The Boeing Company
P.O. Box 3707
Seattle, WA 98127-2207

March 16, 2021
DAT-2021-008

Mr. Kenneth Thiessen
Oregon Department of Environmental Quality
Northwest Region Portland Office
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Subject: Boeing Portland Facility
2020 Annual Progress & Performance Report
Troutdale Gravel Aquifer

Dear Mr. Thiessen:

Enclosed please find the following document that presents the 2020 annual progress and performance report for the Troutdale Gravel Aquifer at The Boeing Company's Portland facility:

- Report: 2020 Annual Progress & Performance Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon, ECSI #13, dated March 16, 2021.

Two hard copies will be produced and mailed to your attention.

Please contact me if you have any questions.

Sincerely,

Debbie Taege
Project Manager
Boeing EHS Remediation
deborah.a.taege@boeing.com
Cell Phone (818) 720-5575

2020 Annual Progress & Performance Report
Troutdale Gravel Aquifer
Boeing Portland Facility
Gresham, Oregon
ECSI #13

March 16, 2021

Prepared for

The Boeing Company

LANDAU ASSOCIATES

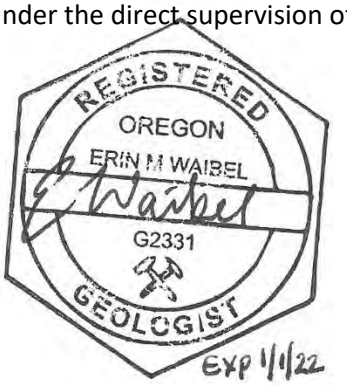
130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

2020 Annual Progress & Performance Report
Troutdale Gravel Aquifer
Boeing Portland Facility
Gresham, Oregon
ECSI #13

This document was prepared by, or under the direct supervision of, the undersigned, whose seal is affixed below.

Name: Erin M. Waibel, RG
License No. G2331

Date: March 16, 2021



Document prepared by: _____ Erin M. Waibel, RG
Senior Geologist

Document reviewed by: _____ Evelyn H. Ives, PE
Project Manager

Document reviewed by: _____ Clint L. Jacob, PE
Quality Reviewer

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Project Coordinator: ljl

LANDAU ASSOCIATES

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L ..... micrograms per liter
1,1-DCE 1,1-dichloroethene
bgs ..... below ground surface
Boeing ..... The Boeing Company
CAA ..... corrective action area
cDCE cis-1,2-dichloroethene
CMS ..... corrective measures study
COPC ..... constituents of potential concern
cVOC ..... chlorinated volatile organic compound
cZVI ..... colloidal zero-valent iron
EPA ..... US Environmental Protection Agency
ft ..... feet, foot
FVDSA ..... Former Vapor Degreaser Source Area
GETS ..... groundwater extraction and treatment system
gpm ..... gallons per minute
HRO ..... high-retention oil
ICA ..... interim corrective action
IRAM ..... interim remedial action measure
LAI ..... Landau Associates, Inc.
lbs ..... pounds
lbs/day ..... pounds per day
MCL ..... maximum contaminant level
mg/L ..... milligrams per liter
MSL ..... mean sea level
NPDES ..... National Pollutant Discharge Elimination System
ODEQ ..... Oregon Department of Environmental Quality
PCE ..... tetrachloroethene
PRB ..... permeable reactive barrier
PVC ..... polyvinyl chloride
RCRA ..... Resource Conservation and Recovery Act
redox ..... reduction-oxidation
ROI ..... Radius of Injection
Site ..... Boeing Portland facility in Gresham, Oregon
STS ..... sump treatment system
SU1 ..... Siltstone Unit
SVE ..... soil vapor extraction
TCA 1,1,1-trichloroethane
TCE ..... trichloroethene
TGA ..... Troutdale Gravel Aquifer
TOC ..... total organic carbon
TPH-Dx ..... total petroleum hydrocarbons diesel- and motor oil-range
TSA ..... Troutdale Sandstone Aquifer
VC ..... vinyl chloride
VOC ..... volatile organic compound

1.0 INTRODUCTION

This 2020 annual report summarizes the Troutdale Gravel Aquifer (TGA) remedy being conducted by The Boeing Company (Boeing) at the Boeing Portland facility (Site) located in Gresham, Oregon (Figure 1). Remediation activities for the TGA are conducted under the Order on Consent No. LQSR-NWR-04-12(h) issued to Boeing by the Oregon Department of Environmental Quality (ODEQ; 2008). This report summarizes annual remedy activities and analytical testing results, provides an evaluation of the TGA remedy progress and performance for calendar year 2020, and provides recommendations to optimize the remedy.

The ODEQ Order on Consent requires Boeing to continue to perform remedial actions included within the final remedy specified in the US Environmental Protection Agency (EPA) Order on Consent (EPA 1994), the Final Decision and Response to Comments (Final Decision; EPA 1997a), and the Statement of Basis (EPA 1997b). In addition to the Consent Order-driven corrective measures, additional measures such as bioremediation have been implemented to improve remedy performance and decrease the projected remedy time frame.

This report provides an evaluation of TGA remedy performance including:

- Remedy background information (Section 2.0)
- Significant issues, events, and actions completed in 2020 (Section 3.0)
- Remedy progress data (Section 4.0)
- An assessment of remedy performance and aquifer restoration progress (Section 5.0)
- Recommendations to optimize remedy performance (Section 6.0).

2.0 REMEDY BACKGROUND

Boeing has conducted investigations and implemented corrective measures to address volatile organic compounds (VOCs) in soil and groundwater at the Site since 1986. Corrective measures consist of:

1. Interim corrective actions (ICAs) were the earliest corrective measures undertaken by Boeing beginning in 1986 to stabilize VOCs in the soil and groundwater at the Site and to address protection of human health and the environment. These ICAs included: providing an alternate water supply to owners of impacted wells, decommissioning water supply wells, investigating and excavating impacted soil (in accessible areas), installing and phased-expansion of the groundwater extraction and treatment system (GETS), and installing a soil vapor extraction (SVE) system. These ICAs were previously documented in the interim measures evaluation report (Landau Associates, Inc. [LAI] 1995a) and summarized in the Phase 2 corrective measures study (CMS; LAI 1996); details of these prior ICAs are discussed in previous reports and are not further discussed in this report.
2. Consent order-driven corrective measures (e.g., pump-and-treat for saturated VOC mass removal and SVE for VOC mass removal in the unsaturated zone).
3. Additional corrective measures (e.g., bioremediation), which have been implemented to improve remedy performance and decrease the projected remedy time frame. Additional corrective measures currently implemented at the Site consist of bioremediation at the Coolant Release Area (diesel-range total petroleum hydrocarbons [TPH-Dx] release), and three specific areas of the dissolved VOC plume identified as the Former Vapor Degreaser Source Area (FVDSA), and two Stagnation Areas. Full descriptions of prior bioremediation efforts are presented in the TGA Annual Progress Reports prepared between 2010 and present and are summarized in this report.

The Consent Order identified Corrective Action Areas (CAAs), which were established as part of the Phase 2 CMS, the EPA Final Decision, and the EPA Statement of Basis. These CAAs were based on the known or potential presence of VOCs in soil and/or groundwater, and on the evaluation of the source areas identified in the Phase III Resource Conservation and Recovery Act (RCRA) facility investigation report (LAI 1995b). The CAAs are:

- West CAA
- Central CAA
- East CAA
- East Yard CAA
- Southwest CAA
- Downgradient CAA.

These CAAs and the current groundwater remedy wells (extraction and monitoring wells) are shown on Figure 2.

Additional areas discussed in this report are:

- FVDSA
- Coolant Release Area
- Stagnation Area #1
- Stagnation Area #2.

The EPA Final Decision and Statement of Basis establish constituents of potential concern (COPC) and target groundwater cleanup levels for the TGA corrective measures based on the maximum contaminant levels (MCLs) as follows:

Constituent	Cleanup Level (µg/L)
1,1-Dichloroethene (1,1-DCE)	7
cis-1,2-Dichloroethene (cDCE)	70
1,1,1-Trichloroethane (TCA)	200
Trichloroethene (TCE)	5
Tetrachloroethene (PCE)	5
Vinyl chloride (VC)	2

µg/L = micrograms per liter

In 2006, after the EPA Final Decision and Statement of Basis was established, a coolant release was discovered within a portion of the Central CAA near the 85-105 building (referred to as the Coolant Release Area). Site-specific cleanup levels were developed for TPH-Dx (sum of diesel- and motor oil-range hydrocarbons) and approved by ODEQ as follows:

Constituent	Cleanup Level (mg/L)
TPH-Dx	1.35

mg/L = milligrams per liter

Below is a summary of the current Consent Order corrective measures (GETS and SVE) and the additional corrective measures (bioremediation) utilized at the Site.

2.1 Groundwater Treatment System

The GETS is designed to achieve hydraulic containment of the dissolved VOC plume and, to the maximum extent practicable, reduce migration of contaminated groundwater off Boeing property, as described in the Consent Order. The GETS began operation in 1989 and has operated full-time with only minor shutdowns for maintenance or construction modifications. In 2015, the original large air stack stripper system was replaced with a more energy-efficient and lower flow rate system composed of two smaller, low-profile tray stripper units. The total treatment capacity of the system is 140 gallons per minute (gpm) and currently approximately 40–60 gpm of groundwater is extracted to maintain hydraulic capture. The locations of the extraction wells, conveyance piping system, and the

GETS and Control Facility are shown on Figure 3. Over time, many of the extraction wells have been shut down as portions of the TGA have achieved cleanup levels, as summarized below.

- Three extractions wells (E-1, E-10, and E-14) were decommissioned in June 2004, March 2010, and April 2010, respectively because they were no longer needed to maintain hydraulic capture, or VOC concentrations at the extraction wells were below the MCL or laboratory reporting limits.
- Five extraction wells (E-5 through E-9) were shut down in 2002 because VOC concentrations were consistently below the MCL. The wells were no longer needed for hydraulic control and are currently utilized for groundwater quality monitoring.
- Two extraction wells (E-2 and E-3) were shut down in July 2015 because VOC concentrations were consistently below the MCL. The wells were no longer needed for hydraulic control and have been utilized for groundwater quality monitoring.
- Currently, two extraction wells (E-11 and DP-1) are shut down because of bioremediation activities in the immediate area. Well E-11 was shut down in 2008 as the well was utilized as a donor injection location. Well DP-1 was shut down in November 2017 in preparation for the bioremediation injection event in the Stagnation Area #2. The two wells are currently used for groundwater monitoring and could resume operation in the future, if needed.

The following five wells were operated in 2020 as part of the TGA GETS:

- E-4, E-12, and E-13 (located in the Downgradient CAA)
- E-15 and E-16 (located in the West CAA).

The groundwater performance monitoring program consists of groundwater elevation measurements, collection of representative groundwater quality samples, and collection of influent and effluent samples from the GETS. The groundwater performance monitoring program is evaluated yearly and modified based on the continued cleanup of the dissolved VOC plume and with ODEQ's approval. The current groundwater monitoring program is presented in Table 1.

2.2 Soil Vapor Extraction System

An SVE system was installed in September 2012 (LAI 2012) to address soil vapor in the vadose zone in the FVDSA, located under the 85-001 building. The vadose zone well screen interval of the multi-purpose wells (BOP-78[i], BOP-79[i], and BOP-84[i] through BOP-88[i])[1] are connected to the SVE system through sub-grade conveyance piping, allowing the system to operate full-time with minimal disruption to facility operations. Three vapor observation wells (VOW-16 through VOW-18) and nine sub-slab vapor pins (VP-1 through VP-9) were installed within the FVDSA to monitor progress within the vadose zone and sub-slab intervals. SVE system operation, including periods of continuous and pulsed operation, is described in Section 3.3.

[1] Multiple purpose wells were constructed with separated screen intervals in both the vadose zone and saturated zone, which allows these wells to be used for SVE, bioremediation injections, and vapor and groundwater sampling.

2.3 *In Situ* Bioremediation

Enhanced *in situ* bioremediation is currently implemented to remediate persistent areas of petroleum contamination and VOC contamination; bioremediation is implemented as an additional corrective measure. Aerobic biodegradation is utilized to treat the petroleum-based coolant release at the 85-105 building in the Coolant Release Area. Anaerobic reductive dechlorination is utilized for treatment of trichloroethene (TCE) and its breakdown products (cis-1,2-dichloroethene [cDCE] and vinyl chloride [VC]) to non-toxic end products (ethane/ethane) in the FVDSA and the two Stagnation Areas.

2.3.1 Coolant Release Area Background

In 2006, coolant utilized in the facility metal fabrications operations was discovered in the 85-105 building footing drain sump. Prior to 2006, the sump had been identified as a collection point for TCE-contaminated groundwater and was being routed to the GETS for treatment. Once coolant impacts were discovered at the sump, an investigation was conducted to identify the extent of groundwater impacted by the coolant release. The investigation indicated that coolant material was not observed in the nearby Troutdale Sandstone Aquifer (TSA) wells and was only observed in a relatively small area of the TGA near the building sump (LAI 2007a). To address coolant-impacted groundwater, accumulated sump water was disconnected from the GETS and rerouted to the sump treatment system (STS), a temporary oil-water separator with in-line monitoring, and as needed a secondary organoclay/granular activated carbon system prior to being discharged to the sanitary sewer system. The STS operated between 2007 and 2012, and after a period of time with no additional coolant accumulation in the building sump, the STS was shut down with ODEQ approval in August 2012 (ODEQ 2012). Accumulated water in the sump was again redirected to the GETS (similar to pre-2006 configuration) in 2012 and has been maintained since then.

To address residual and isolated coolant impacts in the shallow TGA between the point of release and the building sump, aerobic biodegradation has been implemented as an interim remedial action measure (IRAM; LAI 2007b) as approved by ODEQ (ODEQ 2007). Biodegradation has been stimulated by injecting a mixture of potable water and an oxygen-releasing compound (EHC-O™) into injection wells installed directly upgradient of the release area. Further discussion of the performance of the corrective measures for the Coolant Release Area is presented in Section 4.1.8.

