.6 | 76-125 | 9.61 | 30 | |
| trans-1,4-Dichloro 2-Butene | 10.3 | 1.00 | ug/L | 10.0 | | 103 | 55-129 | 12.20 | 30 | |
| n-Propylbenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-130 | 8.05 | 30 | |
| Bromobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 8.52 | 30 | |
| Isopropyl Benzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-128 | 8.79 | 30 | |
| 2-Chlorotoluene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 78-122 | 8.45 | 30 | |
| 4-Chlorotoluene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-121 | 9.07 | 30 | |
| t-Butylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-125 | 7.93 | 30 | |
| 1,3,5-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-129 | 8.21 | 30 | |
| 1,2,4-Trimethylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-127 | 6.97 | 30 | |
| s-Butylbenzene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 78-129 | 7.55 | 30 | |
| 4-Isopropyl Toluene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 79-130 | 7.82 | 30 | |



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| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Volatile Organic Compounds - Quality Control

### Batch BJE0197 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJE0197-BSD1)** | | | | Prepared: 08-May-2021 Analyzed: 08-May-2021 10:39 | | | | | | |
| 1,3-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 6.54 | 30 | |
| 1,4-Dichlorobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 7.74 | 30 | |
| n-Butylbenzene | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 74-129 | 8.58 | 30 | |
| 1,2-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 9.02 | 30 | |
| 1,2-Dibromo-3-chloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 62-123 | 14.40 | 30 | |
| 1,2,4-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 64-124 | 8.66 | 30 | |
| Hexachloro-1,3-Butadiene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 58-123 | 9.19 | 30 | |
| Naphthalene | 9.64 | 0.50 | ug/L | 10.0 | | 96.4 | 50-134 | 9.74 | 30 | |
| 1,2,3-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 49-133 | 8.52 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 4.88 | | ug/L | *5.00* | | *97.7* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.99 | | ug/L | *5.00* | | *99.7* | *80-120* | | | |



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| | | |
|---|---|---|
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| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Chloromethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Chloromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,CALAP |
| Vinyl Chloride | DoD-ELAP,ADEC,CALAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Chloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| Acrolein | DoD-ELAP,CALAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,CALAP |
| Acrolein | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,CALAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,CALAP |
| Acetone | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP |



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| | |
|---|---|
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,CALAP |
| Iodomethane | DoD-ELAP,CALAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,CALAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,CALAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,CALAP |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Acrylonitrile | DoD-ELAP,CALAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,CALAP |
| Acrylonitrile | DoD-ELAP,NELAP,CALAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,CALAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,CALAP |
| Carbon Disulfide | DoD-ELAP,CALAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,CALAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,CALAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,CALAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,CALAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 2-Butanone | DoD-ELAP,CALAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,CALAP |
| 2-Butanone | DoD-ELAP,NELAP,CALAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,CALAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP |



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| | |
|---|---|
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,CALAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,CALAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,CALAP |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,CALAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,CALAP |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Benzene | DoD-ELAP,ADEC,CALAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,CALAP |
| Trichloroethene | DoD-ELAP,ADEC,CALAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,CALAP |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,CALAP |



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

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

| | |
|---|---|
| Bromodichloromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,CALAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,CALAP |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,CALAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,CALAP |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,CALAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,CALAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| Toluene | DoD-ELAP,ADEC,CALAP,WADOE |
| Toluene | DoD-ELAP,ADEC,NELAP,CALAP |
| Toluene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,CALAP |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,CALAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,CALAP |
| 2-Hexanone | DoD-ELAP,CALAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

| | |
|---|---|
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,CALAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,CALAP |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,CALAP |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,CALAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| Ethylbenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,CALAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,CALAP |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,CALAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,CALAP |
| Styrene | DoD-ELAP,NELAP,CALAP,WADOE |
| Styrene | DoD-ELAP,NELAP,CALAP |
| Styrene | DoD-ELAP,CALAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,CALAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,CALAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

| | |
|---|---|
| Bromoform | DoD-ELAP,NELAP,CALAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,CALAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,CALAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,CALAP |
| n-Propylbenzene | DoD-ELAP,CALAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,CALAP |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,CALAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,CALAP |
| Isopropyl Benzene | DoD-ELAP,CALAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,CALAP |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,CALAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,CALAP |
| 2-Chlorotoluene | DoD-ELAP,ADEC,CALAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,CALAP |
| 4-Chlorotoluene | DoD-ELAP,ADEC,CALAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,CALAP |
| t-Butylbenzene | DoD-ELAP,CALAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,CALAP |
| 1,3,5-Trimethylbenzene | DoD-ELAP,CALAP,WADOE |



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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

| | |
|---|---|
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,CALAP |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,CALAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,CALAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,CALAP |
| s-Butylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,CALAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,CALAP |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,CALAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| n-Butylbenzene | DoD-ELAP,CALAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,CALAP |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,CALAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

| | |
|---|---|
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,CALAP |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,CALAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,CALAP |
| Naphthalene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,CALAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,CALAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,CALAP |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,CALAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,CALAP |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,CALAP,WADOE |
| n-Hexane | WADOE |
| n-Hexane | WADOE |
| n-Hexane | |
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |
| 2-Pentanone | WADOE |
| 2-Pentanone | |
| 2-Pentanone | WADOE |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |



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| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 10-May-2021 17:20 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

02 December 2021

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

| Associated Work Order(s) | Associated SDG ID(s) |
|---|---|
| 21K0073 | N/A |

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

WO#: 21K0073

LANDAU ASSOCIATES

# Chain-of-Custody Record

☒ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11/3/2021
Page 1 of 1

Turnaround Time:
Standard ✓
Accelerated _____

Project Name DC Regional GW Project No. 0025217.099.069
Project Location/Event SWMU-20 / November 2021
Sampler's Name Armando Huerta
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____
Shipment Method: Drop off
Stored on ice: (Yes) / No

| Sample I.D. | Date | Time | Matrix | No. of Containers | VOCs (SW8260D) ✓ | MEE (RSK SOP-175/MOD) ✓ | TOC (SM5310C) | Sulfate (E300.0) | | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-16A-211102 | 11/2/21 | 1327 | AQ | 3 | X | | | | | |
| MW-16C-211102 | 11/2/21 | 1359 | AQ | 3 | X | | | | | |
| MW-15C-211102 | 11/2/21 | 1447 | AQ | 3 | X | | | | | |
| MW-14C-211102 | 11/2/21 | 1513 | AQ | 3 | X | | | | | |
| MW-6B-211103 | 11/3/21 | 923 | AQ | 7 | X | X | X | X | | |
| BDC-DUP1-211103 | 11/3/21 | 830 | AQ | 7 | X | X | X | X | | |
| ~~MW-4A-211103~~ | ~~11/3/21~~ | ~~---~~ | AQ | 7 | X | X | X | X | AHA | |
| MW-6A-211103 | 11/3/21 | 943 | AQ | 7 | X | X | X | X | | |
| MW-9A-211103 | 11/3/21 | 928 | AQ | 7 | X | X | X | X | | |
| MW-22A-211103 | 11/3/21 | 1047 | AQ | 7 | X | X | X | X | | |
| MW-20C-211103 | 11/3/21 | 1041 | AQ | 3 | X | | | | | |
| MW-11A-211103 | 11/3/21 | 1118 | AQ | 3 | X | | | | | |
| MW-13A-211103 | 11/3/21 | 1147 | AQ | 3 | X | | | | | |
| MW-13C-211103 | 11/3/21 | 1152 | AQ | 3 | X | | | | | |
| MW-10C-211103 | 11/3/21 | 1542 | AQ | 3 | X | | | | | |
| Trip Blanks | — | — | AQ | 4 | X | X | | | | |

Testing Parameters

Observations/Comments

- Allow water samples to settle, collect aliquot from clear portion ☐
- NWTPH-Dx - Acid wash cleanup ☐
  - Silica gel cleanup ☐
- Dissolved metal samples were field filtered

Other ✓ Non preserved

✓ Methane, Ethane, Ethene

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Armando Huerta | Printed Name Raven Barbera | Printed Name | Printed Name |
| Company LAI | Company AR | Company | Company |
| Date 11-3-2021 Time 1556 | Date 11/3/21 Time 1556 | Date Time | Date Time |

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

**SPECTRA** Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

11/18/2021

Analytical Resources, LLC.
4611 South 134th Place
Suite 100
Tukwila, WA 98168

Project: 21K0073
Sample Matrix: Water
Date Sampled: 11/03/2021
Date Received: 11/12/2021
Spectra Project: 2021110387
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method | Analyzed |
|---|---|---|---|---|---|---|
| 21K0073-05 | 1 | Total Organic Carbon | 25.2 | mg/L | SM 5310 B | 11/17/2021 |
| 21K0073-06 | 2 | Total Organic Carbon | 10.0 | mg/L | SM 5310 B | 11/17/2021 |
| 21K0073-07 | 3 | Total Organic Carbon | 8.9 | mg/L | SM 5310 B | 11/17/2021 |
| 21K0073-08 | 4 | Total Organic Carbon | 10.2 | mg/L | SM 5310 B | 11/17/2021 |
| 21K0073-09 | 5 | Total Organic Carbon | 25.3 | mg/L | SM 5310 B | 11/17/2021 |

SPECTRA LABORATORIES

Ben Frans, Laboratory Manager



a7/scj

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

November 16, 2021

Analytical Resources, Inc.
4611 South 134th Place
Suite 100
Tukwila, WA. 98168

Units: mg/L
Spectra Project: 2021110387
Applies to Spectra #'s: 1-5

## QUALITY CONTROL RESULTS

### Total Organic Carbon in Water - SM 5310B

#### Method Blank

Date Analyzed: 11/16/2021

| | Blank |
|---|---|
| Total Organic Carbon | < 0.5 |

#### Laboratory Control Sample (LCS)

Date Analyzed: 11/16/2021

| | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Total Organic Carbon | 10.0 | 10.09 | 100.9 |

LCS Recovery limits 75-125%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 11/16/2021
Sample Spiked: 2021110386-1

| | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4.65 | 10.0 | 14.82 | 101.7 | 14.76 | 101.1 | 0.6 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

Spectra Laboratories

**Analytical Resources, Incorporated**
**Analytical Chemists and Consultants**

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0073**

202111 0287

**SENDING LABORATORY:**

Analytical Resources, LLC
4611 S. 134th Place, Suite 100
Tukwila, WA 98168
Phone: (206) 695-6200
Fax: (206) 695-6202
Project Manager: Kelly Bottem
E-Mail: kelly.bottem@arilabs.com

**RECEIVING LABORATORY:**

Spectra Laboratories
2221 Ross Way
Tacoma, WA 98421
Phone :253-272-4850
Fax: -

**PLEASE SEND DATA TO subdata@arilabs.com**

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0073-05** **Sampled: 11/03/21 09:23 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 09:23 | | |
| *Containers Supplied:* **21K0073-05 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0073-06** **Sampled: 11/03/21 08:30 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 08:30 | | |
| *Containers Supplied:* **21K0073-06 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0073-07** **Sampled: 11/03/21 09:43 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 09:43 | | |
| *Containers Supplied:* **21K0073-07 B** Glass NM, Amber, 250 mL, 9N | | | | |
| **Sample ID: 21K0073-08** **Sampled: 11/03/21 09:28 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 09:28 | | |
| *Containers Supplied:* **21K0073-08 B** Glass NM, Amber, 250 mL, 9N | | | | |

| Released By | Date | Received By | Date |
|---|---|---|---|
| [illegible] 11/12/21 2:46pm | | [illegible] 11.12.21 | 1446 |
| Released By | Date | Received By | Date |

Printed: 11/12/2021 12:44:05PM

Analytical Resources, Incorporated
Analytical Chemists and Consultants

**SUBCONTRACT ORDER**
**To: Spectra Laboratories**
**ARI Work Order:21K0073**

2021103887

| Analysis | Due | Expires | Sub Laboratory ID | Comments |
|---|---|---|---|---|
| **Sample ID: 21K0073-09** **Sampled: 11/03/21 10:47 Matrix: Water** | | | | |
| Carbon, Organic Total, SM 5310 B-00 | 11/19/21 | 12/01/21 10:47 | | |

*Containers Supplied:*

**21K0073-09 B**
Glass NM, Amber, 250 mL, 9N

| Released By | Date | Received By | Date |
|---|---|---|---|
| LB | 11/12/21 2:46pm | [illegible] | 11.12.21 1466 |
| | | | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| MW-16A-211102 | 21K0073-01 | Water | 02-Nov-2021 13:27 | 03-Nov-2021 15:56 |
| MW-16C-211102 | 21K0073-02 | Water | 02-Nov-2021 13:59 | 03-Nov-2021 15:56 |
| MW-15C-211102 | 21K0073-03 | Water | 02-Nov-2021 14:47 | 03-Nov-2021 15:56 |
| MW-14C-211102 | 21K0073-04 | Water | 02-Nov-2021 15:13 | 03-Nov-2021 15:56 |
| MW-6B-211103 | 21K0073-05 | Water | 03-Nov-2021 09:23 | 03-Nov-2021 15:56 |
| BDC-DUP1-211103 | 21K0073-06 | Water | 03-Nov-2021 08:30 | 03-Nov-2021 15:56 |
| MW-6A-211103 | 21K0073-07 | Water | 03-Nov-2021 09:43 | 03-Nov-2021 15:56 |
| MW-9A-211103 | 21K0073-08 | Water | 03-Nov-2021 09:28 | 03-Nov-2021 15:56 |
| MW-22A-211103 | 21K0073-09 | Water | 03-Nov-2021 10:47 | 03-Nov-2021 15:56 |
| MW-20C-211103 | 21K0073-10 | Water | 03-Nov-2021 10:42 | 03-Nov-2021 15:56 |
| MW-11A-211103 | 21K0073-11 | Water | 03-Nov-2021 11:18 | 03-Nov-2021 15:56 |
| MW-13A-211103 | 21K0073-12 | Water | 03-Nov-2021 11:47 | 03-Nov-2021 15:56 |
| MW-13C-211103 | 21K0073-13 | Water | 03-Nov-2021 11:52 | 03-Nov-2021 15:56 |
| MW-10C-211103 | 21K0073-14 | Water | 03-Nov-2021 15:42 | 03-Nov-2021 15:56 |
| Trip Blanks | 21K0073-15 | Water | 02-Nov-2021 13:27 | 03-Nov-2021 15:56 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

# Work Order Case Narrative

**Volatiles - EPA Method SW8260D**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

**Volatile Gases - MEE by RSK175**

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms. The sample was re-analyzed with surrogate recoveries in control.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

**Wet Chemistry**

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

TOC was subcontracted due to instrument failure.

**Analytical Resources, LLC**
Analytical Chemists and Consultants

Printed: 11/4/2021 11:00:47AM

**WORK ORDER**

21K0073

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client:** The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

**Project:** Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

## Preservation Confirmation

| Container ID | Container Type | pH | |
|---|---|---|---|
| 21K0073-01 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-01 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-01 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-02 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-02 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-02 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-03 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-03 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-03 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-04 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-04 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-04 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-05 A | HDPE NM, 500 mL | | |
| 21K0073-05 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0073-05 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-05 D | VOA Vial, Clear, 40 mL | | |
| 21K0073-05 E | VOA Vial, Clear, 40 mL | | |
| 21K0073-05 F | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-05 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-06 A | HDPE NM, 500 mL | | |
| 21K0073-06 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0073-06 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-06 D | VOA Vial, Clear, 40 mL | | |
| 21K0073-06 E | VOA Vial, Clear, 40 mL | | |
| 21K0073-06 F | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-06 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-07 A | HDPE NM, 500 mL | | |
| 21K0073-07 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0073-07 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-07 D | VOA Vial, Clear, 40 mL | | |
| 21K0073-07 E | VOA Vial, Clear, 40 mL | | |
| 21K0073-07 F | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-07 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-08 A | HDPE NM, 500 mL | | |

Reviewed By

Date

**WORK ORDER**

21K0073

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

**Client: The Boeing Company [Developmental Center]** **Project Manager: Kelly Bottem**

**Project: Boeing Regional GW Developmental Center** **Project Number: Boeing Regional GW Developmental Center**

| | | | |
|---|---|---|---|
| 21K0073-08 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0073-08 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-08 D | VOA Vial, Clear, 40 mL | | |
| 21K0073-08 E | VOA Vial, Clear, 40 mL | | |
| 21K0073-08 F | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-08 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-09 A | HDPE NM, 500 mL | | |
| 21K0073-09 B | Glass NM, Amber, 250 mL, 9N H2SO4 | <2 | Pass |
| 21K0073-09 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-09 D | VOA Vial, Clear, 40 mL | | |
| 21K0073-09 E | VOA Vial, Clear, 40 mL | | |
| 21K0073-09 F | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-09 G | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-10 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-10 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-10 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-11 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-11 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-11 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-12 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-12 B | VOA Vial, Clear, 40 mL | | |
| 21K0073-12 C | VOA Vial, Clear, 40 mL | | |
| 21K0073-13 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-13 B | VOA Vial, Clear, 40 mL | bubbles | |
| 21K0073-13 C | VOA Vial, Clear, 40 mL | bubbles | |
| 21K0073-14 A | VOA Vial, Clear, 40 mL | | |
| 21K0073-14 B | VOA Vial, Clear, 40 mL | bubbles | |
| 21K0073-14 C | VOA Vial, Clear, 40 mL | bubbles | |
| 21K0073-15 A | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-15 B | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-15 C | VOA Vial, Clear, 40 mL, HCL | | |
| 21K0073-15 D | VOA Vial, Clear, 40 mL, HCL | | |

HP
Preservation Confirmed By

11/04/21
Date

Reviewed By

Date

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

# Cooler Receipt Form

ARI Client: Landau | Project Name: DC Regional GW

COC No(s): _____ NA | Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21K0073 | Tracking No: _____ NA

**Preliminary Examination Phase:**

| | | |
|---|---|---|
| Were intact, properly signed and dated custody seals attached to the outside of the cooler? | YES | NO |
| Were custody papers included with the cooler? | YES | NO |
| Were custody papers properly filled out (ink, signed, etc.) | YES | NO |

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1556 | 1.1

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: D00256S

Cooler Accepted by: RB | Date: 11/3/21 | Time: 1556

***Complete custody forms and attach all shipping documents***

## Log-In Phase:

| | | | |
|---|---|---|---|
| Was a temperature blank included in the cooler? | | YES | NO |
| What kind of packing material was used? … Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____ | | | |
| Was sufficient ice used (if appropriate)? | NA | YES | NO |
| How were bottles sealed in plastic bags? | Individually | Grouped | Not |
| Did all bottles arrive in good condition (unbroken)? | | YES | NO |
| Were all bottle labels complete and legible? | | YES | NO |
| Did the number of containers listed on COC match with the number of containers received? | | YES | NO |
| Did all bottle labels and tags agree with custody papers? | | YES | NO |
| Were all bottles used correct for the requested analyses? | | YES | NO |
| Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) … | NA | YES | NO |
| Were all VOC vials free of air bubbles? | NA | YES | NO |
| Was sufficient amount of sample sent in each bottle? | | YES | NO |
| Date VOC Trip Blank was made at ARI | NA | 10/27/21 | |

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AP | Date: 11/04/21 | Time: 1002 | Labels checked by: RB

*** Notify Project Manager of discrepancies or concerns ***

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

***Additional Notes, Discrepancies, & Resolutions:***

Air bubble present in samples 21K0073-13B, -13C, -14B, and -14C. Lab to determine size

By: AP | Date: 11/04/21

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16A-211102**

**21K0073-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:26

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-01 C

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.28 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 6.94 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.41 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16A-211102**

**21K0073-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:26

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *113* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *102* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16A-211102**

**21K0073-01 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:26

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *99.7* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *102* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16C-211102**

**21K0073-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:59

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:51

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-02 B

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.58 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 1.63 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16C-211102**

**21K0073-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:59

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:51

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *112* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.1* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-16C-211102**

**21K0073-02 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:59

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:51

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *97.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *99.8* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-15C-211102**

**21K0073-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 14:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:11

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-03 A

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.25 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.36 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.42 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-15C-211102**

**21K0073-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 14:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:11

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *112* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.2* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-15C-211102**

**21K0073-03 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 14:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:11

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *95.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-14C-211102**

**21K0073-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 15:13

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-04 A

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.22 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-14C-211102**

**21K0073-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 15:13

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:36

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *107* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-14C-211102**

**21K0073-04 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 15:13

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 18:36

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *94.6* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *102* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-6B-211103

**21K0073-05 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:23

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:02

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-05 C

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 1.35 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 9.29 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.62 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-6B-211103

**21K0073-05 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:23

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:02

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *113* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.6* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6B-211103**

**21K0073-05 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:23

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:02

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *96.5* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *100* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6B-211103**

**21K0073-05 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 09:23

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 10:02

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-05 F

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 1530 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *72.5* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6B-211103**

**21K0073-05RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 09:23

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 00:55

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0073-05RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 0.491 | mg/L | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**BDC-DUP1-211103**

**21K0073-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 08:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:28

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-06 C

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 751 | ug/L | E |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | 0.46 | ug/L | |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 4.45 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 330 | ug/L | E |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.42 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**BDC-DUP1-211103**

**21K0073-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 08:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:28

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | 0.22 | ug/L | |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | 1.49 | ug/L | |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *116* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.8* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**BDC-DUP1-211103**

**21K0073-06 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 08:30

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 19:28

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *97.8* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *102* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## BDC-DUP1-211103

**21K0073-06 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 08:30
Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 10:20

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-06 F
Preparation Batch: BJK0151 — Sample Size: 10 mL
Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 1880 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 271 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | 305 | ug/L | |
| *Surrogate: Propane* | | | *72-122 %* | *83.2* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**BDC-DUP1-211103**

**21K0073-06RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 08:30

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 01:15

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0073-06RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 3.64 | mg/L | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-6A-211103

**21K0073-07 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:43
Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 13:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-07 E
Preparation Batch: BJK0169 — Sample Size: 10 mL
Prepared: 11/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.32 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.21 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.30 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6A-211103**

**21K0073-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:43

Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 13:44

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *121* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *100* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6A-211103**

**21K0073-07 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:43

Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 13:44

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *96.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *101* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6A-211103**

**21K0073-07 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 09:43

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 10:56

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-07 F

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 683 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *80.0* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-6A-211103**

**21K0073-07RE3 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 09:43

Instrument: IC930 Analyst: BF — Analyzed: 11/26/2021 17:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0073-07RE3 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 10 | 1.00 | 1.00 | 22.8 | mg/L | D |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-9A-211103

**21K0073-08 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28
Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:19

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-08 C
Preparation Batch: BJK0125 — Sample Size: 10 mL
Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 849 | ug/L | E |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | 0.50 | ug/L | |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 5.29 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 414 | ug/L | E |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 0.39 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:19

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | 0.67 | ug/L | |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *113* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *98.0* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:19

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *99.1* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *100* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 09:28

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 11:14

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-08 F

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 1920 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 232 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | 262 | ug/L | |
| *Surrogate: Propane* | | | *72-122 %* | *71.1* | *%* | * |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-9A-211103

**21K0073-08RE1 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28
Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 14:38

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-08RE1 E
Preparation Batch: BJK0169 — Sample Size: 0.5 mL
Prepared: 11/08/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 10.0 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 4.00 | 949 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 20.0 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 4.00 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 4.00 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 100 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 4.00 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 100 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 4.00 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 20.0 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 20.0 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 20.0 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 4.00 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 4.00 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 4.00 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 4.00 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 100 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 4.00 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 4.00 | 378 | ug/L | |
| Chloroform | 67-66-3 | 1 | 4.00 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 4.00 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 4.00 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 4.00 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 4.00 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 4.00 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 4.00 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 4.00 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 4.00 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 4.00 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 4.00 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 100 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 4.00 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 4.00 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 4.00 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## MW-9A-211103

**21K0073-08RE1 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 14:38

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 100 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 4.00 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 4.00 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 4.00 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 4.00 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 4.00 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 4.00 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 4.00 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 4.00 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 8.00 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 4.00 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 4.00 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 4.00 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 4.00 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 10.0 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 20.0 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 4.00 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 4.00 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 4.00 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 4.00 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 4.00 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 4.00 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 4.00 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 4.00 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 4.00 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 4.00 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 4.00 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 4.00 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 4.00 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 4.00 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 10.0 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 10.0 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 40.0 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 10.0 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 10.0 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.0* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08RE1 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 09:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/08/2021 14:38

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *99.4* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08RE1 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 09:28

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2021 16:36

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-08RE1 F

Preparation Batch: BJK0245 — Sample Size: 10 mL

Prepared: 11/10/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 2520 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | 328 | ug/L | |
| Ethene | 74-85-1 | 1 | 1.14 | 330 | ug/L | |
| *Surrogate: Propane* | | | *72-122 %* | *86.6* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-9A-211103**

**21K0073-08RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 09:28

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 01:56

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0073-08RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | 3.55 | mg/L | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-22A-211103**

**21K0073-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-09 E

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.70 | ND | ug/L | Y1, U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | 6.61 | ug/L | |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | 0.25 | ug/L | |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 1.00 | ND | ug/L | Y1, U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | 0.44 | ug/L | |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | 0.40 | ug/L | |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-22A-211103**

**21K0073-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:44

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | 3.29 | ug/L | |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | 2.56 | ug/L | |
| o-Xylene | 95-47-6 | 1 | 0.20 | 3.76 | ug/L | |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | 0.54 | ug/L | |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | 1.70 | ug/L | |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | 10.1 | ug/L | |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | 0.36 | ug/L | |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | 16.9 | ug/L | |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *115* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *102* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-22A-211103**

**21K0073-09 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 20:44

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *93.9* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *96.9* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-22A-211103**

**21K0073-09 (Water)**

## Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/03/2021 10:47

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 11:32

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-09 F

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | 6600 | ug/L | |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *73.0* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-22A-211103**

**21K0073-09RE1 (Water)**

## Wet Chemistry

Method: EPA 300.0 — Sampled: 11/03/2021 10:47

Instrument: IC930 Analyst: CDE — Analyzed: 11/07/2021 01:16

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21K0073-09RE1 A

Preparation Batch: BJK0134 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Detection Limit | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | 1 | 0.100 | 0.100 | ND | mg/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-20C-211103**

**21K0073-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 21:10

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-10 A

Preparation Batch: BJK0125 — Sample Size: 10 mL

Prepared: 11/04/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.24 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 0.62 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-20C-211103**

**21K0073-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 21:10

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *114* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.7* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-20C-211103**

**21K0073-10 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 10:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/04/2021 21:10

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *97.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *102* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-11A-211103**

**21K0073-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:17

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-11 A

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.42 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.45 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | 8.21 | ug/L | |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-11A-211103**

**21K0073-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:17

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 0.23 | ug/L | |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *120* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.8* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-11A-211103**

**21K0073-11 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:17

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *96.0* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *104* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13A-211103**

**21K0073-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:42

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-12 A

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | 1.31 | ug/L | |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13A-211103**

**21K0073-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:42

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | 2.81 | ug/L | |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *115* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.7* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13A-211103**

**21K0073-12 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:47

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 14:42

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *93.1* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *101* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13C-211103**

**21K0073-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:52

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:07

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-13 A

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | 0.24 | ug/L | |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | 0.25 | ug/L | |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13C-211103**

**21K0073-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:52

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:07

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *118* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *99.1* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-13C-211103**

**21K0073-13 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 11:52

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:07

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *100* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *102* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-10C-211103**

**21K0073-14 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 15:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:33

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-14 A

Preparation Batch: BJK0162 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-10C-211103**

**21K0073-14 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 15:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:33

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *122* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *97.3* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**MW-10C-211103**

**21K0073-14 (Water)**

## Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/03/2021 15:42

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 15:33

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *99.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *103* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Trip Blanks

**21K0073-15 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27
Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:01

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-15 B
Preparation Batch: BJK0162 — Sample Size: 10 mL
Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | 1 | 0.50 | ND | ug/L | U |
| Vinyl Chloride | 75-01-4 | 1 | 0.20 | ND | ug/L | U |
| Bromomethane | 74-83-9 | 1 | 1.00 | ND | ug/L | U |
| Chloroethane | 75-00-3 | 1 | 0.20 | ND | ug/L | U |
| Trichlorofluoromethane | 75-69-4 | 1 | 0.20 | ND | ug/L | U |
| Acrolein | 107-02-8 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76-13-1 | 1 | 0.20 | ND | ug/L | U |
| Acetone | 67-64-1 | 1 | 5.00 | ND | ug/L | U |
| 1,1-Dichloroethene | 75-35-4 | 1 | 0.20 | ND | ug/L | U |
| Iodomethane | 74-88-4 | 1 | 1.00 | ND | ug/L | U |
| Methylene Chloride | 75-09-2 | 1 | 1.00 | ND | ug/L | U |
| Acrylonitrile | 107-13-1 | 1 | 1.00 | ND | ug/L | U |
| Carbon Disulfide | 75-15-0 | 1 | 0.20 | ND | ug/L | U |
| trans-1,2-Dichloroethene | 156-60-5 | 1 | 0.20 | ND | ug/L | U |
| Vinyl Acetate | 108-05-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloroethane | 75-34-3 | 1 | 0.20 | ND | ug/L | U |
| 2-Butanone | 78-93-3 | 1 | 5.00 | ND | ug/L | U |
| 2,2-Dichloropropane | 594-20-7 | 1 | 0.20 | ND | ug/L | U |
| cis-1,2-Dichloroethene | 156-59-2 | 1 | 0.20 | ND | ug/L | U |
| Chloroform | 67-66-3 | 1 | 0.20 | ND | ug/L | U |
| Bromochloromethane | 74-97-5 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1-Trichloroethane | 71-55-6 | 1 | 0.20 | ND | ug/L | U |
| 1,1-Dichloropropene | 563-58-6 | 1 | 0.20 | ND | ug/L | U |
| Carbon tetrachloride | 56-23-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloroethane | 107-06-2 | 1 | 0.20 | ND | ug/L | U |
| Benzene | 71-43-2 | 1 | 0.20 | ND | ug/L | U |
| Trichloroethene | 79-01-6 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichloropropane | 78-87-5 | 1 | 0.20 | ND | ug/L | U |
| Bromodichloromethane | 75-27-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromomethane | 74-95-3 | 1 | 0.20 | ND | ug/L | U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1 | 5.00 | ND | ug/L | U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1 | 0.20 | ND | ug/L | U |
| Toluene | 108-88-3 | 1 | 0.20 | ND | ug/L | U |
| trans-1,3-Dichloropropene | 10061-02-6 | 1 | 0.20 | ND | ug/L | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Trip Blanks

**21K0073-15 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27
Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:01

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| 2-Hexanone | 591-78-6 | 1 | 5.00 | ND | ug/L | U |
| 1,1,2-Trichloroethane | 79-00-5 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichloropropane | 142-28-9 | 1 | 0.20 | ND | ug/L | U |
| Tetrachloroethene | 127-18-4 | 1 | 0.20 | ND | ug/L | U |
| Dibromochloromethane | 124-48-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromoethane | 106-93-4 | 1 | 0.20 | ND | ug/L | U |
| Chlorobenzene | 108-90-7 | 1 | 0.20 | ND | ug/L | U |
| Ethylbenzene | 100-41-4 | 1 | 0.20 | ND | ug/L | U |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | 0.20 | ND | ug/L | U |
| m,p-Xylene | 179601-23-1 | 1 | 0.40 | ND | ug/L | U |
| o-Xylene | 95-47-6 | 1 | 0.20 | ND | ug/L | U |
| Styrene | 100-42-5 | 1 | 0.20 | ND | ug/L | U |
| Bromoform | 75-25-2 | 1 | 0.20 | ND | ug/L | U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | 0.20 | ND | ug/L | U |
| 1,2,3-Trichloropropane | 96-18-4 | 1 | 0.50 | ND | ug/L | U |
| trans-1,4-Dichloro 2-Butene | 110-57-6 | 1 | 1.00 | ND | ug/L | U |
| n-Propylbenzene | 103-65-1 | 1 | 0.20 | ND | ug/L | U |
| Bromobenzene | 108-86-1 | 1 | 0.20 | ND | ug/L | U |
| Isopropyl Benzene | 98-82-8 | 1 | 0.20 | ND | ug/L | U |
| 2-Chlorotoluene | 95-49-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Chlorotoluene | 106-43-4 | 1 | 0.20 | ND | ug/L | U |
| t-Butylbenzene | 98-06-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3,5-Trimethylbenzene | 108-67-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2,4-Trimethylbenzene | 95-63-6 | 1 | 0.20 | ND | ug/L | U |
| s-Butylbenzene | 135-98-8 | 1 | 0.20 | ND | ug/L | U |
| 4-Isopropyl Toluene | 99-87-6 | 1 | 0.20 | ND | ug/L | U |
| 1,3-Dichlorobenzene | 541-73-1 | 1 | 0.20 | ND | ug/L | U |
| 1,4-Dichlorobenzene | 106-46-7 | 1 | 0.20 | ND | ug/L | U |
| n-Butylbenzene | 104-51-8 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dichlorobenzene | 95-50-1 | 1 | 0.20 | ND | ug/L | U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 1 | 0.50 | ND | ug/L | U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1 | 0.50 | ND | ug/L | U |
| Hexachloro-1,3-Butadiene | 87-68-3 | 1 | 2.00 | ND | ug/L | U |
| Naphthalene | 91-20-3 | 1 | 0.50 | ND | ug/L | U |
| 1,2,3-Trichlorobenzene | 87-61-6 | 1 | 0.50 | ND | ug/L | U |
| *Surrogate: 1,2-Dichloroethane-d4* | | | *80-129 %* | *111* | *%* | |
| *Surrogate: Toluene-d8* | | | *80-120 %* | *101* | *%* | |

**Analytical Resources, LLC**
**Analytical Chemists and Consultants**

# Analytical Report

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Trip Blanks

**21K0073-15 (Water)**

### Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/02/2021 13:27

Instrument: NT3 Analyst: PKC — Analyzed: 11/05/2021 13:01

**Analysis by: Analytical Resources, LLC**

| Analyte | CAS Number | Recovery Limits | Recovery | Units | Notes |
|---|---|---|---|---|---|
| *Surrogate: 4-Bromofluorobenzene* | | *80-120 %* | *94.2* | *%* | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | | *80-120 %* | *104* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Trip Blanks

**21K0073-15 (Water)**

### Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/02/2021 13:27

Instrument: FID6 Analyst: LH — Analyzed: 11/05/2021 09:44

**Analysis by: Analytical Resources, LLC**

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21K0073-15 A

Preparation Batch: BJK0151 — Sample Size: 10 mL

Prepared: 11/05/2021 — Final Volume: 10 mL

| Analyte | CAS Number | Dilution | Reporting Limit | Result | Units | Notes |
|---|---|---|---|---|---|---|
| Methane | 74-82-8 | 1 | 0.65 | ND | ug/L | U |
| Ethane | 74-84-0 | 1 | 1.23 | ND | ug/L | U |
| Ethene | 74-85-1 | 1 | 1.14 | ND | ug/L | U |
| *Surrogate: Propane* | | | *72-122 %* | *82.3* | *%* | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0125-BLK1)** | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 12:35 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0125-BLK1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 12:35 | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 2.00 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0125-BLK1)** | | | | Prepared: 04-Nov-2021 | | Analyzed: 04-Nov-2021 12:35 | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.36 | | ug/L | *5.00* | | *107* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.94 | | ug/L | *5.00* | | *98.7* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.85 | | ug/L | *5.00* | | *97.0* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.18 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| **LCS (BJK0125-BS1)** | | | | Prepared: 04-Nov-2021 | | Analyzed: 04-Nov-2021 10:53 | | | | |
| Chloromethane | 10.7 | 0.50 | ug/L | 10.0 | | 107 | 60-138 | | | |
| Vinyl Chloride | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 66-133 | | | |
| Bromomethane | 10.2 | 1.00 | ug/L | 10.0 | | 102 | 72-131 | | | |
| Chloroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 60-155 | | | |
| Trichlorofluoromethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 62-141 | | | |
| Acrolein | 53.7 | 5.00 | ug/L | 50.0 | | 107 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.60 | 0.20 | ug/L | 10.0 | | 96.0 | 76-129 | | | |
| Acetone | 52.8 | 5.00 | ug/L | 50.0 | | 106 | 58-142 | | | |
| 1,1-Dichloroethene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 69-135 | | | |
| Iodomethane | 9.91 | 1.00 | ug/L | 10.0 | | 99.1 | 56-147 | | | |
| Methylene Chloride | 9.64 | 1.00 | ug/L | 10.0 | | 96.4 | 65-135 | | | |
| Acrylonitrile | 9.73 | 1.00 | ug/L | 10.0 | | 97.3 | 64-134 | | | |
| Carbon Disulfide | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-125 | | | |
| trans-1,2-Dichloroethene | 9.64 | 0.20 | ug/L | 10.0 | | 96.4 | 78-128 | | | |
| Vinyl Acetate | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 55-138 | | | |
| 1,1-Dichloroethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 76-124 | | | |
| 2-Butanone | 55.5 | 5.00 | ug/L | 50.0 | | 111 | 61-140 | | | |
| 2,2-Dichloropropane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 66-147 | | | |
| cis-1,2-Dichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |
| Chloroform | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-122 | | | |
| Bromochloromethane | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 80-121 | | | |
| 1,1,1-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 79-123 | | | |
| 1,1-Dichloropropene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-127 | | | |
| Carbon tetrachloride | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 53-137 | | | |
| 1,2-Dichloroethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 75-123 | | | |
| Benzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | | | |
| Trichloroethene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| 1,2-Dichloropropane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | | | |
| Bromodichloromethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0125-BS1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 10:53 | | | | | | |
| Dibromomethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | | | |
| 4-Methyl-2-Pentanone | 53.2 | 5.00 | ug/L | 50.0 | | 106 | 67-133 | | | |
| cis-1,3-Dichloropropene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-124 | | | |
| Toluene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | | | |
| trans-1,3-Dichloropropene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 71-127 | | | |
| 2-Hexanone | 53.1 | 5.00 | ug/L | 50.0 | | 106 | 69-133 | | | |
| 1,1,2-Trichloroethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-121 | | | |
| 1,3-Dichloropropane | 9.94 | 0.20 | ug/L | 10.0 | | 99.4 | 80-120 | | | |
| Tetrachloroethene | 9.63 | 0.20 | ug/L | 10.0 | | 96.3 | 80-120 | | | |
| Dibromochloromethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 65-135 | | | |
| 1,2-Dibromoethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | | | |
| Chlorobenzene | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 80-120 | | | |
| Ethylbenzene | 9.91 | 0.20 | ug/L | 10.0 | | 99.1 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 9.83 | 0.20 | ug/L | 10.0 | | 98.3 | 80-120 | | | |
| m,p-Xylene | 20.0 | 0.40 | ug/L | 20.0 | | 100 | 80-121 | | | |
| o-Xylene | 9.81 | 0.20 | ug/L | 10.0 | | 98.1 | 80-121 | | | |
| Styrene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-124 | | | |
| Bromoform | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 77-123 | | | |
| 1,2,3-Trichloropropane | 10.0 | 0.50 | ug/L | 10.0 | | 100 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 11.3 | 1.00 | ug/L | 10.0 | | 113 | 55-129 | | | |
| n-Propylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-130 | | | |
| Bromobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | | | |
| Isopropyl Benzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-128 | | | |
| 2-Chlorotoluene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-122 | | | |
| 4-Chlorotoluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | | | |
| t-Butylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-127 | | | |
| s-Butylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 78-129 | | | |
| 4-Isopropyl Toluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 79-130 | | | |
| 1,3-Dichlorobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | | | |
| 1,4-Dichlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | | | |
| n-Butylbenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 74-129 | | | |
| 1,2-Dichlorobenzene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 80-120 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0125-BS1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 10:53 | | | | | | |
| 1,2-Dibromo-3-chloropropane | 9.03 | 0.50 | ug/L | 10.0 | | 90.3 | 62-123 | | | |
| 1,2,4-Trichlorobenzene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 9.83 | 2.00 | ug/L | 10.0 | | 98.3 | 58-123 | | | |
| Naphthalene | 10.3 | 0.50 | ug/L | 10.0 | | 103 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.00 | | ug/L | *5.00* | | *100* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.25 | | ug/L | *5.00* | | *105* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.06 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.5* | *80-120* | | | |
| **LCS Dup (BJK0125-BSD1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 11:44 | | | | | | |
| Chloromethane | 11.1 | 0.50 | ug/L | 10.0 | | 111 | 60-138 | 3.59 | 30 | |
| Vinyl Chloride | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 66-133 | 0.14 | 30 | |
| Bromomethane | 10.2 | 1.00 | ug/L | 10.0 | | 102 | 72-131 | 0.26 | 30 | |
| Chloroethane | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 60-155 | 1.82 | 30 | |
| Trichlorofluoromethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 62-141 | 3.35 | 30 | |
| Acrolein | 58.0 | 5.00 | ug/L | 50.0 | | 116 | 52-190 | 7.64 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.38 | 0.20 | ug/L | 10.0 | | 93.8 | 76-129 | 2.27 | 30 | |
| Acetone | 59.3 | 5.00 | ug/L | 50.0 | | 119 | 58-142 | 11.60 | 30 | |
| 1,1-Dichloroethene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 69-135 | 1.15 | 30 | |
| Iodomethane | 9.87 | 1.00 | ug/L | 10.0 | | 98.7 | 56-147 | 0.35 | 30 | |
| Methylene Chloride | 8.57 | 1.00 | ug/L | 10.0 | | 85.7 | 65-135 | 11.80 | 30 | |
| Acrylonitrile | 10.6 | 1.00 | ug/L | 10.0 | | 106 | 64-134 | 8.62 | 30 | |
| Carbon Disulfide | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 78-125 | 0.10 | 30 | |
| trans-1,2-Dichloroethene | 9.59 | 0.20 | ug/L | 10.0 | | 95.9 | 78-128 | 0.54 | 30 | |
| Vinyl Acetate | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 55-138 | 6.44 | 30 | |
| 1,1-Dichloroethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 76-124 | 0.51 | 30 | |
| 2-Butanone | 60.0 | 5.00 | ug/L | 50.0 | | 120 | 61-140 | 7.77 | 30 | |
| 2,2-Dichloropropane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 66-147 | 0.15 | 30 | |
| cis-1,2-Dichloroethene | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 80-121 | 1.90 | 30 | |
| Chloroform | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-122 | 1.04 | 30 | |
| Bromochloromethane | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-121 | 0.35 | 30 | |
| 1,1,1-Trichloroethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 79-123 | 1.24 | 30 | |
| 1,1-Dichloropropene | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 80-127 | 2.36 | 30 | |
| Carbon tetrachloride | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 53-137 | 3.12 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0125-BSD1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 11:44 | | | | | | |
| 1,2-Dichloroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 75-123 | 1.69 | 30 | |
| Benzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 0.05 | 30 | |
| Trichloroethene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-120 | 0.89 | 30 | |
| 1,2-Dichloropropane | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 80-120 | 3.47 | 30 | |
| Bromodichloromethane | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-121 | 1.95 | 30 | |
| Dibromomethane | 9.94 | 0.20 | ug/L | 10.0 | | 99.4 | 80-120 | 3.45 | 30 | |
| 4-Methyl-2-Pentanone | 55.3 | 5.00 | ug/L | 50.0 | | 111 | 67-133 | 3.71 | 30 | |
| cis-1,3-Dichloropropene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-124 | 2.90 | 30 | |
| Toluene | 9.87 | 0.20 | ug/L | 10.0 | | 98.7 | 80-120 | 2.10 | 30 | |
| trans-1,3-Dichloropropene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 71-127 | 0.15 | 30 | |
| 2-Hexanone | 58.4 | 5.00 | ug/L | 50.0 | | 117 | 69-133 | 9.57 | 30 | |
| 1,1,2-Trichloroethane | 9.91 | 0.20 | ug/L | 10.0 | | 99.1 | 80-121 | 2.67 | 30 | |
| 1,3-Dichloropropane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | 4.47 | 30 | |
| Tetrachloroethene | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 80-120 | 0.97 | 30 | |
| Dibromochloromethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 65-135 | 4.71 | 30 | |
| 1,2-Dibromoethane | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-121 | 1.36 | 30 | |
| Chlorobenzene | 9.81 | 0.20 | ug/L | 10.0 | | 98.1 | 80-120 | 1.43 | 30 | |
| Ethylbenzene | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 80-120 | 0.50 | 30 | |
| 1,1,1,2-Tetrachloroethane | 9.72 | 0.20 | ug/L | 10.0 | | 97.2 | 80-120 | 1.18 | 30 | |
| m,p-Xylene | 19.8 | 0.40 | ug/L | 20.0 | | 99.0 | 80-121 | 1.16 | 30 | |
| o-Xylene | 9.96 | 0.20 | ug/L | 10.0 | | 99.6 | 80-121 | 1.52 | 30 | |
| Styrene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-124 | 0.49 | 30 | |
| Bromoform | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 51-134 | 0.43 | 30 | |
| 1,1,2,2-Tetrachloroethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 77-123 | 3.46 | 30 | |
| 1,2,3-Trichloropropane | 9.86 | 0.50 | ug/L | 10.0 | | 98.6 | 76-125 | 1.35 | 30 | |
| trans-1,4-Dichloro 2-Butene | 11.1 | 1.00 | ug/L | 10.0 | | 111 | 55-129 | 1.72 | 30 | |
| n-Propylbenzene | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 78-130 | 2.19 | 30 | |
| Bromobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 0.42 | 30 | |
| Isopropyl Benzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-128 | 1.77 | 30 | |
| 2-Chlorotoluene | 9.76 | 0.20 | ug/L | 10.0 | | 97.6 | 78-122 | 3.22 | 30 | |
| 4-Chlorotoluene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-121 | 2.16 | 30 | |
| t-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-125 | 0.90 | 30 | |
| 1,3,5-Trimethylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-129 | 2.62 | 30 | |
| 1,2,4-Trimethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-127 | 2.17 | 30 | |
| s-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-129 | 3.05 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0125 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0125-BSD1)** | | | | Prepared: 04-Nov-2021 Analyzed: 04-Nov-2021 11:44 | | | | | | |
| 4-Isopropyl Toluene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 79-130 | 2.82 | 30 | |
| 1,3-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 0.20 | 30 | |
| 1,4-Dichlorobenzene | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-120 | 2.26 | 30 | |
| n-Butylbenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 74-129 | 2.76 | 30 | |
| 1,2-Dichlorobenzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-120 | 0.96 | 30 | |
| 1,2-Dibromo-3-chloropropane | 9.35 | 0.50 | ug/L | 10.0 | | 93.5 | 62-123 | 3.48 | 30 | |
| 1,2,4-Trichlorobenzene | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 64-124 | 0.38 | 30 | |
| Hexachloro-1,3-Butadiene | 9.64 | 2.00 | ug/L | 10.0 | | 96.4 | 58-123 | 1.93 | 30 | |
| Naphthalene | 10.5 | 0.50 | ug/L | 10.0 | | 105 | 50-134 | 2.22 | 30 | |
| 1,2,3-Trichlorobenzene | 10.3 | 0.50 | ug/L | 10.0 | | 103 | 49-133 | 1.72 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.28 | | ug/L | *5.00* | | *106* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.02 | | ug/L | *5.00* | | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.95 | | ug/L | *5.00* | | *99.0* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.6* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0162-BLK1)** | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 12:36 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0162-BLK1)** | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 12:36 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 2.00 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0162-BLK1)** | | | | Prepared: 05-Nov-2021 | | Analyzed: 05-Nov-2021 12:36 | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.51 | | ug/L | *5.00* | | *110* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.06 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.03 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.94 | | ug/L | *5.00* | | *98.9* | *80-120* | | | |
| **LCS (BJK0162-BS1)** | | | | Prepared: 05-Nov-2021 | | Analyzed: 05-Nov-2021 10:54 | | | | |
| Chloromethane | 11.0 | 0.50 | ug/L | 10.0 | | 110 | 60-138 | | | |
| Vinyl Chloride | 11.9 | 0.20 | ug/L | 10.0 | | 119 | 66-133 | | | |
| Bromomethane | 10.6 | 1.00 | ug/L | 10.0 | | 106 | 72-131 | | | |
| Chloroethane | 12.2 | 0.20 | ug/L | 10.0 | | 122 | 60-155 | | | Q |
| Trichlorofluoromethane | 11.9 | 0.20 | ug/L | 10.0 | | 119 | 62-141 | | | |
| Acrolein | 58.4 | 5.00 | ug/L | 50.0 | | 117 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.69 | 0.20 | ug/L | 10.0 | | 96.9 | 76-129 | | | |
| Acetone | 59.9 | 5.00 | ug/L | 50.0 | | 120 | 58-142 | | | |
| 1,1-Dichloroethene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 69-135 | | | |
| Iodomethane | 10.5 | 1.00 | ug/L | 10.0 | | 105 | 56-147 | | | |
| Methylene Chloride | 9.23 | 1.00 | ug/L | 10.0 | | 92.3 | 65-135 | | | |
| Acrylonitrile | 10.5 | 1.00 | ug/L | 10.0 | | 105 | 64-134 | | | |
| Carbon Disulfide | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 78-125 | | | |
| trans-1,2-Dichloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 78-128 | | | |
| Vinyl Acetate | 12.1 | 0.20 | ug/L | 10.0 | | 121 | 55-138 | | | Q |
| 1,1-Dichloroethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 76-124 | | | |
| 2-Butanone | 63.7 | 5.00 | ug/L | 50.0 | | 127 | 61-140 | | | Q |
| 2,2-Dichloropropane | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 66-147 | | | |
| cis-1,2-Dichloroethene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | | | |
| Chloroform | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-122 | | | |
| Bromochloromethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | | | |
| 1,1,1-Trichloroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 79-123 | | | |
| 1,1-Dichloropropene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-127 | | | |
| Carbon tetrachloride | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 53-137 | | | |
| 1,2-Dichloroethane | 12.1 | 0.20 | ug/L | 10.0 | | 121 | 75-123 | | | Q |
| Benzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| Trichloroethene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-120 | | | |
| 1,2-Dichloropropane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| Bromodichloromethane | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-121 | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0162-BS1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 10:54 | | | | | | |
| Dibromomethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-120 | | | |
| 4-Methyl-2-Pentanone | 58.0 | 5.00 | ug/L | 50.0 | | 116 | 67-133 | | | |
| cis-1,3-Dichloropropene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-124 | | | |
| Toluene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| trans-1,3-Dichloropropene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 71-127 | | | |
| 2-Hexanone | 62.9 | 5.00 | ug/L | 50.0 | | 126 | 69-133 | | | Q |
| 1,1,2-Trichloroethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | | | |
| 1,3-Dichloropropane | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-120 | | | |
| Tetrachloroethene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| Dibromochloromethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 65-135 | | | |
| 1,2-Dibromoethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | | | |
| Chlorobenzene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| Ethylbenzene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| m,p-Xylene | 21.3 | 0.40 | ug/L | 20.0 | | 107 | 80-121 | | | |
| o-Xylene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-121 | | | |
| Styrene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-124 | | | |
| Bromoform | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 77-123 | | | |
| 1,2,3-Trichloropropane | 10.5 | 0.50 | ug/L | 10.0 | | 105 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 12.1 | 1.00 | ug/L | 10.0 | | 121 | 55-129 | | | Q |
| n-Propylbenzene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 78-130 | | | |
| Bromobenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| Isopropyl Benzene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-128 | | | |
| 2-Chlorotoluene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 78-122 | | | |
| 4-Chlorotoluene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-121 | | | |
| t-Butylbenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-127 | | | |
| s-Butylbenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 78-129 | | | |
| 4-Isopropyl Toluene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 79-130 | | | |
| 1,3-Dichlorobenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| 1,4-Dichlorobenzene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| n-Butylbenzene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 74-129 | | | |
| 1,2-Dichlorobenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0162-BS1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 10:54 | | | | | | |
| 1,2-Dibromo-3-chloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 62-123 | | | |
| 1,2,4-Trichlorobenzene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 10.4 | 2.00 | ug/L | 10.0 | | 104 | 58-123 | | | |
| Naphthalene | 10.9 | 0.50 | ug/L | 10.0 | | 109 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.7 | 0.50 | ug/L | 10.0 | | 107 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.65 | | ug/L | *5.00* | | *113* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.13 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.15 | | ug/L | *5.00* | | *103* | *80-120* | | | |
| **LCS Dup (BJK0162-BSD1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 15:58 | | | | | | |
| Chloromethane | 13.0 | 0.50 | ug/L | 10.0 | | 130 | 60-138 | 16.50 | 30 | |
| Vinyl Chloride | 12.0 | 0.20 | ug/L | 10.0 | | 120 | 66-133 | 0.82 | 30 | |
| Bromomethane | 10.7 | 1.00 | ug/L | 10.0 | | 107 | 72-131 | 1.64 | 30 | |
| Chloroethane | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 60-155 | 5.29 | 30 | Q |
| Trichlorofluoromethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 62-141 | 5.09 | 30 | |
| Acrolein | 57.9 | 5.00 | ug/L | 50.0 | | 116 | 52-190 | 0.91 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.52 | 0.20 | ug/L | 10.0 | | 95.2 | 76-129 | 1.81 | 30 | |
| Acetone | 65.2 | 5.00 | ug/L | 50.0 | | 130 | 58-142 | 8.40 | 30 | |
| 1,1-Dichloroethene | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 69-135 | 2.89 | 30 | |
| Iodomethane | 10.4 | 1.00 | ug/L | 10.0 | | 104 | 56-147 | 1.39 | 30 | |
| Methylene Chloride | 8.76 | 1.00 | ug/L | 10.0 | | 87.6 | 65-135 | 5.18 | 30 | |
| Acrylonitrile | 12.0 | 1.00 | ug/L | 10.0 | | 120 | 64-134 | 13.50 | 30 | |
| Carbon Disulfide | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 78-125 | 1.39 | 30 | |
| trans-1,2-Dichloroethene | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 78-128 | 3.90 | 30 | |
| Vinyl Acetate | 12.5 | 0.20 | ug/L | 10.0 | | 125 | 55-138 | 3.47 | 30 | Q |
| 1,1-Dichloroethane | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 76-124 | 3.33 | 30 | |
| 2-Butanone | 67.8 | 5.00 | ug/L | 50.0 | | 136 | 61-140 | 6.25 | 30 | Q |
| 2,2-Dichloropropane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 66-147 | 1.22 | 30 | |
| cis-1,2-Dichloroethene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | 2.02 | 30 | |
| Chloroform | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-122 | 1.30 | 30 | |
| Bromochloromethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | 0.20 | 30 | |
| 1,1,1-Trichloroethane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 79-123 | 0.99 | 30 | |
| 1,1-Dichloropropene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-127 | 3.22 | 30 | |
| Carbon tetrachloride | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 53-137 | 7.42 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0162-BSD1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 15:58 | | | | | | |
| 1,2-Dichloroethane | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 75-123 | 2.93 | 30 | Q |
| Benzene | 9.92 | 0.20 | ug/L | 10.0 | | 99.2 | 80-120 | 5.51 | 30 | |
| Trichloroethene | 9.68 | 0.20 | ug/L | 10.0 | | 96.8 | 80-120 | 10.80 | 30 | |
| 1,2-Dichloropropane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 0.77 | 30 | |
| Bromodichloromethane | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-121 | 1.91 | 30 | |
| Dibromomethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | 3.60 | 30 | |
| 4-Methyl-2-Pentanone | 60.5 | 5.00 | ug/L | 50.0 | | 121 | 67-133 | 4.19 | 30 | |
| cis-1,3-Dichloropropene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-124 | 4.56 | 30 | |
| Toluene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 80-120 | 5.59 | 30 | |
| trans-1,3-Dichloropropene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 71-127 | 2.65 | 30 | |
| 2-Hexanone | 65.7 | 5.00 | ug/L | 50.0 | | 131 | 69-133 | 4.40 | 30 | Q |
| 1,1,2-Trichloroethane | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-121 | 2.85 | 30 | |
| 1,3-Dichloropropane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 4.26 | 30 | |
| Tetrachloroethene | 9.29 | 0.20 | ug/L | 10.0 | | 92.9 | 80-120 | 13.40 | 30 | |
| Dibromochloromethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 65-135 | 5.01 | 30 | |
| 1,2-Dibromoethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | 1.13 | 30 | |
| Chlorobenzene | 9.78 | 0.20 | ug/L | 10.0 | | 97.8 | 80-120 | 8.30 | 30 | |
| Ethylbenzene | 9.54 | 0.20 | ug/L | 10.0 | | 95.4 | 80-120 | 12.00 | 30 | |
| 1,1,1,2-Tetrachloroethane | 9.73 | 0.20 | ug/L | 10.0 | | 97.3 | 80-120 | 8.82 | 30 | |
| m,p-Xylene | 19.6 | 0.40 | ug/L | 20.0 | | 98.2 | 80-121 | 8.30 | 30 | |
| o-Xylene | 9.49 | 0.20 | ug/L | 10.0 | | 94.9 | 80-121 | 13.10 | 30 | |
| Styrene | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 80-124 | 8.84 | 30 | |
| Bromoform | 9.89 | 0.20 | ug/L | 10.0 | | 98.9 | 51-134 | 10.30 | 30 | |
| 1,1,2,2-Tetrachloroethane | 9.84 | 0.20 | ug/L | 10.0 | | 98.4 | 77-123 | 4.67 | 30 | |
| 1,2,3-Trichloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 76-125 | 3.18 | 30 | |
| trans-1,4-Dichloro 2-Butene | 12.2 | 1.00 | ug/L | 10.0 | | 122 | 55-129 | 1.43 | 30 | Q |
| n-Propylbenzene | 9.94 | 0.20 | ug/L | 10.0 | | 99.4 | 78-130 | 6.91 | 30 | |
| Bromobenzene | 9.57 | 0.20 | ug/L | 10.0 | | 95.7 | 80-120 | 8.96 | 30 | |
| Isopropyl Benzene | 10.0 | 0.20 | ug/L | 10.0 | | 100 | 80-128 | 6.99 | 30 | |
| 2-Chlorotoluene | 9.85 | 0.20 | ug/L | 10.0 | | 98.5 | 78-122 | 7.80 | 30 | |
| 4-Chlorotoluene | 9.99 | 0.20 | ug/L | 10.0 | | 99.9 | 80-121 | 6.95 | 30 | |
| t-Butylbenzene | 9.81 | 0.20 | ug/L | 10.0 | | 98.1 | 78-125 | 8.99 | 30 | |
| 1,3,5-Trimethylbenzene | 9.95 | 0.20 | ug/L | 10.0 | | 99.5 | 80-129 | 7.79 | 30 | |
| 1,2,4-Trimethylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-127 | 7.23 | 30 | |
| s-Butylbenzene | 9.97 | 0.20 | ug/L | 10.0 | | 99.7 | 78-129 | 7.46 | 30 | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0162 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0162-BSD1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 15:58 | | | | | | |
| 4-Isopropyl Toluene | 9.79 | 0.20 | ug/L | 10.0 | | 97.9 | 79-130 | 8.87 | 30 | |
| 1,3-Dichlorobenzene | 9.77 | 0.20 | ug/L | 10.0 | | 97.7 | 80-120 | 7.54 | 30 | |
| 1,4-Dichlorobenzene | 9.86 | 0.20 | ug/L | 10.0 | | 98.6 | 80-120 | 7.73 | 30 | |
| n-Butylbenzene | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 74-129 | 9.32 | 30 | |
| 1,2-Dichlorobenzene | 9.69 | 0.20 | ug/L | 10.0 | | 96.9 | 80-120 | 7.13 | 30 | |
| 1,2-Dibromo-3-chloropropane | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 62-123 | 0.16 | 30 | |
| 1,2,4-Trichlorobenzene | 9.84 | 0.50 | ug/L | 10.0 | | 98.4 | 64-124 | 10.40 | 30 | |
| Hexachloro-1,3-Butadiene | 9.34 | 2.00 | ug/L | 10.0 | | 93.4 | 58-123 | 10.70 | 30 | |
| Naphthalene | 10.3 | 0.50 | ug/L | 10.0 | | 103 | 50-134 | 5.38 | 30 | |
| 1,2,3-Trichlorobenzene | 10.1 | 0.50 | ug/L | 10.0 | | 101 | 49-133 | 5.95 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 6.00 | | ug/L | *5.00* | | *120* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.10 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.86 | | ug/L | *5.00* | | *97.2* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.99 | | ug/L | *5.00* | | *99.8* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0169-BLK1)** | Prepared: 08-Nov-2021 Analyzed: 08-Nov-2021 12:26 | | | | | | | | | |
| Chloromethane | ND | 0.50 | ug/L | | | | | | | U |
| Vinyl Chloride | ND | 0.20 | ug/L | | | | | | | U |
| Bromomethane | ND | 1.00 | ug/L | | | | | | | U |
| Chloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Trichlorofluoromethane | ND | 0.20 | ug/L | | | | | | | U |
| Acrolein | ND | 5.00 | ug/L | | | | | | | U |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 0.20 | ug/L | | | | | | | U |
| Acetone | ND | 5.00 | ug/L | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Iodomethane | ND | 1.00 | ug/L | | | | | | | U |
| Methylene Chloride | ND | 1.00 | ug/L | | | | | | | U |
| Acrylonitrile | ND | 1.00 | ug/L | | | | | | | U |
| Carbon Disulfide | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Vinyl Acetate | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 2-Butanone | ND | 5.00 | ug/L | | | | | | | U |
| 2,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Chloroform | ND | 0.20 | ug/L | | | | | | | U |
| Bromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,1-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Carbon tetrachloride | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| Benzene | ND | 0.20 | ug/L | | | | | | | U |
| Trichloroethene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Bromodichloromethane | ND | 0.20 | ug/L | | | | | | | U |
| Dibromomethane | ND | 0.20 | ug/L | | | | | | | U |
| 4-Methyl-2-Pentanone | ND | 5.00 | ug/L | | | | | | | U |
| cis-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| Toluene | ND | 0.20 | ug/L | | | | | | | U |
| trans-1,3-Dichloropropene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Hexanone | ND | 5.00 | ug/L | | | | | | | U |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0169-BLK1)** | | | Prepared: 08-Nov-2021 Analyzed: 08-Nov-2021 12:26 | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichloropropane | ND | 0.20 | ug/L | | | | | | | U |
| Tetrachloroethene | ND | 0.20 | ug/L | | | | | | | U |
| Dibromochloromethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromoethane | ND | 0.20 | ug/L | | | | | | | U |
| Chlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Ethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| m,p-Xylene | ND | 0.40 | ug/L | | | | | | | U |
| o-Xylene | ND | 0.20 | ug/L | | | | | | | U |
| Styrene | ND | 0.20 | ug/L | | | | | | | U |
| Bromoform | ND | 0.20 | ug/L | | | | | | | U |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,3-Trichloropropane | ND | 0.50 | ug/L | | | | | | | U |
| trans-1,4-Dichloro 2-Butene | ND | 1.00 | ug/L | | | | | | | U |
| n-Propylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| Bromobenzene | ND | 0.20 | ug/L | | | | | | | U |
| Isopropyl Benzene | ND | 0.20 | ug/L | | | | | | | U |
| 2-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Chlorotoluene | ND | 0.20 | ug/L | | | | | | | U |
| t-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3,5-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2,4-Trimethylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| s-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 4-Isopropyl Toluene | ND | 0.20 | ug/L | | | | | | | U |
| 1,3-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,4-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| n-Butylbenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dichlorobenzene | ND | 0.20 | ug/L | | | | | | | U |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |
| Hexachloro-1,3-Butadiene | ND | 2.00 | ug/L | | | | | | | U |
| Naphthalene | ND | 0.50 | ug/L | | | | | | | U |
| 1,2,3-Trichlorobenzene | ND | 0.50 | ug/L | | | | | | | U |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0169-BLK1)** | | | | Prepared: 08-Nov-2021 | | Analyzed: 08-Nov-2021 12:26 | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.77 | | ug/L | *5.00* | | *115* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 4.97 | | ug/L | *5.00* | | *99.4* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 4.78 | | ug/L | *5.00* | | *95.6* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.85 | | ug/L | *5.00* | | *96.9* | *80-120* | | | |
| **LCS (BJK0169-BS1)** | | | | Prepared: 08-Nov-2021 | | Analyzed: 08-Nov-2021 10:45 | | | | |
| Chloromethane | 11.2 | 0.50 | ug/L | 10.0 | | 112 | 60-138 | | | |
| Vinyl Chloride | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 66-133 | | | |
| Bromomethane | 11.3 | 1.00 | ug/L | 10.0 | | 113 | 72-131 | | | |
| Chloroethane | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 60-155 | | | |
| Trichlorofluoromethane | 12.9 | 0.20 | ug/L | 10.0 | | 129 | 62-141 | | | Q |
| Acrolein | 54.4 | 5.00 | ug/L | 50.0 | | 109 | 52-190 | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 76-129 | | | |
| Acetone | 63.9 | 5.00 | ug/L | 50.0 | | 128 | 58-142 | | | Q |
| 1,1-Dichloroethene | 12.0 | 0.20 | ug/L | 10.0 | | 120 | 69-135 | | | Q |
| Iodomethane | 10.8 | 1.00 | ug/L | 10.0 | | 108 | 56-147 | | | |
| Methylene Chloride | 11.1 | 1.00 | ug/L | 10.0 | | 111 | 65-135 | | | |
| Acrylonitrile | 11.5 | 1.00 | ug/L | 10.0 | | 115 | 64-134 | | | |
| Carbon Disulfide | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 78-125 | | | |
| trans-1,2-Dichloroethene | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 78-128 | | | |
| Vinyl Acetate | 12.1 | 0.20 | ug/L | 10.0 | | 121 | 55-138 | | | Q |
| 1,1-Dichloroethane | 11.6 | 0.20 | ug/L | 10.0 | | 116 | 76-124 | | | |
| 2-Butanone | 67.1 | 5.00 | ug/L | 50.0 | | 134 | 61-140 | | | Q |
| 2,2-Dichloropropane | 11.9 | 0.20 | ug/L | 10.0 | | 119 | 66-147 | | | |
| cis-1,2-Dichloroethene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-121 | | | |
| Chloroform | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 80-122 | | | |
| Bromochloromethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-121 | | | |
| 1,1,1-Trichloroethane | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 79-123 | | | |
| 1,1-Dichloropropene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 80-127 | | | |
| Carbon tetrachloride | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 53-137 | | | |
| 1,2-Dichloroethane | 12.3 | 0.20 | ug/L | 10.0 | | 123 | 75-123 | | | Q |
| Benzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-120 | | | |
| Trichloroethene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-120 | | | |
| 1,2-Dichloropropane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-120 | | | |
| Bromodichloromethane | 11.6 | 0.20 | ug/L | 10.0 | | 116 | 80-121 | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0169-BS1)** | | | | Prepared: 08-Nov-2021 Analyzed: 08-Nov-2021 10:45 | | | | | | |
| Dibromomethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 80-120 | | | |
| 4-Methyl-2-Pentanone | 59.8 | 5.00 | ug/L | 50.0 | | 120 | 67-133 | | | |
| cis-1,3-Dichloropropene | 11.8 | 0.20 | ug/L | 10.0 | | 118 | 80-124 | | | |
| Toluene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-120 | | | |
| trans-1,3-Dichloropropene | 12.4 | 0.20 | ug/L | 10.0 | | 124 | 71-127 | | | Q |
| 2-Hexanone | 61.3 | 5.00 | ug/L | 50.0 | | 123 | 69-133 | | | Q |
| 1,1,2-Trichloroethane | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | | | |
| 1,3-Dichloropropane | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-120 | | | |
| Tetrachloroethene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | | | |
| Dibromochloromethane | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 65-135 | | | |
| 1,2-Dibromoethane | 11.7 | 0.20 | ug/L | 10.0 | | 117 | 80-121 | | | |
| Chlorobenzene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| Ethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | | | |
| 1,1,1,2-Tetrachloroethane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | | | |
| m,p-Xylene | 21.5 | 0.40 | ug/L | 20.0 | | 108 | 80-121 | | | |
| o-Xylene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-121 | | | |
| Styrene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-124 | | | |
| Bromoform | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 51-134 | | | |
| 1,1,2,2-Tetrachloroethane | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 77-123 | | | |
| 1,2,3-Trichloropropane | 11.6 | 0.50 | ug/L | 10.0 | | 116 | 76-125 | | | |
| trans-1,4-Dichloro 2-Butene | 12.0 | 1.00 | ug/L | 10.0 | | 120 | 55-129 | | | |
| n-Propylbenzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 78-130 | | | |
| Bromobenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-120 | | | |
| Isopropyl Benzene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-128 | | | |
| 2-Chlorotoluene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 78-122 | | | |
| 4-Chlorotoluene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 80-121 | | | |
| t-Butylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 78-125 | | | |
| 1,3,5-Trimethylbenzene | 11.3 | 0.20 | ug/L | 10.0 | | 113 | 80-129 | | | |
| 1,2,4-Trimethylbenzene | 11.4 | 0.20 | ug/L | 10.0 | | 114 | 80-127 | | | |
| s-Butylbenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 78-129 | | | |
| 4-Isopropyl Toluene | 11.0 | 0.20 | ug/L | 10.0 | | 110 | 79-130 | | | |
| 1,3-Dichlorobenzene | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-120 | | | |
| 1,4-Dichlorobenzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-120 | | | |
| n-Butylbenzene | 11.5 | 0.20 | ug/L | 10.0 | | 115 | 74-129 | | | |
| 1,2-Dichlorobenzene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-120 | | | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS (BJK0169-BS1)** | | | | Prepared: 08-Nov-2021 | Analyzed: 08-Nov-2021 10:45 | | | | | |
| 1,2-Dibromo-3-chloropropane | 11.3 | 0.50 | ug/L | 10.0 | | 113 | 62-123 | | | |
| 1,2,4-Trichlorobenzene | 11.1 | 0.50 | ug/L | 10.0 | | 111 | 64-124 | | | |
| Hexachloro-1,3-Butadiene | 10.6 | 2.00 | ug/L | 10.0 | | 106 | 58-123 | | | |
| Naphthalene | 11.5 | 0.50 | ug/L | 10.0 | | 115 | 50-134 | | | |
| 1,2,3-Trichlorobenzene | 10.7 | 0.50 | ug/L | 10.0 | | 107 | 49-133 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.63 | | ug/L | *5.00* | | *113* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.30 | | ug/L | *5.00* | | *106* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.11 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 5.22 | | ug/L | *5.00* | | *104* | *80-120* | | | |
| **LCS Dup (BJK0169-BSD1)** | | | | Prepared: 08-Nov-2021 | Analyzed: 08-Nov-2021 11:35 | | | | | |
| Chloromethane | 10.3 | 0.50 | ug/L | 10.0 | | 103 | 60-138 | 8.22 | 30 | |
| Vinyl Chloride | 11.6 | 0.20 | ug/L | 10.0 | | 116 | 66-133 | 1.53 | 30 | |
| Bromomethane | 10.7 | 1.00 | ug/L | 10.0 | | 107 | 72-131 | 4.97 | 30 | |
| Chloroethane | 12.0 | 0.20 | ug/L | 10.0 | | 120 | 60-155 | 1.93 | 30 | |
| Trichlorofluoromethane | 12.5 | 0.20 | ug/L | 10.0 | | 125 | 62-141 | 3.72 | 30 | Q |
| Acrolein | 57.6 | 5.00 | ug/L | 50.0 | | 115 | 52-190 | 5.71 | 30 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 9.70 | 0.20 | ug/L | 10.0 | | 97.0 | 76-129 | 7.33 | 30 | |
| Acetone | 64.4 | 5.00 | ug/L | 50.0 | | 129 | 58-142 | 0.78 | 30 | Q |
| 1,1-Dichloroethene | 11.9 | 0.20 | ug/L | 10.0 | | 119 | 69-135 | 1.54 | 30 | Q |
| Iodomethane | 10.6 | 1.00 | ug/L | 10.0 | | 106 | 56-147 | 1.12 | 30 | |
| Methylene Chloride | 10.7 | 1.00 | ug/L | 10.0 | | 107 | 65-135 | 4.30 | 30 | |
| Acrylonitrile | 11.1 | 1.00 | ug/L | 10.0 | | 111 | 64-134 | 3.53 | 30 | |
| Carbon Disulfide | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 78-125 | 1.31 | 30 | |
| trans-1,2-Dichloroethene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 78-128 | 4.07 | 30 | |
| Vinyl Acetate | 12.3 | 0.20 | ug/L | 10.0 | | 123 | 55-138 | 1.53 | 30 | Q |
| 1,1-Dichloroethane | 11.6 | 0.20 | ug/L | 10.0 | | 116 | 76-124 | 0.32 | 30 | |
| 2-Butanone | 66.0 | 5.00 | ug/L | 50.0 | | 132 | 61-140 | 1.57 | 30 | Q |
| 2,2-Dichloropropane | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 66-147 | 6.86 | 30 | |
| cis-1,2-Dichloroethene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-121 | 1.96 | 30 | |
| Chloroform | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-122 | 2.13 | 30 | |
| Bromochloromethane | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-121 | 1.68 | 30 | |
| 1,1,1-Trichloroethane | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 79-123 | 0.85 | 30 | |
| 1,1-Dichloropropene | 10.9 | 0.20 | ug/L | 10.0 | | 109 | 80-127 | 4.37 | 30 | |
| Carbon tetrachloride | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 53-137 | 5.45 | 30 | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0169-BSD1)** | | | | Prepared: 08-Nov-2021 Analyzed: 08-Nov-2021 11:35 | | | | | | |
| 1,2-Dichloroethane | 12.0 | 0.20 | ug/L | 10.0 | | 120 | 75-123 | 2.76 | 30 | Q |
| Benzene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-120 | 4.48 | 30 | |
| Trichloroethene | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | 5.21 | 30 | |
| 1,2-Dichloropropane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-120 | 0.82 | 30 | |
| Bromodichloromethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-121 | 6.88 | 30 | |
| Dibromomethane | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-120 | 1.44 | 30 | |
| 4-Methyl-2-Pentanone | 60.9 | 5.00 | ug/L | 50.0 | | 122 | 67-133 | 1.84 | 30 | |
| cis-1,3-Dichloropropene | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 80-124 | 5.52 | 30 | |
| Toluene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-120 | 5.21 | 30 | |
| trans-1,3-Dichloropropene | 11.6 | 0.20 | ug/L | 10.0 | | 116 | 71-127 | 6.76 | 30 | Q |
| 2-Hexanone | 61.5 | 5.00 | ug/L | 50.0 | | 123 | 69-133 | 0.27 | 30 | Q |
| 1,1,2-Trichloroethane | 10.8 | 0.20 | ug/L | 10.0 | | 108 | 80-121 | 2.69 | 30 | |
| 1,3-Dichloropropane | 10.6 | 0.20 | ug/L | 10.0 | | 106 | 80-120 | 2.85 | 30 | |
| Tetrachloroethene | 9.90 | 0.20 | ug/L | 10.0 | | 99.0 | 80-120 | 4.18 | 30 | |
| Dibromochloromethane | 11.2 | 0.20 | ug/L | 10.0 | | 112 | 65-135 | 0.79 | 30 | |
| 1,2-Dibromoethane | 11.1 | 0.20 | ug/L | 10.0 | | 111 | 80-121 | 4.54 | 30 | |
| Chlorobenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | 2.56 | 30 | |
| Ethylbenzene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 2.30 | 30 | |
| 1,1,1,2-Tetrachloroethane | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-120 | 2.99 | 30 | |
| m,p-Xylene | 21.2 | 0.40 | ug/L | 20.0 | | 106 | 80-121 | 1.74 | 30 | |
| o-Xylene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 80-121 | 2.17 | 30 | |
| Styrene | 10.7 | 0.20 | ug/L | 10.0 | | 107 | 80-124 | 1.89 | 30 | |
| Bromoform | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 51-134 | 9.65 | 30 | |
| 1,1,2,2-Tetrachloroethane | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 77-123 | 6.33 | 30 | |
| 1,2,3-Trichloropropane | 9.92 | 0.50 | ug/L | 10.0 | | 99.2 | 76-125 | 15.90 | 30 | |
| trans-1,4-Dichloro 2-Butene | 11.4 | 1.00 | ug/L | 10.0 | | 114 | 55-129 | 4.66 | 30 | |
| n-Propylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-130 | 9.19 | 30 | |
| Bromobenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-120 | 5.36 | 30 | |
| Isopropyl Benzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-128 | 6.89 | 30 | |
| 2-Chlorotoluene | 9.88 | 0.20 | ug/L | 10.0 | | 98.8 | 78-122 | 11.40 | 30 | |
| 4-Chlorotoluene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-121 | 6.23 | 30 | |
| t-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 78-125 | 8.17 | 30 | |
| 1,3,5-Trimethylbenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 80-129 | 8.07 | 30 | |
| 1,2,4-Trimethylbenzene | 10.5 | 0.20 | ug/L | 10.0 | | 105 | 80-127 | 8.82 | 30 | |
| s-Butylbenzene | 10.4 | 0.20 | ug/L | 10.0 | | 104 | 78-129 | 7.03 | 30 | |

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| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Volatile Organic Compounds - Quality Control