2.3.2 Former Vapor Degreaser Source Area Background

In addition to operation of the GETS, anaerobic bioremediation is ongoing in the FVDSA within the 85-001 building as an additional corrective action to remediate TCE in groundwater. Initial investigation results indicated elevated concentrations of TCE near the location of the former vapor degreaser(s) and the Downgradient CAA (LAI 2009). Subsequent investigations to characterize groundwater, soil, and soil vapor contamination in and downgradient of the FVDSA were conducted between 2007 and 2011 indicating the need for additional corrective measures to remedy elevated VOC concentrations (LAI 2017). Between 2010 and 2020, eight bioremediation injection events have been conducted

within the FVDSA to provide electron donor and maintain the aquifer-reducing conditions required for enhanced reductive dechlorination (LAI 2018). Injection events occurred annually for the first seven injections. The injection interval was extended to 2.5 years between the 2018 and 2020 injections based on the results of performance monitoring, which indicated a longer persistence of electron donor and aquifer conditions conducive to continued reductive dechlorination.

The impetus for the 2020 injection was the rebound in TCE breakdown products observed at the historically highest-concentration well BOP-73(i) during three quarters in 2019 (May, August, and November 2019) and in February 2020. cDCE concentrations increased from 35 micrograms per liter (µg/L) in February 2019 to 1,400 µg/L by May 2019 and increased steadily to 2,100 µg/L in November 2019; cDCE in February 2020 decreased to 780 µg/L. VC concentrations also increased from 86 µg/L in February 2019 to 1,300 µg/L by May 2019; and concentrations from August 2019 through February 2020 ranged from 1,300 µg/L to 1,700 µg/L. Additionally, TCE concentrations were detected in February 2020 for the first time since November 2018 at a concentration of 4.2 µg/L. The observed rebound in TCE and breakdown products at well BOP-73(i) is consistent with the decline over time of available donor to support reductive dechlorination and remaining mass of TCE in the groundwater. A supplemental bioremediation injection was conducted in July 2020; injection details are summarized in Section 3.4. Performance of the corrective measures for the FVDSA is discussed in Section 5.3.

2.3.3 Stagnation Areas

Two stagnation areas were identified in 2016–2017 as areas of the dissolved plume that were more persistent and showed slower TCE concentration reduction compared to other areas of the plume. TCE concentrations decreased notably in these two areas during the early phase of the GETS operation; however, concentration reduction had slowed considerably since 2012. The two areas are referred to as Stagnation Area #1 (located near well BOP-9[i]) and Stagnation Area #2 (located near well BOP-10[i] and including wells E-6 and E-7), as shown on Figure 2. In November and December 2017, electron donor injections were performed to stimulate anaerobic bioremediation of TCE in two remedy stagnation areas as an additional corrective measure. Performance of the corrective measures for the Stagnation Areas is discussed in Section 5.4.

2.4 2020 Modification to Remedy Program

The following modifications were recommended in the TGA Corrective Measure, 2019 TGA Annual Report (LAI 2020a), and were approved by ODEQ (ODEQ 2020a). These modifications were implemented in 2020:

- Continued operation of five wells (E-4, E-12, E-13, E-15, and E-16) with quarterly sampling frequency. Extraction wells E-2, E-3, E-11, and DP-1 remained off because they achieved the MCLs or because of their proximity to bioremediation areas. Sampling frequency was changed from semiannual to annual at E-2 and E-11. The sampling frequency was not changed at E-3 (semiannual) or DP-1 (quarterly). Sampling was discontinued at extraction wells E-5 and E-9,

which were shut down because concentrations at the wells were below MCLs and the wells were no longer needed for hydraulic control.

- Sampling and groundwater elevation monitoring was discontinued at Coolant Release Area wells LAI-1 through LAI-3, LAI-5, and LAI-6 because TPH-Dx (sum of diesel- and motor oil-range hydrocarbons) concentrations at the wells were below the Site-specific cleanup level (1.35 milligrams per liter [mg/L]) and VOC concentrations were below the MCLs at LAI-6, and they are no longer needed for evaluation.
- Increased sampling frequency from semiannual to quarterly for VOCs and TPH-Dx at Coolant Release Area well LAI-8 to further evaluate the results of the Stagnation Area #2 injection.
- Continued implementation of enhanced *in situ* bioremediation (described in Section 2.3) as an additional corrective measure. The timing of future injections will be based on groundwater monitoring.
- Decommissioning of one groundwater monitoring well, D-11(i), as described in Section 3.2.
- Implementation of additional shallow soil and soil vapor assessment in the FVDSA beginning in December 2020, as described in Section 3.3.1. The shallow soil and soil vapor assessment will continue through spring 2021.

3.0 SIGNIFICANT ISSUES, EVENTS, AND ACTIONS

This section of the report summarizes significant issues, events, and actions taken during this annual reporting period (January 1–December 31, 2020).

3.1 Groundwater Extraction Well Operation

The GETS provided localized hydraulic containment through extraction of groundwater from five active extraction wells (E-4, E-12, E-13, E-15, and E-16) in 2020. Groundwater from two building sump pumps (SP-2 and LS-2) is also routed to the GETS, as shown on Figure 3. The groundwater extraction wells indicated above were operated continuously in 2020 with the following exceptions:

- Extraction well E-12 was shut down between February 24 and 27, 2020 because of a malfunctioning pump motor and biofouling of the pump inlet resulting in reduced extraction rates and an electrically overloaded pump motor. During the shutdown period, the extraction well screen was cleaned using sonar techniques and the well was redeveloped to remove biomass by pumping approximately 3,500 gallons of water to the GETS for treatment. Upon completion of sonar cleaning and redevelopment, a new extraction pump was installed and full-time operation of the well resumed.
- Extraction well E-13 was shut down between June 25 and July 9, 2020 because of a malfunctioning pump motor and biofouling of the pump inlet resulting in reduced extraction rates and an electrically overloaded pump motor. During the shutdown period, the extraction well screen was cleaned using sonar techniques and the well was redeveloped to remove biomass by pumping 5,500 gallons of water to the GETS for treatment. Upon completion of sonar cleaning and redevelopment, a new extraction pump was installed and full-time operation of the well resumed

3.2 Well Decommissioning

Monitoring well D-11i was decommissioned in February 2020 by over-drilling using a rotosonic drill rig in accordance with the ODEQ-approved (Thiessen 2019) work plan (LAI 2019). The monitoring well was decommissioned to accommodate planned development on the offsite vacant lot where the well was located. Surface features associated with the well (concrete bollards, steel monument, and polyvinyl chloride [PVC] piping) were removed and disposed of/recycled by Boeing. The well will be reinstalled when construction nears completion in 2021. The proposed location of the replacement well D-11R(i) is outside the high-traffic area of the proposed development and located in an area to provide areal coverage for the eastern edge of the dissolved VOC plume.

3.3 Soil Vapor Extraction System

The SVE system at the FVDSA was temporarily shut down between June 30 and July 27, 2020 to facilitate bio-injection at multipurpose wells in the area and between December 26 and 31, 2020 for shallow soil sampling and installation of 10 additional sub-slab vapor points in the FVDSA. The system was also down from November 26 to December 4, 2020 after an electrical malfunction in the blower motor that shut down the system. Cumulative operation of the SVE system has been as follows:

Date Range	SVE Operation Cycle
September 17, 2012 to June 21, 2013	Full-time operation of system
June 21 to July 22, 2013	Temporarily shut down to facilitate bioinjection activities
July 22, 2013 to July 2, 2014	Full-time operation of system
July 2, 2014	Receive ODEQ's approval to shut down system and start pulse-pump operation
July 2, 2014 to January 29, 2015	System shut down
January 29 to June 8, 2015	Resume full-time operation of system because of increased TCE concentrations in either the sub-slab or at-depth sampling intervals
June 8 to June 29, 2015	Temporarily shut down to facilitate bioinjection activities
June 29 to October 9, 2015	Resume full-time operation of system
October 9, 2015 to April 7, 2016	System shut down
April 7, 2016 to October 31, 2017	Resume full-time operation of system
October 31, 2017 to August 20, 2018	Temporarily removed to facilitate construction project
August 20, 2018 to February 26, 2019	Resume full-time operation of system
February 26 to April 24, 2019	Temporarily removed to facilitate construction project
April 24, 2019 to June 30, 2020	Resumed full-time operation of system
June 30 to July 27, 2020	Temporarily shut down to facilitate bioinjection activities
July 27 to November 26, 2020	Resumed full-time operation of system
November 26 to December 4, 2020	SVE shutdown due to electrical short in blower motor
December 4 to December 26, 2020	Resumed full-time operation of system
December 26 to December 31, 2020	Temporarily shut down to facilitate concrete coring and shallow soil sampling in the FVDSA
December 31, 2020	Resumed full-time operation of system

FVDSA = Former Vapor Degreaser Source Area
ODEQ = Oregon Department of Environmental Quality
SVE = soil vapor extraction
TCE = trichloroethene

3.3.1 Shallow Soil and Soil Vapor Assessment

In the 2019 Annual Progress report (LAI 2020a), it was recommended that additional investigation of shallow soil vapor be conducted in the FVDSA to better delineate the distribution of TCE and identify

the cause(s) of rebounding vapor concentrations in the sub-slab interval observed during the temporary shutdown of the SVE system in 2018. In late December 2020, the first phase of the assessment began. Shallow soil sampling was completed in areas where sub-slab vapor data during the 2018 rebound event were well above the vapor screening level. Ten additional sub-slab vapor points were also installed by using a Cox Colvin permanent sub-slab sampling devise. In 2021, preexisting and new sub-slab vapor points will be used to conduct the SVE system rebound testing. Data will be used to evaluate whether residual contaminant mass is bound to soil within 5 feet (ft) below ground surface (bgs) or if permeable soils are transporting residual mass to sub-slab locations from deeper intervals. This information will be used to assess whether the current SVE system would benefit from further optimization or alternative shallow-subsurface treatment options would be beneficial. An SVE investigation report with evaluation of these results will be provided to ODEQ in 2021 after the investigation is complete.

3.4 Bioremediation Injection-Former Vapor Degreaser Source Area

In July 2020, the eighth bioremediation injection was conducted in the FVDSA. The injection activities were conducted in accordance with Addendum No. 4 to the Work Plan (LAI 2020b), which was approved by ODEQ (2020b).

The 2020 injection solution consisted of potable water, RNAS High-Retention Oil (HRO), and crude glycerin. HRO is a blend of soybean oil and esters with a proprietary food grade surfactant blend that is mixed with potable water onsite to create an emulsion for injection. HRO is readily available at a lower cost than previous vegetable oil products previously used onsite. Crude glycerin is a byproduct of bio-diesel production from used fryer oil collected from restaurants and food-preparation facilities in the local region. Bio-diesel production represents a first stage of fryer oil reuse/recycling while the use of the crude glycerin as an electron donor represents a second stage of reuse/recycling.

For the first time, in 2020, nitrogen and phosphorus were added to the injection solution as macronutrients. The addition was to address potential nutrient limitations to the degradation of TCE and breakdown products, given the extended period of biotreatment that has occurred in the FVDSA. Yeast extract continued to be added as the source of micronutrients.

Three source wells (BOP-78[i], BOP-87[i], and BOP-88[i]), identified for additional focused treatment because of their proximity to the former vapor degreasers and well BOP-73(i) where rebound has been observed, also received colloidal zero-valent iron (cZVI). cZVI strongly stimulates the abiotic (i.e., chemical) degradation process which is concurrent and complementary to biological reductive dechlorination. The predominant abiotic reaction is reductive elimination whereby iron chemically reduces TCE to cDCE to chloroacetylene and acetylene without formation of VC. The non-toxic acetylenes break down quickly to ethane and ethene under anerobic conditions and are often not detected, even where substantial reductive elimination is occurring (Butler and Hayes 2001).

The eight injection wells received the following quantities of injection solution and substrates:

Well	Potable Water (gallons)	Newman Zone HRO (gallons)	Crude Glycerin (gallons)	cZVI (gallons)	Average Injection Rate (gpm)
BOP-74(i) (Permeable Reactive Barrier)	16,548	602	930	---	22.1
BOP-78(i)	3,667	135	223	34	7.1
BOP-79(i)	3,655	133	223	---	12.6
BOP-84(i)	3,689	132	225	---	5.6
BOP-85(i)	3,656	132	213	---	4.0
BOP-86(i)	3,722	136	223	---	4.3
BOP-87(i)	3,474	129	208	27	2.0
BOP-88(i)	3,622	136	222	39	3.1
Total Donor Material	**42,034**	**1,535**	**2,469**	**100**	

Note: BOP-75(i), injected in 2018, was not injected due to chlorinated volatile organic compounds (cVOCs) remaining below MCLs.

cZVI = colloidal zero-valent iron
gpm = gallons per minute
HRO = high-retention oil

4.0 REMEDY PROGRESS DATA

This section presents a summary of the performance monitoring data collected during this reporting period (January 1–December 31, 2020). This data includes TGA and select Upper TSA groundwater quality data and groundwater elevation data. Upper TSA wells are included to evaluate potential downward migration of VOCs from the TGA to the Upper TSA, per the Consent Order. Laboratory reports and data validation memoranda for the data collected during this reporting period are provided in Appendix A. Historical TGA and select Upper TSA data are presented in Appendix B.

4.1 TGA Groundwater Quality

Groundwater quality monitoring for TGA wells and select Upper TSA monitoring wells was conducted in accordance with the Groundwater Performance Monitoring Program (Table 1). The sections below present groundwater quality by CAAs (Figure 2). Groundwater samples from each sampling event were analyzed for VOCs, and samples from wells in bioremediation areas were analyzed for additional bioremediation parameters (total organic carbon [TOC], sulfate, nitrate, total and dissolved iron, and dissolved gasses). Prior to August 2020, bioremediation monitoring parameters also included sulfide analysis, which was determined to be no longer needed for evaluation. The analytical results for the VOC COPCs are presented by area in Table 2. TCE concentrations for the more extensive annual sampling event (August 2020) are shown for the entire TGA on Figure 4 and for the FVDSA on Figure 5. Wells associated with the Coolant Release Area were analyzed for TPH-Dx, with results presented in Table 3 and on Figure 6.

4.1.1 West Corrective Action Area

Groundwater quality in the West CAA is currently evaluated using data from monitoring wells BOP-16(i) and BOP-57(ia), operating extraction wells E-15 and E-16, and non-operating extraction well E-11. Monitoring well BOP-57(ib) is partly screened in the lower TGA and the upper siltstone layer of the aquitard and is, therefore, not representative of TGA groundwater; data for BOP-57(ib) is included in Table 2 for informational purposes only as an indicator of conditions within the upper aquitard. Evaluation findings are as follows:

- TCE concentrations were observed above the MCL (5 µg/L) at one of the five TGA West CAA wells:
  - BOP-57(ia) ranged from 7.53 to 13 µg/L
- VC concentrations fluctuated below and above the MCL (2 µg/L) at two of the five TGA West CAA wells:
  - BOP-16(i) ranged from 1.1 to 2.2 µg/L
  - E-15 ranged from 2.1 to 4.7 µg/L
- All other COPCs were below MCLs or the laboratory reporting limits for the TGA West CAA.