### Batch BJK0169 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **LCS Dup (BJK0169-BSD1)** | | | | Prepared: 08-Nov-2021 Analyzed: 08-Nov-2021 11:35 | | | | | | |
| 4-Isopropyl Toluene | 10.3 | 0.20 | ug/L | 10.0 | | 103 | 79-130 | 6.51 | 30 | |
| 1,3-Dichlorobenzene | 9.93 | 0.20 | ug/L | 10.0 | | 99.3 | 80-120 | 11.30 | 30 | |
| 1,4-Dichlorobenzene | 10.1 | 0.20 | ug/L | 10.0 | | 101 | 80-120 | 6.31 | 30 | |
| n-Butylbenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 74-129 | 11.50 | 30 | |
| 1,2-Dichlorobenzene | 10.2 | 0.20 | ug/L | 10.0 | | 102 | 80-120 | 6.65 | 30 | |
| 1,2-Dibromo-3-chloropropane | 10.8 | 0.50 | ug/L | 10.0 | | 108 | 62-123 | 4.08 | 30 | |
| 1,2,4-Trichlorobenzene | 10.2 | 0.50 | ug/L | 10.0 | | 102 | 64-124 | 9.20 | 30 | |
| Hexachloro-1,3-Butadiene | 9.17 | 2.00 | ug/L | 10.0 | | 91.7 | 58-123 | 14.60 | 30 | |
| Naphthalene | 10.8 | 0.50 | ug/L | 10.0 | | 108 | 50-134 | 6.17 | 30 | |
| 1,2,3-Trichlorobenzene | 10.3 | 0.50 | ug/L | 10.0 | | 103 | 49-133 | 4.08 | 30 | |
| *Surrogate: 1,2-Dichloroethane-d4* | 5.40 | | ug/L | *5.00* | | *108* | *80-129* | | | |
| *Surrogate: Toluene-d8* | 5.12 | | ug/L | *5.00* | | *102* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | 5.05 | | ug/L | *5.00* | | *101* | *80-120* | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | 4.98 | | ug/L | *5.00* | | *99.6* | *80-120* | | | |

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|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0151 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0151-BLK1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 09:10 | | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1500 | | ug/L | *1800* | | *83.2* | *72-122* | | | |
| **LCS (BJK0151-BS1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 08:34 | | | | | | |
| Methane | 327 | 0.65 | ug/L | 328 | | 99.8 | 80-120 | | | |
| Ethane | 646 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 586 | 1.14 | ug/L | 575 | | 102 | 80-120 | | | |
| *Surrogate: Propane* | 1450 | | ug/L | *1800* | | *80.5* | *62-122* | | | |
| **LCS Dup (BJK0151-BSD1)** | | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 08:52 | | | | | | |
| Methane | 346 | 0.65 | ug/L | 328 | | 105 | 80-120 | 5.39 | 30 | |
| Ethane | 684 | 1.23 | ug/L | 615 | | 111 | 80-120 | 5.75 | 30 | |
| Ethene | 616 | 1.14 | ug/L | 575 | | 107 | 80-120 | 4.99 | 30 | |
| *Surrogate: Propane* | 1630 | | ug/L | *1800* | | *90.8* | *62-122* | | | |
| **Duplicate (BJK0151-DUP1)** | **Source: 21K0073-06** | | | Prepared: 05-Nov-2021 Analyzed: 05-Nov-2021 10:38 | | | | | | |
| Methane | 1710 | 0.65 | ug/L | | 1880 | | | 9.75 | 30 | |
| Ethane | 236 | 1.23 | ug/L | | 271 | | | 13.90 | 30 | |
| Ethene | 265 | 1.14 | ug/L | | 305 | | | 13.90 | 30 | |
| *Surrogate: Propane* | 1450 | | ug/L | *1800* | *1500* | *80.4* | *72-122* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Dissolved Gases - Quality Control

### Batch BJK0245 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

| QC Sample/Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0245-BLK1)** | | | | Prepared: 10-Nov-2021 | Analyzed: 10-Nov-2021 09:28 | | | | | |
| Methane | ND | 0.65 | ug/L | | | | | | | U |
| Ethane | ND | 1.23 | ug/L | | | | | | | U |
| Ethene | ND | 1.14 | ug/L | | | | | | | U |
| *Surrogate: Propane* | 1570 | | ug/L | *1800* | | *87.1* | *72-122* | | | |
| **LCS (BJK0245-BS1)** | | | | Prepared: 10-Nov-2021 | Analyzed: 10-Nov-2021 08:52 | | | | | |
| Methane | 328 | 0.65 | ug/L | 328 | | 99.9 | 80-120 | | | |
| Ethane | 643 | 1.23 | ug/L | 615 | | 105 | 80-120 | | | |
| Ethene | 580 | 1.14 | ug/L | 575 | | 101 | 80-120 | | | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.6* | *62-122* | | | |
| **LCS Dup (BJK0245-BSD1)** | | | | Prepared: 10-Nov-2021 | Analyzed: 10-Nov-2021 09:10 | | | | | |
| Methane | 306 | 0.65 | ug/L | 328 | | 93.3 | 80-120 | 6.83 | 30 | |
| Ethane | 601 | 1.23 | ug/L | 615 | | 97.7 | 80-120 | 6.84 | 30 | |
| Ethene | 543 | 1.14 | ug/L | 575 | | 94.5 | 80-120 | 6.59 | 30 | |
| *Surrogate: Propane* | 1650 | | ug/L | *1800* | | *91.4* | *62-122* | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

**Analysis by: Analytical Resources, LLC**

## Wet Chemistry - Quality Control

### Batch BJK0134 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

| QC Sample/Analyte | Result | Detection Limit | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (BJK0134-BLK2)** | | | | Prepared: 04-Nov-2021 Analyzed: 19-Nov-2021 07:29 | | | | | | | |
| Sulfate | ND | 0.100 | 0.100 | mg/L | | | | | | | U |
| **LCS (BJK0134-BS2)** | | | | Prepared: 04-Nov-2021 Analyzed: 19-Nov-2021 07:49 | | | | | | | |
| Sulfate | 4.74 | 0.100 | 0.100 | mg/L | 5.00 | | 94.9 | 90-110 | | | |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***EPA 300.0 in Water*** | |
| Sulfate | DoD-ELAP,WADOE,WA-DW,NELAP |
| ***EPA 8260D in Water*** | |
| Chloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichlorofluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrolein | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Acetone | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Iodomethane | DoD-ELAP,NELAP,WADOE |
| Methylene Chloride | DoD-ELAP,ADEC,NELAP,WADOE |
| Acrylonitrile | DoD-ELAP,NELAP,WADOE |
| Carbon Disulfide | DoD-ELAP,NELAP,WADOE |
| trans-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Vinyl Acetate | DoD-ELAP,NELAP,WADOE |
| 1,1-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Butanone | DoD-ELAP,NELAP,WADOE |
| 2,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| cis-1,2-Dichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Chloroform | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| Carbon tetrachloride | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Benzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Trichloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Bromodichloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromomethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Chloroethyl vinyl ether | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Methyl-2-Pentanone | DoD-ELAP,NELAP,WADOE |
| cis-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

| | |
|---|---|
| Toluene | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,3-Dichloropropene | DoD-ELAP,ADEC,NELAP,WADOE |
| 2-Hexanone | DoD-ELAP,NELAP,WADOE |
| 1,1,2-Trichloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,3-Dichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| Tetrachloroethene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dibromochloromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromoethane | DoD-ELAP,NELAP,WADOE |
| Chlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Ethylbenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,1,1,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| m,p-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| o-Xylene | DoD-ELAP,ADEC,NELAP,WADOE |
| Styrene | DoD-ELAP,NELAP,WADOE |
| Bromoform | DoD-ELAP,NELAP,WADOE |
| 1,1,2,2-Tetrachloroethane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| trans-1,4-Dichloro 2-Butene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Propylbenzene | DoD-ELAP,NELAP,WADOE |
| Bromobenzene | DoD-ELAP,NELAP,WADOE |
| Isopropyl Benzene | DoD-ELAP,NELAP,WADOE |
| 2-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| 4-Chlorotoluene | DoD-ELAP,ADEC,NELAP,WADOE |
| t-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,3,5-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2,4-Trimethylbenzene | DoD-ELAP,NELAP,WADOE |
| s-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 4-Isopropyl Toluene | DoD-ELAP,NELAP,WADOE |
| 1,3-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,4-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| n-Butylbenzene | DoD-ELAP,NELAP,WADOE |
| 1,2-Dichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2-Dibromo-3-chloropropane | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,4-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Hexachloro-1,3-Butadiene | DoD-ELAP,ADEC,NELAP,WADOE |
| Naphthalene | DoD-ELAP,ADEC,NELAP,WADOE |
| 1,2,3-Trichlorobenzene | DoD-ELAP,ADEC,NELAP,WADOE |
| Dichlorodifluoromethane | DoD-ELAP,ADEC,NELAP,WADOE |
| Methyl tert-butyl Ether | DoD-ELAP,ADEC,NELAP,WADOE |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

| | |
|---|---|
| n-Hexane | WADOE |
| 2-Pentanone | WADOE |

***EPA RSK-175 in Water***

| | |
|---|---|
| Methane | NELAP |
| Ethane | NELAP |
| Ethene | NELAP |
| Acetylene | NELAP |

| Code | Description | Number | Expires |
|---|---|---|---|
| ADEC | Alaska Dept of Environmental Conservation | 17-015 | 03/28/2023 |
| DoD-ELAP | DoD-Environmental Laboratory Accreditation Program | 66169 | 02/28/2022 |
| NELAP | ORELAP - Oregon Laboratory Accreditation Program | WA100006-012 | 05/12/2022 |
| WADOE | WA Dept of Ecology | C558 | 06/30/2022 |
| WA-DW | Ecology - Drinking Water | C558 | 06/30/2022 |

| | | |
|---|---|---|
| The Boeing Company [Developmental Center] | Project: Boeing Regional GW Developmental Center | |
| PO Box 3703 MS 2R-96 | Project Number: Boeing Regional GW Developmental Center | **Reported:** |
| Seattle WA, 98124 | Project Manager: Jennifer Parsons | 02-Dec-2021 15:14 |

## Notes and Definitions

| | |
|---|---|
| * | Flagged value is not within established control limits. |
| D | The reported value is from a dilution |
| E | The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL) |
| Q | Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) |
| U | This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD). |
| Y1 | Raised reporting limit due to interference |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| [2C] | Indicates this result was quantified on the second column on a dual column analysis. |

APPENDIX B

# Cumulative Groundwater Level Measurements

# Table B-1
## Cumulative Groundwater Level Measurements
## November 1999 to Present
## Boeing Developmental Center
## Tukwila, Washington

| | | | November 2021 | | May 2021 | | November 2020 | | May 2020 | | November 2019 | | May 2019 | | February 2019 | | November 2018 | | August 2018 | | May 2018 | | February 2018 | | November 2017 | | August 2017 | | May 2017 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Well Location / Bldg.* | *Well ID No.* | *Well Depth (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* | *Depth to Water (ft)* | *Water Elevation (ft)* |
| 9-101-bldg. | MW-6A | 24.25 | 12.44 | 2.36 | 12.76 | 2.04 | 13.01 | 1.79 | 12.73 | 2.07 | 13.14 | 1.66 | 12.81 | 1.99 | | | 12.90 | 1.90 | | | 12.29 | 2.51 | | | 12.81 | 1.99 | | | 11.97 | 2.83 |
| 9-101-bldg. | MW-6B | 27.20 | 12.79 | 2.30 | 13.13 | 1.96 | 13.35 | 1.74 | 13.13 | 1.96 | 13.53 | 1.56 | 13.02 | 2.07 | | | 13.08 | 2.01 | | | 12.60 | 2.49 | | | 13.15 | 1.94 | | | 12.31 | 2.78 |
| 9-101-bldg. | MW-6C | 40.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-8C | 40.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9A | 21.30 | 12.46 | 2.28 | 12.63 | 2.11 | 13.03 | 1.71 | 12.84 | 1.90 | 13.18 | 1.56 | 12.83 | 1.91 | | | 12.83 | 1.91 | | | 12.45 | 2.29 | | | 12.91 | 1.83 | | | 12.07 | 2.67 |
| 9-101-bldg. | MW-9B | 26.90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9C | 38.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9D | 56.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-10A | 20.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-10C | 40.40 | 12.46 | 2.18 | 12.71 | 1.93 | 12.98 | 1.66 | 12.77 | 1.87 | 13.11 | 1.53 | 12.78 | 1.86 | | | 12.82 | 1.82 | | | 12.39 | 2.25 | | | 12.86 | 1.78 | | | 11.97 | 2.67 |
| 9-101-bldg. | MW-11A | 19.90 | 12.44 | 2.44 | 12.31 | 2.57 | 11.86 | 3.02 | 12.84 | 2.04 | 13.23 | 1.65 | 12.80 | 2.08 | | | 12.89 | 1.99 | | | 12.39 | 2.49 | | | 12.96 | 1.92 | | | 12.03 | 2.85 |
| 9-101-bldg. | MW-12A | 20.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-13A | 19.37 | 12.03 | 2.11 | 12.32 | 1.82 | 12.46 | 1.68 | 12.33 | 1.81 | 12.56 | 1.58 | 12.38 | 1.76 | | | 12.37 | 1.77 | | | 11.77 | 2.37 | | | 12.28 | 1.86 | | | 11.57 | 2.57 |
| 9-101-bldg. | MW-13C | 35.62 | 11.92 | 2.10 | 11.93 | 2.09 | 12.32 | 1.70 | 12.09 | 1.93 | 12.33 | 1.69 | 12.16 | 1.86 | | | 12.21 | 1.81 | | | 11.60 | 2.42 | | | 12.10 | 1.92 | | | 11.39 | 2.63 |
| 9-101-bldg. | MW-14A | 19.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-14C | 33.30 | 11.82 | 2.15 | 12.05 | 1.92 | 12.24 | 1.73 | 12.19 | 1.78 | 12.47 | 1.50 | 12.23 | 1.74 | | | 12.14 | 1.83 | | | 11.80 | 2.17 | | | 12.10 | 1.87 | | | 11.40 | 2.57 |
| 9-101-bldg. | MW-14E | 82.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-15A | 20.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-15C | 34.35 | 12.49 | 2.06 | 12.66 | 1.89 | 12.88 | 1.67 | 12.77 | 1.78 | 13.14 | 1.41 | 12.89 | 1.66 | | | 12.78 | 1.77 | | | 12.41 | 2.14 | | | 12.79 | 1.76 | | | 12.00 | 2.55 |
| 9-101-bldg. | MW-15D | 51.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-16A | 20.55 | 12.71 | 2.28 | 12.98 | 2.01 | 13.21 | 1.78 | 12.97 | 2.02 | 13.29 | 1.70 | 12.94 | 2.05 | | | 13.04 | 1.95 | | | 12.54 | 2.45 | | | 12.99 | 2.00 | | | 12.18 | 2.81 |
| 9-101-bldg. | MW-16C | 38.30 | 12.89 | 2.15 | 13.08 | 1.96 | 12.79 | 2.25 | 13.17 | 1.87 | 13.44 | 1.60 | 13.09 | 1.95 | | | 13.16 | 1.88 | | | 12.72 | 2.32 | | | 13.14 | 1.90 | | | 12.33 | 2.71 |
| 9-101-bldg. | MW-17A | 19.00 | 12.44 | 2.22 | 12.71 | 1.95 | 12.91 | 1.75 | 12.72 | 1.94 | 13.11 | 1.55 | 12.71 | 1.95 | | | 12.81 | 1.85 | | | 12.24 | 2.42 | | | 12.81 | 1.85 | | | 11.97 | 2.69 |
| 9-101-bldg. | MW-17C | 35.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-17D | 52.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-18A | 20.02 | 12.15 | 2.15 | 12.37 | 1.93 | 12.56 | 1.74 | 12.45 | 1.85 | 12.85 | 1.45 | 12.47 | 1.83 | | | 12.50 | 1.80 | | | 11.91 | 2.39 | | | 12.50 | 1.80 | | | 11.73 | 2.57 |
| 9-101-bldg. | MW-18C | 34.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-18D | 52.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19A | 16.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19C | 33.92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19D | 51.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-20A | 19.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-20C | 35.32 | 12.04 | 2.11 | 12.26 | 1.89 | 12.56 | 1.59 | 12.21 | 1.94 | 12.82 | 1.33 | 12.46 | 1.69 | | | 12.39 | 1.76 | | | 11.96 | 2.19 | | | 12.45 | 1.70 | | | 11.59 | 2.56 |
| 9-101-bldg. | MW-20D | 50.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-22A | 19.20 | 12.28 | 1.97 | 12.45 | 1.80 | 12.62 | 1.63 | 12.52 | 1.73 | 12.72 | 1.53 | 12.62 | 1.63 | | | 12.55 | 1.70 | | | 12.08 | 2.17 | | | 12.55 | 1.70 | | | 11.79 | 2.46 |
| 9-101-bldg. | MW-23A | 19.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101/9-50 bldg. | MW-21A | 19.90 | 12.36 | 2.09 | 12.61 | 1.84 | 12.71 | 1.74 | 12.69 | 1.76 | 13.09 | 1.36 | 12.66 | 1.79 | | | 12.69 | 1.76 | | | 12.12 | 2.33 | | | 12.68 | 1.77 | | | 11.97 | 2.48 |
| 9-101/9-50 bldg. | MW-21C | 34.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-02 | 25.35 | 12.01 | 2.40 | 12.25 | 2.16 | 12.46 | 1.95 | 12.20 | 2.21 | 12.64 | 1.77 | 12.19 | 2.22 | | | 12.39 | 2.02 | | | 11.76 | 2.65 | | | 12.42 | 1.99 | 12.31 | 2.10 | 11.46 | 2.95 |
| 9-64-bldg. | BDC-05-03 | 25.47 | 12.08 | 2.33 | 12.41 | 2.00 | 12.58 | 1.83 | 12.43 | 1.98 | 12.78 | 1.63 | 12.43 | 1.98 | | | 12.58 | 1.83 | | | 11.94 | 2.47 | | | 12.45 | 1.96 | | | 11.58 | 2.83 |
| 9-64-bldg. | BDC-05-04 | 25.36 | 12.24 | 2.35 | 12.41 | 2.18 | 12.69 | 1.90 | 12.43 | 2.16 | 12.76 | 1.83 | 12.37 | 2.22 | | | 12.62 | 1.97 | | | 11.95 | 2.64 | | | 12.58 | 2.01 | | | 11.62 | 2.97 |
| 9-64-bldg. | BDC-05-05 | 24.18 | 11.84 | 2.60 | 12.06 | 2.38 | 12.45 | 1.99 | 12.03 | 2.41 | 12.45 | 1.99 | 12.00 | 2.44 | | | 12.32 | 2.12 | | | 11.58 | 2.86 | | | 12.27 | 2.17 | | | 11.19 | 3.25 |
| 9-64-bldg. | BDC-05-07 | 25.30 | 11.62 | 2.37 | 11.64 | 2.35 | 12.09 | 1.90 | 7.84 | 6.15 | 12.24 | 1.75 | 11.70 | 2.29 | | | 11.96 | 2.03 | | | 11.34 | 2.65 | | | 12.03 | 1.96 | | | 11.02 | 2.97 |
| 9-64-bldg. | BDC-05-08 | 26.75 | 12.25 | 2.42 | 12.63 | 2.04 | 12.76 | 1.91 | 12.63 | 2.04 | 13.02 | 1.65 | 12.62 | 2.05 | | | 12.74 | 1.93 | | | 12.12 | 2.55 | | | 12.71 | 1.96 | | | 11.88 | 2.79 |
| 9-64-bldg. | BDC-05-09 | 24.55 | 12.02 | 2.39 | 12.26 | 2.15 | 12.53 | 1.88 | 12.24 | 2.17 | 12.66 | 1.75 | 12.25 | 2.16 | | | 12.40 | 2.01 | | | 11.79 | 2.62 | | | 12.41 | 2.00 | | | 11.49 | 2.92 |
| 9-64-bldg. | BDC-05-10 | 24.57 | 11.99 | 2.42 | 12.27 | 2.14 | 12.49 | 1.92 | 12.23 | 2.18 | 12.63 | 1.78 | 12.23 | 2.18 | | | 12.42 | 1.99 | | | 11.74 | 2.67 | | | 12.44 | 1.97 | | | 11.31 | 3.10 |
| 9-64-bldg. | BDC-05-11 | 24.85 | 12.12 | 2.53 | 12.45 | 2.20 | 12.67 | 1.98 | 12.43 | 2.22 | 12.78 | 1.87 | 12.48 | 2.17 | | | 12.60 | 2.05 | | | 11.96 | 2.69 | | | 12.58 | 2.07 | | | 11.71 | 2.94 |
| 9-64-bldg. | BDC-05-12 | 24.87 | 12.14 | 2.58 | 12.57 | 2.15 | 12.61 | 2.11 | 12.55 | 2.17 | 12.91 | 1.81 | 12.54 | 2.18 | | | 12.65 | 2.07 | | | 11.94 | 2.78 | | | 12.68 | 2.04 | 12.62 | 2.10 | 11.80 | 2.92 |
| 9-64-bldg. | BDC-05-13 | 24.78 | 11.96 | 2.47 | 12.34 | 2.09 | 12.51 | 1.92 | 12.32 | 2.11 | 12.66 | 1.77 | 12.31 | 2.12 | | | 12.44 | 1.99 | | | 11.45 | 2.98 | | | 12.44 | 1.99 | | | 11.62 | 2.81 |
| 9-64-bldg. | BDC-05-14 | 24.85 | 11.66 | 2.56 | 12.17 | 2.05 | 12.30 | 1.92 | 12.10 | 2.12 | 12.47 | 1.75 | 12.14 | 2.08 | | | 12.26 | 1.96 | | | 11.71 | 2.51 | | | 12.25 | 1.97 | | | 11.39 | 2.83 |
| 9-64-bldg. | BDC-05-15 | 24.48 | 11.52 | 2.45 | 11.93 | 2.04 | 12.06 | 1.91 | 11.94 | 2.03 | 12.28 | 1.69 | 11.89 | 2.08 | | | 12.02 | 1.95 | | | 11.26 | 2.71 | | | 11.94 | 2.03 | | | 11.20 | 2.77 |
| 9-64-bldg. | BDC-05-16 | 24.89 | 11.69 | 2.38 | 12.09 | 1.98 | 12.24 | 1.83 | 12.12 | 1.95 | 12.38 | 1.69 | 12.04 | 2.03 | | | 12.14 | 1.93 | | | 11.51 | 2.56 | | | 12.10 | 1.97 | 12.13 | 1.94 | 11.32 | 2.75 |
| 9-64-bldg. | BDC-05-17 | 24.82 | 11.89 | 2.36 | 12.31 | 1.94 | 12.44 | 1.81 | 12.33 | 1.92 | 12.61 | 1.64 | 12.18 | 2.07 | | | 12.37 | 1.88 | | | 11.77 | 2.48 | | | 12.33 | 1.92 | | | 11.56 | 2.69 |
| 9-64-bldg. | BDC-05-18 | 24.69 | 11.39 | 2.40 | 11.68 | 2.11 | 11.96 | 1.83 | 11.72 | 2.07 | 12.10 | 1.69 | 11.69 | 2.10 | | | 11.87 | 1.92 | | | 11.19 | 2.60 | | | 11.73 | 2.06 | 11.77 | 2.02 | 10.92 | 2.87 |
| 9-64-bldg. | BDC-05-19 | 24.85 | 12.03 | 2.53 | 12.48 | 2.08 | 12.48 | 2.08 | 10.34 | 4.22 | 12.79 | 1.77 | 12.46 | 2.10 | | | 12.48 | 2.08 | | | 11.97 | 2.59 | | | 12.58 | 1.98 | 12.52 | 2.04 | 11.73 | 2.83 |
| 9-64-bldg. | BDC-05-20 | 24.80 | 11.91 | 2.43 | 12.42 | 1.92 | 12.51 | 1.83 | 12.41 | 1.93 | 12.77 | 1.57 | 12.38 | 1.96 | | | 12.49 | 1.85 | | | 11.91 | 2.43 | | | 12.41 | 1.93 | 12.44 | 1.90 | 11.66 | 2.68 |
| 9-64-bldg. | BDC-05-21 | 24.86 | 11.85 | 2.34 | 12.28 | 1.91 | 12.44 | 1.75 | 12.25 | 1.94 | 12.66 | 1.53 | 12.33 | 1.86 | | | 12.37 | 1.82 | | | 11.82 | 2.37 | | | 12.31 | 1.88 | 12.29 | 1.90 | 11.49 | 2.70 |
| 9-64-bldg. | BDC-05-22 | 25.07 | 11.73 | 2.43 | 12.22 | 1.94 | 12.33 | 1.83 | 12.22 | 1.94 | 12.61 | 1.55 | 12.22 | 1.94 | | | 11.31 | 2.85 | | | 11.73 | 2.43 | | | 12.21 | 1.95 | 12.22 | 1.94 | 11.45 | 2.71 |
| 9-64-bldg. | BDC-05-23 | 25.10 | 12.23 | 2.23 | 12.69 | 1.77 | 12.76 | 1.70 | 12.64 | 1.82 | 13.12 | 1.34 | 12.76 | 1.70 | | | 12.75 | 1.71 | | | 12.26 | 2.20 | | | 12.69 | 1.77 | 12.74 | 1.72 | 11.94 | 2.52 |
| 9-64-bldg. | BDC-05-24 | 24.73 | 11.69 | 2.50 | 12.15 | 2.04 | 12.29 | 1.90 | 12.08 | 2.11 | 12.50 | 1.69 | 12.15 | 2.04 | | | 12.26 | 1.93 | | | 11.66 | 2.53 | | | 12.10 | 2.09 | 12.23 | 1.96 | 11.39 | 2.80 |
| 9-60 bldg. | BDC-101 | 18.42 | 11.82 | 2.65 | 11.98 | 2.49 | 12.38 | 2.09 | 11.93 | 2.54 | 12.37 | 2.10 | 11.87 | 2.60 | 11.19 | 3.28 | 12.20 | 2.27 | 12.21 | 2.26 | 11.41 | 3.06 | 10.66 | 3.81 | 12.21 | 2.26 | 12.08 | 2.39 | 11.02 | 3.45 |
| 9-60 bldg. | BDC-102 | 18.83 | 11.63 | 2.64 | 11.75 | 2.52 | 12.15 | 2.12 | 10.70 | 3.57 | 12.15 | 2.12 | 11.70 | 2.57 | 10.98 | 3.29 | 11.97 | 2.30 | 12.01 | 2.26 | 11.18 | 3.09 | 10.53 | 3.74 | 11.94 | 2.33 | 11.85 | 2.42 | 10.86 | 3.41 |
| 9-60 bldg. | BDC-103 | 18.51 | 11.59 | 2.75 | 11.76 | 2.58 | 12.22 | 2.12 | 11.69 | 2.65 | 12.08 | 2.26 | 11.63 | 2.71 | 10.94 | 3.40 | 12.00 | 2.34 | 12.01 | 2.33 | 11.10 | 3.24 | 10.38 | 3.96 | 11.89 | 2.45 | 11.82 | 2.52 | 10.76 | 3.58 |
| 9-60 bldg. | BDC-104 | 18.90 | 11.39 | 2.77 | 11.50 | 2.66 | 12.03 | 2.13 | 11.48 | 2.68 | 11.89 | 2.27 | 11.37 | 2.79 | 10.72 | 3.44 | 11.79 | 2.37 | 11.81 | 2.35 | 10.88 | 3.28 | 10.19 | 3.97 | 11.72 | 2.44 | 11.61 | 2.55 | 10.52 | 3.64 |
| 9-52-bldg. | 952MW-1 | 17.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-2 | 17.54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-3 | 17.95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. (west) | MW-5 | 27.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-2 | 26.98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-7 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-8 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-9 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Table B-1
## Cumulative Groundwater Level Measurements
## November 1999 to Present
## Boeing Developmental Center
## Tukwila, Washington

| | | | February 2017 | | November 2016 | | August 2016 | | April 2016 | | January 2016 | | October 2015 | | July 2015 | | April 2015 | | January 2015 | | November 2014 | | August 2014 | | May 2014 | | February 2014 | | November 2013 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Location / Bldg. | Well ID No. | Well Depth (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) |
| 9-101-bldg. | MW-6A | 24.25 | | | 12.13 | 2.67 | | | 12.38 | 2.42 | | | 12.80 | 2.00 | | | 12.65 | 2.15 | | | 12.22 | 2.58 | | | 12.10 | 2.70 | | | 12.82 | 1.98 |
| 9-101-bldg. | MW-6B | 27.20 | | | 12.82 | 2.27 | | | 12.77 | 2.32 | | | 13.16 | 1.93 | | | 13.02 | 2.07 | | | 12.58 | 2.51 | | | 14.44 | 0.65 | | | 13.16 | 1.93 |
| 9-101-bldg. | MW-6C | 40.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-8C | 40.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9A | 21.30 | | | 12.18 | 2.56 | | | 12.37 | 2.37 | | | 12.83 | 1.91 | | | 12.64 | 2.10 | | | 12.18 | 2.56 | | | 12.07 | 2.67 | | | 12.88 | 1.86 |
| 9-101-bldg. | MW-9B | 26.90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9C | 38.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-9D | 56.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-10A | 20.20 | | | | | | | | | | | | | | | | | | | 12.14 | 2.55 | | | 11.98 | 2.71 | | | 12.81 | 1.88 |
| 9-101-bldg. | MW-10C | 40.40 | | | 12.16 | 2.48 | | | 12.37 | 2.27 | | | 12.66 | 1.96 | | | 12.57 | 2.05 | | | 12.06 | 2.56 | | | 11.91 | 2.71 | | | 12.73 | 1.89 |
| 9-101-bldg. | MW-11A | 19.90 | | | 12.14 | 2.74 | | | 12.47 | 2.41 | | | 12.87 | 2.01 | | | 12.74 | 2.14 | | | 12.31 | 2.57 | | | 12.10 | 2.78 | | | 12.89 | 1.99 |
| 9-101-bldg. | MW-12A | 20.20 | | | | | | | | | | | | | | | | | | | 12.38 | 2.45 | | | 12.17 | 2.66 | | | 12.98 | 1.85 |
| 9-101-bldg. | MW-13A | 19.37 | | | 11.55 | 2.59 | | | 11.82 | 2.32 | | | 12.23 | 1.91 | | | 12.19 | 1.95 | | | 11.71 | 2.43 | | | 11.62 | 2.52 | | | 12.37 | 1.77 |
| 9-101-bldg. | MW-13C | 35.62 | | | 11.41 | 2.61 | | | 11.71 | 2.31 | | | 12.08 | 1.94 | | | 12.07 | 1.95 | | | 11.59 | 2.43 | | | 11.49 | 2.53 | | | 12.23 | 1.79 |
| 9-101-bldg. | MW-14A | 19.00 | | | | | | | | | | | | | | | | | | | 11.93 | 2.44 | | | 11.85 | 2.52 | | | 12.59 | 1.78 |
| 9-101-bldg. | MW-14C | 33.30 | | | 11.33 | 2.64 | | | 11.78 | 2.19 | | | 11.95 | 2.02 | | | 11.95 | 2.02 | | | 11.54 | 2.43 | | | 11.49 | 2.48 | | | 12.17 | 1.80 |
| 9-101-bldg. | MW-14E | 82.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-15A | 20.70 | | | | | | | | | | | | | | | | | | | 11.77 | 2.40 | | | 11.72 | 2.45 | | | 12.44 | 1.73 |
| 9-101-bldg. | MW-15C | 34.35 | | | 11.98 | 2.57 | | | 12.45 | 2.10 | | | 12.19 | 1.98 | | | 12.29 | 1.88 | | | 11.70 | 2.47 | | | 11.71 | 2.46 | | | 12.42 | 1.75 |
| 9-101-bldg. | MW-15D | 51.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-16A | 20.55 | | | 12.32 | 2.67 | | | 12.60 | 2.39 | | | 12.96 | 2.03 | | | 12.85 | 2.14 | | | 12.40 | 2.59 | | | 12.22 | 2.77 | | | 13.06 | 1.93 |
| 9-101-bldg. | MW-16C | 38.30 | | | 12.54 | 2.50 | | | 12.70 | 2.34 | | | 13.14 | 1.90 | | | 13.02 | 2.02 | | | 12.58 | 2.46 | | | 12.32 | 2.72 | | | 13.24 | 1.80 |
| 9-101-bldg. | MW-17A | 19.00 | | | 12.11 | 2.55 | | | 12.28 | 2.38 | | | 12.83 | 1.97 | | | 12.67 | 2.13 | | | 12.25 | 2.55 | | | 12.11 | 2.69 | | | 12.90 | 1.90 |
| 9-101-bldg. | MW-17C | 35.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-17D | 52.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-18A | 20.02 | | | 11.68 | 2.62 | | | 11.87 | 2.43 | | | 12.36 | 1.94 | | | 12.26 | 2.04 | | | 11.86 | 2.44 | | | 11.70 | 2.60 | | | 12.23 | 2.07 |
| 9-101-bldg. | MW-18C | 34.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-18D | 52.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19A | 16.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19C | 33.92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19D | 51.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-20A | 19.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-20C | 35.32 | | | 11.55 | 2.60 | | | 11.95 | 2.20 | | | 12.14 | 2.01 | | | 12.19 | 1.96 | | | 11.61 | 2.54 | | | 11.58 | 2.57 | | | 12.40 | 1.75 |
| 9-101-bldg. | MW-20D | 50.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-22A | 19.20 | | | 11.79 | 2.46 | | | 12.12 | 2.13 | | | 12.34 | 1.91 | | | 12.33 | 1.92 | | | 11.96 | 2.29 | | | 11.90 | 2.35 | | | 12.42 | 1.83 |
| 9-101-bldg. | MW-23A | 19.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101/9-50 bldg. | MW-21A | 19.90 | | | 11.85 | 2.60 | | | 12.10 | 2.35 | | | 12.55 | 1.90 | | | 12.48 | 1.97 | | | 12.06 | 2.39 | | | 11.90 | 2.55 | | | 12.39 | 2.06 |
| 9-101/9-50 bldg. | MW-21C | 34.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-02 | 25.35 | 11.24 | 3.17 | 11.68 | 2.73 | 12.53 | 1.88 | 11.77 | 2.64 | 10.85 | 3.56 | 12.28 | 2.13 | 12.30 | 2.11 | 12.07 | 2.34 | 11.49 | 2.92 | 11.77 | 2.64 | 12.26 | 2.15 | 11.69 | 2.72 | 12.21 | 2.20 | 12.36 | 2.05 |
| 9-64-bldg. | BDC-05-03 | 25.47 | | | 11.71 | 2.70 | | | 11.86 | 2.55 | | | 12.33 | 2.08 | | | 12.19 | 2.22 | | | 11.79 | 2.62 | | | 11.76 | 2.65 | | | 12.43 | 1.98 |
| 9-64-bldg. | BDC-05-04 | 25.36 | | | 11.86 | 2.73 | | | 11.95 | 2.64 | | | 12.54 | 2.05 | | | 12.26 | 2.33 | | | 11.95 | 2.64 | | | 11.93 | 2.66 | | | 12.51 | 2.08 |
| 9-64-bldg. | BDC-05-05 | 24.18 | | | 11.52 | 2.92 | | | 11.57 | 2.87 | | | 12.18 | 2.26 | | | 11.86 | 2.58 | | | 11.53 | 2.91 | | | 11.47 | 2.97 | | | 12.15 | 2.29 |
| 9-64-bldg. | BDC-05-07 | 25.30 | | | 11.22 | 2.77 | | | 11.38 | 2.61 | | | 11.88 | 2.11 | | | 11.67 | 2.32 | | | 11.37 | 2.62 | | | 11.29 | 2.70 | | | 11.96 | 2.03 |
| 9-64-bldg. | BDC-05-08 | 26.75 | | | 11.95 | 2.72 | | | 12.11 | 2.56 | | | 12.62 | 2.05 | | | 12.47 | 2.20 | | | 12.10 | 2.57 | | | 12.07 | 2.60 | | | 12.72 | 1.95 |
| 9-64-bldg. | BDC-05-09 | 24.55 | | | 11.68 | 2.73 | | | 11.80 | 2.61 | | | 12.30 | 2.11 | | | 12.10 | 2.31 | | | 11.79 | 2.62 | | | 11.71 | 2.70 | | | 12.37 | 2.04 |
| 9-64-bldg. | BDC-05-10 | 24.57 | | | 11.62 | 2.79 | | | 11.80 | 2.61 | | | 12.27 | 2.14 | | | 12.11 | 2.30 | | | 11.72 | 2.69 | | | 11.70 | 2.71 | | | 12.36 | 2.05 |
| 9-64-bldg. | BDC-05-11 | 24.85 | | | 11.78 | 2.87 | | | 12.02 | 2.63 | | | 12.99 | 1.66 | | | 12.33 | 2.32 | | | 11.93 | 2.72 | | | 11.91 | 2.74 | | | 12.59 | 2.06 |
| 9-64-bldg. | BDC-05-12 | 24.87 | 11.50 | 3.22 | 11.91 | 2.81 | 12.80 | 1.92 | 12.11 | 2.61 | 11.21 | 3.51 | 12.59 | 2.13 | 12.63 | 2.09 | 12.43 | 2.29 | 11.83 | 2.89 | 12.06 | 2.66 | 12.58 | 2.14 | 12.01 | 2.71 | 12.53 | 2.19 | 12.88 | 1.84 |
| 9-64-bldg. | BDC-05-13 | 24.78 | | | 11.68 | 2.75 | | | 11.87 | 2.56 | | | 12.37 | 2.06 | | | 12.20 | 2.23 | | | 11.85 | 2.58 | | | 11.86 | 2.57 | | | 12.44 | 1.99 |
| 9-64-bldg. | BDC-05-14 | 24.85 | | | 11.52 | 2.70 | | | 11.71 | 2.51 | | | 12.18 | 2.04 | | | 12.03 | 2.19 | | | 11.70 | 2.52 | | | 11.68 | 2.54 | | | 12.25 | 1.97 |
| 9-64-bldg. | BDC-05-15 | 24.48 | | | 11.28 | 2.69 | | | 11.49 | 2.48 | | | 11.95 | 2.02 | | | 11.83 | 2.14 | | | 11.47 | 2.50 | | | 11.42 | 2.55 | | | 12.04 | 1.93 |
| 9-64-bldg. | BDC-05-16 | 24.89 | 11.05 | 3.02 | 11.43 | 2.64 | 12.31 | 1.76 | 11.65 | 2.42 | 10.79 | 3.28 | 12.10 | 1.97 | 12.10 | 1.97 | 11.90 | 2.17 | 11.31 | 2.76 | 11.65 | 2.42 | 12.04 | 2.03 | 11.60 | 2.47 | 12.00 | 2.07 | 12.16 | 1.91 |
| 9-64-bldg. | BDC-05-17 | 24.82 | | | 11.65 | 2.60 | | | 11.86 | 2.39 | | | 12.29 | 1.96 | | | 12.12 | 2.13 | | | 11.86 | 2.39 | | | 11.83 | 2.42 | | | 12.34 | 1.91 |
| 9-64-bldg. | BDC-05-18 | 24.69 | 10.70 | 3.09 | 11.13 | 2.66 | 11.96 | 1.83 | 11.22 | 2.57 | 10.34 | 3.45 | 11.77 | 2.02 | 11.75 | 2.04 | 11.50 | 2.29 | 10.98 | 2.81 | 11.14 | 2.65 | 11.51 | 2.28 | 11.16 | 2.63 | 11.62 | 2.17 | 11.71 | 2.08 |
| 9-64-bldg. | BDC-05-19 | 24.85 | 11.43 | 3.13 | 11.82 | 2.74 | 12.68 | 1.88 | 11.99 | 2.57 | 11.11 | 3.45 | 12.49 | 2.07 | 12.53 | 2.03 | 12.33 | 2.23 | 11.61 | 2.95 | 11.96 | 2.60 | 12.47 | 2.09 | 11.91 | 2.65 | 12.43 | 2.13 | 12.58 | 1.98 |
| 9-64-bldg. | BDC-05-20 | 24.80 | 11.34 | 3.00 | 11.74 | 2.60 | 12.62 | 1.72 | 11.92 | 2.42 | 11.08 | 3.26 | 12.37 | 1.97 | 12.42 | 1.92 | 12.25 | 2.09 | 11.64 | 2.70 | 11.92 | 2.42 | 12.45 | 1.89 | 11.95 | 2.39 | 12.28 | 2.06 | 12.46 | 1.88 |
| 9-64-bldg. | BDC-05-21 | 24.86 | 11.16 | 3.03 | 11.57 | 2.62 | 12.50 | 1.69 | 11.80 | 2.39 | 10.96 | 3.23 | 12.22 | 1.97 | 12.24 | 1.95 | 12.10 | 2.09 | 11.51 | 2.68 | 11.80 | 2.39 | 12.29 | 1.90 | 11.79 | 2.40 | 12.15 | 2.04 | 12.30 | 1.89 |
| 9-64-bldg. | BDC-05-22 | 25.07 | 11.16 | 3.00 | 11.59 | 2.57 | 12.42 | 1.74 | 11.73 | 2.43 | 10.89 | 3.27 | 12.19 | 1.97 | 12.29 | 1.87 | 12.04 | 2.12 | 11.47 | 2.69 | 11.74 | 2.42 | 12.25 | 1.91 | 11.75 | 2.41 | 12.08 | 2.08 | 12.25 | 1.91 |
| 9-64-bldg. | BDC-05-23 | 25.10 | 11.48 | 2.98 | 12.02 | 2.44 | 12.88 | 1.58 | 12.25 | 2.21 | 11.40 | 3.06 | 12.57 | 1.89 | 12.85 | 1.61 | 12.51 | 1.95 | 11.98 | 2.48 | 12.27 | 2.19 | 12.81 | 1.65 | 12.36 | 2.10 | 12.51 | 1.95 | 12.74 | 1.72 |
| 9-64-bldg. | BDC-05-24 | 24.73 | 11.10 | 3.09 | 11.48 | 2.71 | 12.37 | 1.82 | 11.68 | 2.51 | 10.81 | 3.38 | 12.15 | 2.04 | 12.21 | 1.98 | 12.00 | 2.19 | 11.43 | 2.76 | 11.65 | 2.54 | 12.12 | 2.07 | 11.64 | 2.55 | 12.04 | 2.15 | 12.22 | 1.97 |
| 9-60 bldg. | BDC-101 | 18.42 | 10.97 | 3.50 | 11.55 | 2.92 | 12.30 | 2.17 | 11.27 | 3.20 | 10.51 | 3.96 | 12.20 | 2.27 | 12.12 | 2.35 | 11.75 | 2.72 | 11.22 | 3.25 | 11.44 | 3.03 | 12.08 | 2.39 | 11.22 | 3.25 | 11.97 | 2.50 | 11.99 | 2.48 |
| 9-60 bldg. | BDC-102 | 18.83 | 10.73 | 3.54 | 11.32 | 2.95 | 12.07 | 2.20 | 11.09 | 3.18 | 10.30 | 3.97 | 11.98 | 2.29 | 11.94 | 2.33 | 11.57 | 2.70 | 11.01 | 3.26 | 11.20 | 3.07 | 11.87 | 2.40 | 10.97 | 3.30 | 11.73 | 2.54 | 11.75 | 2.52 |
| 9-60 bldg. | BDC-103 | 18.51 | 10.69 | 3.65 | 11.39 | 2.95 | 12.13 | 2.21 | 10.97 | 3.37 | 10.22 | 4.12 | 12.02 | 2.32 | 11.94 | 2.40 | 11.49 | 2.85 | 10.93 | 3.41 | 11.01 | 3.33 | 11.88 | 2.46 | 10.85 | 3.49 | 11.75 | 2.59 | 11.66 | 2.68 |
| 9-60 bldg. | BDC-104 | 18.90 | 10.51 | 3.65 | 11.03 | 3.13 | 11.89 | 2.27 | 10.73 | 3.43 | 10.02 | 4.14 | 11.95 | 2.21 | 11.75 | 2.41 | 11.23 | 2.93 | 10.74 | 3.42 | 10.88 | 3.28 | 11.67 | 2.49 | 10.66 | 3.50 | 11.45 | 2.71 | 11.51 | 2.65 |
| 9-52-bldg. | 952MW-1 | 17.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-2 | 17.54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-3 | 17.95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. (west) | MW-5 | 27.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-2 | 26.98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-7 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-8 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-9 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Table B-1
## Cumulative Groundwater Level Measurements
## November 1999 to Present
## Boeing Developmental Center
## Tukwila, Washington

| | | | August 2013 | | May 2013 | | February 2013 | | November 2012 | | May 2012 | | November 2011 | | July 2011 | | May 2011 | | November 2010 | | May 2010 | | November 2009 | | May 2009 | | November 2008 | | May 2008 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Location / Bldg. | Well ID No. | Well Depth (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) |
| 9-101-bldg. | MW-6A | 24.25 | | | 12.92 | 1.88 | | | 12.82 | 1.98 | 12.61 | 2.19 | 12.99 | 1.81 | | | 12.50 | 2.30 | 12.70 | 2.10 | 12.69 | 2.11 | 12.42 | 2.38 | 12.73 | 2.07 | 12.79 | 2.01 | 12.87 | 1.93 |
| 9-101-bldg. | MW-6B | 27.20 | | | 13.27 | 1.82 | | | 13.17 | 1.92 | 12.96 | 2.13 | 13.29 | 1.80 | | | 12.81 | 2.28 | 13.06 | 2.03 | 13.04 | 2.05 | 12.73 | 2.36 | 13.08 | 2.01 | 13.12 | 1.97 | 13.21 | 1.88 |
| 9-101-bldg. | MW-6C | 40.55 | | | | | | | | | | | | | | | | | | | | | 12.72 | 2.35 | 13.05 | 2.02 | 13.06 | 2.01 | 13.13 | 1.94 |
| 9-101-bldg. | MW-8C | 40.20 | | | | | | | | | | | | | | | | | | | | | 12.70 | 2.22 | 13.01 | 1.91 | 12.88 | 2.04 | 13.16 | 1.76 |
| 9-101-bldg. | MW-9A | 21.30 | | | 12.80 | 1.94 | | | 12.83 | 1.91 | 12.54 | 2.20 | 13.03 | 1.71 | | | 12.53 | 2.21 | 12.65 | 2.09 | 12.65 | 2.09 | 12.43 | 2.31 | 12.77 | 1.97 | 12.69 | 2.05 | 12.93 | 1.81 |
| 9-101-bldg. | MW-9B | 26.90 | | | | | | | | | | | | | | | | | | | | | 12.30 | 2.29 | 12.64 | 1.95 | 12.68 | 1.91 | 12.75 | 1.84 |
| 9-101-bldg. | MW-9C | 38.80 | | | | | | | | | | | | | | | | | | | | | 12.40 | 2.26 | 12.67 | 1.99 | 12.66 | 2.00 | 12.82 | 1.84 |
| 9-101-bldg. | MW-9D | 56.00 | | | | | | | | | | | | | | | | | | | | | 12.43 | 2.23 | 12.79 | 1.87 | 12.78 | 1.88 | 12.90 | 1.76 |
| 9-101-bldg. | MW-10A | 20.20 | | | 12.72 | 1.97 | | | 12.77 | 1.92 | 12.55 | 2.14 | 12.97 | 1.72 | | | 12.47 | 2.22 | 12.64 | 2.05 | 12.62 | 2.07 | 12.46 | 2.23 | 12.65 | 2.04 | 12.68 | 2.01 | 12.89 | 1.80 |
| 9-101-bldg. | MW-10C | 40.40 | | | 12.65 | 1.97 | | | 12.70 | 1.92 | 12.49 | 2.13 | 12.90 | 1.72 | | | 12.38 | 2.24 | 12.55 | 2.07 | 12.53 | 2.09 | 12.41 | 2.21 | 12.60 | 2.02 | 12.62 | 2.00 | 12.78 | 1.84 |
| 9-101-bldg. | MW-11A | 19.90 | | | 12.84 | 2.04 | | | 12.19 | 2.69 | 12.65 | 2.23 | 13.03 | 1.85 | | | 12.62 | 2.26 | 12.59 | 2.29 | 12.69 | 2.19 | 12.52 | 2.36 | 12.81 | 2.07 | 12.81 | 2.07 | 13.16 | 1.72 |
| 9-101-bldg. | MW-12A | 20.20 | | | 12.88 | 1.95 | | | 13.01 | 1.82 | 12.70 | 2.13 | 13.23 | 1.60 | | | 12.71 | 2.12 | 12.68 | 2.15 | 12.73 | 2.10 | 12.56 | 2.27 | 12.96 | 1.87 | 12.91 | 1.92 | 13.22 | 1.61 |
| 9-101-bldg. | MW-13A | 19.37 | | | 12.36 | 1.78 | | | 12.27 | 1.87 | 12.20 | 1.94 | 12.66 | 1.48 | | | 12.11 | 2.03 | 12.08 | 2.06 | 12.14 | 2.00 | 11.89 | 2.25 | 12.29 | 1.85 | 12.25 | 1.89 | 12.62 | 1.52 |
| 9-101-bldg. | MW-13C | 35.62 | | | 12.22 | 1.80 | | | 12.11 | 1.91 | 12.06 | 1.96 | 12.52 | 1.50 | | | 11.94 | 2.08 | 11.92 | 2.10 | 12.02 | 2.00 | 11.71 | 2.31 | 12.14 | 1.88 | 12.12 | 1.90 | 12.46 | 1.56 |
| 9-101-bldg. | MW-14A | 19.00 | | | 12.65 | 1.72 | | | 12.53 | 1.84 | 12.46 | 1.91 | 12.71 | 1.66 | | | 12.16 | 2.21 | 12.22 | 2.15 | 12.39 | 1.98 | 12.10 | 2.27 | 12.50 | 1.87 | 12.50 | 1.87 | 12.64 | 1.73 |
| 9-101-bldg. | MW-14C | 33.30 | | | 12.25 | 1.72 | | | 12.07 | 1.90 | 12.09 | 1.88 | 12.20 | 1.77 | | | 12.78 | 1.19 | 11.82 | 2.15 | 12.00 | 1.97 | 11.65 | 2.32 | 12.20 | 1.77 | 12.08 | 1.89 | 12.14 | 1.83 |
| 9-101-bldg. | MW-14E | 82.10 | | | | | | | | | | | | | | | | | | | | | 7.20 | 6.98 | 7.55 | 6.63 | 7.51 | 6.67 | 8.07 | 6.11 |
| 9-101-bldg. | MW-15A | 20.70 | | | 12.48 | 1.69 | | | 12.34 | 1.83 | 12.16 | 2.01 | 12.51 | 1.66 | | | 11.87 | 2.30 | 12.12 | 2.05 | 12.22 | 1.95 | 11.89 | 2.28 | 12.44 | 1.73 | 12.31 | 1.86 | 12.35 | 1.82 |
| 9-101-bldg. | MW-15C | 34.35 | | | 12.54 | 1.63 | | | 12.27 | 1.90 | 12.36 | 1.81 | 12.44 | 1.73 | | | 11.49 | 2.68 | 12.00 | 2.17 | 12.17 | 2.00 | 11.85 | 2.32 | 12.46 | 1.71 | 12.23 | 1.94 | 12.50 | 1.67 |
| 9-101-bldg. | MW-15D | 51.80 | | | | | | | | | | | | | | | | | | | | | 12.02 | 2.39 | 12.78 | 1.63 | 12.47 | 1.94 | 12.68 | 1.73 |
| 9-101-bldg. | MW-16A | 20.55 | | | 13.07 | 1.92 | | | 13.02 | 1.97 | 12.81 | 2.18 | 13.19 | 1.80 | | | 12.67 | 2.32 | 12.84 | 2.15 | 12.88 | 2.11 | 12.68 | 2.31 | 12.98 | 2.01 | 12.95 | 2.04 | 13.17 | 1.82 |
| 9-101-bldg. | MW-16C | 38.30 | | | 13.25 | 1.79 | | | 13.17 | 1.87 | 13.01 | 2.03 | 13.33 | 1.71 | | | 12.84 | 2.20 | 13.02 | 2.02 | 13.04 | 2.00 | 12.63 | 2.41 | 13.12 | 1.92 | 13.13 | 1.91 | 13.34 | 1.70 |
| 9-101-bldg. | MW-17A | 19.00 | | | 12.98 | 1.82 | | | 12.78 | 2.02 | 12.26 | 2.54 | 12.73 | 2.07 | 12.84 | 1.96 | 12.45 | 2.35 | 12.65 | 2.15 | 12.63 | 2.17 | 12.55 | 2.25 | 12.75 | 2.05 | 12.80 | 2.00 | 13.07 | 1.73 |
| 9-101-bldg. | MW-17C | 35.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-17D | 52.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-18A | 20.02 | | | 12.58 | 1.72 | | | 12.39 | 1.91 | 11.90 | 2.40 | 12.84 | 1.46 | 12.43 | 1.87 | 12.14 | 2.16 | 12.22 | 2.08 | 12.25 | 2.05 | 12.21 | 2.09 | 12.42 | 1.88 | 12.37 | 1.93 | 12.72 | 1.58 |
| 9-101-bldg. | MW-18C | 34.55 | | | | | | | | | | | | | | | | | | | | | 12.36 | 2.27 | 12.66 | 1.97 | 12.67 | 1.96 | 12.98 | 1.65 |
| 9-101-bldg. | MW-18D | 52.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-19A | 16.86 | | | 10.74 | 1.49 | | | | | | | | | | | | | | | | | 10.11 | 2.12 | 10.49 | 1.74 | 10.47 | 1.76 | 10.49 | 1.74 |
| 9-101-bldg. | MW-19C | 33.92 | | | | | | | | | | | | | | | | | | | | | 9.98 | 2.25 | 10.44 | 1.79 | 10.33 | 1.90 | 10.41 | 1.82 |
| 9-101-bldg. | MW-19D | 51.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-20A | 19.34 | | | | | | | | | | | | | | | | | | | | | 12.37 | 1.94 | 12.56 | 1.75 | 12.69 | 1.62 | 12.60 | 1.71 |
| 9-101-bldg. | MW-20C | 35.32 | | | 12.50 | 1.65 | | | 12.22 | 1.93 | 12.18 | 1.97 | 12.76 | 1.39 | | | 12.27 | 1.88 | 11.87 | 2.28 | 12.06 | 2.09 | 11.70 | 2.45 | 12.15 | 2.00 | 12.13 | 2.02 | 12.50 | 1.65 |
| 9-101-bldg. | MW-20D | 50.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-22A | 19.20 | | | 12.72 | 1.53 | | | 12.42 | 1.83 | 12.35 | 1.90 | 12.52 | 1.73 | | | 12.14 | 2.11 | 12.40 | 1.85 | 12.30 | 1.95 | 12.04 | 2.21 | 12.57 | 1.68 | 12.35 | 1.90 | 12.50 | 1.75 |
| 9-101-bldg. | MW-23A | 19.50 | | | | | | | | | | | | | | | | | | | | | 11.86 | 2.41 | 13.27 | 1.00 | 12.67 | 1.60 | 12.67 | 1.60 |
| 9-101/9-50 bldg. | MW-21A | 19.90 | | | 12.80 | 1.65 | | | 12.60 | 1.85 | 12.13 | 2.32 | 13.05 | 1.40 | 12.67 | 1.78 | 12.41 | 2.04 | 12.43 | 2.02 | 12.45 | 2.00 | 12.37 | 2.08 | | | | | | |
| 9-101/9-50 bldg. | MW-21C | 34.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-02 | 25.35 | 12.47 | 1.94 | 12.29 | 2.12 | 12.19 | 2.22 | 12.31 | 2.10 | 11.81 | 2.60 | 12.63 | 1.78 | 12.35 | 2.06 | 11.81 | 2.60 | 12.10 | 2.31 | 12.14 | 2.27 | 12.05 | 2.36 | 12.19 | 2.22 | 12.20 | 2.21 | 12.28 | 2.09 |
| 9-64-bldg. | BDC-05-03 | 25.47 | | | 12.36 | 2.05 | | | 12.36 | 2.05 | 11.95 | 2.46 | 12.77 | 1.64 | | | 11.94 | 2.47 | 12.21 | 2.20 | 12.24 | 2.17 | 12.11 | 2.30 | 12.29 | 2.12 | 12.28 | 2.13 | 12.47 | 1.94 |
| 9-64-bldg. | BDC-05-04 | 25.36 | | | 12.17 | 2.42 | | | 12.52 | 2.07 | 12.05 | 2.54 | 12.82 | 1.77 | | | 12.03 | 2.56 | 12.30 | 2.29 | 12.33 | 2.26 | 12.22 | 2.37 | 12.40 | 2.19 | 12.35 | 2.24 | 12.58 | 2.01 |
| 9-64-bldg. | BDC-05-05 | 24.18 | | | 12.13 | 2.31 | | | 13.40 | 1.04 | 11.65 | 2.79 | 12.50 | 1.94 | | | 11.61 | 2.83 | 11.95 | 2.49 | 11.97 | 2.47 | 11.89 | 2.55 | 12.02 | 2.42 | 12.00 | 2.44 | 12.18 | 2.26 |
| 9-64-bldg. | BDC-05-07 | 25.30 | | | 11.92 | 2.07 | | | 11.97 | 2.02 | 11.40 | 2.59 | 12.23 | 1.76 | | | 11.42 | 2.57 | 11.95 | 2.04 | 11.75 | 2.24 | 11.95 | 2.04 | 11.82 | 2.17 | 11.80 | 2.19 | 12.02 | 1.97 |
| 9-64-bldg. | BDC-05-08 | 26.75 | | | 12.64 | 2.03 | | | 12.64 | 2.03 | 12.28 | 2.39 | 13.02 | 1.65 | | | 12.20 | 2.47 | 12.49 | 2.18 | 12.51 | 2.16 | 12.39 | 2.28 | 12.79 | 1.88 | 12.57 | 2.10 | | |
| 9-64-bldg. | BDC-05-09 | 24.55 | | | 12.31 | 2.10 | | | 12.36 | 2.05 | 11.90 | 2.51 | 12.68 | 1.73 | 12.27 | 2.13 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-10 | 24.57 | | | 12.31 | 2.10 | | | 12.30 | 2.11 | 11.95 | 2.46 | 12.74 | 1.67 | 12.27 | 2.14 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-11 | 24.85 | | | 12.51 | 2.14 | | | 12.55 | 2.10 | 12.13 | 2.52 | 12.92 | 1.73 | 12.60 | 2.05 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-12 | 24.87 | 12.78 | 1.94 | 12.61 | 2.11 | 12.53 | 2.19 | 12.66 | 2.06 | 12.24 | 2.48 | 13.00 | 1.72 | 12.57 | 2.15 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-13 | 24.78 | | | 12.40 | 2.03 | | | 12.44 | 1.99 | 12.02 | 2.41 | 12.78 | 1.65 | 12.35 | 2.08 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-14 | 24.85 | | | 12.21 | 2.01 | | | 12.29 | 1.93 | 11.83 | 2.39 | 12.55 | 1.67 | 12.23 | 1.99 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-15 | 24.48 | | | 12.07 | 1.90 | | | 11.97 | 2.00 | 11.63 | 2.34 | 12.34 | 1.63 | 11.95 | 2.02 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-16 | 24.89 | 12.25 | 1.82 | 12.19 | 1.88 | 12.04 | 2.03 | 12.09 | 1.98 | 11.78 | 2.29 | 12.44 | 1.63 | 12.05 | 2.02 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-17 | 24.82 | | | 12.30 | 1.95 | | | 12.27 | 1.98 | 11.65 | 2.60 | 12.60 | 1.65 | 12.27 | 1.98 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-18 | 24.69 | 11.90 | 1.89 | 11.72 | 2.07 | 11.63 | 2.16 | 11.75 | 2.04 | 11.34 | 2.45 | 12.10 | 1.69 | 11.84 | 1.95 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-19 | 24.85 | 12.68 | 1.88 | 12.52 | 2.04 | 12.44 | 2.12 | 12.60 | 1.96 | 12.15 | 2.41 | 12.90 | 1.66 | 12.59 | 1.97 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-20 | 24.80 | 12.55 | 1.79 | 12.38 | 1.96 | 12.41 | 1.93 | 12.44 | 1.90 | 12.08 | 2.26 | 12.75 | 1.59 | 12.47 | 1.87 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-21 | 24.86 | 12.42 | 1.77 | 12.26 | 1.93 | 12.25 | 1.94 | 12.30 | 1.89 | 11.94 | 2.25 | 12.59 | 1.60 | 12.34 | 1.85 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-22 | 25.07 | 12.38 | 1.78 | 12.22 | 1.94 | 12.18 | 1.98 | 12.24 | 1.92 | 11.87 | 2.29 | 12.54 | 1.62 | 12.27 | 1.89 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-23 | 25.10 | 12.83 | 1.63 | 12.70 | 1.76 | 12.56 | 1.90 | 12.74 | 1.72 | 12.39 | 2.07 | 13.08 | 1.38 | 12.79 | 1.67 | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-24 | 24.73 | 12.34 | 1.85 | 12.19 | 2.00 | 12.09 | 2.10 | 12.20 | 1.99 | 11.82 | 2.37 | 12.59 | 1.60 | 12.28 | 1.91 | | | | | | | | | | | | | | |
| 9-60 bldg. | BDC-101 | 18.42 | 12.27 | 2.20 | 11.99 | 2.48 | 11.77 | 2.70 | 12.20 | 2.27 | 11.32 | 3.15 | 12.46 | 2.01 | 12.16 | 2.31 | 11.48 | 2.99 | 11.92 | 2.55 | 11.82 | 2.65 | 11.82 | 2.65 | 11.89 | 2.58 | 11.95 | 2.52 | 12.29 | 2.18 |
| 9-60 bldg. | BDC-102 | 18.83 | 12.04 | 2.23 | 11.79 | 2.48 | 11.55 | 2.72 | 11.93 | 2.34 | 11.13 | 3.14 | 12.16 | 2.11 | 11.92 | 2.35 | 11.20 | 3.07 | 11.67 | 2.60 | 11.57 | 2.70 | 11.58 | 2.69 | 11.64 | 2.63 | 11.67 | 2.60 | 12.08 | 2.19 |
| 9-60 bldg. | BDC-103 | 18.51 | 12.06 | 2.28 | 11.71 | 2.63 | 11.43 | 2.91 | 11.88 | 2.46 | 11.09 | 3.25 | 12.20 | 2.14 | 11.90 | 2.44 | 10.96 | 3.38 | 11.63 | 2.71 | 11.54 | 2.80 | 11.55 | 2.79 | 11.61 | 2.73 | 11.68 | 2.66 | 12.02 | 2.32 |
| 9-60 bldg. | BDC-104 | 18.90 | 11.87 | 2.29 | 11.51 | 2.65 | 11.24 | 2.92 | 11.78 | 2.38 | 10.93 | 3.23 | 12.00 | 2.16 | 11.72 | 2.44 | 10.97 | 3.19 | 11.45 | 2.71 | 11.32 | 2.84 | 11.36 | 2.80 | 11.40 | 2.76 | 11.51 | 2.65 | 11.84 | 2.32 |
| 9-52-bldg. | 952MW-1 | 17.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-2 | 17.54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-3 | 17.95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. (west) | MW-5 | 27.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-2 | 26.98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-7 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-8 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-9 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Table B-1
## Cumulative Groundwater Level Measurements
## November 1999 to Present
## Boeing Developmental Center
## Tukwila, Washington

| | | | November 2007 | | May 2007 | | February 2007 | | November 2006 | | August 2006 | | May 2006 | | February 2006 | | November 2005 | | August 2005 | | May 2005 | | February 2005 | | October 2004 | | August 2004 | | May 2004 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Location / Bldg. | Well ID No. | Well Depth (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) |
| 9-101-bldg. | MW-6A | 24.25 | 13.08 | 1.72 | 12.97 | 1.83 | 12.42 | 2.38 | 12.30 | 2.50 | 13.16 | 1.64 | 12.77 | 2.03 | 12.42 | 2.38 | 12.80 | 2.00 | 13.02 | 1.78 | 12.52 | 2.28 | 12.68 | 2.12 | 12.90 | 1.90 | 13.06 | 1.74 | | |
| 9-101-bldg. | MW-6B | 27.20 | 13.46 | 1.63 | 13.32 | 1.77 | 12.75 | 2.34 | 12.67 | 2.42 | 13.50 | 1.59 | 13.09 | 2.00 | 12.75 | 2.34 | 13.15 | 1.94 | 13.35 | 1.74 | 12.88 | 2.21 | 12.97 | 2.12 | 13.25 | 1.84 | 13.40 | 1.69 | 13.00 | 1.83 |
| 9-101-bldg. | MW-6C | 40.55 | 13.41 | 1.66 | 13.27 | 1.80 | 12.69 | 2.38 | 12.65 | 2.42 | 13.41 | 1.66 | 13.07 | 2.00 | 12.71 | 2.36 | 13.14 | 1.93 | 13.32 | 1.75 | 12.87 | 2.20 | 12.90 | 2.17 | 13.18 | 1.89 | 13.37 | 1.70 | 13.14 | 1.85 |
| 9-101-bldg. | MW-8C | 40.20 | 13.28 | 1.64 | 13.00 | 1.92 | | | 12.21 | 2.71 | | | 13.18 | 1.74 | | | 13.00 | 1.92 | | | 12.64 | 2.28 | | | 12.91 | 2.01 | | | 13.11 | 1.81 |
| 9-101-bldg. | MW-9A | 21.30 | 13.07 | 1.67 | 12.90 | 1.84 | 12.36 | 2.38 | 12.12 | 2.62 | 13.05 | 1.69 | 13.00 | 1.74 | 12.37 | 2.37 | 12.73 | 2.01 | 13.08 | 1.66 | 12.53 | 2.21 | 12.51 | 2.23 | 12.92 | 1.82 | 13.05 | 1.69 | 12.82 | 1.82 |
| 9-101-bldg. | MW-9B | 26.90 | 12.91 | 1.68 | 12.71 | 1.88 | 12.19 | 2.40 | 11.95 | 2.64 | 12.87 | 1.72 | 13.81 | 0.78 | 12.19 | 2.40 | 12.69 | 1.90 | 12.90 | 1.69 | 12.17 | 2.42 | 10.80 | 3.79 | 12.76 | 1.83 | 12.90 | 1.69 | 12.77 | 1.95 |
| 9-101-bldg. | MW-9C | 38.80 | 13.02 | 1.64 | 12.81 | 1.85 | 12.20 | 2.46 | 12.05 | 2.61 | 13.01 | 1.65 | 12.91 | 1.75 | 12.26 | 2.40 | 12.69 | 1.97 | 12.93 | 1.73 | 12.55 | 2.11 | 12.46 | 2.20 | 12.87 | 1.79 | 13.01 | 1.65 | 12.85 | 1.83 |
| 9-101-bldg. | MW-9D | 56.00 | 13.56 | 1.10 | 12.88 | 1.78 | | | 12.30 | 2.36 | | | 13.15 | 1.51 | | | 12.90 | 1.76 | | | 12.90 | 1.76 | | | 13.92 | 0.74 | | | 12.92 | 1.74 |
| 9-101-bldg. | MW-10A | 20.20 | 13.05 | 1.64 | 12.72 | 1.97 | 12.35 | 2.34 | 12.06 | 2.63 | 12.88 | 1.81 | 12.98 | 1.71 | 11.93 | 2.76 | 12.73 | 1.96 | 12.85 | 1.84 | 12.52 | 2.17 | 12.58 | 2.11 | 12.95 | 1.74 | 13.05 | 1.64 | 12.93 | 1.76 |
| 9-101-bldg. | MW-10C | 40.40 | 12.96 | 1.66 | 12.77 | 1.85 | | | 11.99 | 2.63 | | | 12.88 | 1.74 | | | 12.63 | 1.99 | | | 12.45 | 2.17 | | | 12.74 | 1.88 | | | 12.80 | 1.82 |
| 9-101-bldg. | MW-11A | 19.90 | 13.16 | 1.72 | 12.96 | 1.92 | | | 11.85 | 3.03 | | | 12.80 | 2.08 | | | 12.92 | 1.96 | | | 12.42 | 2.46 | | | 12.78 | 2.10 | | | 13.12 | 1.76 |
| 9-101-bldg. | MW-12A | 20.20 | 13.24 | 1.59 | 13.00 | 1.83 | | | 11.89 | 2.94 | | | 12.97 | 1.86 | | | 12.98 | 1.85 | | | 12.58 | 2.25 | | | 12.86 | 1.97 | | | 13.21 | 1.62 |
| 9-101-bldg. | MW-13A | 19.37 | 12.42 | 1.72 | 12.33 | 1.81 | | | 11.50 | 2.64 | | | 12.48 | 1.66 | | | 12.26 | 1.88 | | | 11.97 | 2.17 | | | 12.35 | 1.79 | | | 12.47 | 1.67 |
| 9-101-bldg. | MW-13C | 35.62 | 12.29 | 1.73 | 12.20 | 1.82 | | | 11.35 | 2.67 | | | 12.33 | 1.69 | | | 12.10 | 1.92 | | | 11.78 | 2.24 | | | 12.19 | 1.83 | | | 12.35 | 1.67 |
| 9-101-bldg. | MW-14A | 19.00 | 12.55 | 1.82 | 12.73 | 1.64 | 12.03 | 2.34 | 11.46 | 2.91 | 12.83 | 1.54 | 12.59 | 1.78 | 11.95 | 2.42 | 12.39 | 1.98 | 12.56 | 1.81 | 12.35 | 2.02 | 12.38 | 2.09 | 12.60 | 1.87 | 12.94 | 1.53 | 12.71 | 1.76 |
| 9-101-bldg. | MW-14C | 33.30 | 12.00 | 1.97 | 12.32 | 1.65 | | | 11.72 | 2.25 | | | 12.26 | 1.71 | | | 12.13 | 1.84 | | | 11.84 | 2.13 | | | 12.09 | 1.88 | | | 12.16 | 1.81 |
| 9-101-bldg. | MW-14E | 82.10 | 6.83 | 7.35 | 7.59 | 6.59 | | | 6.71 | 7.47 | | | 8.78 | 5.40 | | | 7.87 | 6.31 | | | 7.29 | 6.89 | | | 7.58 | 6.60 | | | 6.94 | 7.24 |
| 9-101-bldg. | MW-15A | 20.70 | 12.24 | 1.93 | 12.52 | 1.65 | | | 11.93 | 2.24 | | | 12.05 | 2.12 | | | 12.42 | 1.75 | | | 11.74 | 2.43 | | | 12.17 | 2.00 | | | 12.67 | 1.50 |
| 9-101-bldg. | MW-15C | 34.35 | 12.30 | 1.87 | 12.55 | 1.62 | | | 11.91 | 2.26 | | | 12.37 | 1.80 | | | 12.50 | 1.67 | | | 12.02 | 2.15 | | | 12.31 | 1.86 | | | 12.72 | 1.45 |
| 9-101-bldg. | MW-15D | 51.80 | 12.53 | 1.88 | 12.76 | 1.65 | | | 12.14 | 2.27 | | | 12.52 | 1.89 | | | 12.63 | 1.78 | | | 12.20 | 2.21 | | | 12.56 | 1.85 | | | 12.88 | 1.53 |
| 9-101-bldg. | MW-16A | 20.55 | 12.53 | 2.46 | 13.11 | 1.88 | | | 12.05 | 2.94 | | | 13.04 | 1.95 | | | 13.05 | 1.94 | | | 12.67 | 2.32 | | | 12.97 | 2.02 | | | 13.19 | 1.80 |
| 9-101-bldg. | MW-16C | 38.30 | 13.33 | 1.71 | 13.23 | 1.81 | | | 12.22 | 2.82 | | | 13.23 | 1.81 | | | 13.22 | 1.82 | | | 12.83 | 2.21 | | | 13.15 | 1.89 | | | 13.38 | 1.66 |
| 9-101-bldg. | MW-17A | 19.00 | 13.00 | 1.80 | 12.80 | 2.00 | | | 12.04 | 2.76 | | | 12.85 | 1.95 | | | 12.74 | 2.30 | | | | | | | 12.81 | 1.99 | | | 13.05 | 1.75 |
| 9-101-bldg. | MW-17C | 35.00 | | | | | | | | | | | | | | | 12.83 | 2.21 | | | | | | | 12.80 | 2.05 | | | 13.11 | 1.74 |
| 9-101-bldg. | MW-17D | 52.50 | | | | | | | | | | | | | | | 12.82 | 2.22 | | | | | | | 12.97 | 1.90 | | | 13.20 | 1.67 |
| 9-101-bldg. | MW-18A | 20.02 | 12.46 | 1.84 | 12.45 | 1.85 | | | 11.57 | 2.73 | | | 12.43 | 1.87 | | | 12.44 | 1.86 | | | 12.11 | 2.19 | | | 12.43 | 1.87 | | | 12.57 | 1.73 |
| 9-101-bldg. | MW-18C | 34.55 | 12.88 | 1.75 | 12.74 | 1.89 | | | 11.85 | 2.78 | | | 12.70 | 1.93 | | | 12.72 | 1.91 | | | 12.36 | 2.27 | | | 12.75 | 1.88 | | | 12.84 | 1.79 |
| 9-101-bldg. | MW-18D | 52.85 | | | | | | | | | | | | | | | 12.42 | 2.21 | | | | | | | 12.42 | 1.84 | | | 12.60 | 1.66 |
| 9-101-bldg. | MW-19A | 16.86 | 10.68 | 1.55 | 10.55 | 1.68 | 9.92 | 2.31 | 9.59 | 2.64 | 10.77 | 1.46 | 10.44 | 1.79 | 10.22 | 2.01 | 10.43 | 1.80 | 10.70 | 1.53 | 10.22 | 2.01 | 10.19 | 2.04 | 10.54 | 1.69 | | | 10.85 | 1.38 |
| 9-101-bldg. | MW-19C | 33.92 | 10.59 | 1.64 | 10.50 | 1.73 | | | 9.50 | 2.73 | | | 10.32 | 1.91 | | | 10.36 | 1.87 | | | 10.22 | 2.01 | | | 10.43 | 1.80 | | | 10.22 | 2.01 |
| 9-101-bldg. | MW-19D | 51.86 | | | | | | | | | | | | | | | 10.69 | 1.54 | | | | | | | 10.67 | 1.56 | | | 10.86 | 1.37 |
| 9-101-bldg. | MW-20A | 19.34 | 12.76 | 1.55 | 12.30 | 2.01 | | | 12.10 | 2.21 | | | 12.09 | 2.22 | | | 12.68 | 1.63 | | | 12.33 | 1.98 | | | 12.75 | 1.56 | | | 12.73 | 1.58 |
| 9-101-bldg. | MW-20C | 35.32 | 12.39 | 1.76 | 12.28 | 1.87 | | | 11.67 | 2.48 | | | 12.05 | 2.10 | | | 12.30 | 1.85 | | | 11.90 | 2.25 | | | 12.39 | 1.76 | | | 12.66 | 1.49 |
| 9-101-bldg. | MW-20D | 50.15 | | | | | | | | | | | | | | | 12.66 | 1.49 | | | | | | | 12.80 | 1.63 | | | 13.17 | 1.26 |
| 9-101-bldg. | MW-22A | 19.20 | 12.25 | 2.00 | 12.64 | 1.61 | 11.90 | 2.35 | 12.11 | 2.14 | 12.77 | 1.48 | 12.41 | 1.84 | 12.25 | 2.00 | 12.55 | 1.70 | 12.81 | 1.44 | 12.38 | 1.87 | | | | | | | | |
| 9-101-bldg. | MW-23A | 19.50 | 12.83 | 1.44 | 12.90 | 1.37 | 12.03 | 2.24 | 13.02 | 1.25 | 12.94 | 1.33 | 12.49 | 1.78 | 12.44 | 1.83 | 12.78 | 1.49 | 13.73 | 0.54 | 13.55 | 0.72 | | | | | | | | |
| 9-101/9-50 bldg. | MW-21A | 19.90 | | | | | | | | | | | 12.68 | 1.77 | | | | | | | | | | | | | | | | |
| 9-101/9-50 bldg. | MW-21C | 34.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-02 | 25.35 | 12.31 | 2.06 | 12.23 | 2.14 | | | 11.53 | 2.84 | | | 12.21 | 2.16 | | | 12.21 | 2.16 | | | 11.86 | 2.51 | | | 12.40 | 1.97 | | | 12.24 | 2.13 |
| 9-64-bldg. | BDC-05-03 | 25.47 | 12.51 | 1.90 | 12.45 | 1.96 | | | 11.75 | 2.66 | | | 12.40 | 2.01 | | | 12.43 | 1.98 | | | 12.07 | 2.34 | | | 12.60 | 1.81 | | | 12.46 | 1.95 |
| 9-64-bldg. | BDC-05-04 | 25.36 | 12.57 | 2.02 | 12.54 | 2.05 | | | 11.85 | 2.74 | | | 12.54 | 2.05 | | | 12.52 | 2.07 | | | 12.17 | 2.42 | | | 12.72 | 1.87 | | | 12.55 | 2.04 |
| 9-64-bldg. | BDC-05-05 | 24.18 | 12.30 | 2.14 | 12.07 | 2.37 | | | 11.51 | 2.93 | | | 12.16 | 2.28 | | | 12.16 | 2.28 | | | 11.87 | 2.57 | | | 12.41 | 2.03 | | | 12.12 | 2.32 |
| 9-64-bldg. | BDC-05-07 | 25.30 | 12.03 | 1.96 | 11.96 | 2.03 | | | 11.27 | 2.72 | | | 11.94 | 2.05 | | | 11.96 | 2.03 | | | 11.59 | 2.40 | | | 12.14 | 1.85 | | | 11.97 | 2.02 |
| 9-64-bldg. | BDC-05-08 | 26.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-09 | 24.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-10 | 24.57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-11 | 24.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-12 | 24.87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-13 | 24.78 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-14 | 24.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-15 | 24.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-16 | 24.89 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-17 | 24.82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-18 | 24.69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-19 | 24.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-20 | 24.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-21 | 24.86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-22 | 25.07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-23 | 25.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-24 | 24.73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-60 bldg. | BDC-101 | 18.42 | 12.22 | 2.25 | 12.13 | 2.34 | | | 11.42 | 3.05 | | | 12.07 | 2.40 | | | 11.91 | 2.56 | | | 11.73 | 2.74 | | | 12.31 | 2.16 | | | 12.04 | 2.43 |
| 9-60 bldg. | BDC-102 | 18.83 | 11.86 | 2.41 | 11.89 | 2.38 | | | 11.13 | 3.14 | | | 11.85 | 2.42 | | | 11.79 | 2.48 | | | 11.53 | 2.74 | | | 11.97 | 2.30 | | | 11.84 | 2.43 |
| 9-60 bldg. | BDC-103 | 18.51 | 11.93 | 2.41 | 11.87 | 2.47 | | | 11.10 | 3.24 | | | 11.78 | 2.56 | | | 11.81 | 2.53 | | | 11.50 | 2.84 | | | 12.08 | 2.26 | | | 11.79 | 2.55 |
| 9-60 bldg. | BDC-104 | 18.90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-1 | 17.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-2 | 17.54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-3 | 17.95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. (west) | MW-5 | 27.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-04-bldg. (north) | MW-2 | 26.98 | | | | | | | | | | | | | | | | | | | | | | | | | | | 9.96 | 2.71 |
| 9-04-bldg. (north) | MW-7 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | 10.90 | 2.79 |
| 9-04-bldg. (north) | MW-8 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | 11.10 | 2.82 |
| 9-04-bldg. (north) | MW-9 | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | 11.03 | |