4.1.2 Central Correction Action Area

Groundwater quality in the Central CAA is currently evaluated using data from monitoring wells BOP-10(i), BOP-56(i), and BOP-59(i); non-operational extraction wells E-6 and E-7; and temporarily shutdown extraction well DP-1. Evaluation findings are as follows:

- Tetrachloroethene (PCE) concentrations were observed to fluctuate near and above the MCL (5 µg/L) at two of the six wells:
  - BOP-10(i) ranged from 4.7 to 9.87 µg/L
  - BOP-56(i) ranged from 5.4 to 11.9 µg/L
- TCE concentrations were observed above the MCL (5 µg/L) at three of the six wells:
  - BOP-10(i) ranged from 27 to 30.3 µg/L
  - BOP-56(i) was 12 µg/L during two sampling events
  - E-7 ranged from 21.3 to 27 µg/L
- VC concentrations were observed above the MCL (2 µg/L) at three of the six wells:
  - E-6 ranged from 37.7 to 84 µg/L
  - DP-1 ranged from non-detect to 2.29 µg/L
  - BOP-59(i) ranged from 2.8 to 5.14 µg/L
- All other COPCs were below either the respective MCLs or the laboratory reporting limits for the Central CAA.

4.1.3 East Yard Corrective Action Area

No groundwater monitoring occurred in this area in 2020. Groundwater quality in the East Yard CAA was previously evaluated using data from shutdown extraction well E-9. However, sampling at E-9 was discontinued following ODEQ approval of recommended modifications to the performance monitoring program in the 2019 annual report (LAI 2020a). TCE concentrations decreased from a maximum concentration of 78 µg/L in April 1990 to below the MCL by February 2008. COPC analytical results have been consistently below the MCLs since February 2008.

4.1.4 East Corrective Action Area

Groundwater quality in the East CAA is currently evaluated using data from shutdown extraction well E-8, sampled annually in August. During the August sampling event, concentrations of PCE (29 µg/L) and TCE (9.3 µg/L) were detected above MCLs (5 µg/L for both PCE and TCE). All other COPCs were below MCLs or the laboratory reporting limits.

4.1.5 Southwest Corrective Action

The groundwater quality in the Southwest CAA is currently evaluated using data from monitoring well BOP-9(i) on a quarterly basis. All COPC concentrations were below MCLs or the laboratory reporting limits.

4.1.6 Downgradient Corrective Action

The groundwater quality in the Downgradient CAA is currently evaluated using data from monitoring wells BOP-7(d), D-7(i), D-8(i), and D-12(i); operating extraction wells E-4, E-12, and E-13; and shutdown extraction wells E-2 and E-3. Decommissioned monitoring well D-11(i) is also part of the Downgradient CAA but was decommissioned in 2020; the well will be re-installed in 2021 (Section 3.2). Monitoring well BOP-7(i) is partly screened in the lower TGA and the upper siltstone layer of the aquitard and is not representative of TGA groundwater; therefore, monitoring well BOP-7(d) was installed nearby in 2016 and is used to characterize TGA groundwater quality in this area. Data for BOP-7(i) is included in Table 2 for informational purposes only, as an indicator of conditions within the upper aquitard. Evaluation findings for 2020 are as follows:

- TCE concentrations fluctuated above and below the MCL (5 µg/L) at the following:
  - Non-operating extraction well E-3 (ranging from 2.0 to 6.6 µg/L)
  - Operating extraction wells E-4 (18–22 µg/L), E-12 (7.3–14 µg/L), and E-13 (8.96–10.5 µg/L)
  - Monitoring well D-8(i): Initial sampling results at monitoring well D-8(i) in August indicated a TCE concentration (8.7 µg/L) above the MCL; however, a verification sample was collected in September to confirm TCE concentrations and results (1.4 µg/L) were below the MCL
- VC concentrations fluctuated above and below the MCL (2 µg/L) at one location:
  - BOP-7(d) ranging from 1.0 to 3.77 µg/L
- All other COPCs were below MCLs or laboratory reporting limits.

4.1.7 Former Vapor Degreaser Source Area

Groundwater quality in the FVDSA is currently evaluated using data from wells BOP-72(i) through BOP-88(i). This area is affected by bioremediation activities, which are discussed in Section 5.0. The 2020 groundwater analytical results are summarized below:

- TCE concentrations fluctuated above and below the MCL (5 µg/L) at two of 17 FVDSA wells:
  - BOP-80(i) is located downgradient of the source area. TCE increased from non-detect in February to 257 µg/L in August, following the July bioremediation injection. This increase is likely temporary and associated with aquifer disruption and enhanced desorption resulting from the injection (discussed further in Section 5.0).
  - Injection well BOP-88(i) is located upgradient of the source. TCE was detected at 24 µg/L in February event and decreased to 0.93 µg/L in November.
- 1,1-Dichloroethene (1,1-DCE) concentrations were reported above the MCL (7 µg/L) at one well located downgradient of the source:
  - BOP-80(i) increased from non-detect in February to 9.85 µg/L in August. This increase is likely temporary and associated with bioremediation injections in July (discussed further in Section 5.0).

- cDCE concentrations were reported above the MCL (70 µg/L) at three wells:
  - BOP-73(i) is the historically highest concentration source well. cDCE decreased from 1,700 µg/L (prior to injection) to 17.9 µg/L in November
  - Downgradient well BOP-80(i) increased from non-detect to 289 µg/L following injection
  - Injection well BOP-88(i) decreased from 140 µg/L (prior to injection) to 45 µg/L following injection
- VC concentrations were reported above the MCL (2 µg/L) at eight FVDSA wells:
  - BOP-72(i) decreased from 2.3 µg/L to non-detect following the injection
  - BOP-73(i) decreased from 1,700 µg/L to 38.1 µg/L following injection
  - BOP-76(i) increased from 1.5 to 8.52 µg/L following injection
  - BOP-77(i) decreased from 9.2 µg/L to 1.24 µg/L following injection
  - BOP-78(i) ranged from 11 µg/L to 12.2 µg/L
  - BOP-80(i) increased from non-detect to 23.2 µg/L following injection
  - Injection well BOP-87(i) decreased from 82 µg/L to 19.1 µg/L following injection
  - Injection well BOP-88(i) decreased from 23 µg/L to 3.67 µg/L following injection
- All other COPCs were below MCLs or laboratory reporting limits.

4.1.8 Coolant Release Area

Groundwater data in the Coolant Release Area is used to evaluate the lateral extent of the coolant release impacts, to monitor the performance of the bioremediation, and to monitor other TGA COPCs. Groundwater samples were collected semiannually in 2020 at two TGA coolant release monitoring wells (LAI-4 and LAI-7). Monitoring well LAI-8 was also sampled on a quarterly basis for both VOC and TPH-Dx to better monitor bioremediation performance and increased TPH-Dx concentrations in the area. Monitoring well LAI-4 was dry during the February semiannual sampling event. The 2020 groundwater analytical results for TPH-Dx from these wells are summarized in Table 3 and on Figure 6. TGA COPC data is summarized in Table 2 and TCE concentrations are shown on Figure 4.

- VOCs: During the February and August sampling events, TCE concentrations were above the MCL (5 µg/L) at monitoring well LAI-7 at 7.4 µg/L and 5.57 µg/L, respectively. In recent years, COPC concentrations have been below MCLs; these concentrations are likely caused by the recent temporary shutdown of DP-1 extraction. All other COPCs were below MCLs or laboratory reporting limits at the three (LAI-4, LAI-7, and LAI-8) Coolant Release Area wells.
- TPH-Dx (sum of diesel- and motor oil-range hydrocarbons): Concentrations were above the TPH-Dx Site-specific cleanup level (1.35 mg/L) at LAI-4 in August at a concentration of 4.2 mg/L and at LAI-8 for all four quarters ranging from 184.4 mg/L (August) to 740 mg/L (February). As discussed in the 2019 Annual Report (LAI 2020a), results at LAI-8 appear to be false positive results for TPH resulting from the electron donor injection to Stagnation Area #2, TPH-Dx concentrations at LAI-7 were below the Site-specific cleanup level or the laboratory reporting limits in 2020.

4.2 TGA Groundwater Level Monitoring

Water levels were measured at the TGA performance monitoring well locations in conjunction with the TGA water quality sampling events and in accordance with the Performance Monitoring Program (Table 1). Groundwater levels were measured with an electronic water meter and groundwater elevations were calculated from the surveyed reference points at individual wells. The TGA groundwater flow continues to be toward the northwest in areas not influenced by operating extraction wells. Groundwater elevation contours show drawdown associated with operating extraction wells (Figure 7). Groundwater elevation data for the annual sampling event in August are presented in Table 4.

4.3 Upper TSA Groundwater Quality

Per the Consent Order, potential downward migration of VOCs from the TGA to the Upper TSA was monitored by collecting groundwater elevation data and groundwater quality data at select Upper TSA wells. There is an aquitard (Siltstone Unit [SU1]) with four distinct geologic subunits separating the TGA from the Upper TSA. Although the geologic subunits and SU1 have varying thicknesses, the aquitard is present across the Site. In August 2020, groundwater elevations in the TGA were higher than groundwater elevations in the TSA, continuing to indicate a downward hydraulic gradient in areas of the TGA without active extraction well operations. For example, the August groundwater elevation at TGA well LAI-3 measured 90.15 ft mean sea level (MSL) while the groundwater elevation at nearby TSA well BOP-66(ds) was 12.08 ft MSL (Figure 7).

The Upper TSA VOC analytical results from this reporting period are presented in Table 2 and TCE concentrations from the August sampling event are included with TGA results on Figure 4. TCE concentrations at the four Upper TSA wells were below MCLs or laboratory reporting limits.

4.4 Vapor Data—Former Vapor Degreaser Source Area

The SVE system has been operating in the FVDSA since 2012 with some periods of shutdown, as detailed in Section 3.3. Shutdowns in 2020 and additional soil vapor investigation activities in 2020 are also described in Section 3.3.

VOC vapor concentrations are monitored in two depth intervals: sub-slab (directly beneath the building concrete slab) and at-depth (directly above the static water table). In 2020, sub-slab vapor and at-depth vapor VOC concentrations were below laboratory reporting limits or screening levels protective of the occupational receptor for vapor intrusion into buildings. Sub-slab vapor results for 2020 are summarized in Table 5 and on Figure 8. Vapor results from 2020 for at-depth vapor extraction and observation wells are summarized in Table 6 and on Figure 9.

5.0 REMEDY PERFORMANCE EVALUATION

This section evaluates the performance of the various corrective measures.

5.1 Groundwater Extraction System

Average total mass removal rates (pounds per day [lbs/day]) of VOCs (TCE, PCE, 1,1,1-trichloroethane [TCA], 1,1-DCE, and cDCE) from each TGA groundwater extraction well for 2020 are presented on Figure 10. The mass of other COPCs, representing less than 10 percent of the total VOC mass removed, is not included. Extraction well E-13, located in the Downgradient CAA, continues to provide the highest average VOC mass removal rate (0.0072 lbs/day), due to its high pumping rate (on average 50 gpm) compared with the other TGA extraction wells (average rates range between 1 to 5 gpm). The lowest mass removal rate is observed at E-15 (0.0001 lbs VOC/day), but E-15 is an important capture point for vinyl chloride, which is detected above MCLs at this extraction well only (VC is not detected above MCLs at operating extraction wells downgradient of E-15). In 2020, the TGA GETS removed approximately 3.30 pounds (lbs) of VOCs.

To evaluate the GETS performance, the average monthly pump rates[2] and average yields[3] are calculated for each extraction well. Extraction well E-15 had the lowest average pump rate during 2020 (1.64 gpm), while E-13 continues to pump at the highest average pump rate (50.55 gpm). The average pump rate for each operating extraction well is summarized in Table 7.

The treatment system has been operating since 1989 and has extracted approximately 4.669 billion gallons of groundwater and removed an estimated total of 4,317 lbs of VOC mass from the saturated zone of the TGA. The VOC mass removal rate decreased to an asymptotic level beginning in the early 2000s, as shown on Figure 11. Most the VOC mass removal occurred during the first 15 years of GETS operation. Over the past few years, the benefit of operating the GETS has shifted more from providing VOC mass removal to providing hydraulic control of the dissolved plume. As the additional corrective measures continue to remove mass (i.e., SVE system in the vadose zone and enhanced *in situ* bioremediation in the saturated zone), the operation of individual extraction wells for the GETS will continue to be evaluated and modified with ODEQ's approval.

The TCE plume has decreased substantially in both extent and concentration since 1989 as a result of GETS operation and IRAMs. The substantial reduction in plume size is presented on Figure 12. The maximum TCE concentration of 39,000 µg/L in 1989 has decreased to a maximum of 257 µg/L in August 2020. The 2020 maximum occurred at a downgradient monitoring well in the FVDSA, BOP-80(i), and is likely a temporary TCE increase as a result of bioremediation injections within the FVDSA; similar temporary increases have been observed at this well after the 2012, 2014, 2015, and 2018 injections followed by concentrations dropping below the MCL (Figure 13) [4]. The second highest TCE

[2] Total gallons extracted during each month divided by the number of minutes in the month that the well was actively pumping.
[3] Total gallons extracted during each month divided by the total minutes in the month.
[4] TCE concentrations at BOP-80(i) were non-detect in February 2021.

concentration in August 2020 (30.3 µg/L at BOP-10[i]) is within the range of typical maximum concentrations observed onsite.

5.1.1 Groundwater Treatment System Discharge Monitoring

In compliance with the National Pollutant Discharge Elimination System permit (NPDES Permit No. 101761) for the GETS-treated water that discharges to the Columbia Slough, quarterly samples of the GETS influent and effluent were collected and submitted for chemical analysis. All 2020 results demonstrated compliance with NPDES permit requirements. The NPDES permit effluent water quality results for the Site COPCs are summarized in Table 2.

5.2 Coolant Release Area-Aerobic Bioremediation

Starting in August 2020, only three monitoring wells (LAI-4, LAI-7, and LAI-8) remain as part of the monitoring program in the Coolant Release Area. Total TPH-Dx concentrations were above the site-specific cleanup level (1.35 mg/L) at monitoring wells LAI-4 and LAI-8. Well LAI-4 has historically had the highest TPH-Dx concentrations and most frequency of detections; therefore, this well is a conservative indicator of treatment progress in the Coolant Release Area. Monitoring well LAI-4 was sampled for the first time in August 2020 since August 2018. The well was dry during 2019 and February 2020 sampling events and, therefore, no samples were collected. During the August 2020 sampling event, total TPH-Dx was above the Site-specific cleanup level at a concentration of 4.2 mg/L, which represents an increase from the prior sampling event (in August 2018) when concentrations were detected at 1.37 mg/L.