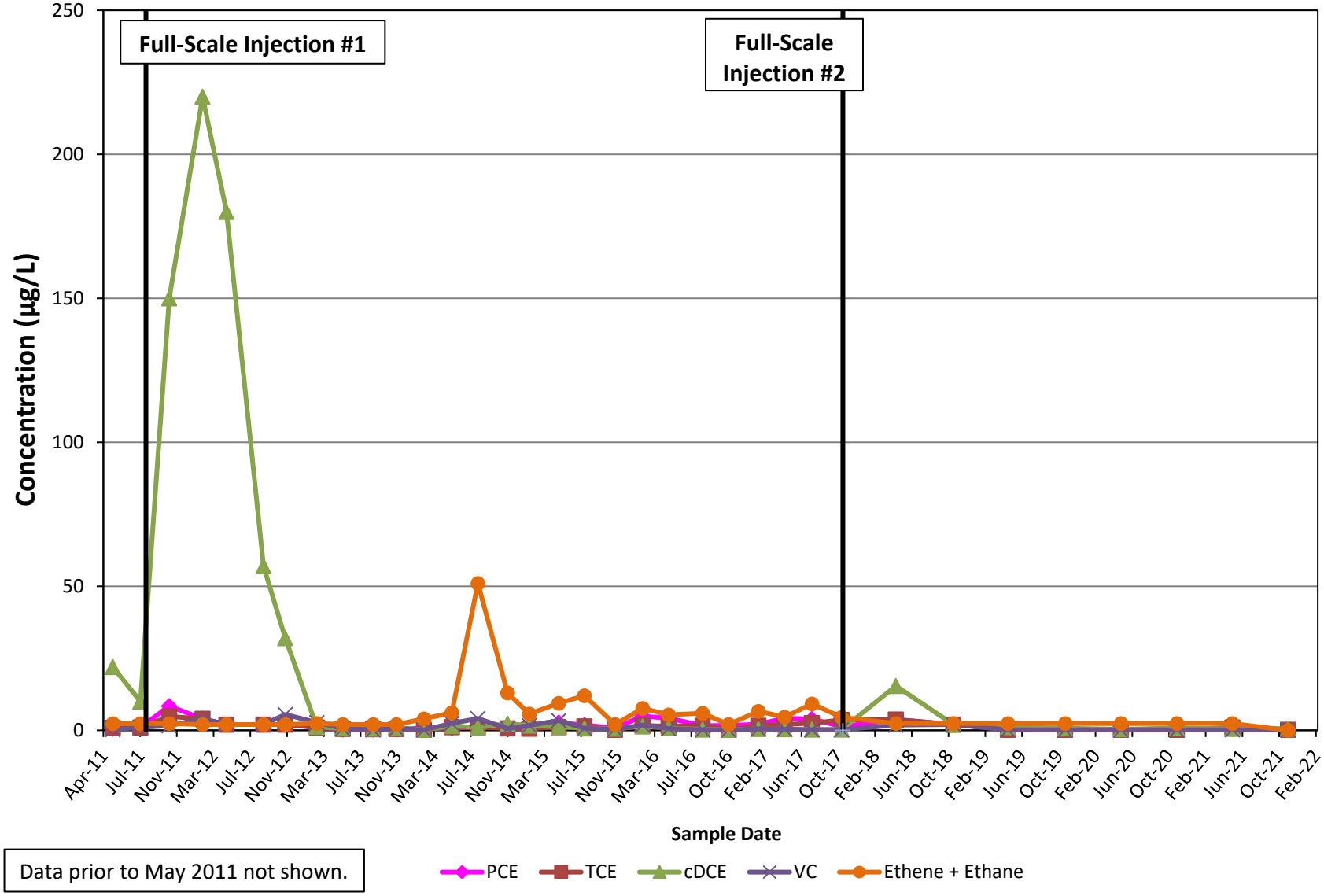
# Table B-1
## Cumulative Groundwater Level Measurements
## November 1999 to Present
## Boeing Developmental Center
## Tukwila, Washington

| | | | November 2003 | | June 2003 | | December 2002 | | June 2002 | | December 2001 | | June 2001 | | December 2000 | | June 2000 | | November 1999 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Location / Bldg. | Well ID No. | Well Depth (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) | Depth to Water (ft) | Water Elevation (ft) |
| 9-101-bldg. | MW-6A | 24.25 | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-6B | 27.20 | 12.88 | 1.95 | 13.30 | 1.53 | 13.01 | 1.82 | 13.21 | 1.62 | 12.45 | 2.38 | 13.50 | 1.33 | 13.55 | 1.28 | 13.01 | 1.82 | 13.33 | 1.50 |
| 9-101-bldg. | MW-6C | 40.55 | 13.03 | 1.96 | 13.44 | 1.55 | 13.16 | 1.83 | 13.36 | 1.63 | 12.60 | 2.39 | 13.67 | 1.32 | 13.70 | 1.29 | 13.15 | 1.84 | 13.50 | 1.49 |
| 9-101-bldg. | MW-8C | 40.20 | 13.11 | 1.81 | 13.39 | 1.53 | 13.19 | 1.73 | 13.27 | 1.65 | 12.89 | 2.03 | 13.85 | 1.07 | 13.71 | 1.21 | 13.13 | 1.79 | 13.79 | 1.13 |
| 9-101-bldg. | MW-9A | 21.30 | 12.78 | 1.86 | 13.00 | 1.64 | 12.90 | 1.74 | 12.94 | 1.70 | 12.69 | 1.95 | 13.76 | 0.88 | 13.72 | 0.92 | 12.78 | 1.86 | 13.67 | 0.97 |
| 9-101-bldg. | MW-9B | 26.90 | 12.82 | 1.90 | 13.08 | 1.64 | 12.96 | 1.76 | 13.00 | 1.72 | 12.82 | 1.90 | 13.90 | 0.82 | 13.82 | 0.90 | 12.81 | 1.91 | 13.90 | 0.82 |
| 9-101-bldg. | MW-9C | 38.80 | 12.77 | 1.91 | 13.09 | 1.59 | 12.90 | 1.78 | 12.94 | 1.74 | 12.61 | 2.07 | 13.64 | 1.04 | 13.57 | 1.11 | 12.75 | 1.93 | 13.60 | 1.08 |
| 9-101-bldg. | MW-9D | 56.00 | 13.04 | 1.62 | 13.39 | 1.27 | 13.17 | 1.49 | 13.20 | 1.46 | 12.25 | 2.41 | 13.15 | 1.51 | 13.03 | 1.63 | 12.74 | 1.92 | 13.00 | 1.66 |
| 9-101-bldg. | MW-10A | 20.20 | 12.83 | 1.86 | 13.08 | 1.61 | 13.03 | 1.66 | 12.94 | 1.75 | 12.52 | 2.17 | 13.52 | 1.17 | 13.62 | 1.07 | 12.84 | 1.85 | 13.50 | 1.19 |
| 9-101-bldg. | MW-10C | 40.40 | 12.71 | 1.91 | 12.97 | 1.65 | 12.90 | 1.72 | 12.84 | 1.78 | 12.32 | 2.30 | 13.37 | 1.25 | 13.40 | 1.22 | 12.74 | 1.88 | 13.29 | 1.33 |
| 9-101-bldg. | MW-11A | 19.90 | 12.91 | 1.97 | 13.14 | 1.74 | 13.13 | 1.75 | 12.97 | 1.91 | 12.28 | 2.60 | 13.35 | 1.53 | 13.52 | 1.36 | 12.91 | 1.97 | 13.20 | 1.68 |
| 9-101-bldg. | MW-12A | 20.20 | 13.00 | 1.83 | 13.23 | 1.60 | 13.20 | 1.63 | 13.03 | 1.80 | 12.33 | 2.50 | 13.35 | 1.48 | 13.50 | 1.33 | 13.02 | 1.81 | 13.21 | 1.62 |
| 9-101-bldg. | MW-13A | 19.37 | 12.18 | 1.96 | 12.49 | 1.65 | 12.38 | 1.76 | 12.50 | 1.64 | 11.92 | 2.22 | 12.59 | 1.55 | 12.76 | 1.38 | 12.50 | 1.64 | 12.33 | 1.81 |
| 9-101-bldg. | MW-13C | 35.62 | 12.02 | 2.00 | 12.30 | 1.72 | 12.22 | 1.80 | 12.31 | 1.71 | 11.45 | 2.57 | 12.43 | 1.59 | 12.69 | 1.33 | 12.37 | 1.65 | 12.21 | 1.81 |
| 9-101-bldg. | MW-14A | 19.00 | 12.57 | 1.90 | 12.91 | 1.56 | 12.70 | 1.77 | 12.85 | 1.62 | 12.16 | 2.31 | 13.00 | 1.47 | 12.98 | 1.49 | 12.70 | 1.77 | 12.78 | 1.69 |
| 9-101-bldg. | MW-14C | 33.30 | 12.07 | 1.90 | 12.43 | 1.54 | 12.18 | 1.79 | 12.33 | 1.64 | 11.60 | 2.37 | 12.59 | 1.38 | 12.49 | 1.48 | 12.17 | 1.80 | 12.35 | 1.62 |
| 9-101-bldg. | MW-14E | 82.10 | 7.26 | 6.92 | 8.56 | 5.62 | 7.69 | 6.49 | 7.64 | 6.54 | 6.10 | 8.08 | 7.83 | 6.35 | 7.44 | 6.74 | 7.45 | 6.73 | 7.90 | 6.28 |
| 9-101-bldg. | MW-15A | 20.70 | 12.36 | 1.81 | 12.57 | 1.60 | 12.55 | 1.62 | 12.52 | 1.65 | 11.82 | 2.35 | 12.66 | 1.51 | 12.82 | 1.35 | 12.40 | 1.77 | 12.35 | 1.82 |
| 9-101-bldg. | MW-15C | 34.35 | 12.37 | 1.80 | 12.56 | 1.61 | 12.47 | 1.70 | 12.50 | 1.67 | 11.73 | 2.44 | 12.80 | 1.37 | 12.77 | 1.40 | 12.36 | 1.81 | 12.49 | 1.68 |
| 9-101-bldg. | MW-15D | 51.80 | 12.64 | 1.77 | 12.41 | 2.00 | 12.80 | 1.61 | 13.02 | 1.39 | 11.90 | 2.51 | 12.88 | 1.53 | 12.90 | 1.51 | 12.59 | 1.82 | 12.44 | 1.97 |
| 9-101-bldg. | MW-16A | 20.55 | 12.96 | 2.03 | 13.35 | 1.64 | 13.03 | 1.96 | 13.02 | 1.97 | 12.45 | 2.54 | 13.55 | 1.44 | 13.50 | 1.49 | 13.19 | 1.80 | 13.34 | 1.65 |
| 9-101-bldg. | MW-16C | 38.30 | 13.15 | 1.89 | 13.51 | 1.53 | 13.33 | 1.71 | 13.29 | 1.75 | 12.62 | 2.42 | 13.77 | 1.27 | 13.67 | 1.37 | 13.36 | 1.68 | 13.52 | 1.52 |
| 9-101-bldg. | MW-17A | 19.00 | 12.83 | 1.97 | 13.10 | 1.70 | 12.99 | 1.81 | 13.07 | 1.73 | 12.34 | 2.46 | | | 13.32 | 1.48 | 13.05 | 1.75 | 13.03 | 1.77 |
| 9-101-bldg. | MW-17C | 35.00 | | | | | | | | | | | 13.25 | 1.60 | | | 13.10 | 1.75 | 13.05 | 1.80 |
| 9-101-bldg. | MW-17D | 52.50 | | | | | | | | | | | 13.20 | 1.67 | | | 13.25 | 1.62 | 12.82 | 2.05 |
| 9-101-bldg. | MW-18A | 20.02 | 12.36 | 1.94 | | | | | | | 11.82 | 2.48 | 12.61 | 1.69 | 12.84 | 1.46 | 12.55 | 1.75 | 12.38 | 1.92 |
| 9-101-bldg. | MW-18C | 34.55 | 12.62 | 2.01 | 12.89 | 1.74 | 12.82 | 1.81 | 12.92 | 1.71 | | | 12.87 | 1.76 | 13.12 | 1.51 | 12.83 | 1.80 | 12.61 | 2.02 |
| 9-101-bldg. | MW-18D | 52.85 | | | | | | | | | | | 12.58 | 1.68 | 12.85 | 1.41 | 12.52 | 1.74 | 12.33 | 1.93 |
| 9-101-bldg. | MW-19A | 16.86 | 10.39 | 1.84 | | | | | | | 9.93 | 2.30 | 10.62 | 1.61 | 10.93 | 1.30 | 10.68 | 1.55 | 10.42 | 1.81 |
| 9-101-bldg. | MW-19C | 33.92 | 10.31 | 1.92 | 10.55 | 1.68 | 10.41 | 1.82 | 10.71 | 1.52 | | | 10.55 | 1.68 | 10.89 | 1.34 | 10.65 | 1.58 | 10.35 | 1.88 |
| 9-101-bldg. | MW-19D | 51.86 | | | | | | | | | | | 11.00 | 1.23 | 10.90 | 1.33 | 10.71 | 1.52 | 11.05 | 1.18 |
| 9-101-bldg. | MW-20A | 19.34 | 12.58 | 1.73 | | | | | | | 12.20 | 2.11 | 12.60 | 1.71 | 12.89 | 1.42 | 12.44 | 1.87 | 12.75 | 1.56 |
| 9-101-bldg. | MW-20C | 35.32 | 12.24 | 1.91 | 12.48 | 1.67 | 12.26 | 1.89 | 12.55 | 1.60 | | | 12.50 | 1.65 | 12.69 | 1.46 | 12.16 | 1.99 | 12.44 | 1.71 |
| 9-101-bldg. | MW-20D | 50.15 | | | | | | | | | | | 12.83 | 1.60 | 12.87 | 1.56 | 12.41 | 2.02 | 12.66 | 1.77 |
| 9-101-bldg. | MW-22A | 19.20 | | | | | | | | | | | | | | | | | | |
| 9-101-bldg. | MW-23A | 19.50 | | | | | | | | | | | | | | | | | | |
| 9-101/9-50 bldg. | MW-21A | 19.90 | | | | | 12.79 | 1.66 | 12.74 | 1.71 | 12.05 | 2.40 | 12.77 | 1.68 | 13.04 | 1.41 | 12.93 | 1.52 | 12.50 | 1.95 |
| 9-101/9-50 bldg. | MW-21C | 34.00 | | | | | 10.53 | 1.67 | 10.52 | 1.68 | 9.87 | 2.33 | 10.50 | 1.70 | | | | | | |
| 9-64-bldg. | BDC-05-02 | 25.35 | 12.08 | 2.29 | 12.47 | 1.90 | 12.40 | 1.97 | 12.25 | 2.12 | 11.45 | 2.92 | 12.38 | 1.99 | 12.56 | 1.81 | 12.37 | 2.00 | 12.03 | 2.34 |
| 9-64-bldg. | BDC-05-03 | 25.47 | 12.28 | 2.13 | 12.66 | 1.75 | 12.60 | 1.81 | 12.47 | 1.94 | 11.70 | 2.71 | 12.56 | 1.85 | 12.82 | 1.59 | 12.56 | 1.85 | 12.33 | 2.08 |
| 9-64-bldg. | BDC-05-04 | 25.36 | 12.40 | 2.19 | 12.80 | 1.79 | 12.71 | 1.88 | 12.57 | 2.02 | 11.78 | 2.81 | 12.69 | 1.90 | 12.86 | 1.73 | 12.65 | 1.94 | 12.33 | 2.26 |
| 9-64-bldg. | BDC-05-05 | 24.18 | 12.13 | 2.31 | 12.51 | 1.93 | 12.42 | 2.02 | 12.22 | 2.22 | 11.38 | 3.06 | 12.37 | 2.07 | 12.53 | 1.91 | 12.36 | 2.08 | 11.96 | 2.48 |
| 9-64-bldg. | BDC-05-07 | 25.30 | 11.81 | 2.18 | 12.18 | 1.81 | 12.11 | 1.88 | 12.02 | 1.97 | 11.18 | 2.81 | 12.10 | 1.89 | 12.28 | 1.71 | 12.08 | 1.91 | 11.72 | 2.27 |
| 9-64-bldg. | BDC-05-08 | 26.75 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-09 | 24.55 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-10 | 24.57 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-11 | 24.85 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-12 | 24.87 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-13 | 24.78 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-14 | 24.85 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-15 | 24.48 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-16 | 24.89 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-17 | 24.82 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-18 | 24.69 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-19 | 24.85 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-20 | 24.80 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-21 | 24.86 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-22 | 25.07 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-23 | 25.10 | | | | | | | | | | | | | | | | | | |
| 9-64-bldg. | BDC-05-24 | 24.73 | | | | | | | | | | | | | | | | | | |
| 9-60 bldg. | BDC-101 | 18.42 | 12.08 | 2.39 | 12.43 | 2.04 | 12.34 | 2.13 | 12.07 | 2.40 | 11.29 | 3.18 | 12.30 | 2.17 | | | | | | |
| 9-60 bldg. | BDC-102 | 18.83 | 11.82 | 2.45 | 12.24 | 2.03 | 12.14 | 2.13 | 11.82 | 2.45 | 11.05 | 3.22 | 12.06 | 2.21 | | | | | | |
| 9-60 bldg. | BDC-103 | 18.51 | 11.72 | 2.62 | 12.27 | 2.07 | 12.15 | 2.19 | 11.81 | 2.53 | 11.03 | 3.31 | 12.04 | 2.30 | | | | | | |
| 9-60 bldg. | BDC-104 | 18.90 | | | | | | | | | | | | | | | | | | |
| 9-52-bldg. | 952MW-1 | 17.40 | | | | | | | 11.10 | 2.38 | 10.21 | 3.27 | 11.25 | 2.23 | 11.50 | 1.98 | | | 10.97 | 2.51 |
| 9-52-bldg. | 952MW-2 | 17.54 | | | | | | | 11.37 | 2.63 | 10.46 | 3.54 | 11.48 | 2.52 | 11.76 | 2.24 | | | 11.25 | 2.75 |
| 9-52-bldg. | 952MW-3 | 17.95 | | | | | | | 11.40 | 2.36 | 10.52 | 3.24 | 11.55 | 2.21 | 11.85 | 1.91 | | | 11.28 | 2.48 |
| 9-52-bldg. (west) | MW-5 | 27.43 | | | | | | | | | | | | | | | | | 10.53 | 2.42 |
| 9-04-bldg. (north) | MW-2 | 26.98 | 9.78 | 2.89 | | | | | | | | | 10.03 | 2.64 | | | 10.19 | 2.48 | 9.53 | 3.14 |
| 9-04-bldg. (north) | MW-7 | 18.50 | 10.72 | 2.97 | | | | | | | 9.96 | 3.73 | 11.05 | 2.64 | | | | | | |
| 9-04-bldg. (north) | MW-8 | 18.50 | 10.88 | 3.04 | | | | | | | 10.08 | 3.84 | 11.23 | 2.69 | | | | | | |
| 9-04-bldg. (north) | MW-9 | 18.50 | 10.84 | | | | | | | | 10.08 | | 11.23 | -11.23 | | | | | | |

**Notes:**
ft = feet
Depth to Water measurements taken from top of well casing.
Top of casing elevation altered in wells MW-6B, MW-6C, MW-9A, MW-9B, and MW-9C by installation of threaded fitting on 6/19/2004.
Top of casing elevation was lowered in well MW-14A by 0.10 ft on 3/17/2005; resurveyed 9/9/05.
Top of casing elevation at wells MS-22A and MW-23A measured 9/9/05.
BDC-05-02 was modified in October 2008 for utilization as an injection well. Elevation changed from 14.37 to 14.41 ft; total depth changed from 25.35 to 25.27.

APPENDIX C

# SWMU-17 Time Plots: VOC Concentrations




Data prior to May 2011 not shown.

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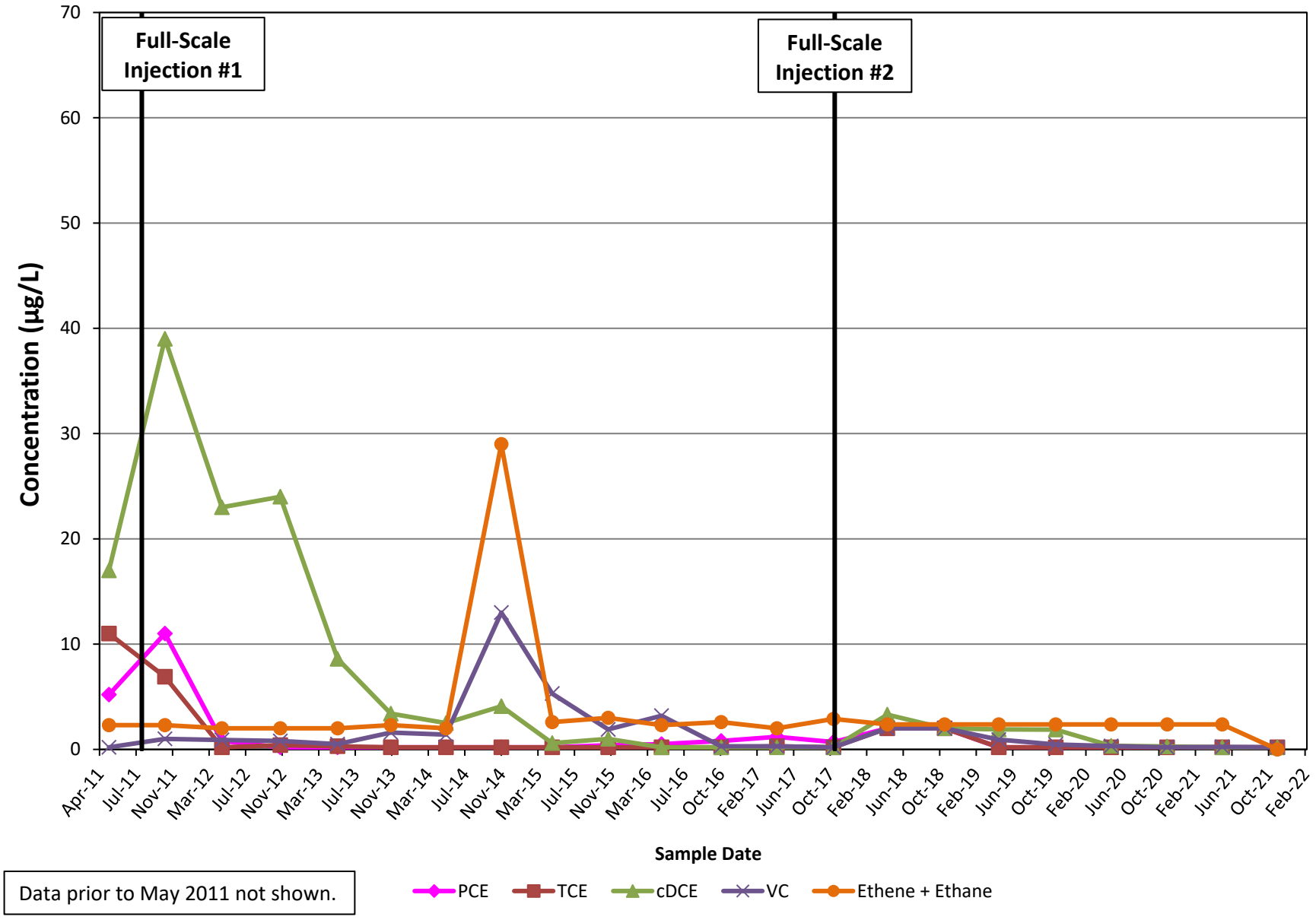
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-02** | Figure<br>C-1 |




Data prior to May 2011 not shown.

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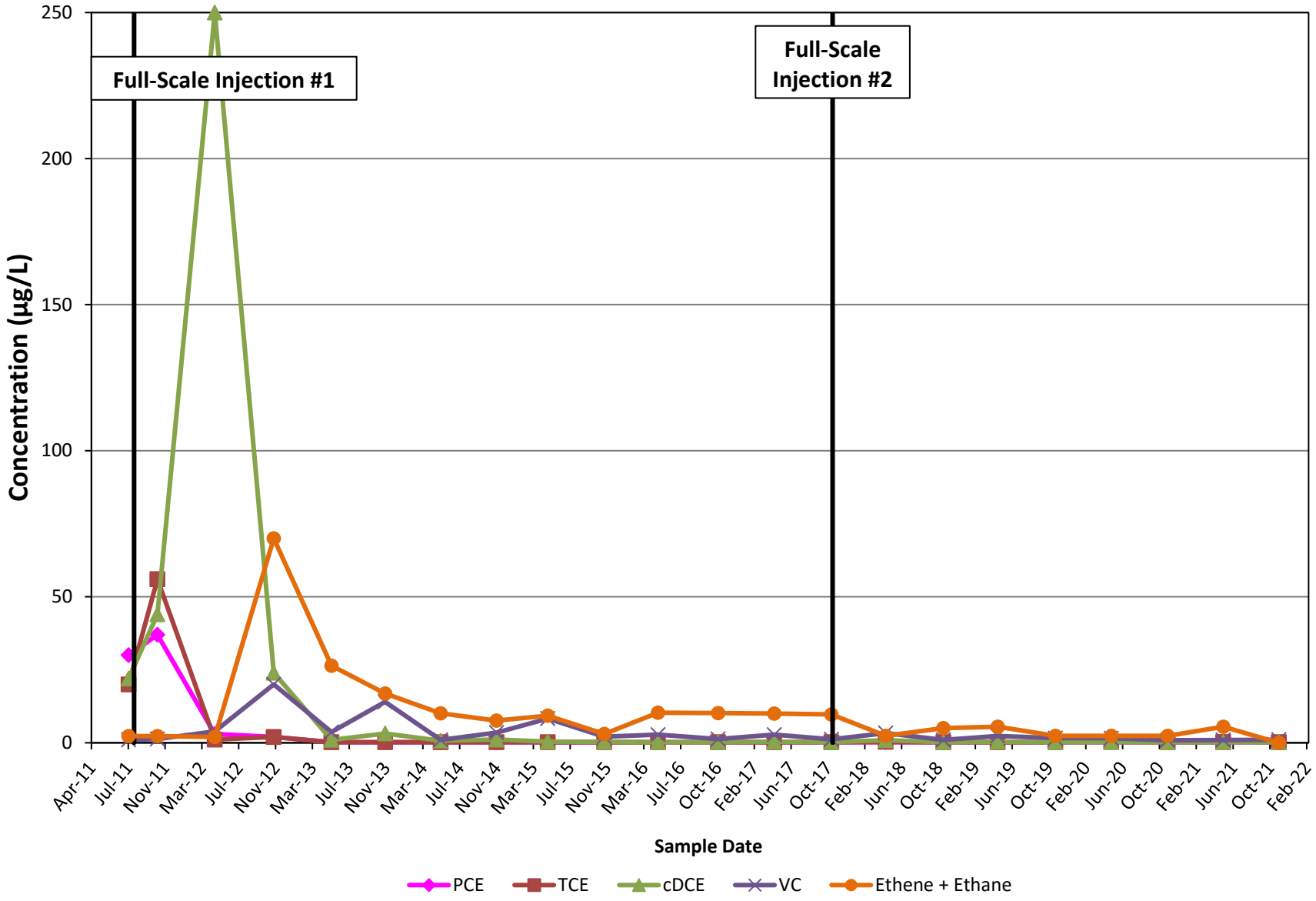
**SWMU-17: VOCs at Source Zone Injection Well BDC-05-07**

Figure
C-2

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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-09** | Figure<br>C-3 |

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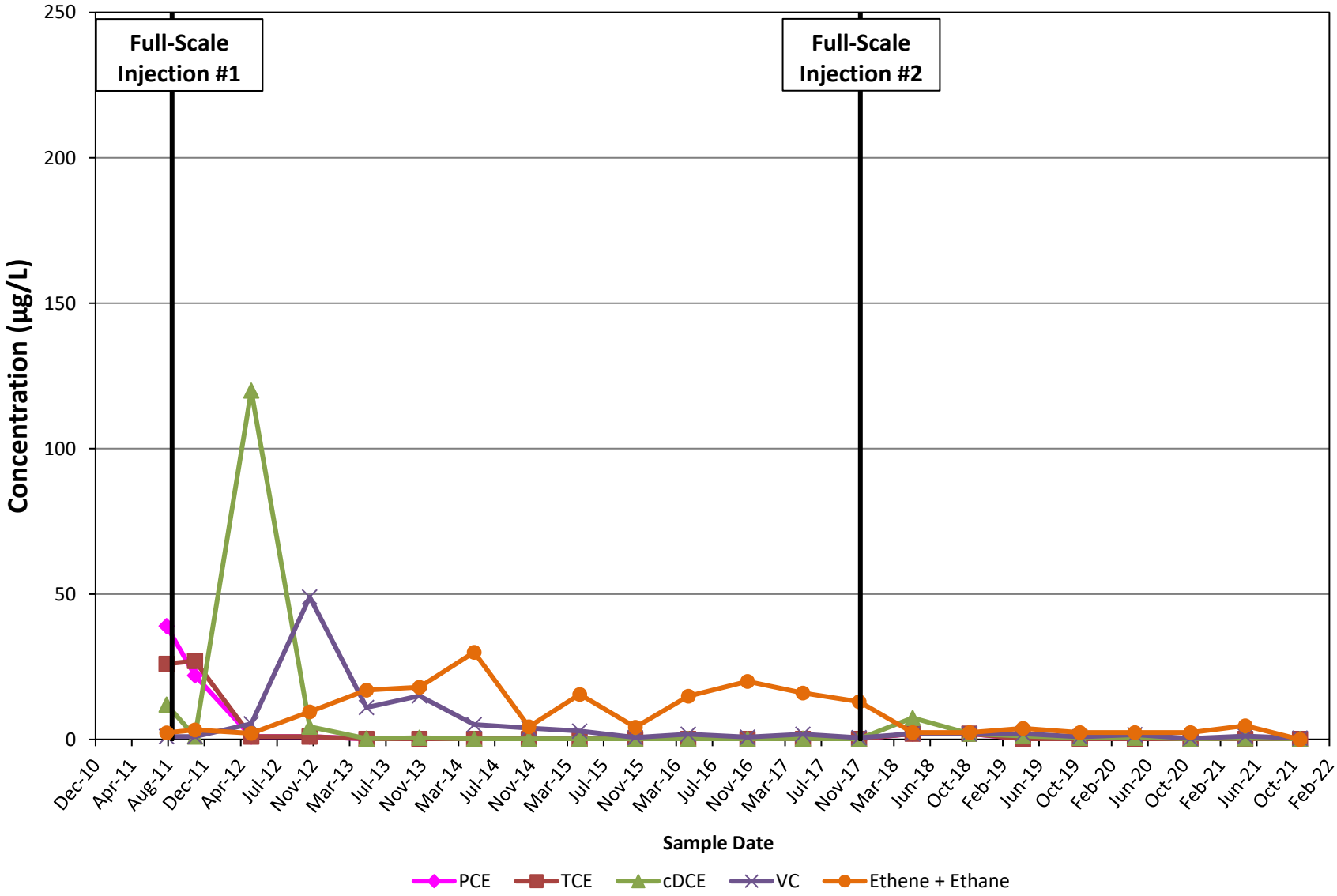


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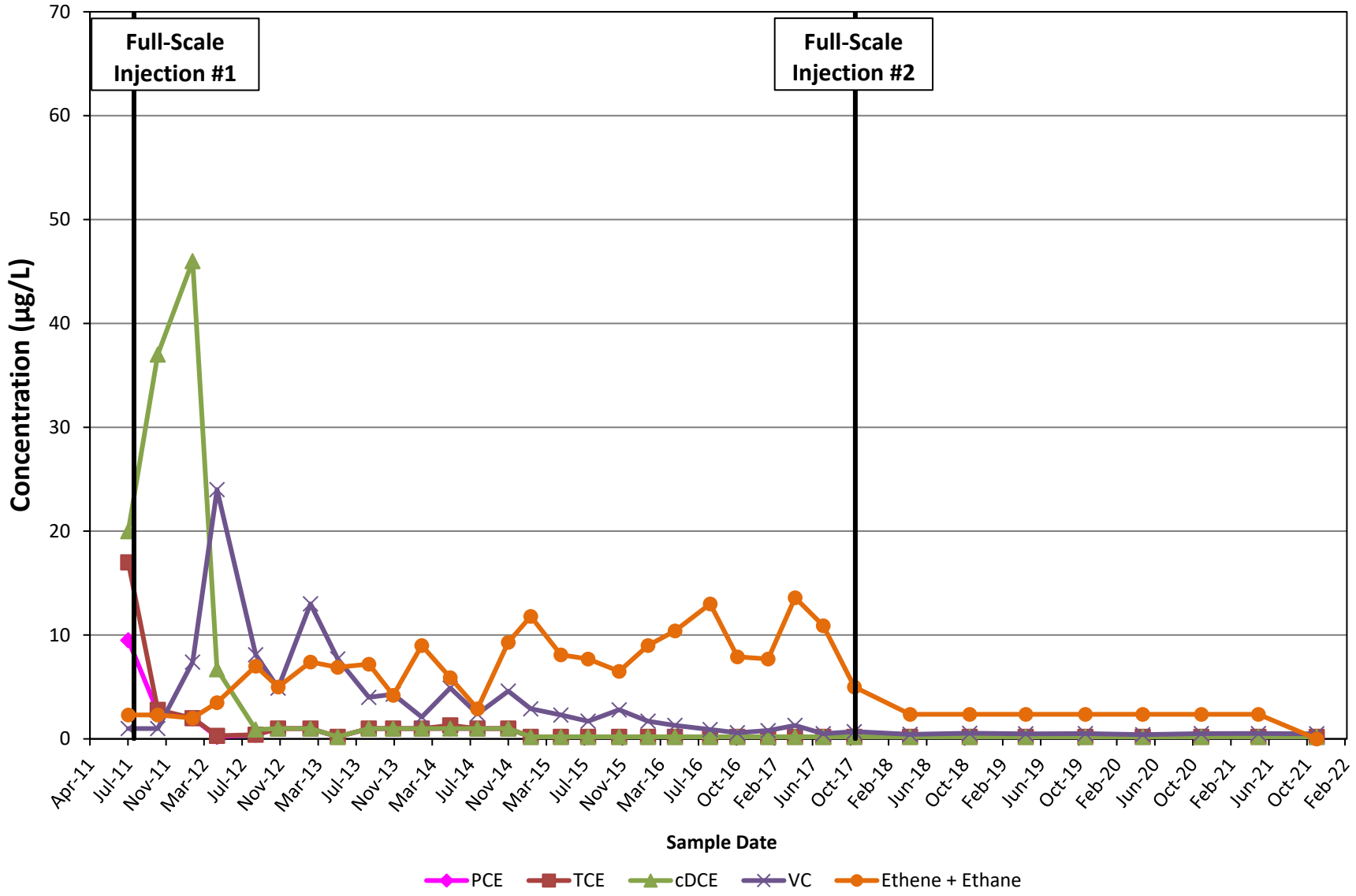
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-10** |

Figure
C-4

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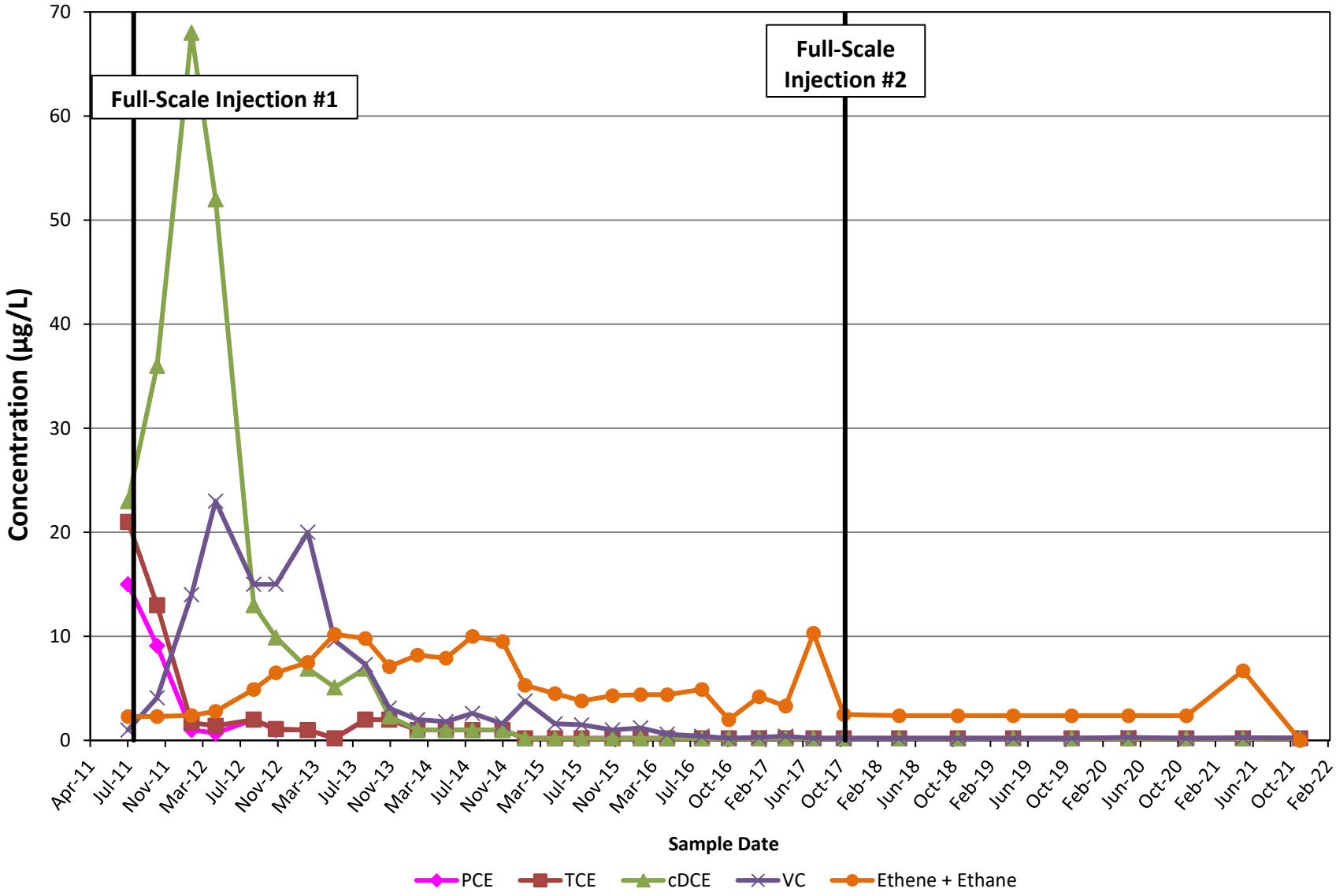
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-16** |