Extraction well DP-1 was temporarily shut down in late 2017 because of its proximity to bioremediation injections in Stagnation Area #2; DP-1 remained shut down through 2020. The temporary shutdown of DP-1 has resulted in a localized rise in groundwater elevations and has re-saturated well LAI-8. Samples were collected from LAI-8 in mid-2018 through 2020, whereas the well was previously dry from November 2011 until February 2018.

Before LAI-8 was de-saturated by DP-1 drawdown, total TPH-Dx results at LAI-8 (between September 2006 and August 2011) fluctuated near the Site-specific cleanup level with a maximum concentration of 6.7 mg/L (June 2007; see Appendix B). Total TPH-Dx concentrations were much higher after re-saturation in 2018 and have decreased since then. A maximum of 1,950 mg/L was detected at LAI-8 in August 2018 and concentrations have generally decreased through 2020. In 2020, total TPH-Dx concentrations at LAI-8 ranged from 740 mg/L (February) to 184.4 mg/L (August). As described in the 2018 and 2019 TGA Annual Progress Reports (LAI 2019, 2020a), these detections appear to be false positives for TPH-Dx resulting from of the electron donor injection to Stagnation Area #2 in December 2017. Well LAI-8 is located approximately 95 ft from Stagnation Area #2 (slightly upgradient to crossgradient of this stagnation area) and within the theoretical 100-ft radius of injection (ROI) of well BOP-10(i).

Beginning in May 2020, TOC was analyzed at LAI-8 to further evaluate the Stagnation Area #2 injection as the cause of the recent elevated TPH-Dx concentrations. TOC, indicative of available electron donor, increases following injection then decreases due to consumption over time. Baseline TOC concentrations were not analyzed prior to donor injection at LAI-8; however, high TOC concentrations were observed in each of the three sampling events in 2020 (ranging from 76.8 mg/L to 81.8 mg/L). Additionally, enhanced aquifer reduction-oxidation (redox) conditions for anaerobic chlorinated volatile organic compound (cVOC) bioremediation are apparent by decreased nitrate and sulfate (non-detect for nitrate and sulfate in 2020) and indicate that donor substrates injected at Stagnation Area #2 have reached monitoring well LAI-8, located nearby and upgradient of donor injection wells. Nitrate at LAI-4 and LAI-7 in 2020 ranged from 1.87 mg/L to 3.99 mg/L and sulfate ranged from 10.9 to 14.2 mg/L for comparison. LAI-8 TOC and aquifer redox data are included with the stagnation area data in Table 8 for evaluation of treatment extent.

5.3 Former Vapor Degreaser Source Area

The additional corrective measure utilized at the FVDSA includes operation of the SVE system to address vapor concentrations in two intervals (sub-slab and the deeper at-depth interval), and the stimulation of *in situ* bioremediation to address VOC concentrations in groundwater.

5.3.1 SVE System

The 2020 analytical results at the sub-slab interval (Table 5) and the at-depth interval (i.e., screened interval depths beginning at 5 ft bgs extending up to 45 ft bgs; Table 6) indicate COPCs at all the sampling locations were below the applicable screening level. Since the startup of the SVE system in 2012, an estimated 26 lbs of VOC mass have been removed from the unsaturated zone in the FVDSA, as shown on Table 6. These results demonstrate that the SVE system continues to remove VOC mass from the sub-slab and deeper unsaturated zone in the vicinity of the FVDSA. As described in Section 3.3.1, additional investigation to shallow soil/soil vapor in the vicinity of the FVDSA is in process and will be evaluated and reported on in 2021.

5.3.2 Anaerobic Bioremediation

A primary source of TCE groundwater contamination in the TGA is the FVDSA where aquifer bioremediation began in 2010. FVDSA wells and features are shown with 2020 and historic TCE results on Figure 5. Cumulative groundwater data for the FVDSA wells, including cVOCs, donor indicators, and aquifer redox parameters are presented in Table 9.

FVDSA bioremediation has consisted of electron donor injection to well BOP-74(i) on the downgradient edge of the source area for creation of a permeable reactive barrier (PRB) and to seven multiple-purpose wells (BOP-78[i], BOP-79[i], and BOP-84[i] through BOP-88[i]) located closer to and hydraulically upgradient of the former vapor degreasers. Well BOP-74(i) was selected for PRB injection because of its location directly downgradient of the former vapor degreaser and high injection flow

rates, which indicates that the well intersects a preferential flow path within the aquifer near the source. Monitoring well BOP-75(i) was injected for the first/only time in 2018 to increase the width of the injection treatment zone to the south and to address low, but persistent, contaminant concentrations located on the fringe of the source area. Injection to the PRB well, BOP-75(i), and to the seven multiple-purpose source area wells, has created a large treatment zone resulting from overlapping ROI and downgradient transport of donor by westward groundwater flow. With periodic injections and groundwater flow transport of donor downgradient, the treatment zone has expanded to its current extent, which includes downgradient wells BOP-80(i), BOP-81(i), and BOP-82(i).

Below is a summary of the injection events to date and total injection volumes. The injection volumes consisted of potable water mixed with various bioremediation substrates (substrates shown parenthetically).

Injection Event	PRB-Donor Material (gallons)	Source Area Well-Donor Material (gallons)
(Pilot Injection) November 2010	NA	900 gallons (LactOil)
December 2011	15,000 gallons (LactOil)	--
August 2012	27,800 gallons (LactOil)	--
July 2013	--	9,200 gallons (LactOil)
April 2014	30,000 gallons (glycerin/ferrous sulfate/Textrol BR)	20,000 gallons (glycerin/ferrous sulfate/Textrol BR)
June 2015	20,000 gallons (glycerin/ferrous sulfate/Textrol BR)	30,000 gallons (glycerin/ferrous sulfate/Textrol BR)
January 2018	19,000 gallons (glycerin/HRO)	35,000 gallons (glycerin/HRO)
July 2020	18,000 gallons (glycerin/HRO)	28,000 gallons (glycerin/HRO/cZVI)

cZVI = colloidal zero-valent iron
HRO = high-retention oil (soy oil with oil-based emulsifiers)
NA = not applicable
PRB = permeable reactive barrier
Textrol BR = soy oil and soy lecithin emulsifier

The progress of the bioremediation remedy within the source area and downgradient of the treatment zone is primarily demonstrated by enhanced reductive dechlorination. This is evidenced by the decrease in TCE concentrations, the sequential increase then decrease in breakdown daughter products (cDCE and VC), and in production of non-toxic end products ethane and ethene. It should be noted that prior to introduction of bioremediation as a selected additional corrective action, no PCE/TCE breakdown products were present in the TGA aquifer at the Site (i.e., no reductive dechlorination occurred under naturally aerobic conditions). This sequential reductive dechlorination process is most evident on the time versus concentration plot for BOP-73(i), as shown on Figure 14.

Monitoring well BOP-73(i) is uniquely suited for evaluation of treatment progression in the FVDSA. This well has not been used for injections but has been reserved for monitoring purposes only. The well is centrally located within the source area and the highest concentrations of TCE, breakdown products, and end products have consistently been detected at this well. Rebounding concentrations of breakdown products cDCE and VC have been observed at this well as the treatment effects from prior injections wane. BOP-73(i) is located closest to remaining TCE source mass in the vicinity of the former vapor degreaser.

In 2020, BOP-73(i) TCE concentrations in groundwater continued to be below the MCL (since 2018). However, breakdown product concentrations rebounded in 2019 and 2020 prior to the July 2020 injection. Maximum cDCE concentrations increased from 280 µg/L in 2018 to 2,100 µg/L in 2019, and cDCE increased in 2020 from 780 µg/L (February) to 1,700 µg/L (May). Similarly, VC concentrations increased in 2019 and 2020 following substantial decrease in 2018 after the January 2018 injection event; VC as low as 22 µg/L in 2018 increased to a maximum of 1,700 µg/L in 2019, with similar 2020 concentrations of 1,700 µg/L (February) and 1,400 µg/L (May).

The increases in the concentrations of these breakdown products was that primary indicator that additional donor injection was needed. The observed rebound indicated continued desorption of TCE mass from the aquifer/aquitard matrix in the vicinity of this well and a slowing in the rate of dechlorination to the end products ethane and ethene, as the donor material was depleted.

As anticipated, reductive dechlorination improved substantially after the July 2020 injection. cDCE concentrations decreased to 302 µg/L (August) and to below the MCL by November (17.9 µg/L). VC concentrations also decreased to 463 µg/L (August) and 38.1 µg/L (November). Ethane and ethene decreased substantially in November (888 µg/L); a temporary decrease in ethane and ethene was also observed following the 2018 injection. Acetylene, the short-lived intermediary resulting from reductive elimination (stimulated by cZVI injection) was not detected. However, as noted above, acetylenes are often not detected, even where substantial reductive elimination is occurring (Butler and Hayes 2001).

The rebound in cDCE and VC occurred more quickly after the January 2018 injection (just over 1 year) than after the June 2015 injection (approximately 2 years), as shown on Figure 14. This difference in the rate of rebound appears to be abiotic degradation stimulated by the injection of ferrous sulfate. Ferrous sulfate was included in the 2014 and 2015 injections, but not in the 2018 injection because of fouling problems with the injection wells.[5] With the exception of ferrous sulfate, the injection volumes and electron donor substrates utilized were essentially the same for the 2015 and 2018 injections.

[5] Biofouling was resolved through redevelopment of the injection wells.

The July 2020 injection was similar to the injection completed in 2018, except BOP-75(i) was not included, macronutrients were provided in the donor solution, and cZVI was injected into three identified wells. The injection solution was otherwise similar to previous years, containing emulsified vegetable oil and glycerin (a combination of slow- and fast-release donors to optimize donor availability and longevity). The macronutrients nitrate and phosphorus were added in addition to yeast extract (micronutrients) to promote the growth and health of natural bacteria. cZVI was used in place of the ferrous sulfate utilized in prior injections for stimulation of the abiotic degradation mechanism (reductive elimination). cZVI provides stronger localized reductive elimination than the ferrous sulfate, which was more widely distributed to all injection wells. cZVI mixes well with injection solution, and the small colloids move readily through aquifer pores similar to the droplets of emulsified vegetable oil. cZVI was added to the injection solution at three source wells (BOP-78[i], BOP-87[i], and BOP-88[i]) to focus additional treatment in the vicinity of BOP-73 (i), where highest VOC concentrations were historically observed and where TCE breakdown product rebound was occurring.

A plot of compound molar fractions and total chlorinated ethenes (molar sum of TCE+cDCE+VC) over time at BOP-73(i) is presented on Figure 15. The initial predominance of TCE (i.e., largest molar fraction) is apparent through November 2013, with a transition to cDCE and VC predominance by February and August 2014, respectively. Non-toxic end products ethane and ethene began to be predominant in November 2014. The plot of total chlorinated ethenes shows the substantial mass desorption that occurred in 2013–2014 concurrent with biodegradation. The 2017–2018 and 2019–2020 rebounds in total cVOCs are observed, coincident with declining ethane and ethene molar fraction and increased TCE (2018 only), cDCE, and VC molar fractions; these rebounds indicated slowing dechlorination rates because of waning effects of the prior injection. Total chlorinated ethenes decreased by 99 percent from the peak in November 2019 to November 2020.

Complete reductive dechlorination of TCE and breakdown products with substantial conversion of chlorinated compounds to non-toxic end products has occurred throughout the extent of the treatment zone. Molar fractions for each well in the FVDSA are summarized in Table 9, with the predominant molar fraction highlighted. At wells where ethane and ethene are not analyzed, the molar fraction of these end products is not known.

Aquifer conditions conducive to ongoing reductive dechlorination have been maintained by periodic injections of electron donor. TOC, indicative of available electron donor, increases following injection then decreases because of consumption of electron donor with time. The all-time TOC maximum concentration at BOP-73(i) occurred in August 2020 at a concentration of 694 mg/L, up from 2.9 mg/L in May 2020, prior to injection. TOC remained elevated at BOP-73(i) in November 2020 (274 mg/L—the third highest TOC concentration since 2010), indicating favorable distribution and longevity of the injected donor. Enhanced aquifer redox conditions for bioremediation are indicated by decreased nitrate and sulfate and increased iron and methane. Highly reducing (i.e., sulfate-reducing to

methanogenic aquifer redox conditions persist, as required for complete reductive dechlorination of TCE to non-toxic end products.

Although very low TCE concentrations in groundwater have been observed since biotreatment in mid-2014, the continued generation of end products ethane and ethene in the source area indicates ongoing treatment of a substantial flux of TCE as a result of back diffusion from soil to groundwater. This is consistent with the baseline distribution of TCE in the source area, which indicated a dense non-aqueous-phase liquid release that resulted in the highest TCE concentrations in the TGA just above the SU1. TCE mass diffused into the SU1 continues to slowly back diffuse into the aqueous phase, where it is quickly dechlorinated to end products ethane and ethene. The substantial back diffusion of TCE is demonstrated by converting ethane and ethene concentrations to the TCE equivalent concentration that would be required to generate the measured concentration of ethane and ethene (see calculations provided in the 2018 TGA Annual Report [LAI 2019]). The highest concentrations of ethane and ethene continue to be detected at BOP-73(i), indicating that substantial TCE source mass continues to be treated in the immediate vicinity of this well. The maximum ethane and ethene concentration in 2020 (2,559 µg/L in February) is equivalent to approximately 11,500 µg/L of source TCE.[6] Compared to the maximum TCE concentration detected at BOP-73(i) during biotreatment (17,000 µg/L in 2013), the February 2020 equivalent represents an approximate 32 percent decrease in source strength. The November 2020 result for ethane and ethene (888 µg/L) is equivalent to approximately 4,000 µg/L TCE, a 76 percent decrease in source strength. Continued back diffusion of TCE is also indicated by rebounding concentrations of cDCE and VC as described above; this rebound of TCE breakdown products occurs as injected donor nears depletion and treatment effectiveness wanes. Continued periodic injections of electron donor will be needed to treat the mass of TCE continuing to back diffuse from the aquitard.