Figure
C-5

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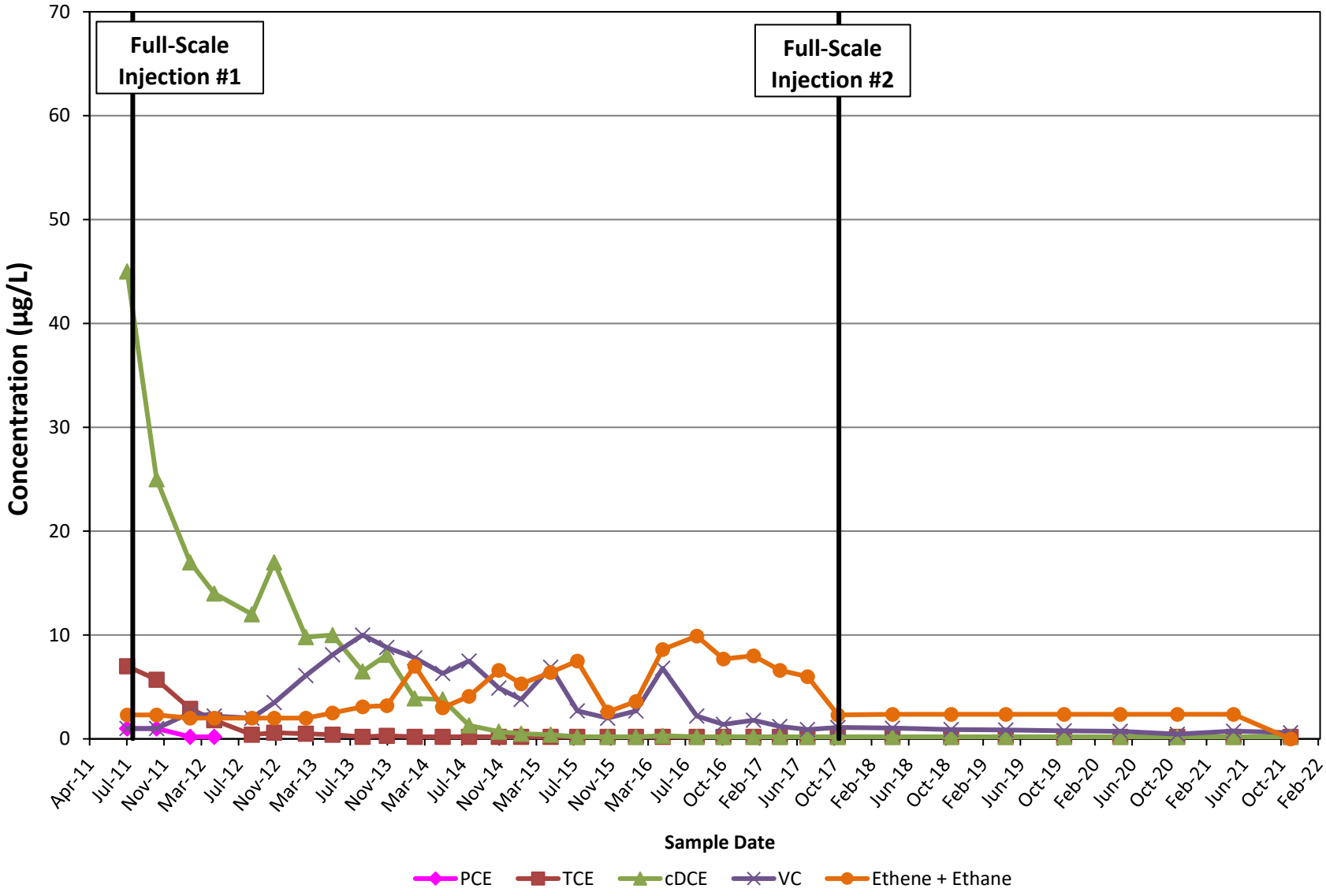
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-19** | Figure<br>C-6 |

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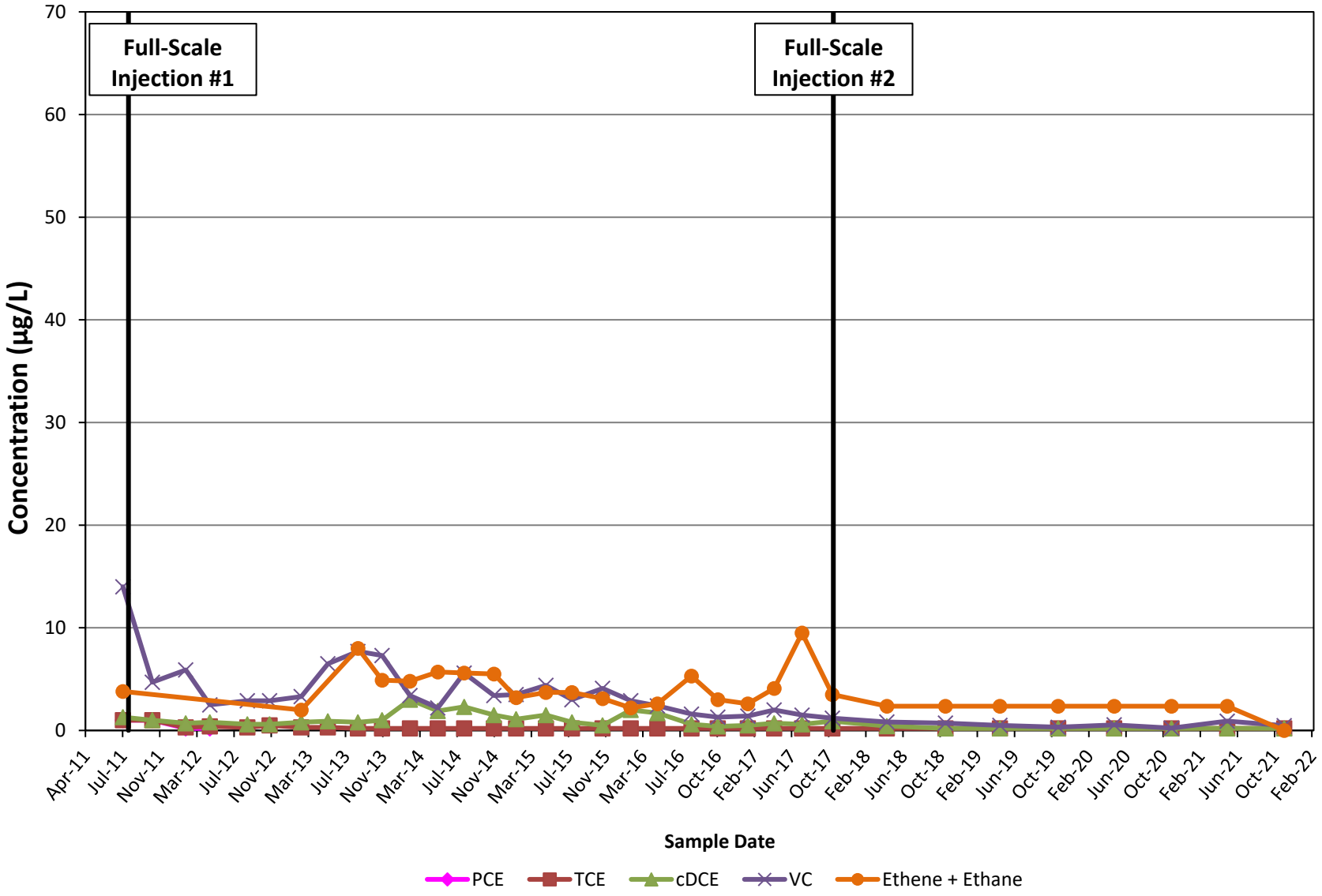
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-20** | Figure<br>C-7 |

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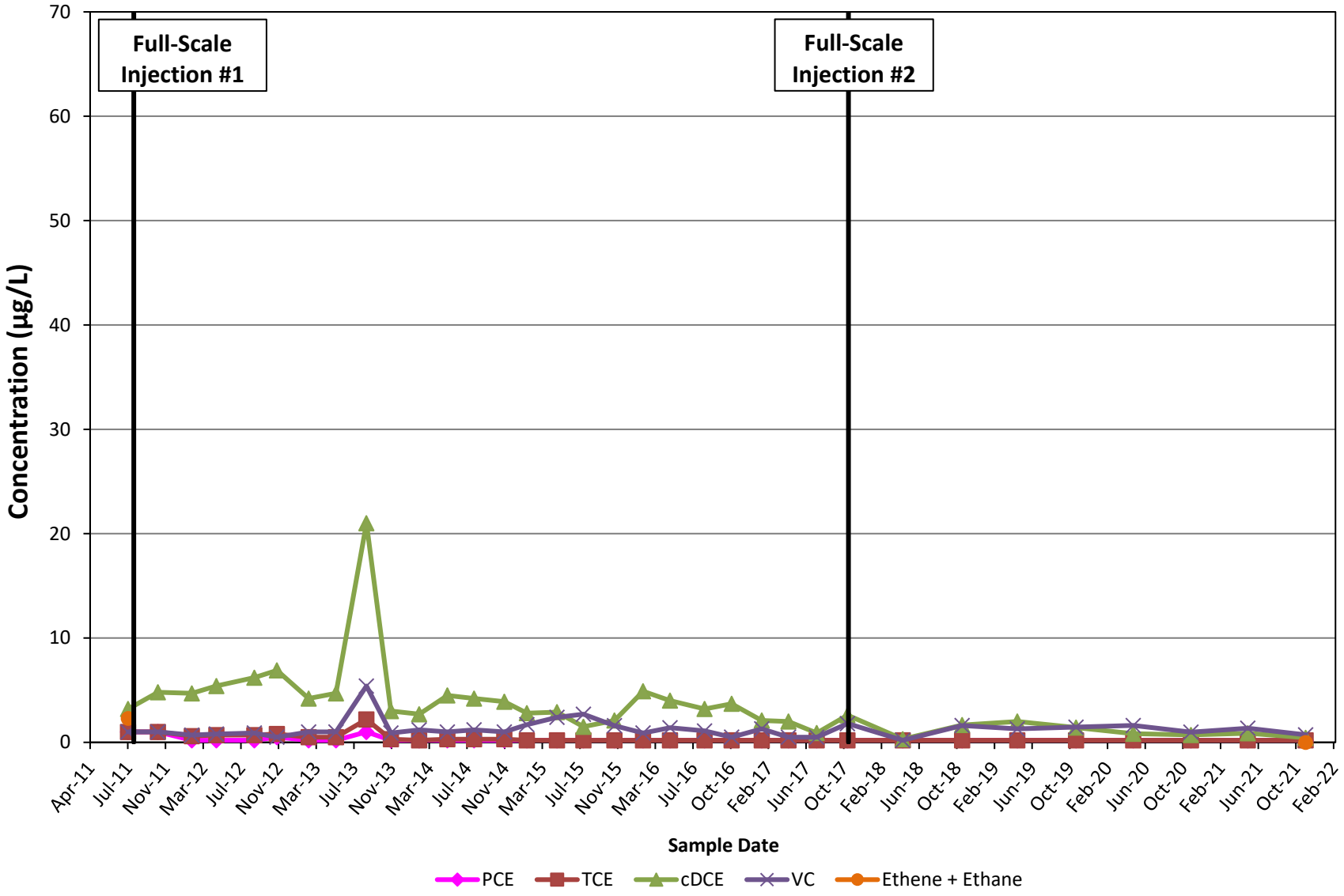
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-21** |

Figure
C-8

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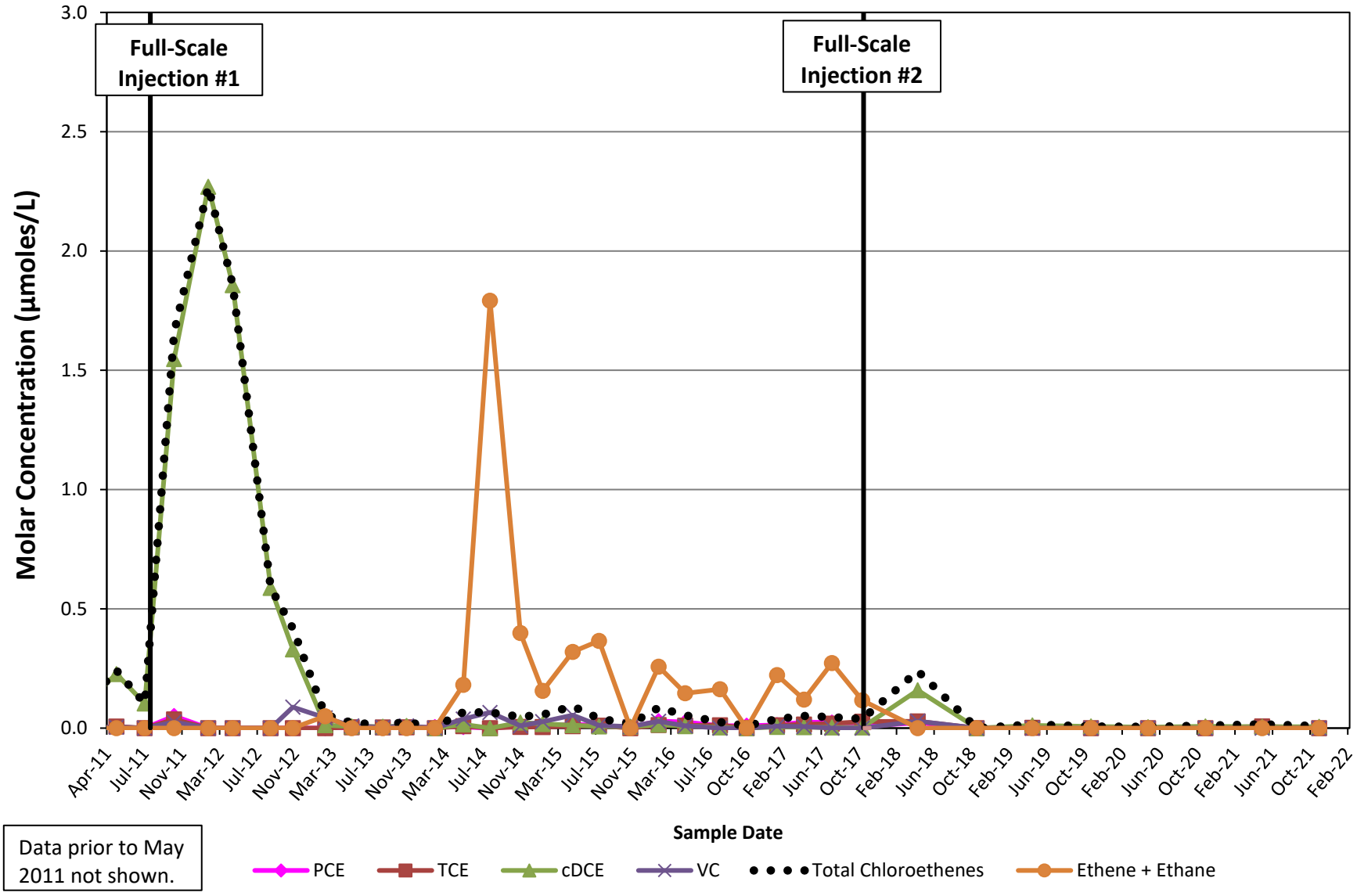
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOCs at Source Zone Injection Well BDC-05-23** |

Figure
C-9

APPENDIX D

# SWMU-17 Time Plots: Molar Concentrations of VOCs and Breakdown Products

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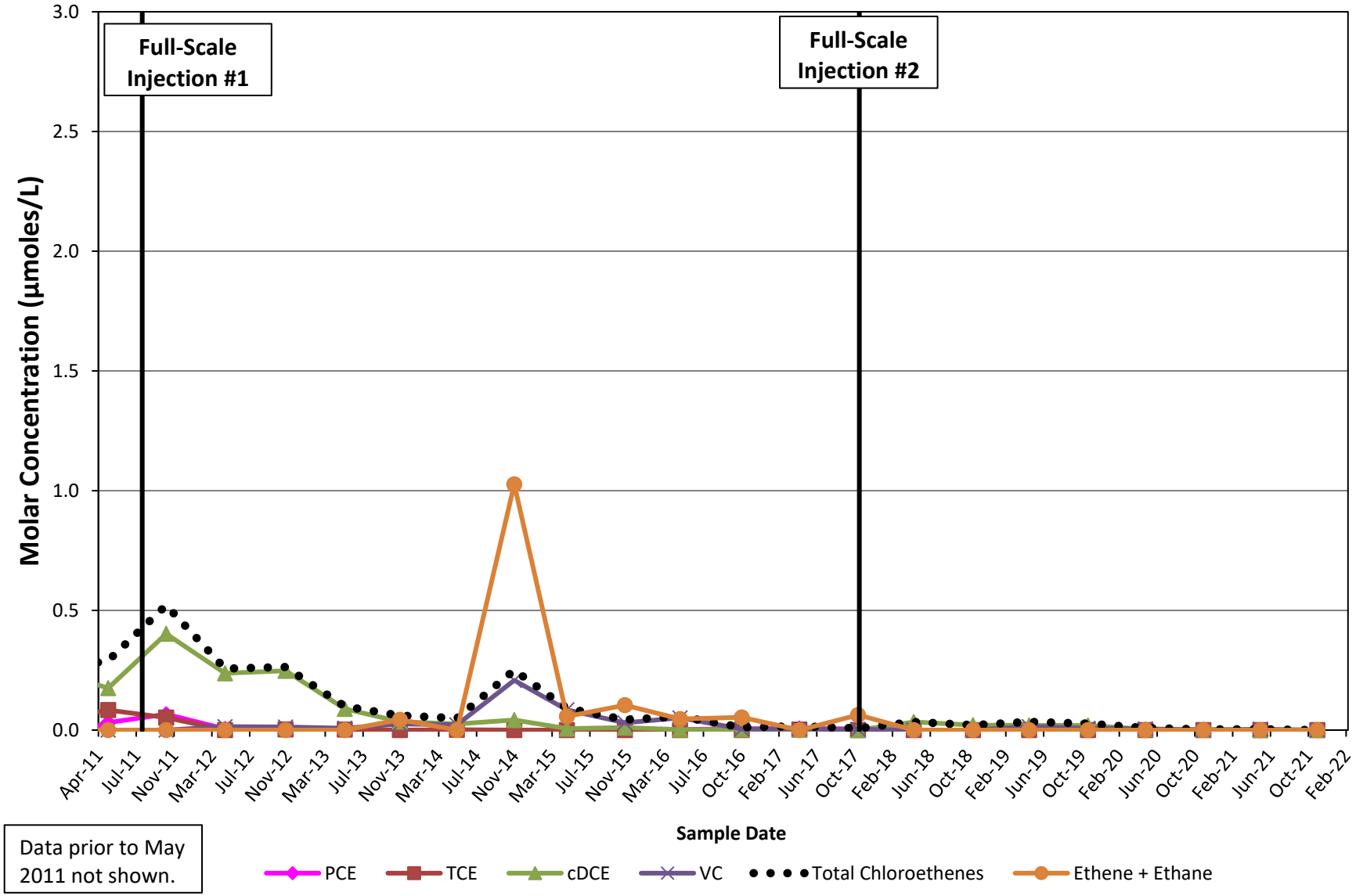
**SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-02**

Figure
D-1

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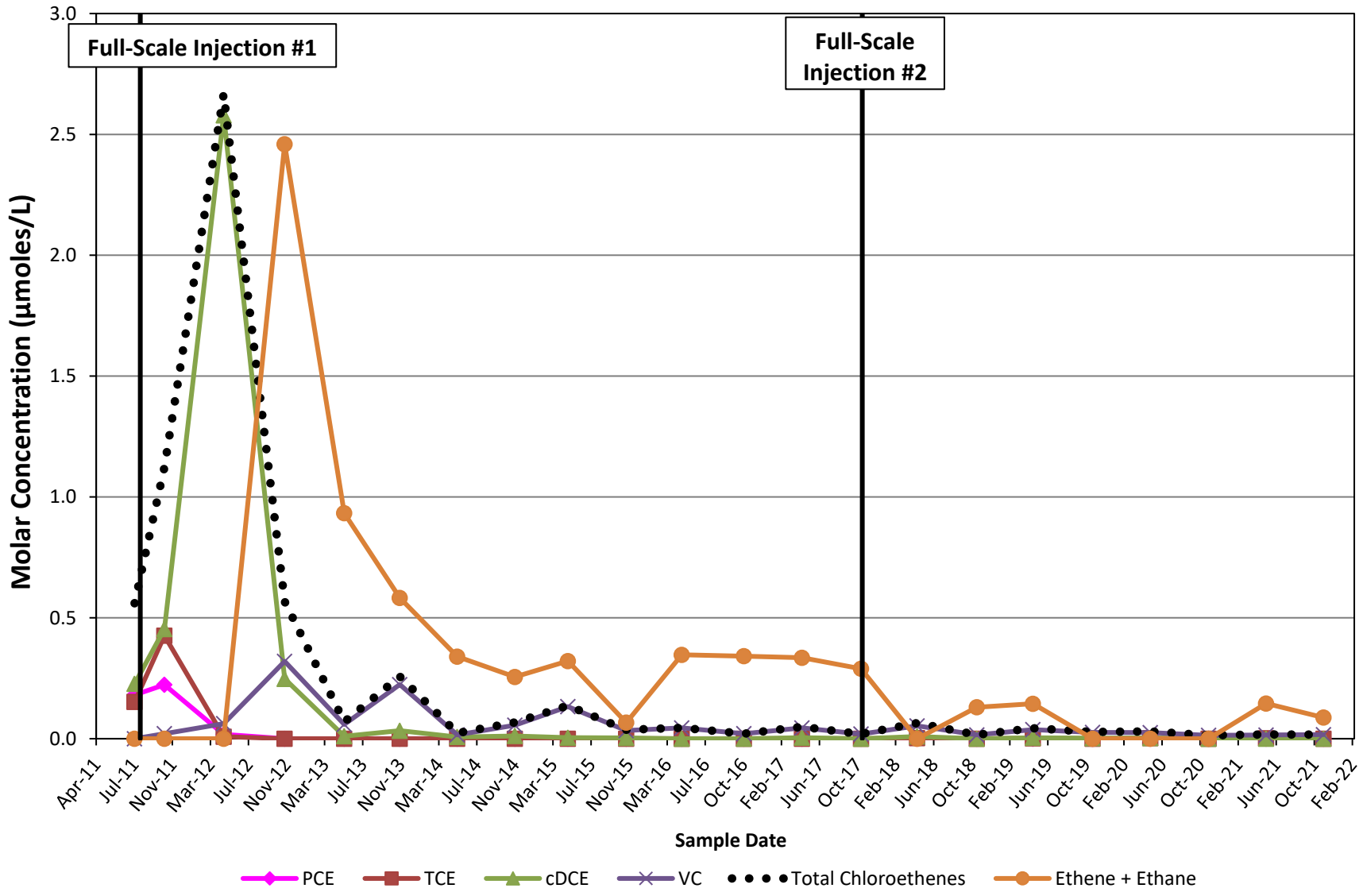
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-07** |

Figure
D-2

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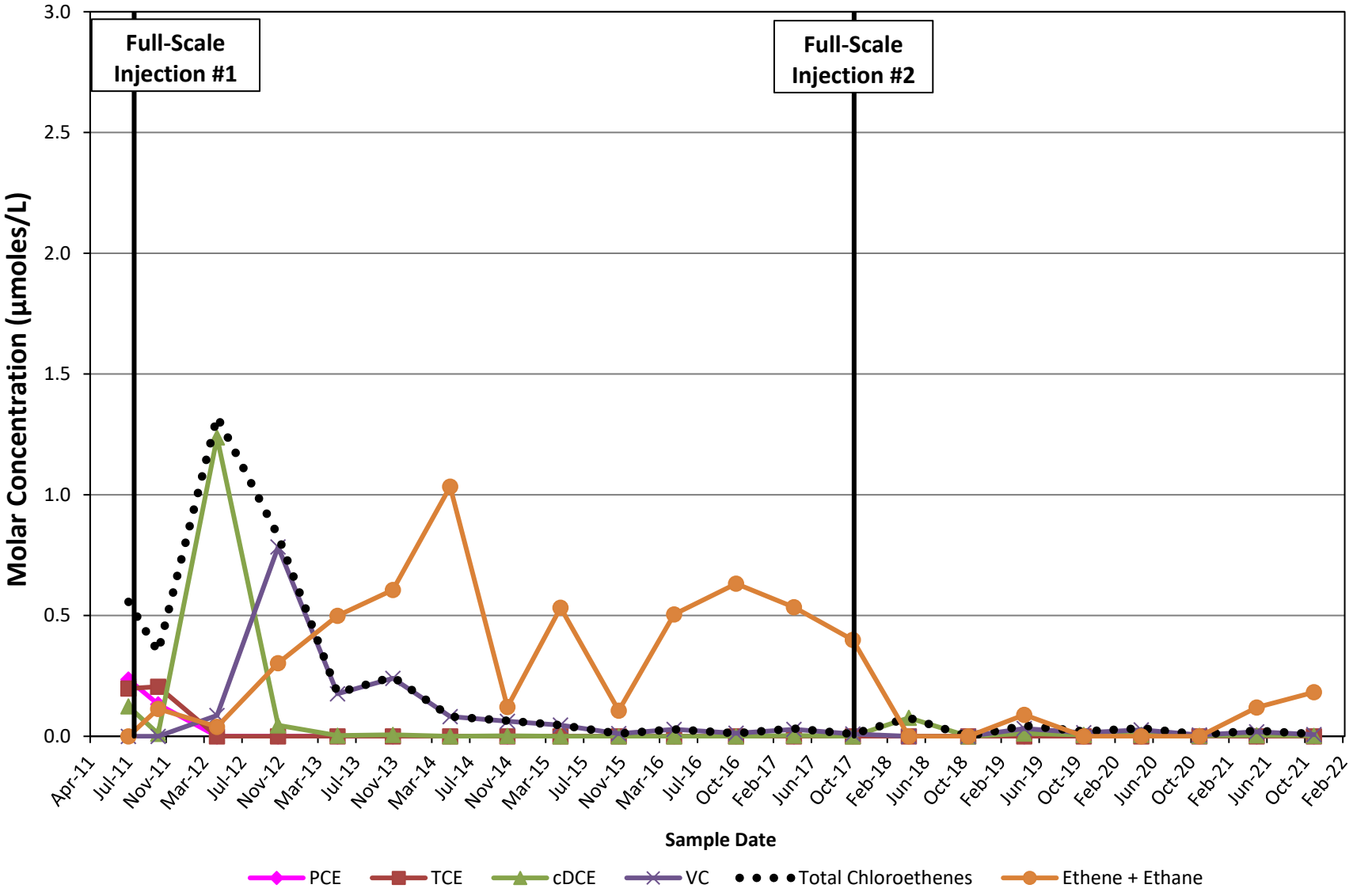
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-09** | Figure<br>D-3 |

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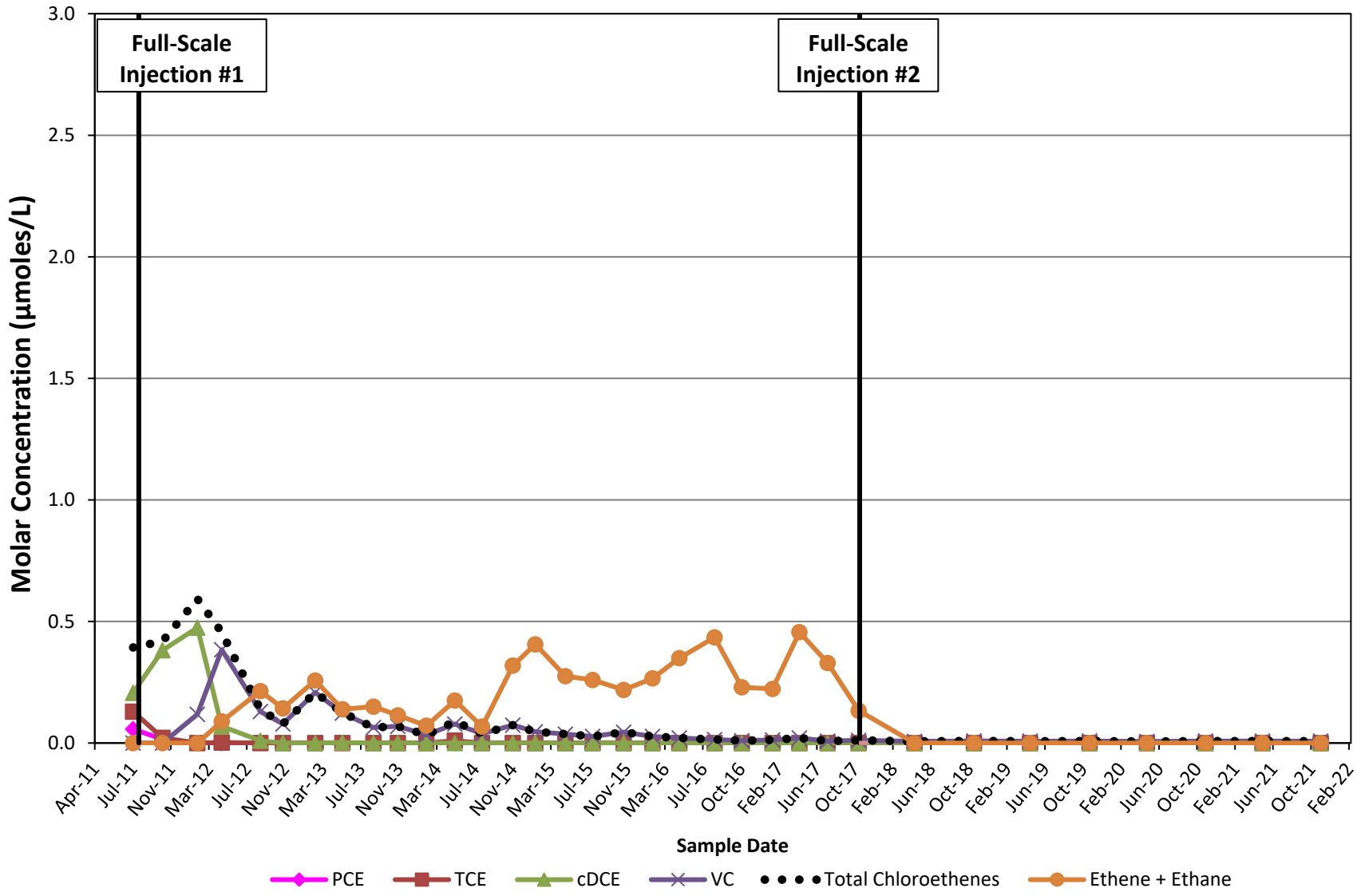
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-10** |

Figure
D-4

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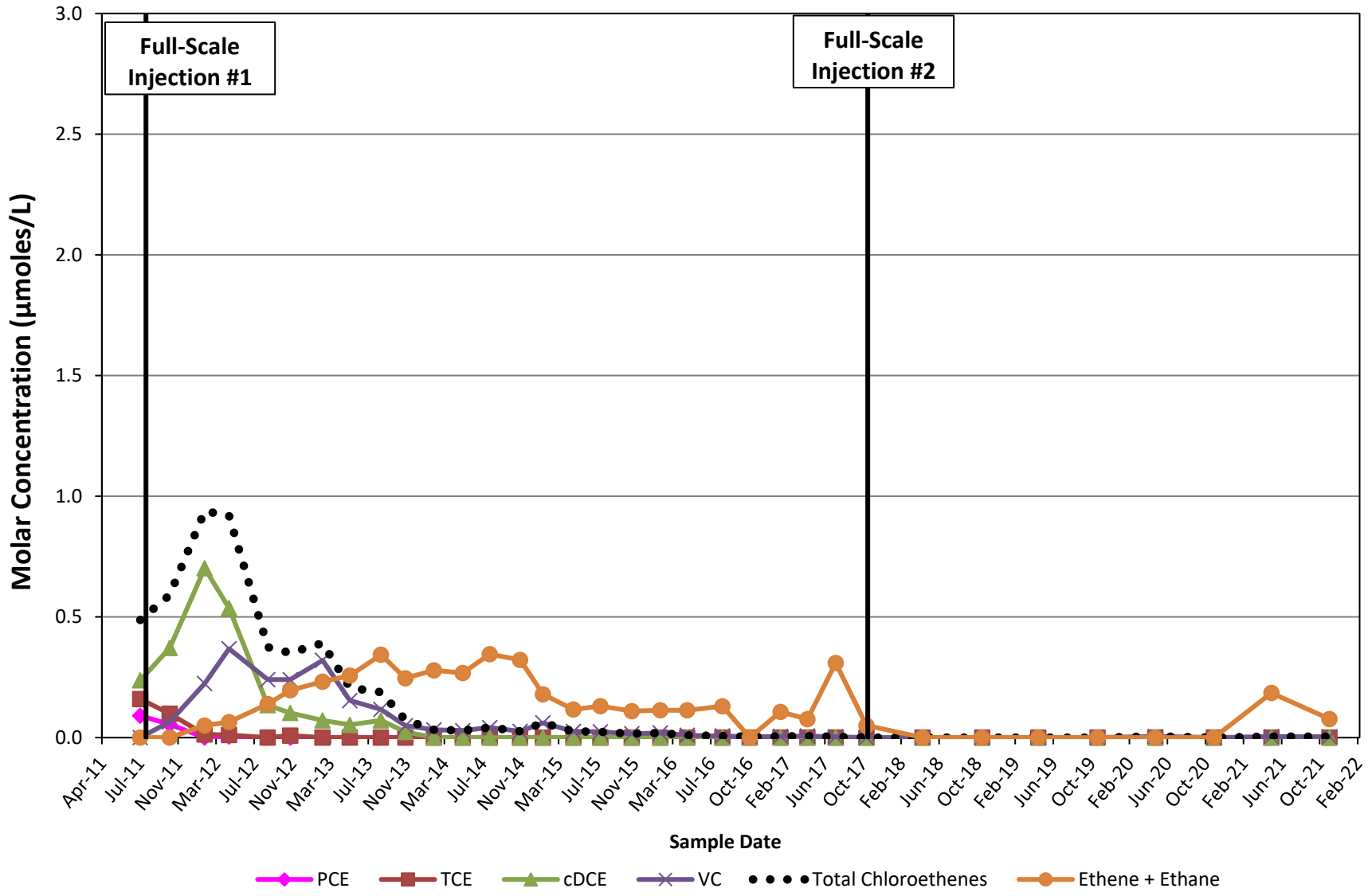
**SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-16**

Figure
D-5

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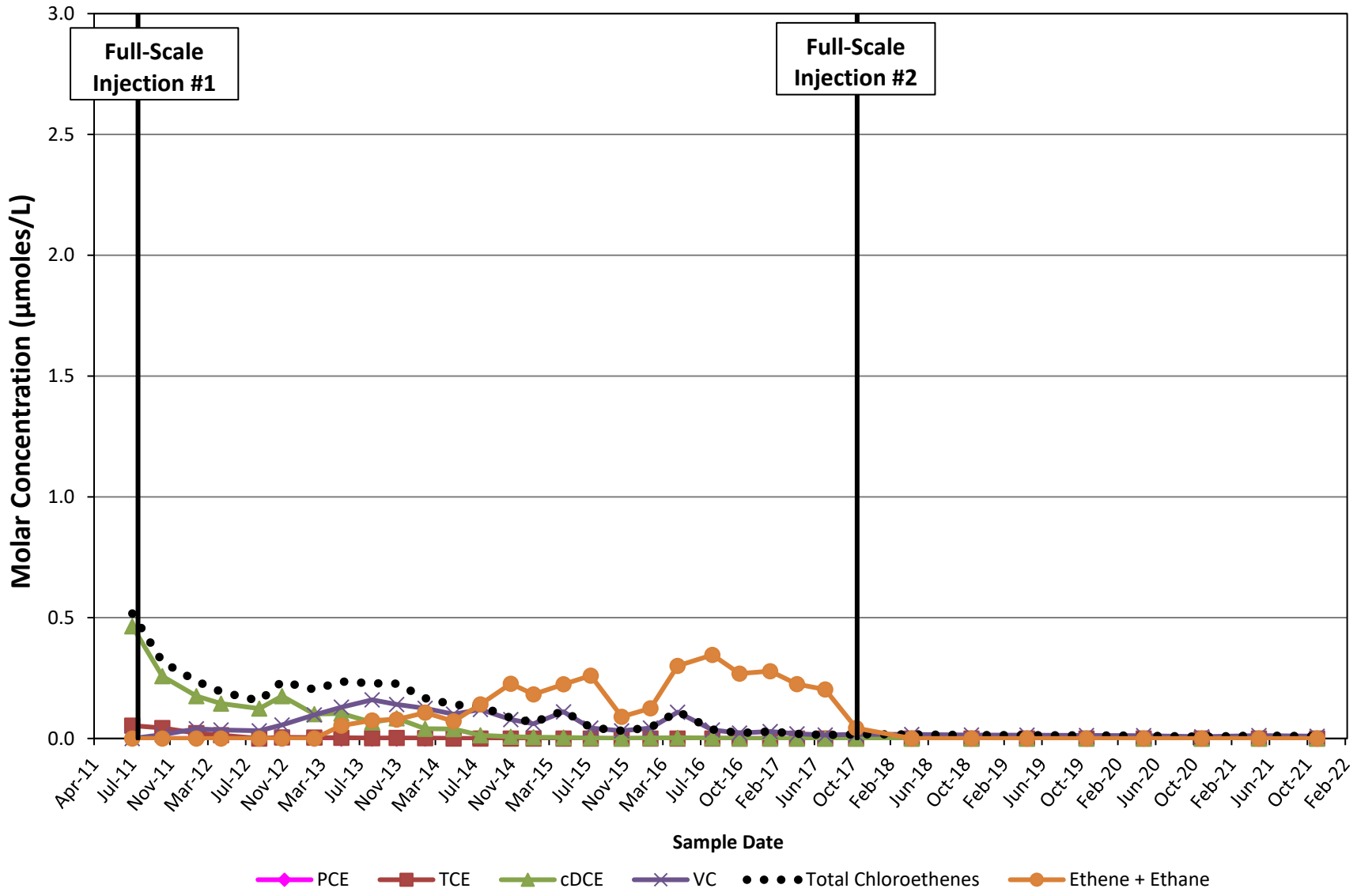
**SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-19**

Figure
D-6

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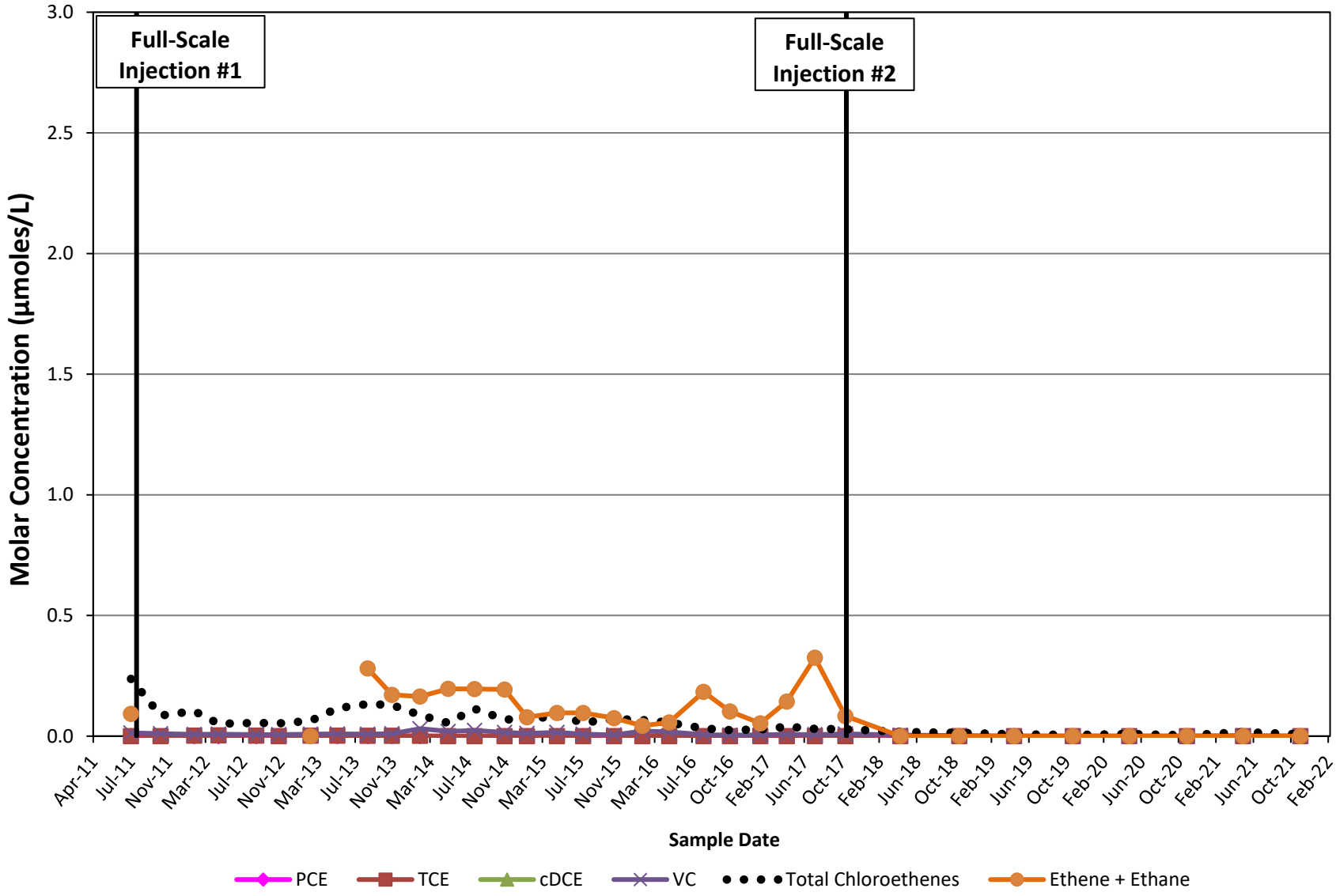
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-20** |

Figure
D-7

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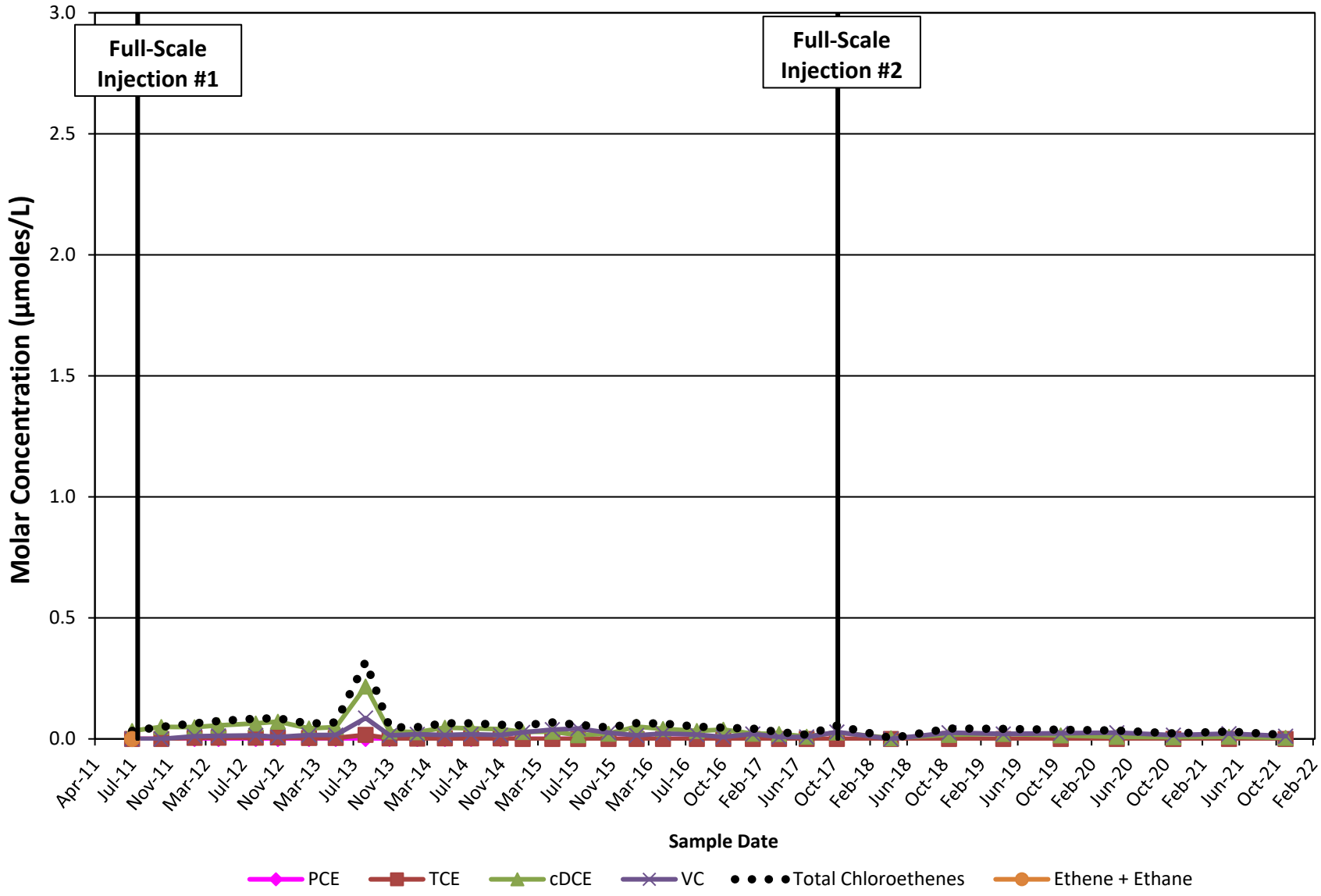
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-21** |

Figure
D-8

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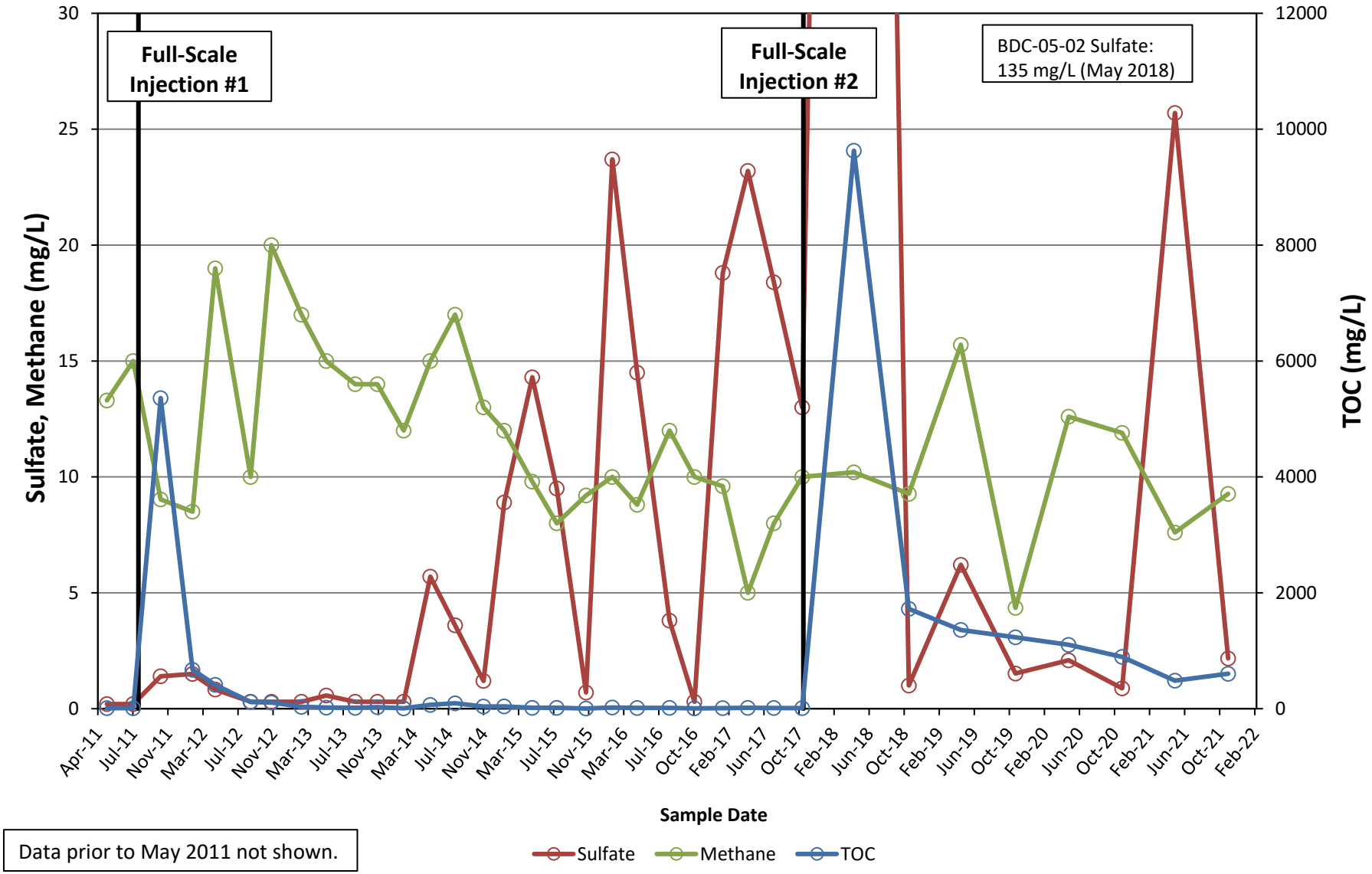
**SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-23**

Figure
D-9

APPENDIX E

# SWMU-17 Time Plots: Redox Parameters and TOC

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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-02** | Figure<br>**E-1** |

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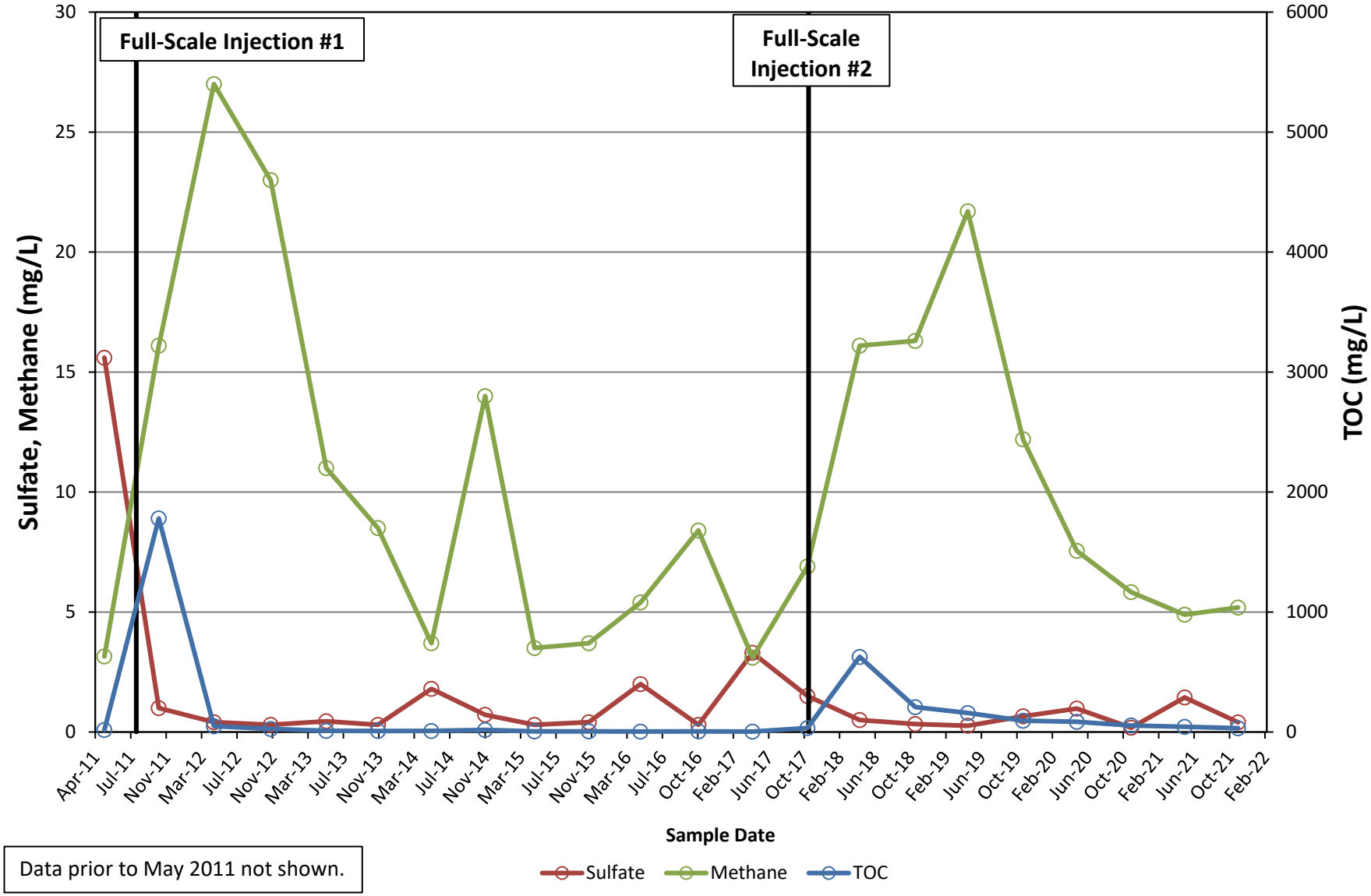


Data prior to May 2011 not shown.

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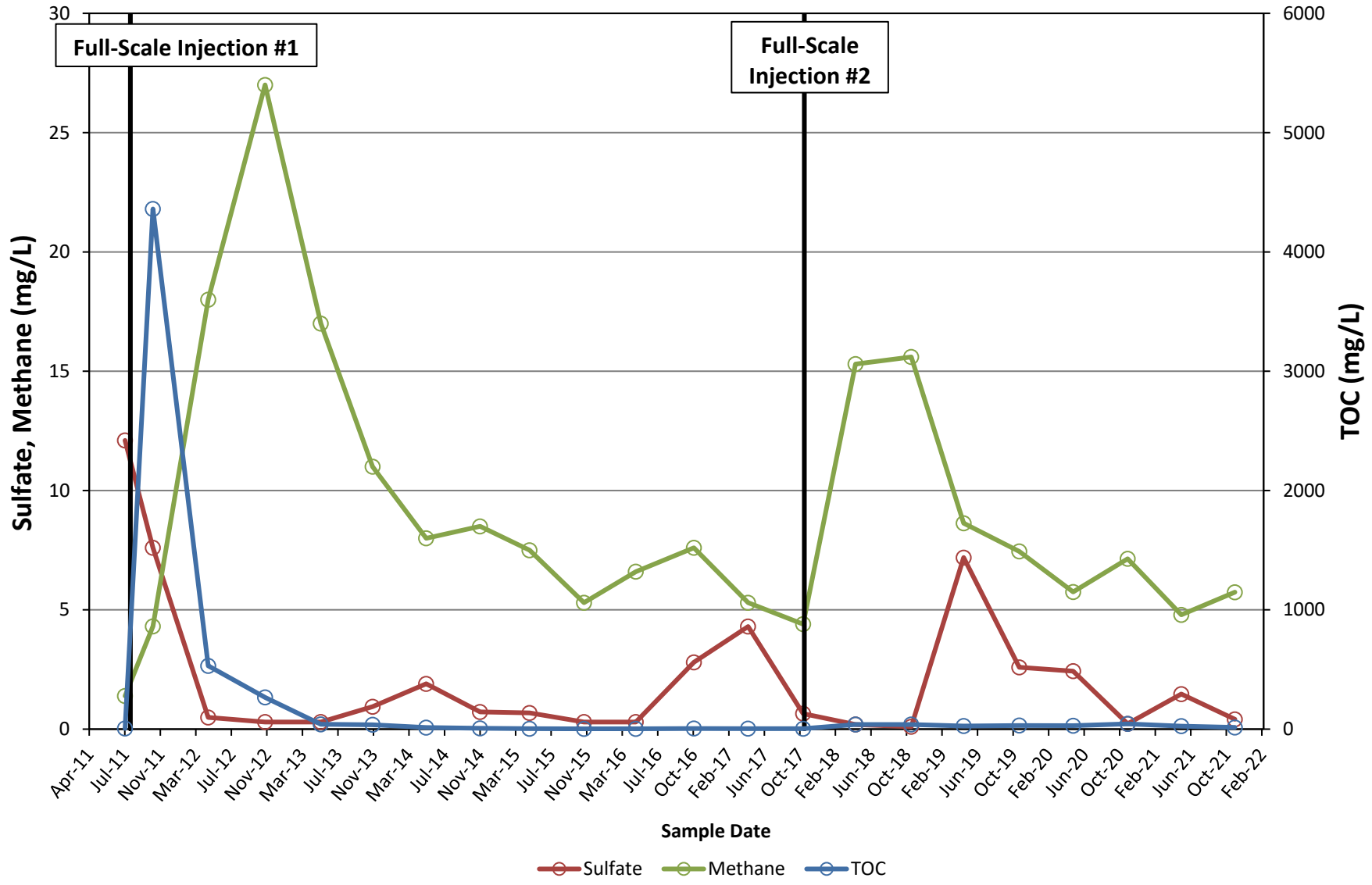
| LANDAU ASSOCIATES | Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-07** |

Figure
E-2

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|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-09** | Figure<br>**E-3** |

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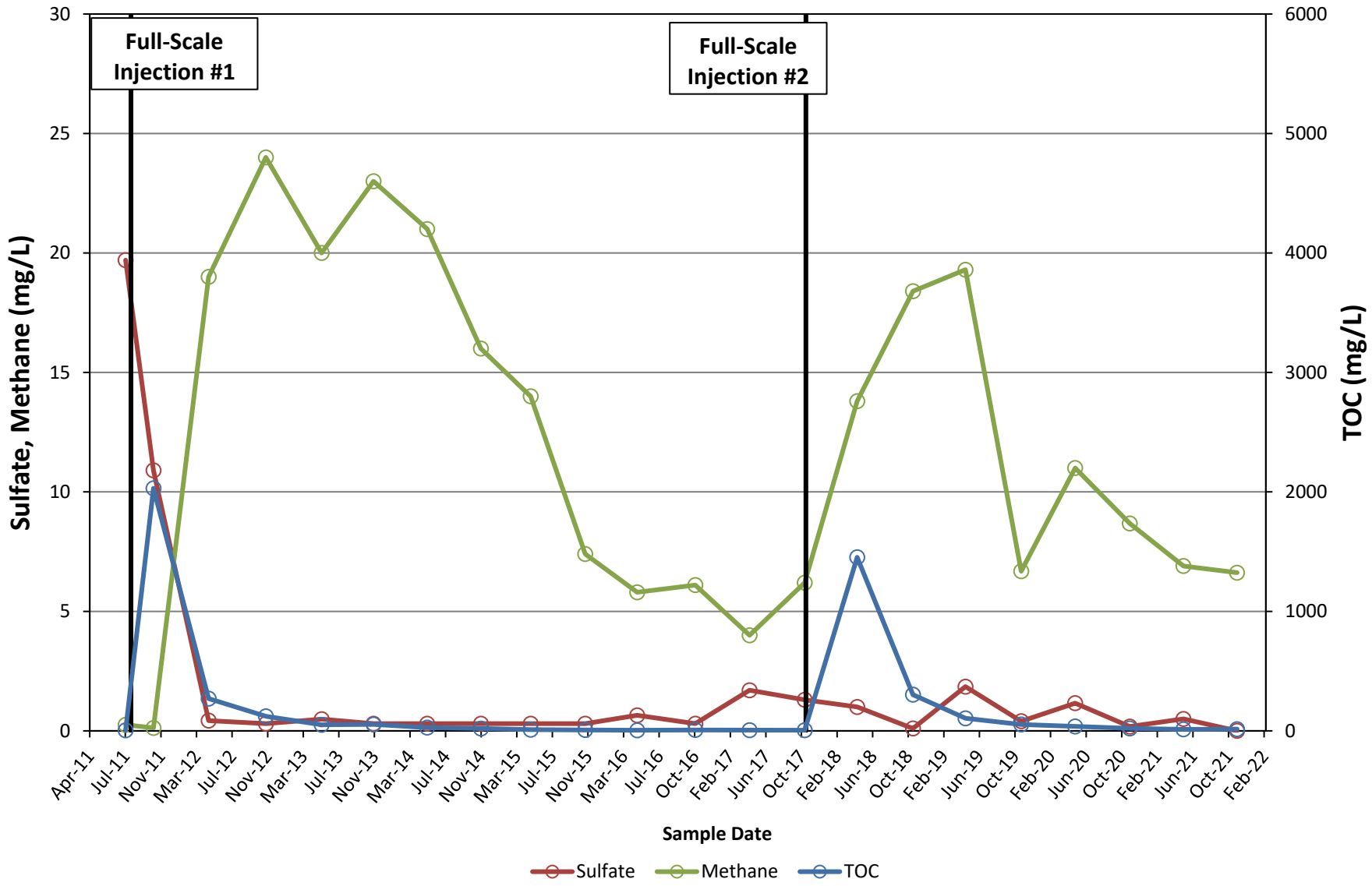


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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-10** | Figure<br>E-4 |

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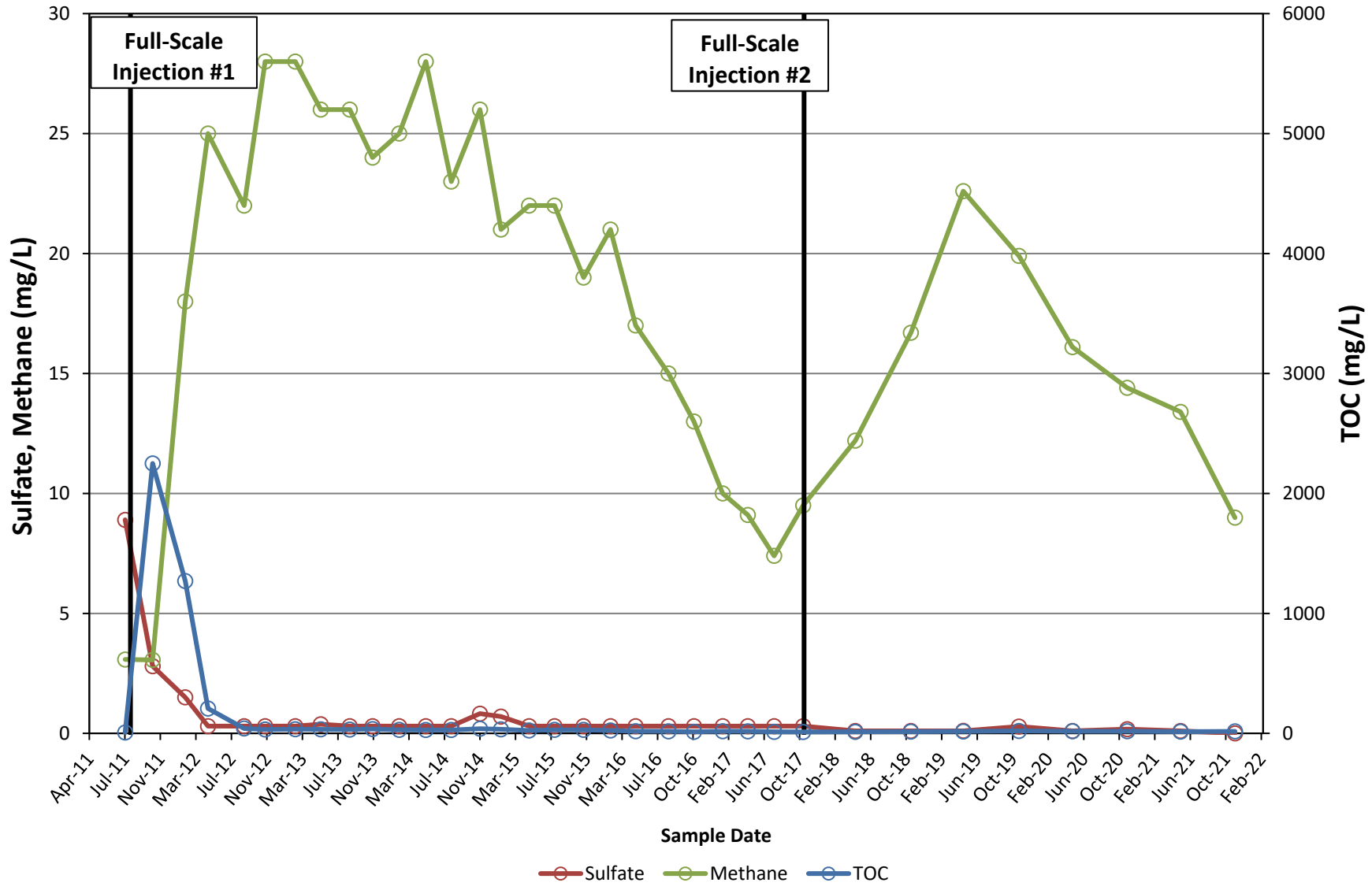


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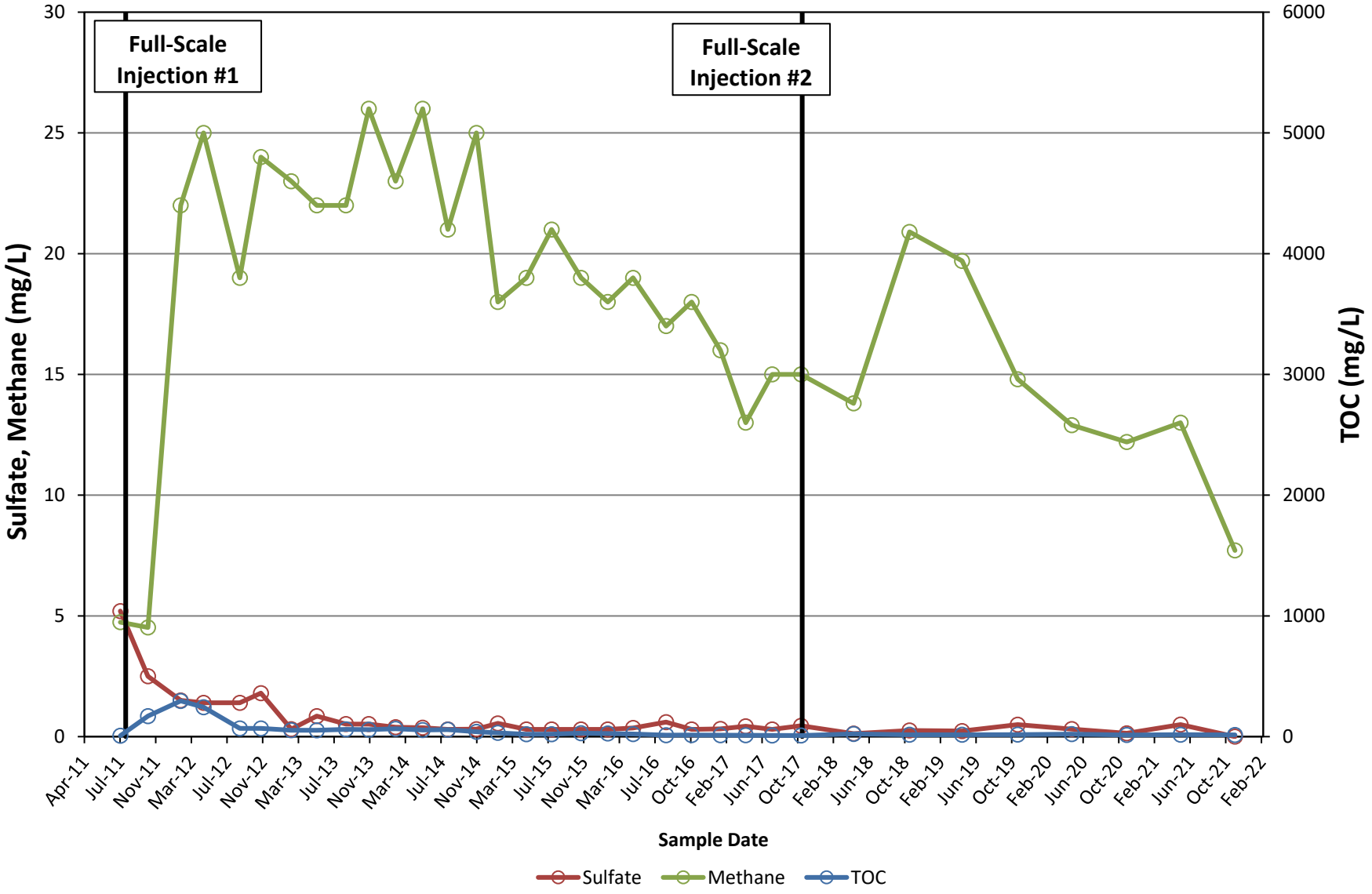
**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-16**

Figure
E-5

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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-19** | Figure<br>E-6 |

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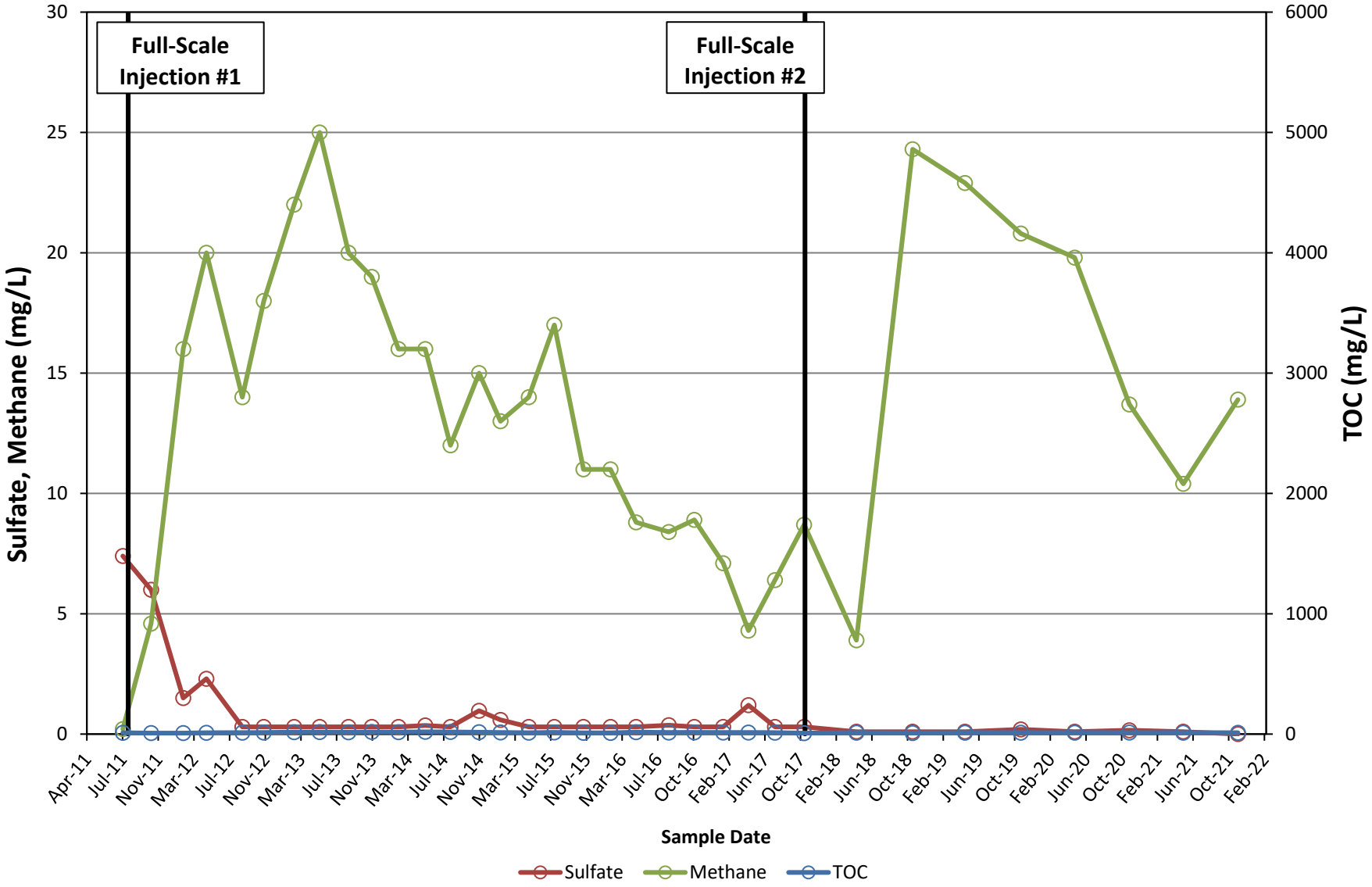


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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-20** | Figure<br>**E-7** |

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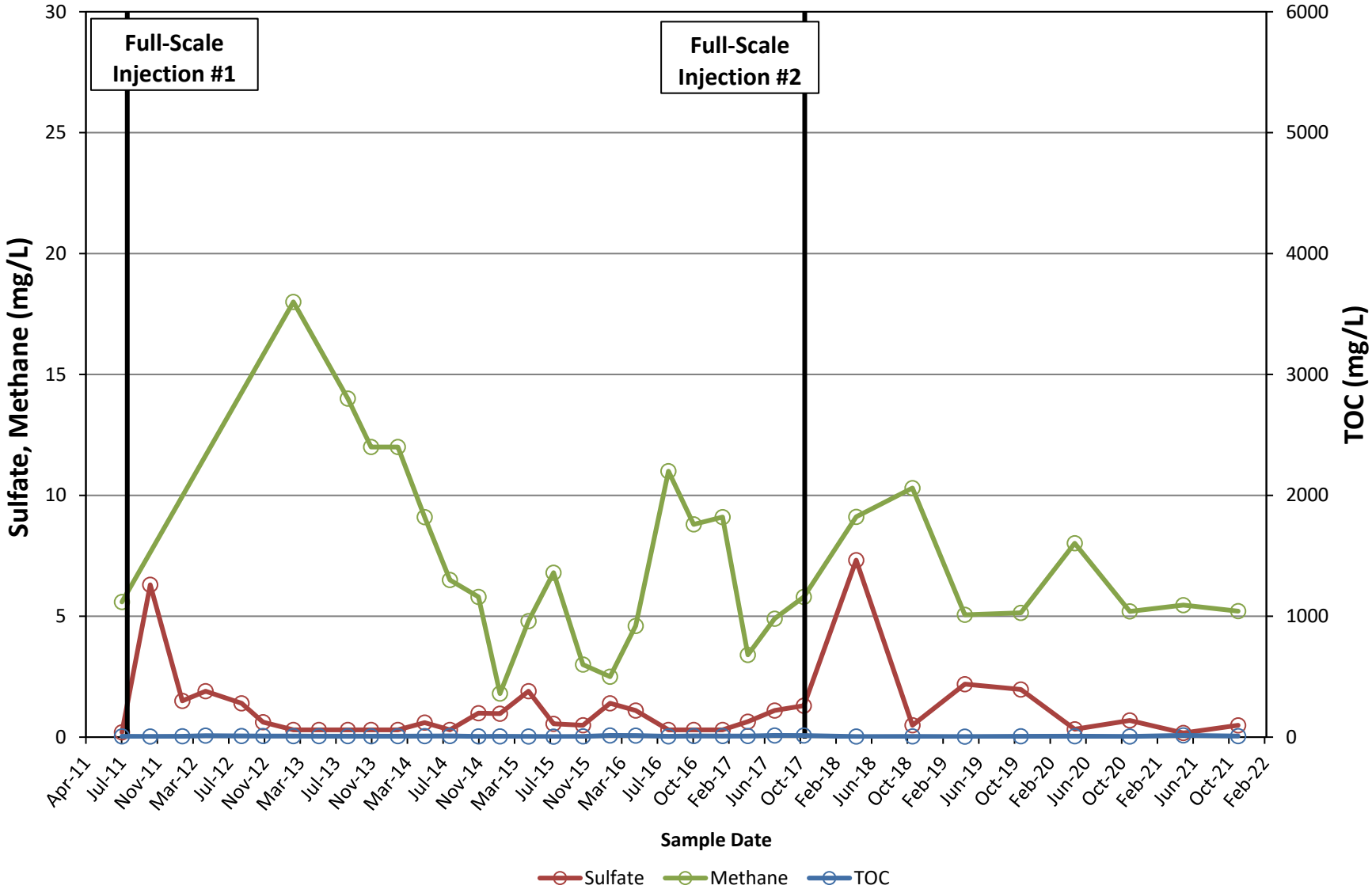


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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-21** | Figure<br>E-8 |