5.4 Stagnation Areas—Anaerobic Bioremediation

Both Stagnation Areas (Stagnation Area #1 near well BOP-9[i] and Stagnation Area #2 near well BOP-10[i]) demonstrate active treatment resulting from electron donor injection in 2018. Enhanced treatment was evidenced by increases in TOC and development of the reduced aquifer redox conditions following injection. Enhanced reductive dechlorination has been demonstrated by an increase in breakdown products (cDCE and VC) and the generation of non-toxic end products ethane and ethene. TOC and aquifer redox parameters (ferrous iron, sulfate, and methane) continue to indicate conditions conducive to enhanced biodegradation at injected wells through the end of 2020. Continued groundwater sampling and evaluation of the data will be utilized to evaluate the longevity of the enhanced bioremediation progress. Cumulative bioremediation monitoring data for the two stagnation areas are summarized in Table 8. Molar Fraction plots for the two Stagnation Areas are shown on Figures 16 and 17.

[6] The TCE equivalent is calculated by multiplying the measured ethane and ethene concentration by the 4.52 TCE equivalency factor.

The following observations indicate enhanced biodegradation in Stagnation Area #1 at well BOP-9(i):

- All cVOCs at this well have been below MCLs beginning in August 2019.
- TCE concentrations decreased through 2020. Prior to the 2017 injection, TCE concentrations were stable at around 35 µg/L for the previous 5 years. For the first time in remedy history dating back to 1987, TCE was not detected in November 2020.
- The initial predominance of TCE (i.e., largest molar fraction) is apparent prior to the 2017 donor injection, with a transition to alternating TCE and cDCE predominance through 2018. cDCE and VC have been alternately predominant since February 2019.
- Non-toxic end product ethene was detected only once in August 2019 and was the predominant cVOC based on molar fraction comparisons (Table 8). The infrequent detection of end products is not surprising given the 5-µg/L reporting limit, which is higher than most of the TCE, cDCE, and VC detections at this well.
- Elevated TOC concentrations remain at this well, with a concentration of 49.9 mg/L in November 2020. This TOC result indicates adequate donor for ongoing treatment nearly 3 years after the injection.
- Low pH, ranging from 5.29 to 5.84 in 2020, is consistent with the desired fermentation of injected donor substrates to volatile fatty acids.
- Reduced aquifer conditions are indicated by ferrous iron above baseline, low to non-detected sulfate, and elevated methane (ranging from 24.9 to 36 mg/L in 2020).

The following observations indicate enhanced biodegradation in Stagnation Area #2 (injected wells BOP-10[i], E-6, and E-7):

- PCE and TCE concentrations have increased substantially since 2017 at BOP-10(i), which has the highest current concentrations of the three injected stagnation wells. The increased PCE and TCE concentrations indicate beneficial enhanced desorption from the aquifer matrix/soil to groundwater. Enhanced desorption is also reflected in a general increase in total chlorinated ethenes at Stagnation Area #2 from the baseline through 2020, as shown on Figure 17.
- TCE concentrations at BOP-10(i) have been generally stable at around 30 µg/L since the August 2019 peak. During the same time period, slowly increasing cDCE and VC concentrations indicate enhanced reductive dechlorination; maximum cDCE and VC concentrations were detected in November 2020.
- Substantial concentrations of ethene (19–32 µg/L) were detected at well E-6 in May through November 2020. These are the first detections of end product at this well. Ethene has also been detected at well E-7 since August 2018, ranging from approximately 5 µg/L to 10 µg/L. These ethene detections are the results of complete reductive dechlorination and/or reductive elimination stimulated by the bioremediation injection.[7]

[7] The stagnation area injections included ferrous chloride, for stimulation of abiotic reductive elimination. The provided ferrous iron combines with sulfide, produced from sulfate present in the molasses donor, to create reactive iron sulfide minerals in the aquifer.

- Baseline sampling conducted prior to the injection indicated a molar fraction predominance of TCE at BOP-10(i) and E-6 (Table 8). TCE predominance remains at BOP-10(i); however, E-6 shifted to end product ethene predominance by August 2020 (Figure 17).
- Baseline samples for E-7 indicate cDCE predominance; however, ethane and ethene became predominant by August 2018 through 2019. In 2020, molar predominance has varied, fluctuating from TCE (February) to ethene (May) to cDCE through the remainder of 2020.
- High TOC concentrations persist at BOP-10(i) and E-7 in November 2020 (988 mg/L and 21,700 mg/L, respectively). TOC at E-6 in November 2020 (6.86 mg/L) is lower, but still above baseline TOC concentrations. These elevated TOC concentrations at injection wells represent available donor for continued treatment nearly 3 years after the injection event. The downgradient extent and longevity of TOC is unknown. Elevated TOC at upgradient wells LAI-8 and DP-1 indicate the upgradient extent of injected donor; treatment effects at DP-1 are further discussed below.
- Elevated methane concentrations continue to indicate reduced aquifer redox conditions conducive to enhanced reductive dechlorination. At these wells, sulfate is not a good indicator of redox conditions because of the high sulfate content in injection molasses donor. Methane maxima occurred at two out of three wells in November 2020 (BOP-10[i] and E-7). Concentrations at BOP-10(i) increased from 9.3 mg/L (February) to 19.2 mg/L (November). Concentrations at E-7 ranged from 11.7 mg/L to 21.5 mg/L. Methane concentrations remain elevated above baseline at E-6, but concentrations decreased from 7.2 mg/L (February) to 1.94 mg/L (November).
- Baseline pH values ranged from 6.26 to 7.06 and have decreased to ranging from 5.30 to 6.43 in November 2020. pH below 5.5 is not conducive to reductive dechlorination of cDCE and VC to end products. However, pH is lowest at injection wells and is expected to buffer with distance downgradient.

Wells located upgradient and downgradient of injection wells allow some evaluation of treatment extent. Data is available for three upgradient wells and one downgradient well, as follows.

- At BOP-59(i), located about 160 ft upgradient of injection wells (E-6 and BOP-10[i]), cVOC data indicates beneficial effects of treatment. Substantial but temporary increases in PCE and TCE in February 2018 indicated enhanced desorption and aquifer disturbance, while current concentrations are below respective cleanup levels. cDCE has increased steadily from a baseline of less than 1 µg/L to a maximum of 24 µg/L in February 2020. VC similarly increased from not detected to a maximum of 5 µg/L in August 2020. TOC and redox parameters are not analyzed at this well.
- At LAI-8, located about 130 ft upgradient of injection wells (E-6 and BOP-10[i]), TOC and aquifer redox data indicate beneficial effects of treatment. TOC concentrations during May, August, and November 2020 ranged from 76.8 mg/L to 81.8 mg/L.[8] Enhanced aquifer redox are indicated by decreased nitrate and sulfate (results were non-detect for nitrate and sulfate in 2020).
- At DP-1, located about 150 ft upgradient of injection wells (E-6 and BOP-10[i]), has also showed beneficial effects from donor injection. PCE, TCE, and cDCE concentrations have all

[8] TOC and redox parameters were added at this well in May to investigate the apparent false positive TPH-Dx detections at this well resulting from electron donor.

decreased substantially from pre-injection concentrations. PCE and TCE were not detected during any of the four sampling events in 2020. VC was detected in November 2019 and in August and November 2020 at a maximum concentration of 2.29 µg/L. Ethane and ethene have not been detected. TOC, detected as high as 9,540 mg/L post injection, persisted at 30.5 mg/L in November 2020. Reduced aquifer conditions continue as indicated by ferrous iron above baseline, low to non-detected sulfate, and elevated methane concentrations (maximum of 24 mg/L in May 2020).

- At downgradient well BOP-56(i), cVOC data does not show clear evidence of treatment effects. PCE increased from approximately 3 µg/L in August 2017 to 12 µg/L in August 2020, possibly as a result of enhanced desorption observed at BOP-10(i). TOC and redox data are not analyzed at this well.

6.0 RECOMMENDATIONS

This section presents recommended modifications to optimize the Consent Order corrective measures and the additional corrective measures currently being utilized to conduct TGA remedy.

6.1 Treatment System Monitoring

The following treatment system monitoring recommendations are made:

- Continued operation of the GETS extraction wells (E-4, E-12, E-13, E-15, and E-16) to:
    1) provide hydraulic control of the dissolved VOC plume and
    2) provide VOC mass removal.
- Continued conditional shutdown of extraction wells E-2, E-3, E-11, and DP-1, which were approved for shutdown based on:
    1) groundwater quality meeting consent order objectives or
    2) their location near bioremediation areas, resulting in likely negative impacts by donor material if operated as extraction wells.

Based on previous ODEQ-approved recommendations, resumed operation of shut down extraction wells will be evaluated if TCE concentrations increase above the MCL for two consecutive sampling events at either E-2 or E-3 and if TOC concentrations at DP-1 (located in the direct vicinity of Stagnation Area #2) decrease to baseline (pre-injection) conditions. Groundwater quality continues to be below the trigger concentrations to consider resumed operation of these three wells.

The optimization of this Consent Order corrective measure will be evaluated monthly to verify individual extraction well pump rates and system compliance with the NPDES permit requirements.

6.2 Performance Monitoring Program

Given the remedy progress and the continued reduction of the dissolved VOC plume, the following proposed changes are recommended to the performance monitoring program beginning with the next annual sampling event (August 2021). The proposed modifications are shown in red in Table 1 and are discussed below:

Extraction Wells

- Groundwater sampling frequency at E-6, E-7, and DP-1 will remain on a quarterly basis until the Stagnation Area #2 injection can be further evaluated for effectiveness and longevity.

Groundwater Monitoring Wells

- Groundwater sampling frequency FVDSA wells (BOP-72[i] through BOP-79[i] and BOP-84[i] through BOP-88[i]) will remain on a quarterly basis until the 2020 FVDSA injection treatment progress can be further evaluated for effectiveness and longevity.

- Decrease elevation measurement and sampling frequency from quarterly to semiannual for both VOC and bioremediation parameters at BOP-9(i). Analytical results have been below the MCLs for COPCs since August 2019 and aquifer redox conditions demonstrate continued reductive dechlorination with elevated TOC concentrations.
- Discontinue elevation measurement and sampling at Upper TSA monitoring well BOP-61(ds) as part of the TGA Remedy (may still be a required monitoring location for the East Multnomah County Site Remedy). Per the Consent Order, potential downward migration of VOCs from the TGA to the Upper TSA was a required element; however, TGA wells are no longer monitored in the East Yard CAA because of COPC analytical results consistently below the MCLs. In 2020, COPCs were either below MCLs or the laboratory reporting limits.

7.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of The Boeing Company for specific application to the Boeing Portland facility. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. 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 LAI, shall be at the user's sole risk. LAI 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.

8.0 REFERENCES

Butler, E.C., and K.M. Hayes. 2001. "Factors Influencing Rates and Products in the Transformation of Trichloroethylene by Iron Sulfide and Iron Metal." Environmental Science & Technology 35:3884-3891.

EPA. 1994. Administrative Order on Consent, RCRA Docket No. 1093-04-02-3008(h). US Environmental Protection Agency. January 18.

EPA. 1997a. Final Decision and Response to Comments for the Boeing Portland Facility Troutdale Gravel Aquifer. The Boeing Company, 19700 N.E. Sandy Blvd., Gresham, Oregon. ORD 054964481. US Environmental Protection Agency. July.

EPA. 1997b. Statement of Basis for the Boeing Portland Facility Troutdale Gravel Aquifer. The Boeing Company, 19700 N.E. Sandy Blvd., Gresham, Oregon. ORD 054964481. US Environmental Protection Agency. March.

LAI. 1995a. Interim Measures Evaluation, Boeing Portland, Gresham, Oregon. Landau Associates, Inc. September 15.

LAI. 1995b. Phase III RCRA Facility Investigation, Boeing Portland, Gresham, Oregon. Landau Associates, Inc. July 31.

LAI. 1996. Phase 2 Corrective Measures Study, Boeing Portland, Gresham, Oregon. Landau Associates, Inc. September 13.

LAI. 2007a. Report, Building 85-105 Coolant Investigation, Boeing Portland Facility, Gresham, Oregon. Landau Associates, Inc. January 16.

LAI. 2007b. Work Plan, Interim Remedial Action Measure, Building 85-105 Coolant Investigation, Boeing Portland Facility, Gresham, Oregon. Landau Associates, Inc. October 9.

LAI. 2009. Bioremediation Injection Completion, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon. Landau Associates, Inc. October 21.

LAI. 2012. Report, Well Installation – Building 85-001, Former Degreaser Area, Boeing Portland Facility, Portland, Oregon. Landau Associates, Inc. July 24.

LAI. 2017. Troutdale Gravel Aquifer Corrective Measure, 2016 Annual Report and Five-Year Performance Evaluation, Boeing Portland Facility, Gresham, Oregon. Landau Associates, Inc. April 25.

LAI. 2018. 2017 Annual Progress & Performance Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon. Landau Associates, Inc. March 27.

LAI. 2019. 2018 Annual Progress & Performance Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon, ECSI #13. Landau Associates, Inc. March 14.

LAI. 2019. Letter: Monitoring Well D-11(i) Replacement Work Plan, Boeing Portland—Troutdale Gravel Aquifer Remedy, Gresham, Oregon. From Erin Waibel and Christine Kimmel, Landau Associates, Inc. August 19.

LAI. 2020a. 2019 Annual Progress & Performance Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon, ECSI #13. Landau Associates, Inc. March 16.

LAI. 2020b. Technical Memorandum: Addendum No. 4, Source Area Bioremediation Work Plan, Combined Treatment of TGA Source Wells and Permeable Reactive Barrier, Building 85-001 Former Vapor Degreaser Source Area, Boeing Portland Facility. From Christine Kimmel, Clint Jacob, and Erin Waibel, Landau Associates, Inc., to Kenneth Thiessen, Oregon Department of Environmental Quality, and Deborah Taege, The Boeing Company. May 4.

ODEQ. 2007. "Re: Boeing Building 85-105 IRAM." From Mavis Kent, Oregon Department of Environmental Quality, to Chris Kimmel, Landau Associates, Inc. November 29.

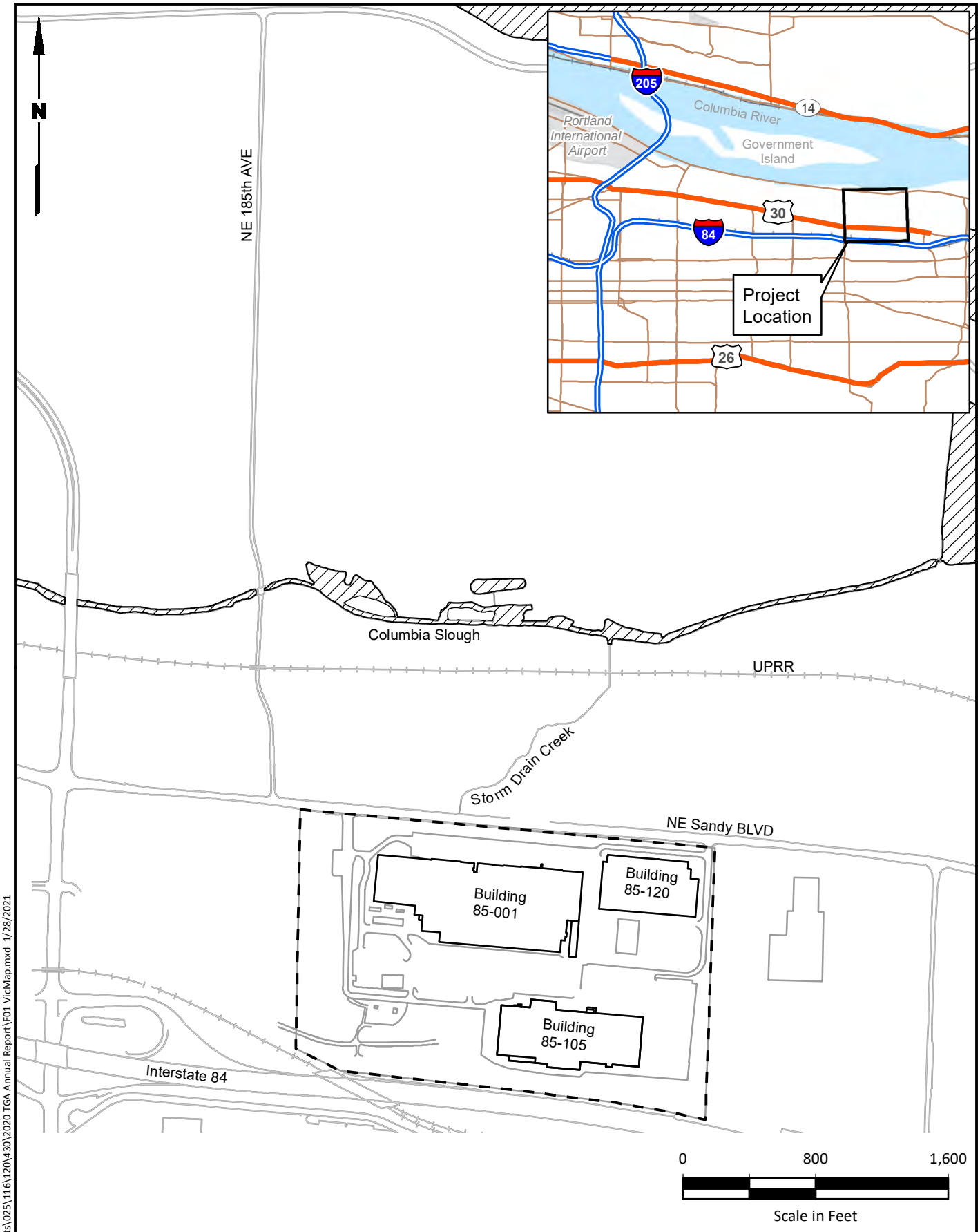
ODEQ. 2008. Order on Consent LQSR-NWR-04-12(h). Oregon Department of Environmental Quality. September 8.

ODEQ. 2012. Letter: Troutdale Gravel Aquifer Corrective Measure, Five-Year Performance Evaluation 2006-2011 and Corrective Measure Support (SAP, QAPP, HASP). Boeing Portland, From Robert Williams, Oregon Department of Environmental Quality. July 31.

ODEQ. 2020a. Letter: 2019 Annual Progress and Performance Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon. ECSI #13. From Kenneth Thiessen, Northwest Region Cleanup Section, Oregon Department of Environmental Quality, to Chris Kimmel and Erin Waibel, Landau Associates, Inc. April 15.

ODEQ. 2020b. Letter: Addendum No. 4, Source Area Bioremediation Work Plan, Combined Treatment of TGA Source Wells and Permeable Reactive Barrier Building 85-001 Former Vapor Degreaser Source Area, Boeing Portland Facility, ECSI #13. From Kenneth Thiessen, Northwest Region Cleanup Section, Oregon Department of Environmental Quality, to Deborah Taege, The Boeing Company. May 4.

Thiessen, K. 2019. "Re: Monitoring Well D-11(i) replacement Work Plan, Boeing TGA Remedy." From Kenneth Thiessen, Oregon Department of Environmental Quality, to Chris Kimmel and Erin Waibel, Landau Associates, Inc. October 22.



G:\Projects\025\116\120\430\2020 TGA Annual Report\F01 VicMap.mxd 1/28/2021

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Boeing Portland Gresham, Oregon	**Boeing Portland Site Map**	Figure 1

G:\Projects\025\116\120\430\2020 TGA Annual Report\F02 TGA GW Locations and Action Areas.mxd 1/28/2021

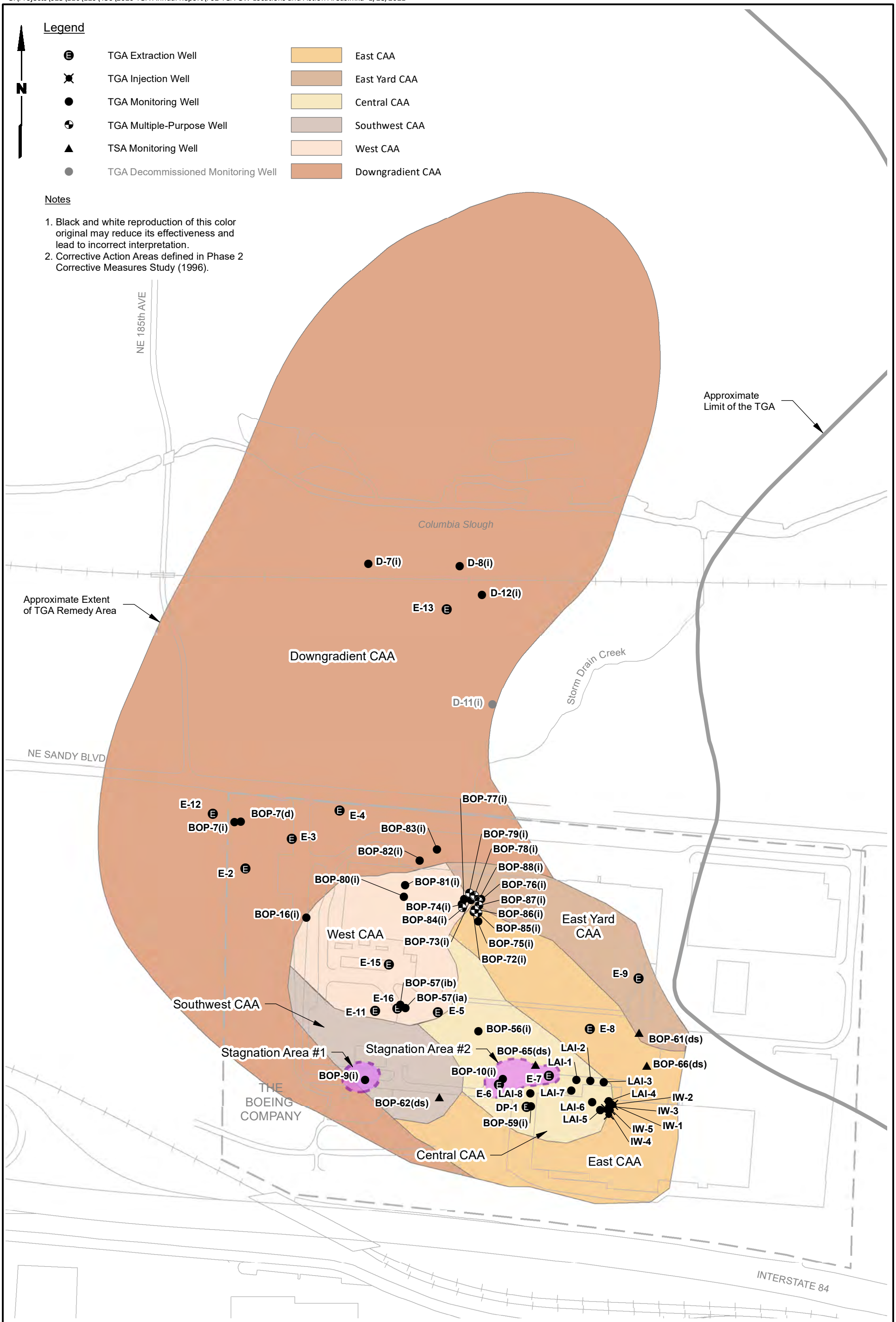
Legend

- TGA Extraction Well
- TGA Injection Well
- TGA Monitoring Well
- TGA Multiple-Purpose Well
- TSA Monitoring Well
- TGA Decommissioned Monitoring Well

- East CAA
- East Yard CAA
- Central CAA
- Southwest CAA
- West CAA
- Downgradient CAA

Notes

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
2. Corrective Action Areas defined in Phase 2 Corrective Measures Study (1996).



0 350 700

Scale in Feet

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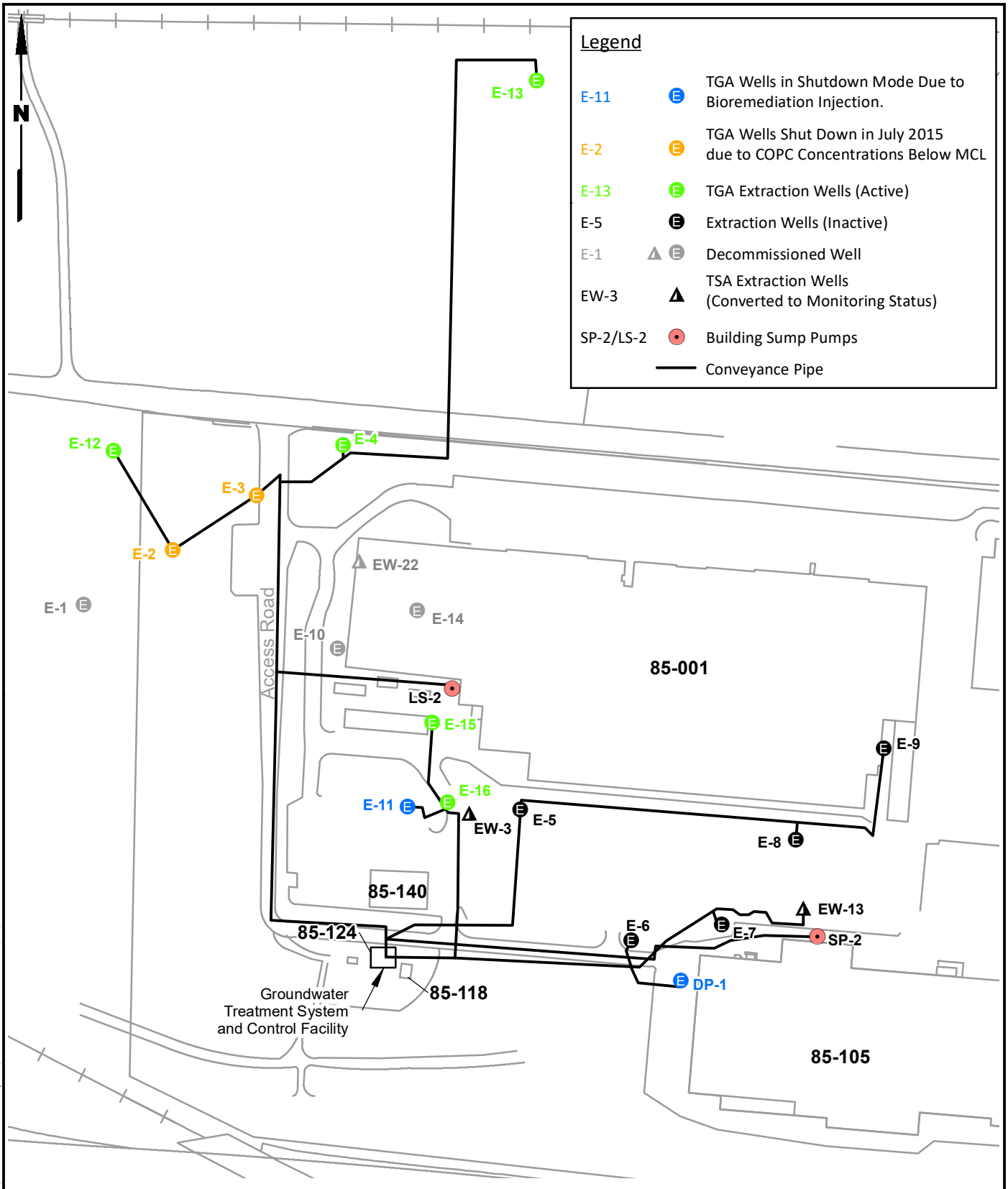
Boeing Portland
Gresham, Oregon

TGA Groundwater Performance Monitoring Locations and Corrective Action Areas

Figure 2



Notes

1. E-1 decommissioned June 2004.
2. E-10, E-14, and EW-22 decommissoned February 2010.

0 300 600

Scale in Feet

G:\Projects\025\116\120\430\2020 TGA Annual Report\F03 GW Extraction.mxd 1/28/2021