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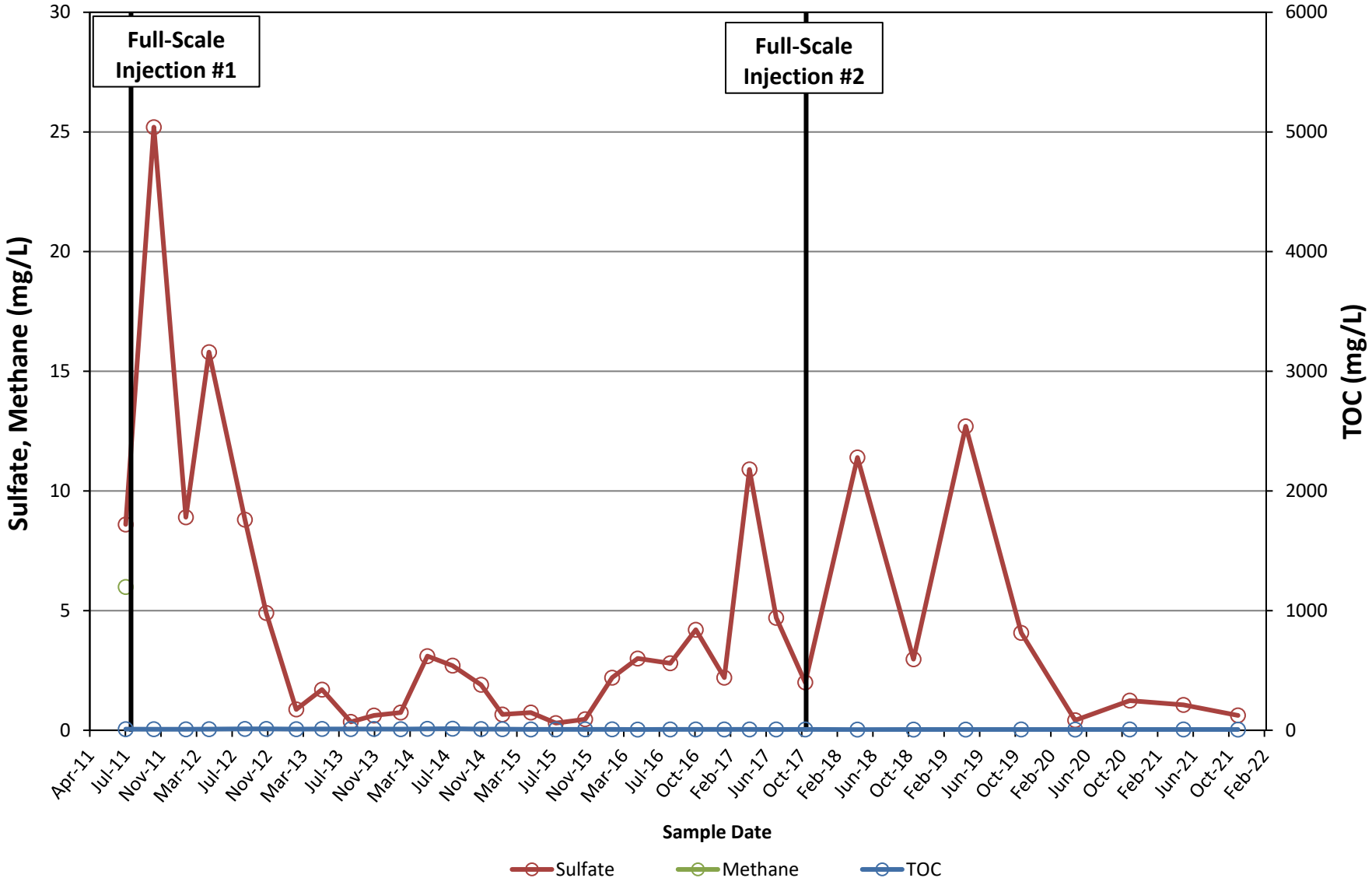


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| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-23** | Figure<br>E-9 |

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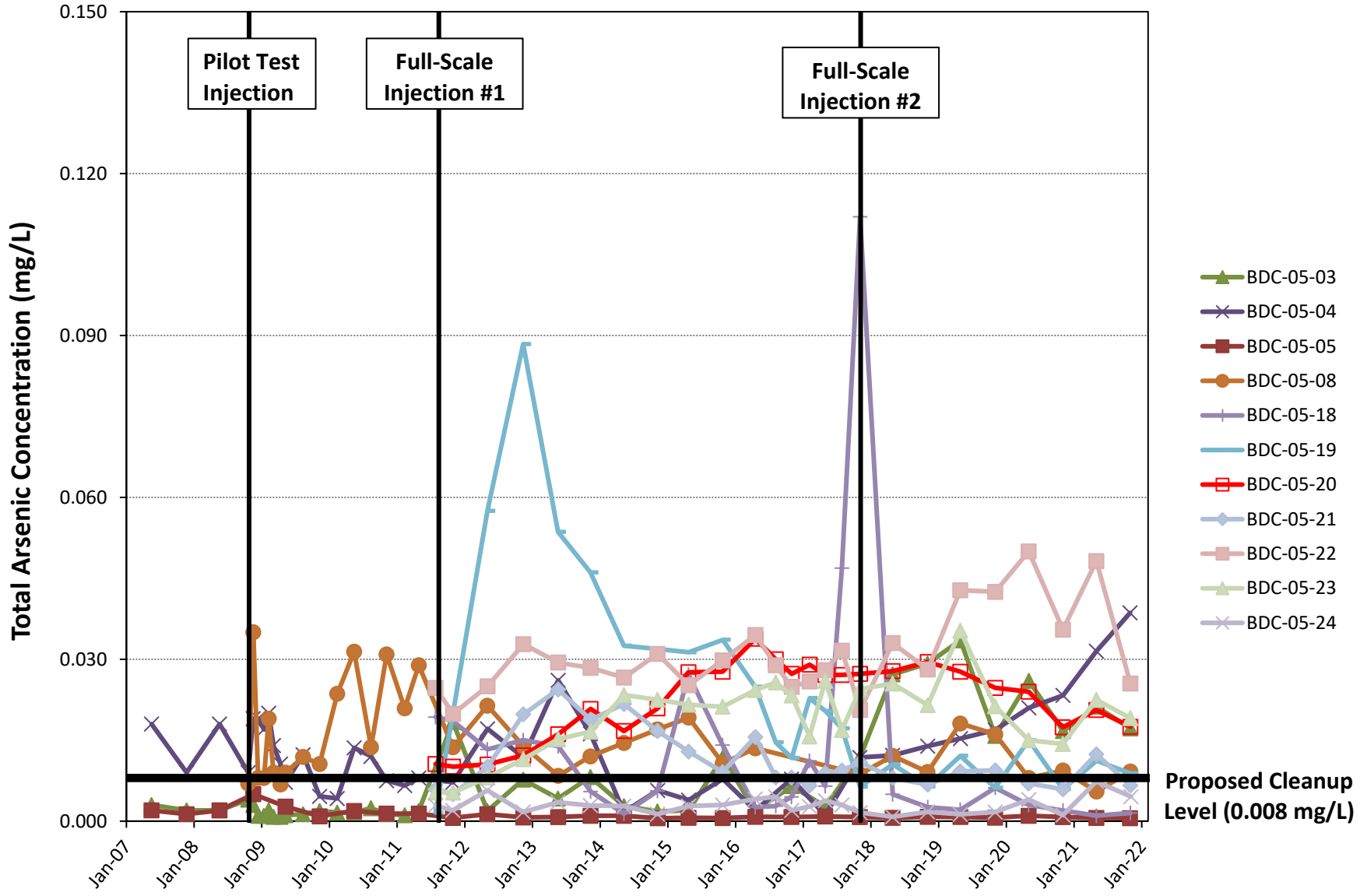
APPENDIX F

# SWMU-17 Time Plots: Copper and Arsenic

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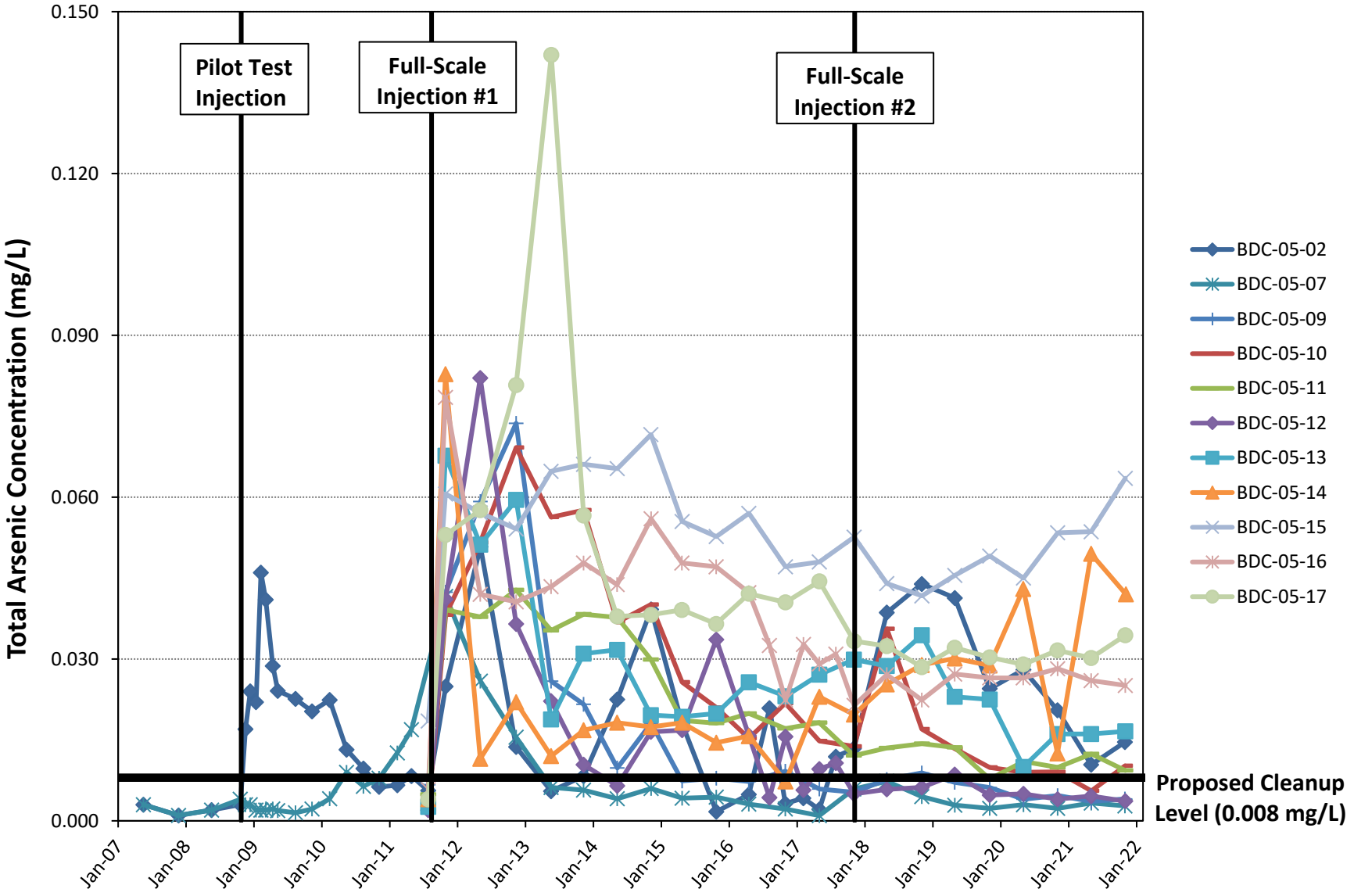
**SWMU-17: Total Arsenic at Monitoring Wells**

Figure
F-1

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables

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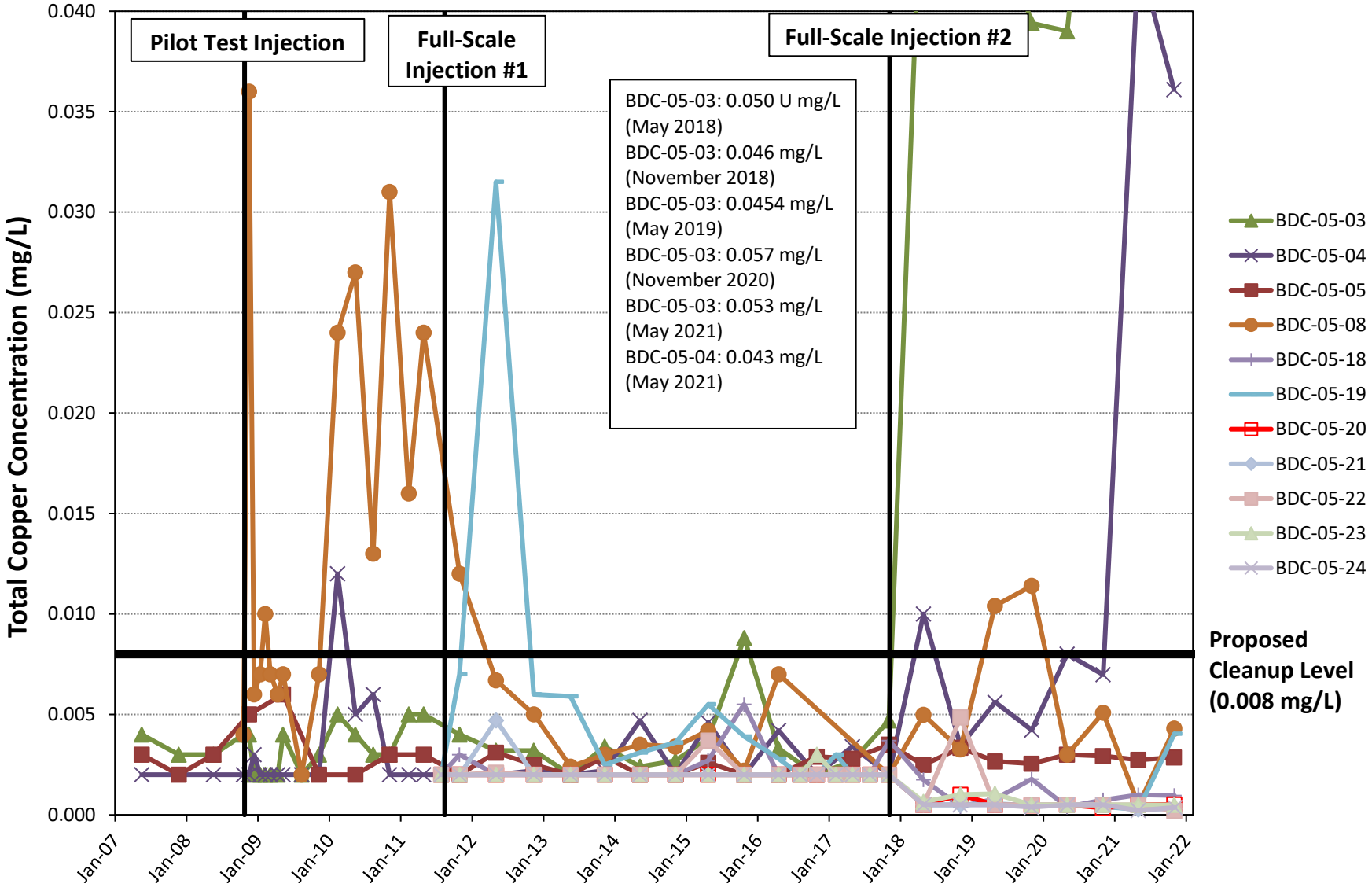
**SWMU-17: Total Arsenic at Injection Wells**

Figure
F-2

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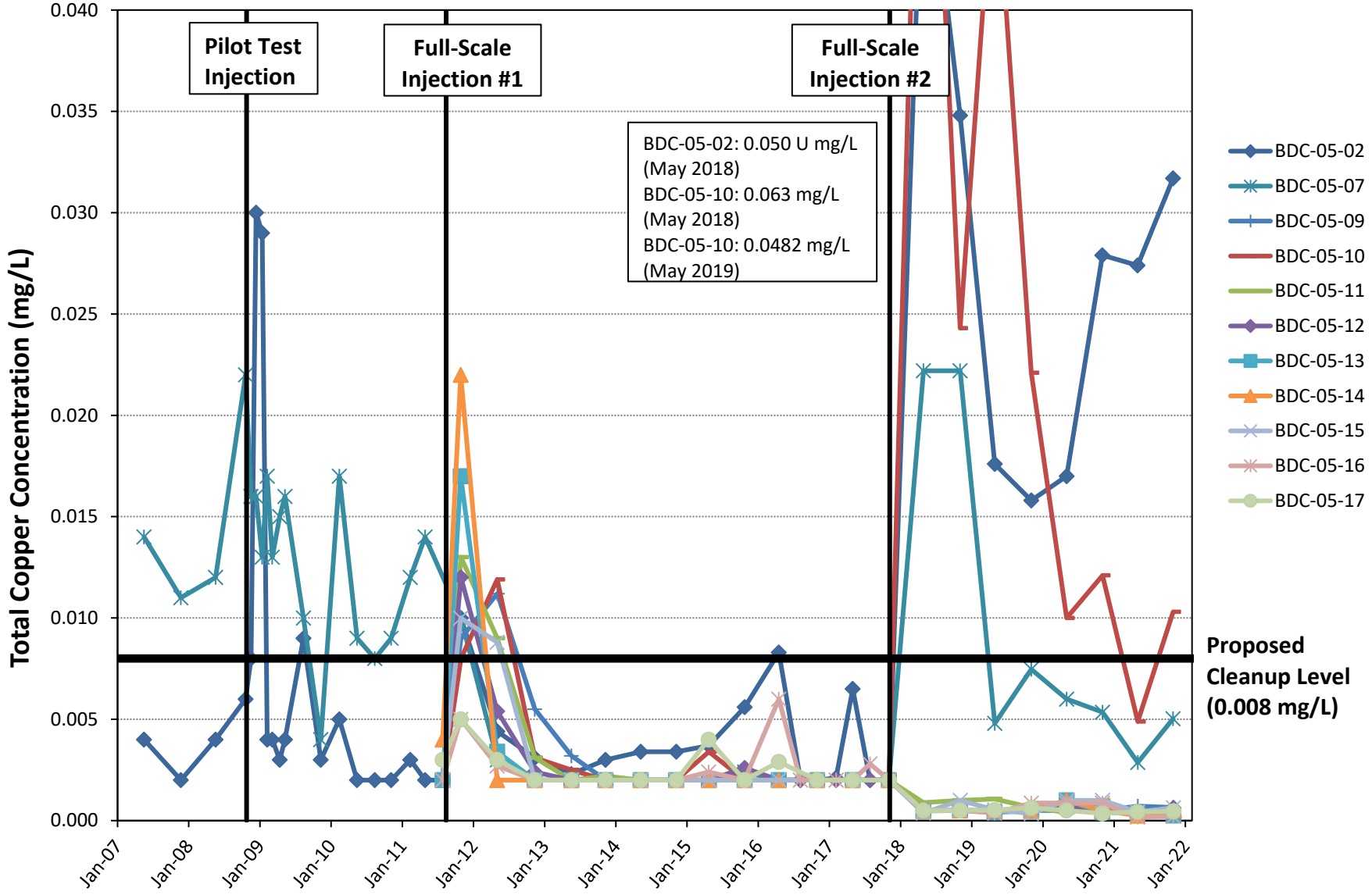
| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-17: Total Copper at Monitoring Wells** | Figure<br>F-3 |

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables

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Tukwila, Washington

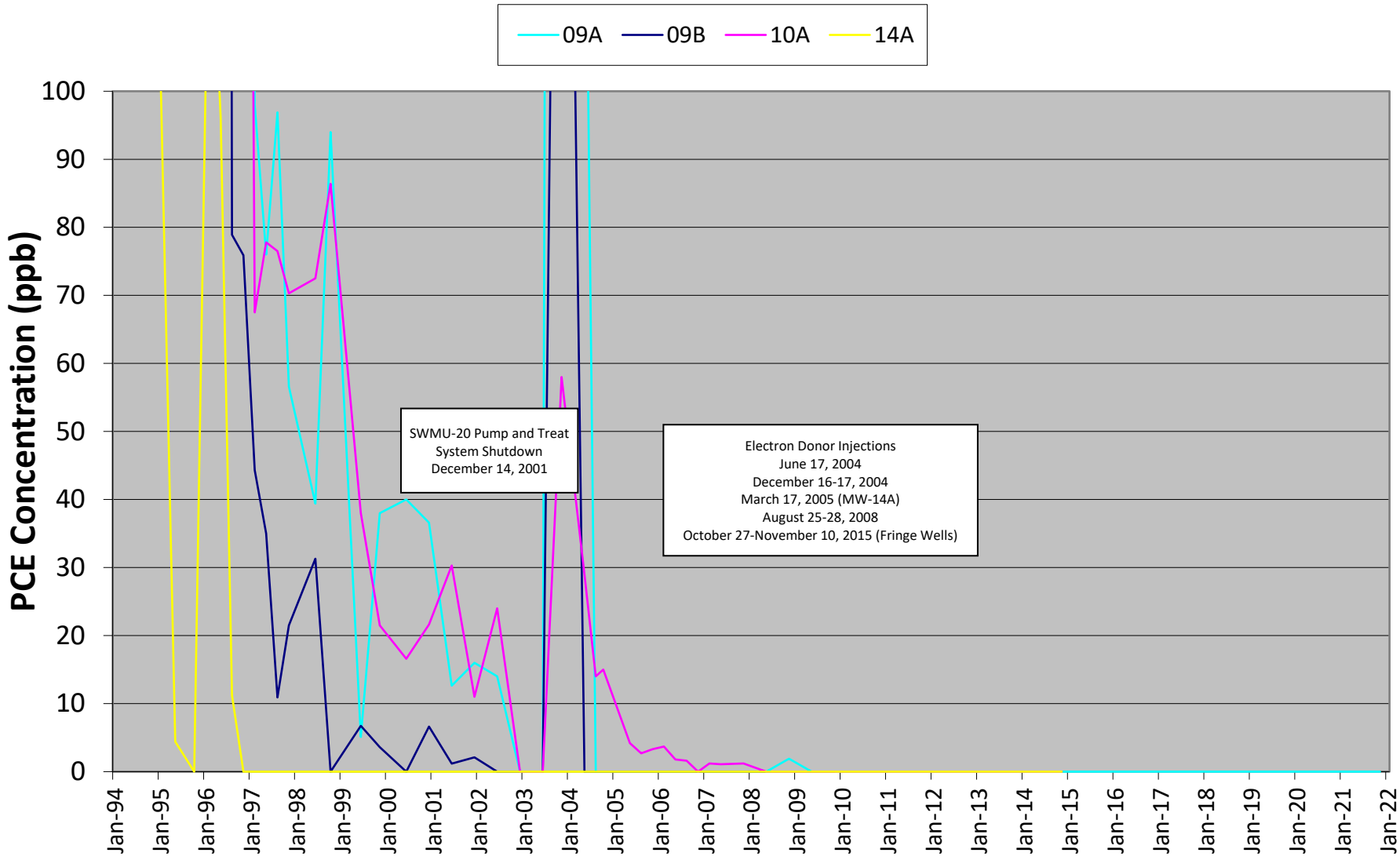
**SWMU-17: Total Copper at Injection Wells**

Figure
F-4

APPENDIX G

# SWMU-20 Concentration Trend Charts

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



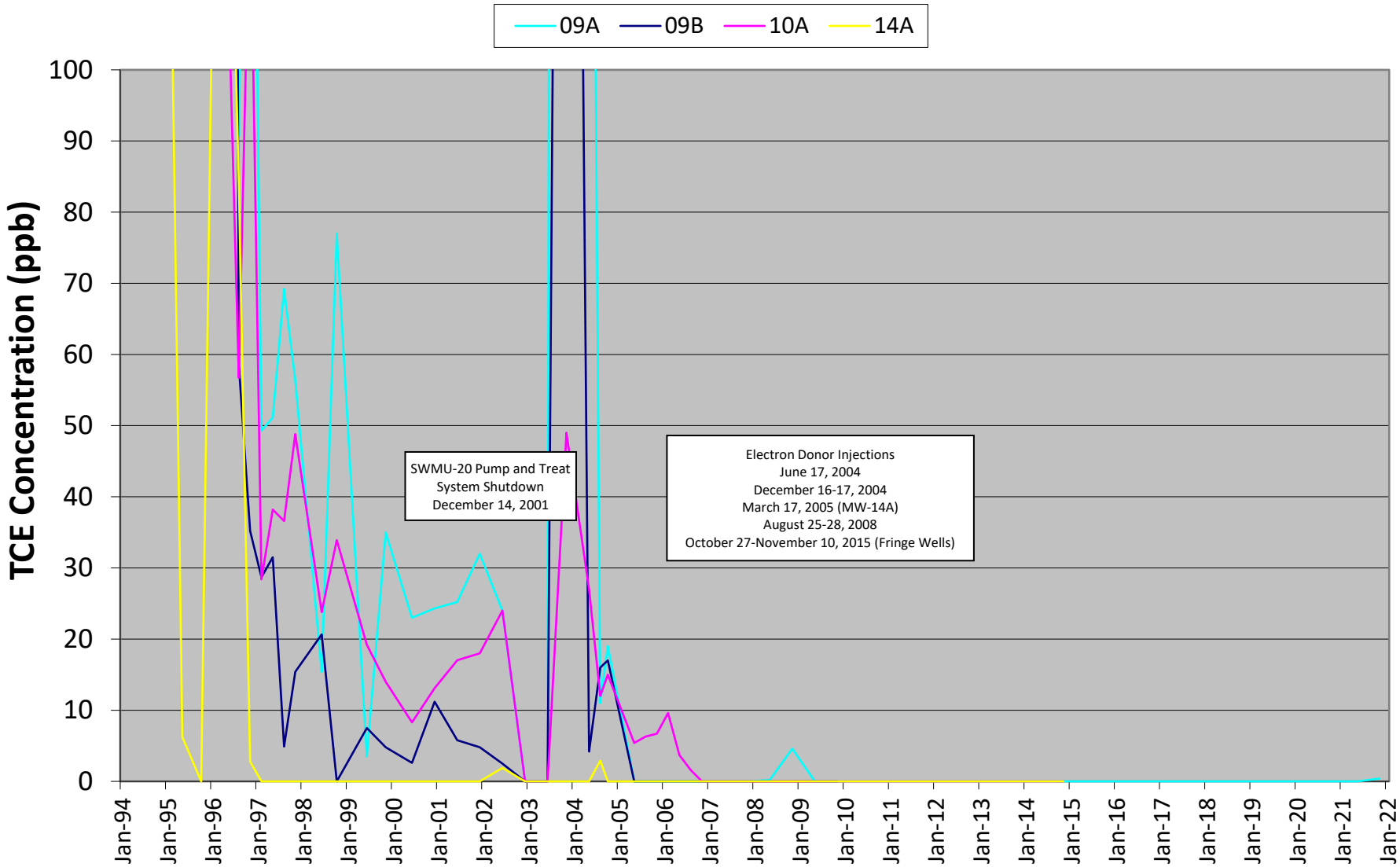

**(Wells with PCE Historically Detected over 50 ppb)**

**January 1994 Through Present**

LANDAU ASSOCIATES

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20: PCE Concentration Trend Chart** | Figure<br>G-1 |

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



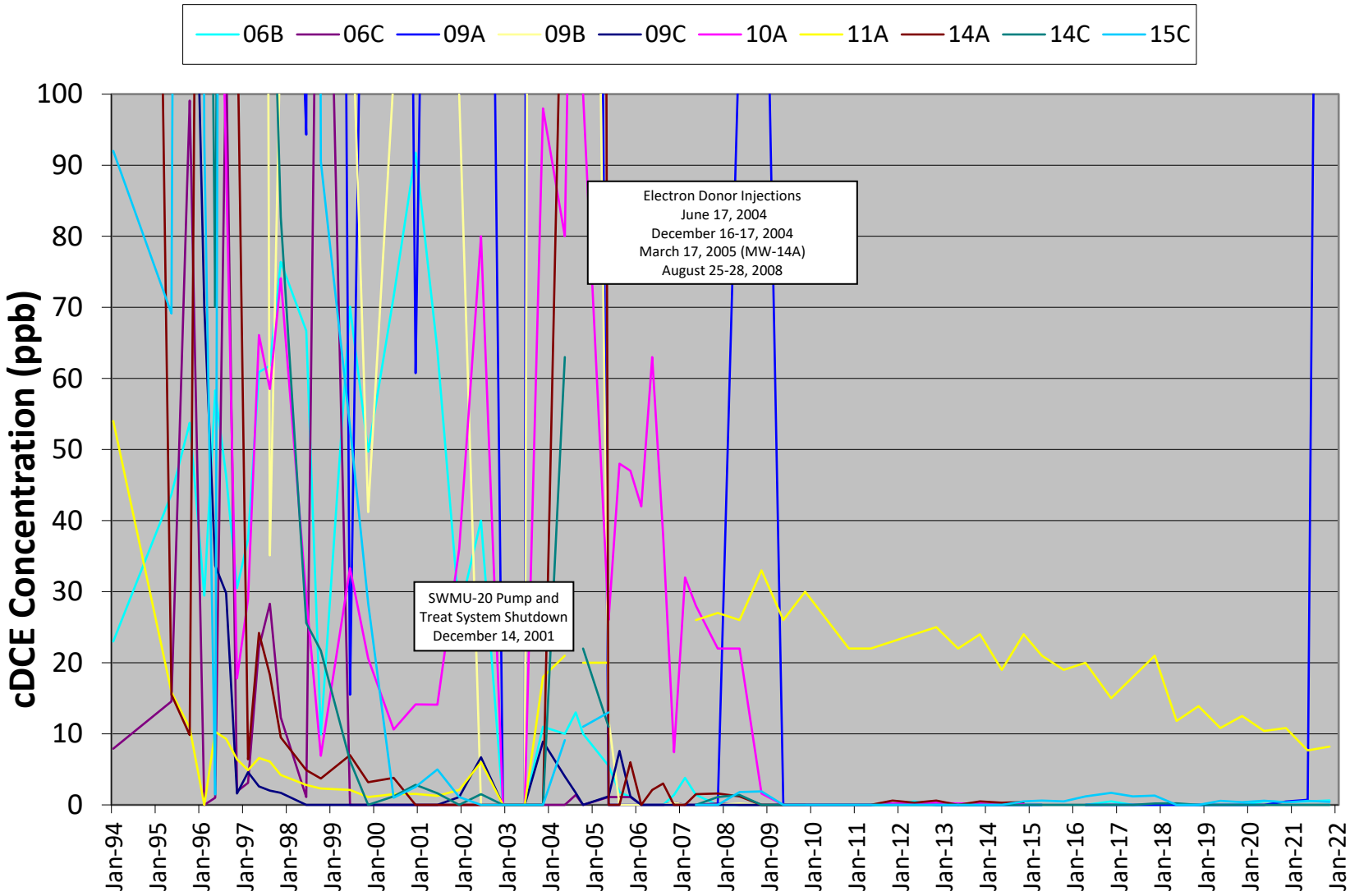

**(Wells with TCE Historically Detected over 50 ppb)**

**January 1994 Through Present**

LANDAU ASSOCIATES

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20: TCE Concentration Trend Chart** | Figure<br>G-2 |

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



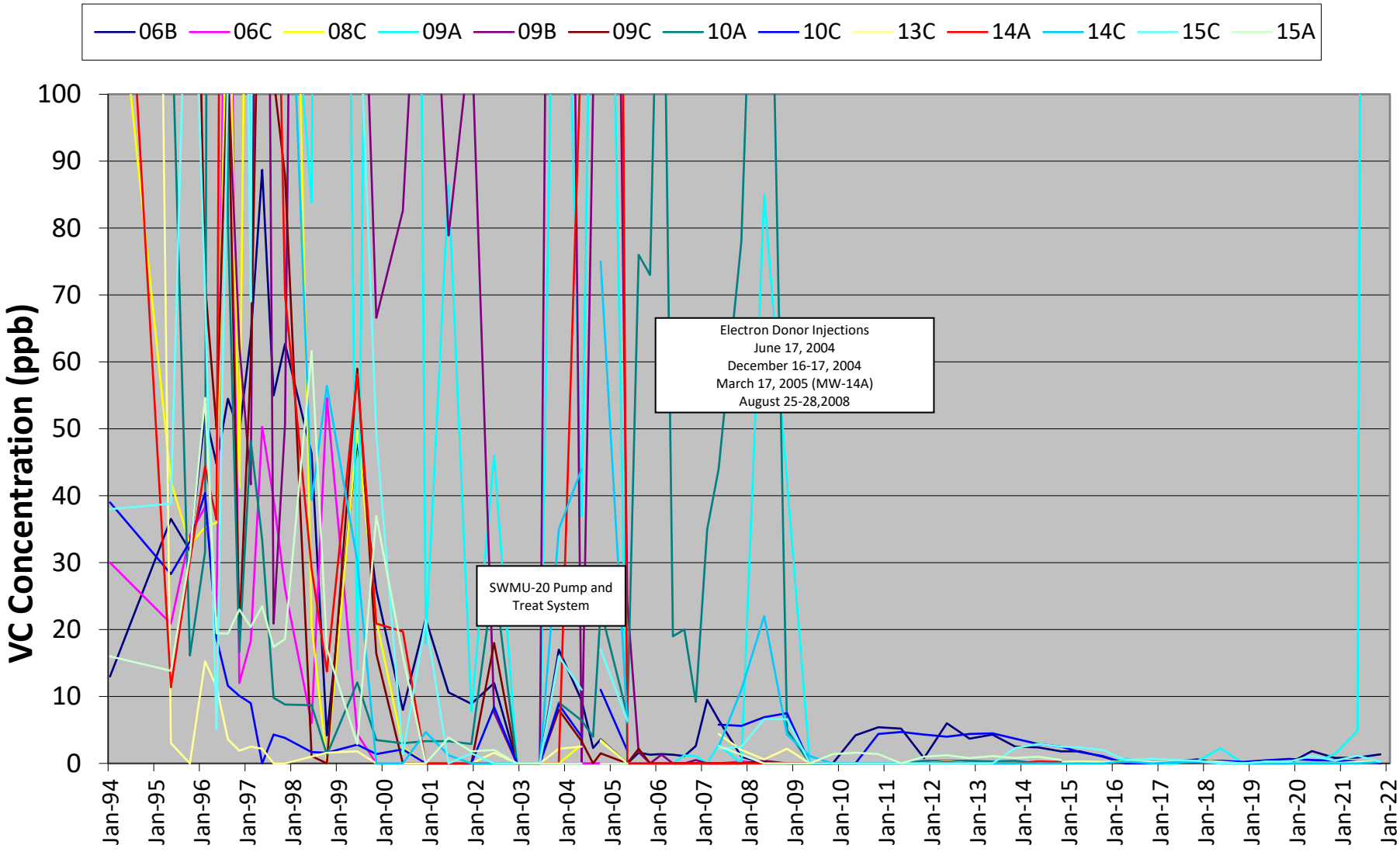

**(Wells with cDCE Historically Detected over 50 ppb)**

**January 1994 Through Present**

LANDAU ASSOCIATES

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20: cDCE Concentration Trend Chart** | Figure<br>G-3 |

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx




**(Wells with VC Historically Detected over 50 ppb)**

**January 1994 Through Present**

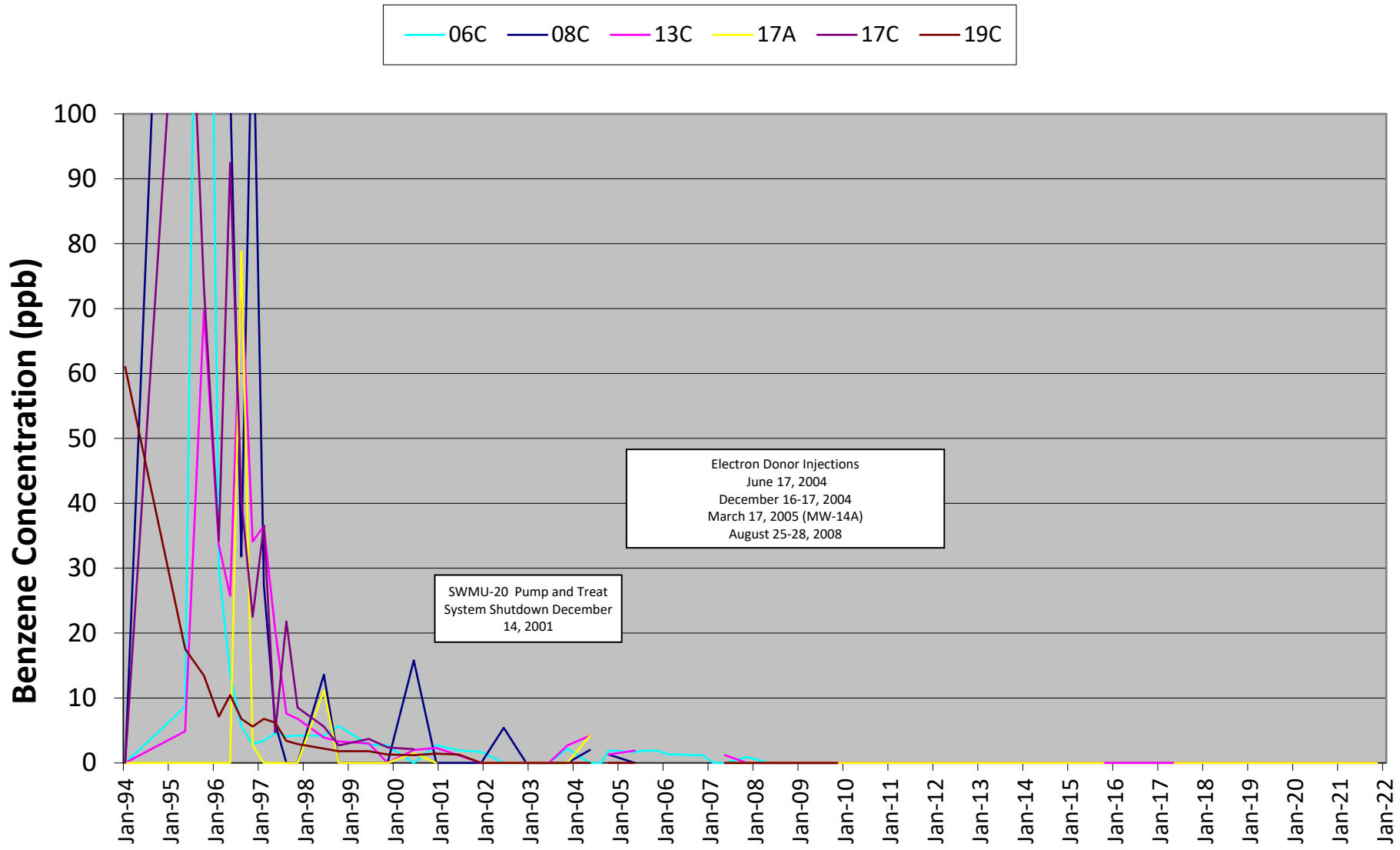
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

**SWMU-20: VC Concentration Trend Chart**

Figure
G-4

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx




**(Wells with Benzene Historically Detected over 50 ppb)**

**January 1994 Through Present**

LANDAU ASSOCIATES

| | | |
|---|---|---|
| Boeing Developmental Center<br>Tukwila, Washington | **SWMU-20: Benzene Concentration Trend Chart** | Figure<br>G-5 |