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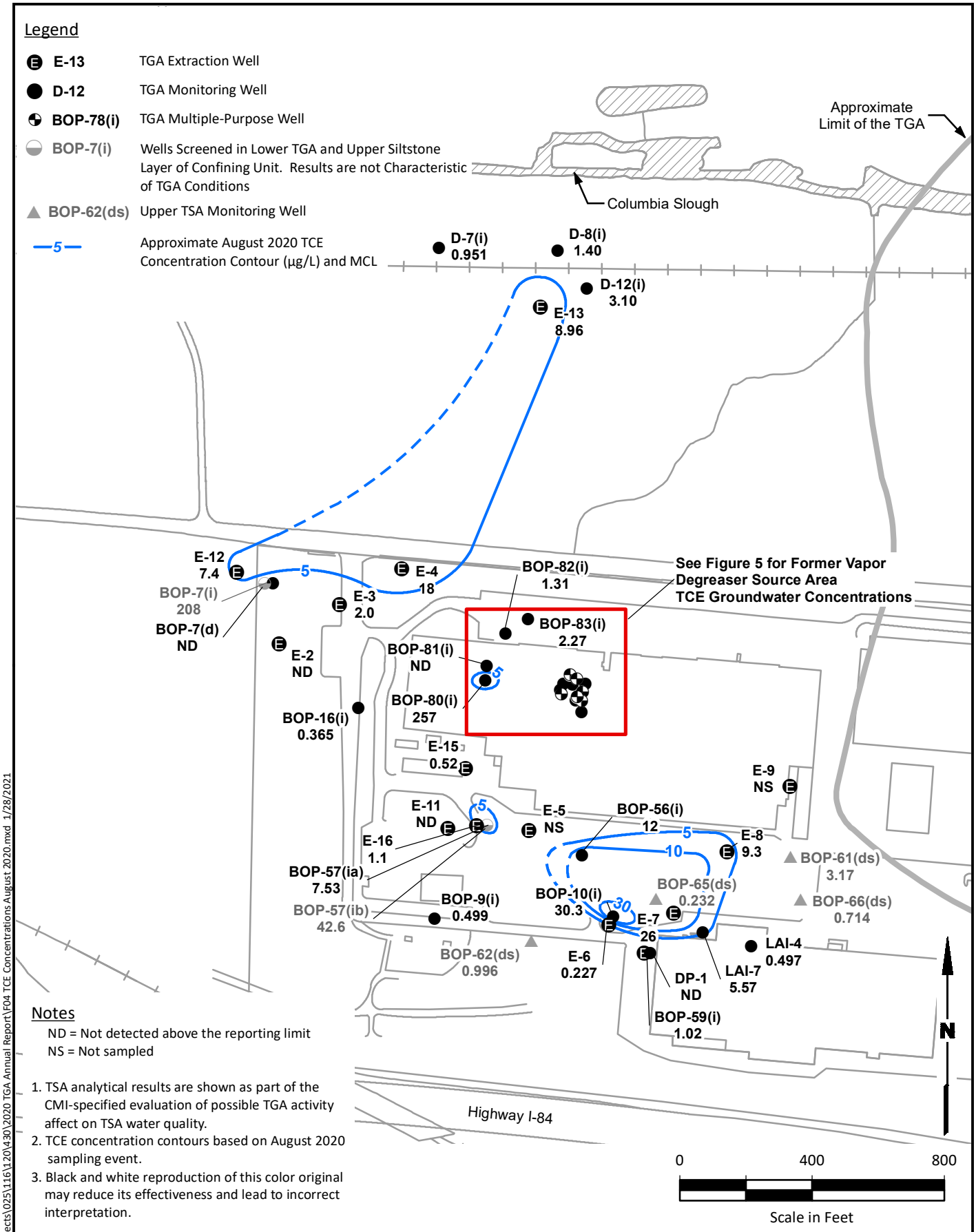
Gresham, Oregon

Groundwater Extraction and Treatment System Configuration

Figure 3



Notes

ND = Not detected above the reporting limit
NS = Not sampled

1. TSA analytical results are shown as part of the CMI-specified evaluation of possible TGA activity affect on TSA water quality.
2. TCE concentration contours based on August 2020 sampling event.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

G:\Projects\025\116\120\430\2020 TGA Annual Report\F04 TCE Concentrations August 2020.mxd 1/28/2021

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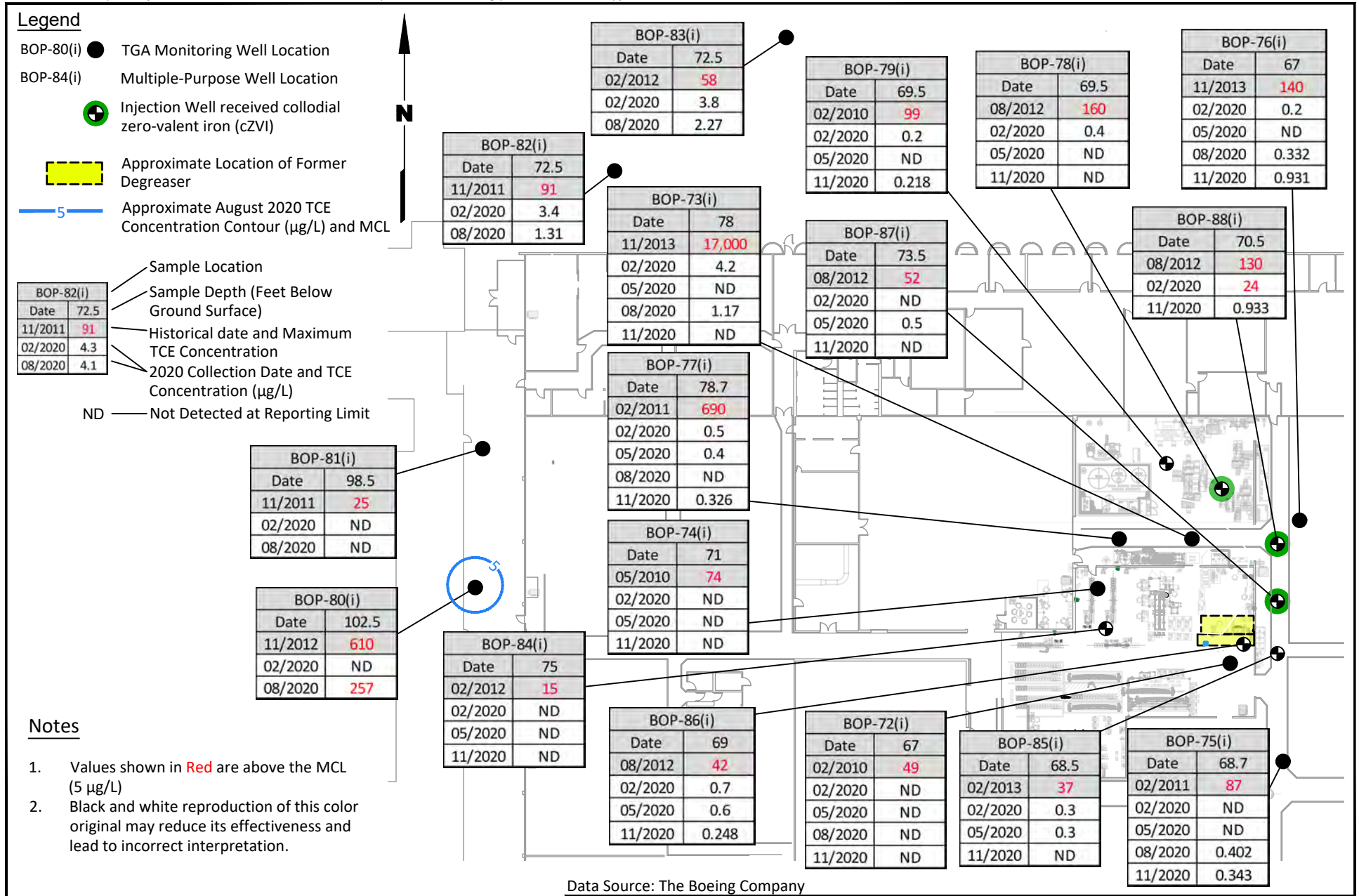
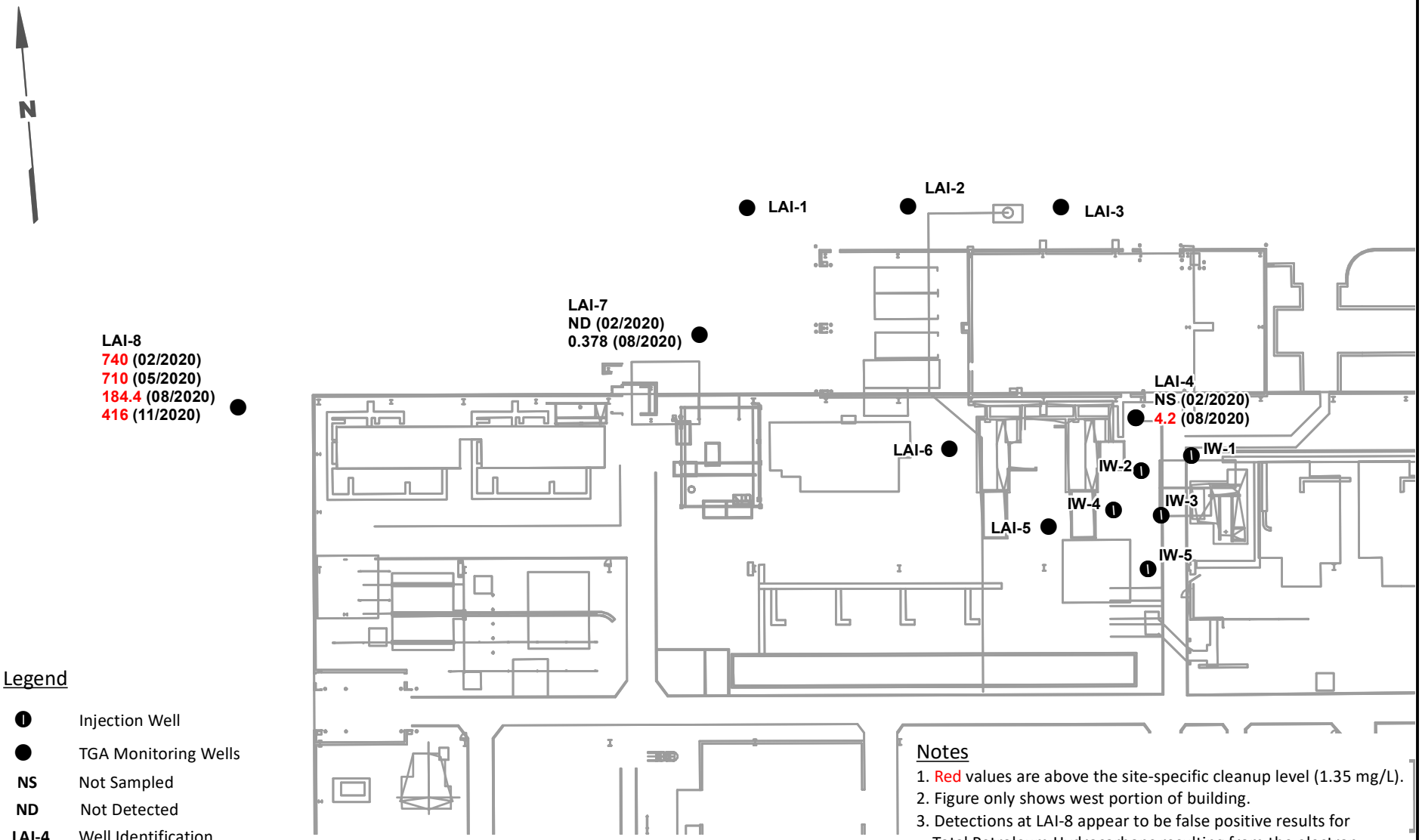
Boeing Portland Gresham, Oregon	**TCE Groundwater Results in TGA August 2020**	Figure 4


Legend
BOP-80(i) TGA Monitoring Well Location
BOP-84(i) Multiple-Purpose Well Location
Injection Well received collodial zero-valent iron (cZVI)
Approximate Location of Former Degreaser
5 Approximate August 2020 TCE Concentration Contour (µg/L) and MCL
Sample Location
Sample Depth (Feet Below Ground Surface)
Historical date and Maximum TCE Concentration
2020 Collection Date and TCE Concentration (µg/L)
ND Not Detected at Reporting Limit
N
BOP-82(i) Date 72.5 11/2011 91 02/2020 4.3 08/2020 4.1
BOP-83(i) Date 72.5 02/2012 58 02/2020 3.8 08/2020 2.27
BOP-82(i) Date 72.5 11/2011 91 02/2020 3.4 08/2020 1.31
BOP-79(i) Date 69.5 02/2010 99 02/2020 0.2 05/2020 ND 11/2020 0.218
BOP-78(i) Date 69.5 08/2012 160 02/2020 0.4 05/2020 ND 11/2020 ND
BOP-76(i) Date 67 11/2013 140 02/2020 0.2 05/2020 ND 08/2020 0.332 11/2020 0.931
BOP-73(i) Date 78 11/2013 17,000 02/2020 4.2 05/2020 ND 08/2020 1.17 11/2020 ND
BOP-87(i) Date 73.5 08/2012 52 02/2020 ND 05/2020 0.5 11/2020 ND
BOP-88(i) Date 70.5 08/2012 130 02/2020 24 11/2020 0.933
BOP-77(i) Date 78.7 02/2011 690 02/2020 0.5 05/2020 0.4 08/2020 ND 11/2020 0.326
BOP-81(i) Date 98.5 11/2011 25 02/2020 ND 08/2020 ND
BOP-74(i) Date 71 05/2010 74 02/2020 ND 05/2020 ND 11/2020 ND
BOP-80(i) Date 102.5 11/2012 610 02/2020 ND 08/2020 257
BOP-84(i) Date 75 02/2012 15 02/2020 ND 05/2020 ND 11/2020 ND
BOP-86(i) Date 69 08/2012 42 02/2020 0.7 05/2020 0.6 11/2020 0.248
BOP-72(i) Date 67 02/2010 49 02/2020 ND 05/2020 ND 08/2020 ND 11/2020 ND
BOP-85(i) Date 68.5 02/2013 37 02/2020 0.3 05/2020 0.3 11/2020 ND
BOP-75(i) Date 68.7 02/2011 87 02/2020 ND 05/2020 ND 08/2020 0.402 11/2020 0.343
Notes
1. Values shown in Red are above the MCL (5 µg/L)
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
Data Source: The Boeing Company
0 50 100
Scale in Feet
LANDAU ASSOCIATES
Boeing Portland
Gresham, Oregon
Historical Maximum and 2020 TCE Groundwater Results Former Vapor Degreaser Source Area
Figure 5

G:\Projects\025\116\120\430\2020 TGA Annual Report\F06 Coolant Release Results.mxd



Legend

I	Injection Well
●	TGA Monitoring Wells
NS	Not Sampled
ND	Not Detected
LAI-4	Well Identification
02/2020	Total Diesel- and Motor Oil-Range Petroleum Hydrocarbons for 2020

Notes

1. Red values are above the site-specific cleanup level (1.35 mg/L).
2. Figure only shows west portion of building.
3. Detections at LAI-8 appear to be false positive results for Total Petroleum Hydrocarbons resulting from the electron donor injection to Stagnation Area #2.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Adapted from: Boeing 2006

0 50 100

Scale in Feet

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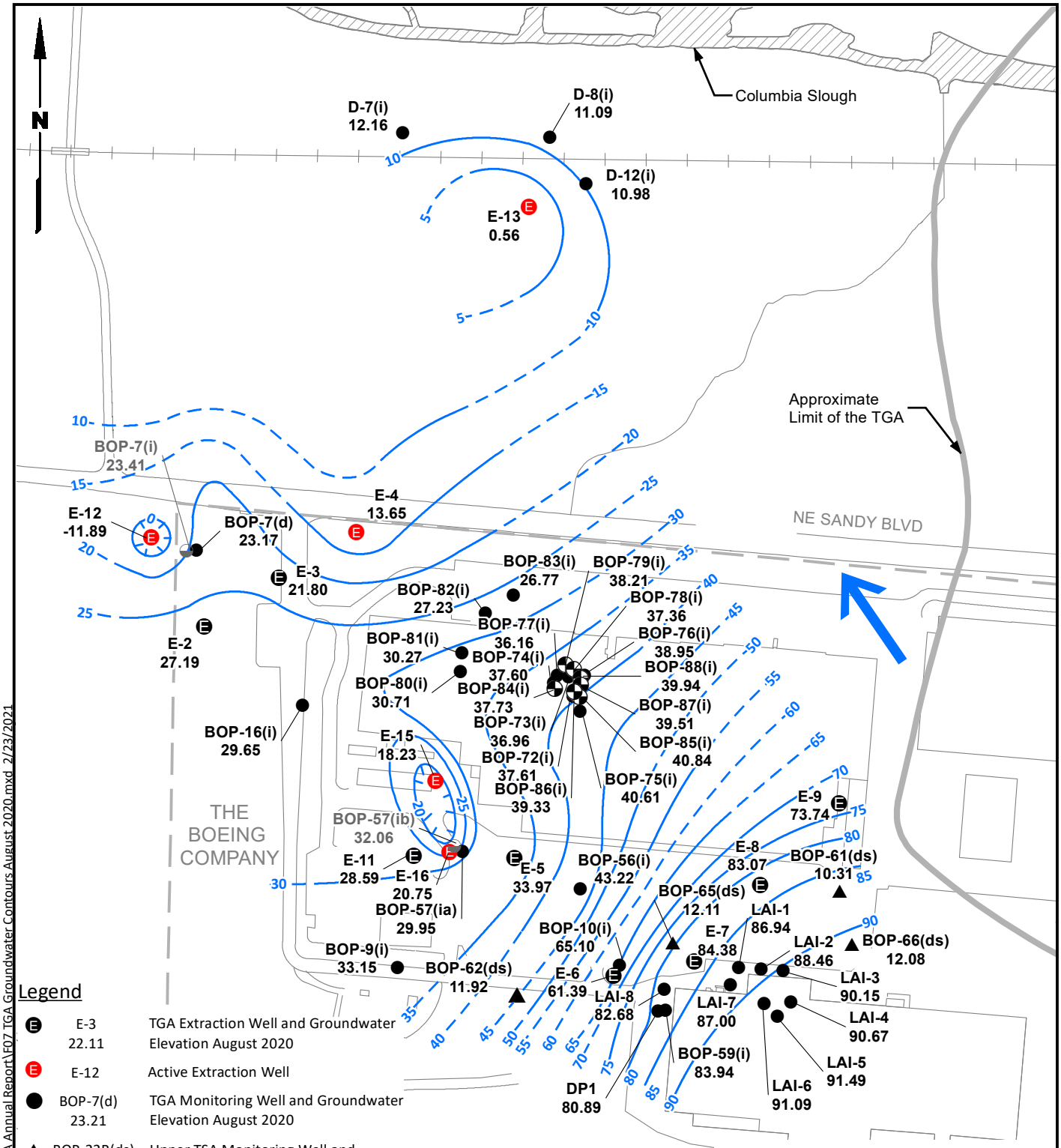
Gresham, Oregon

Coolant Release Groundwater Results 2020

Figure 6



Legend

E-3 22.11	TGA Extraction Well and Groundwater Elevation August 2020
E-12	Active Extraction Well
BOP-7(d) 23.21	TGA Monitoring Well and Groundwater Elevation August 2020
BOP-22R(ds) 8.70	Upper TSA Monitoring Well and Groundwater Elevation August 2020
BOP-84(i)	TGA Multiple-Purpose Wells
BOP-7(i)	Wells screened in lower TGA and upper siltstone layer of confining layer
5	Approximate Groundwater Elevation Contour (ft. MSL)
	Groundwater Flow Direction

Notes

1. NM = Not measured.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 350 700

Scale in Feet

G:\Projects\025\116\120\430\2020 TGA Annual Report\F07 TGA Groundwater Contours August 2020.mxd 2/23/2021

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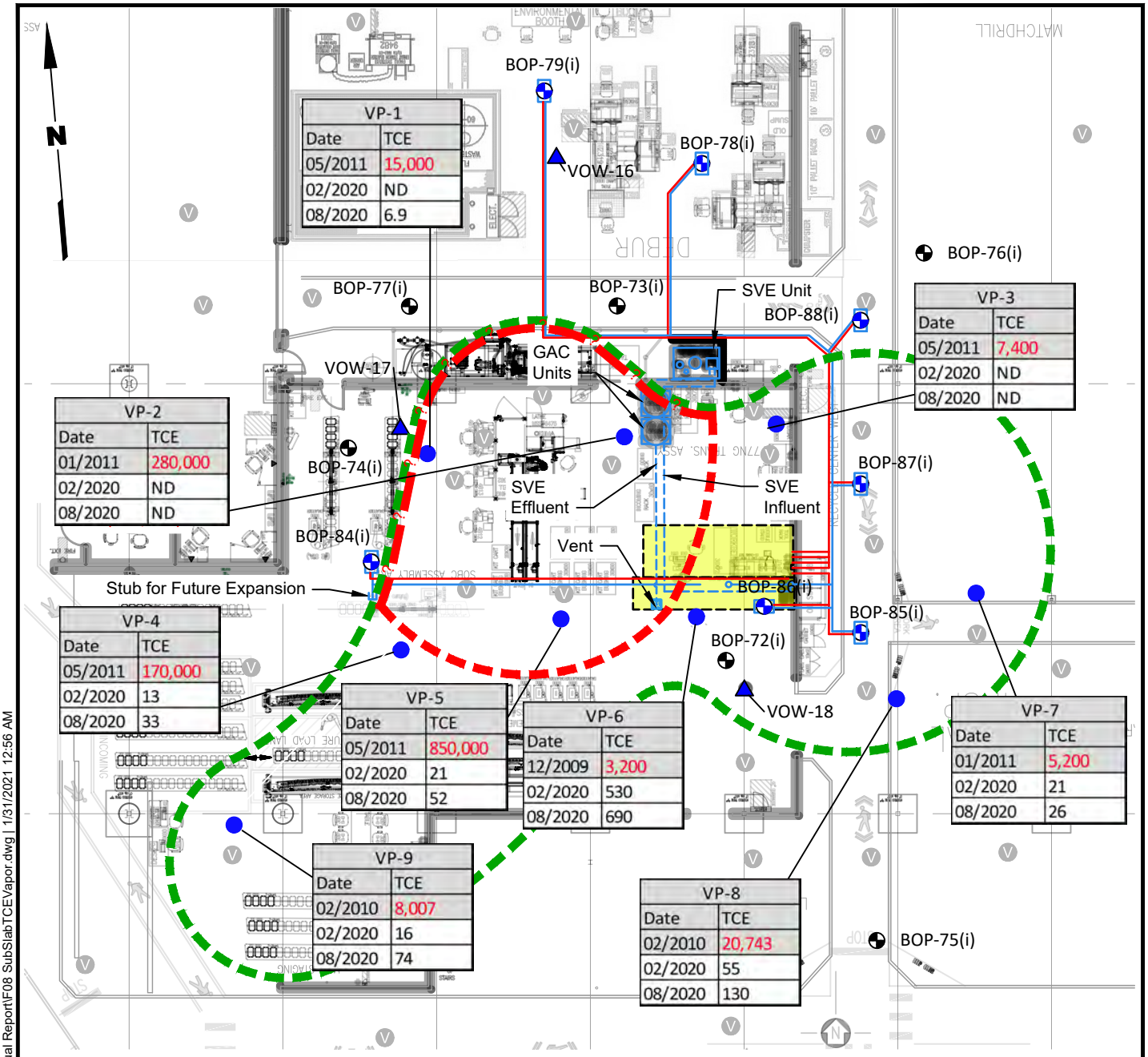
Boeing Portland
Gresham, Oregon

TGA Groundwater Elevation Contours - August 2020

Figure 7



Legend

- Sub-Slab Vapor Pin Location
- Multiple-Purpose SVE and Monitoring Well Location
- Monitoring Well Location
- Baseline Investigation Sub-Slab Grab Sample Location
- Vapor Observation Well Location

VP-9	
Date	TCE
02/2010	8,007
02/2020	16

Sample Location

Baseline Concentration Date and TCE Concentration

2020 Collection Date and TCE Concentration (µg/m3)

- Approximate Location of Former Degreasers
- Below-ground Donor Injection Piping
- Below-ground SVE Piping
- Above-ground SVE Piping
- Baseline (2009-2011) TCE Concentrations Above Screening Level
- 2018 Rebound TCE Concentrations Above Screening Level

ND — TCE Not Detected above Laboratory Reporting Limit

Notes

1. Values shown in RED are above screening level (2,900 µg/m^3).
2. The soil vapor extraction (SVE) system was shut down on October 31, 2017 to facilitate a facility construction project in the area. The SVE system had been non-operational for 283 days prior sampling on August 10, 2018. The SVE system resumed operation on August 20, 2018.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 20 40

Scale in Feet

Source: The Boeing Company

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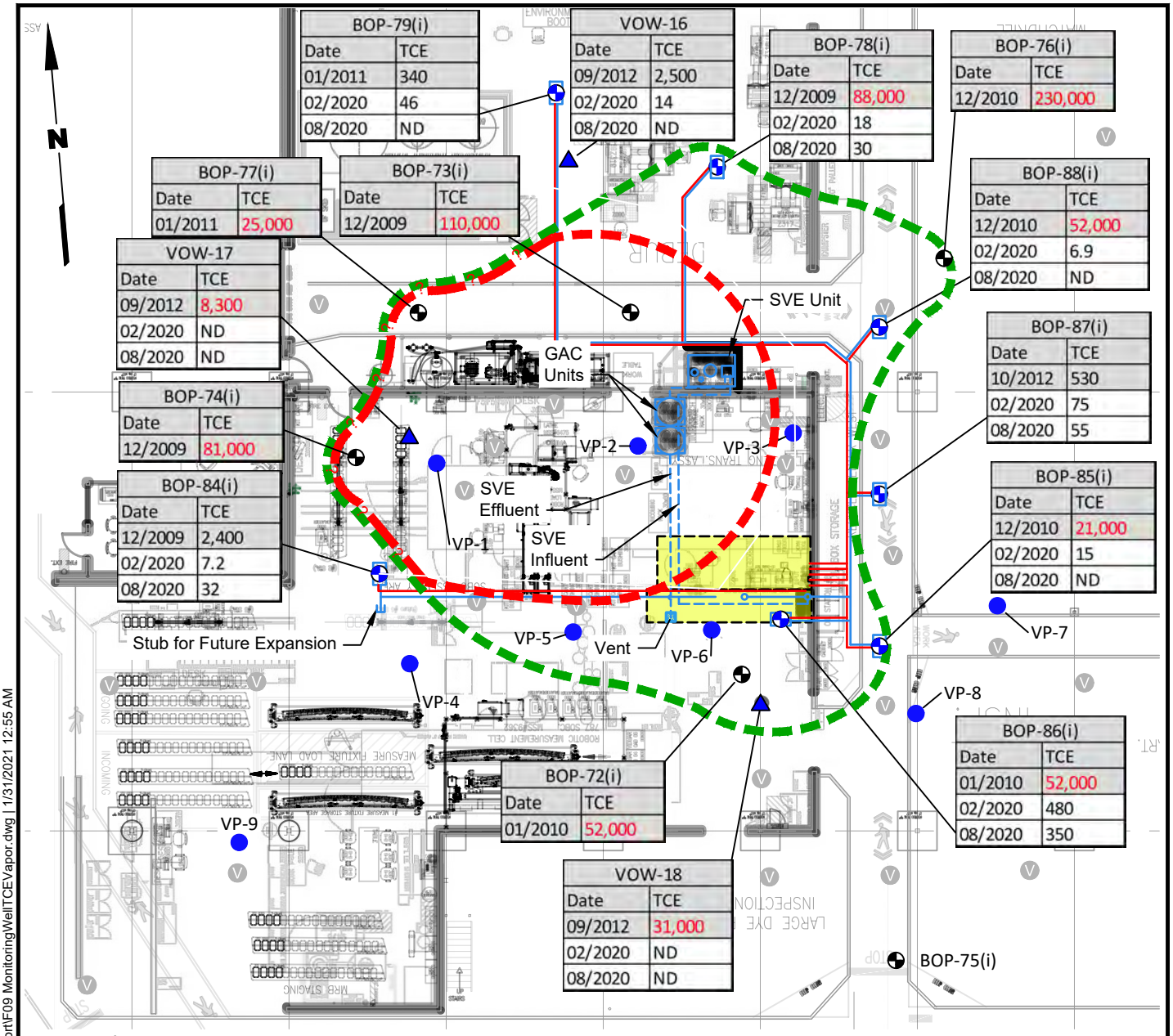
Boeing Portland
Gresham, Oregon

Sub-Slab TCE Vapor Results
Former Vapor Degreaser
Source Area

Figure
8



Legend

- Sub-Slab Vapor Pin Location
- Multiple-Purpose SVE and Monitoring Well Location
- Monitoring Well Location
- Baseline Investigation Sub-Slab Grab Sample Location
- Vapor Observation Well Location
- Approximate Location of Former Degreasers
- Below-ground Donor Injection Piping
- Below-ground SVE Piping
- Above-ground SVE Piping
- Baseline (2009-2012) TCE Concentrations Above Screening Level
- 2018 Rebound TCE Concentrations Above Screening Level

VOW-18	
Date	TCE
09/2012	31,000
02/2020	ND

Sample Location
Baseline Concentration Date and TCE Concentration
2020 Collection Date and TCE Concentration (µg/m3)

ND TCE Not Detected above Laboratory Reporting Limit

Notes

1. Values shown in RED are above screening level (2,900 µg/m^3).
2. The soil vapor extraction (SVE) system was shut down on October 31, 2017 to facilitate a facility construction project in the area. The SVE system had been non-operational for 283 days prior sampling on August 10, 2018. The SVE system resumed operation on August 20, 2018.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 20 40
Scale in Feet

Source: The Boeing Company

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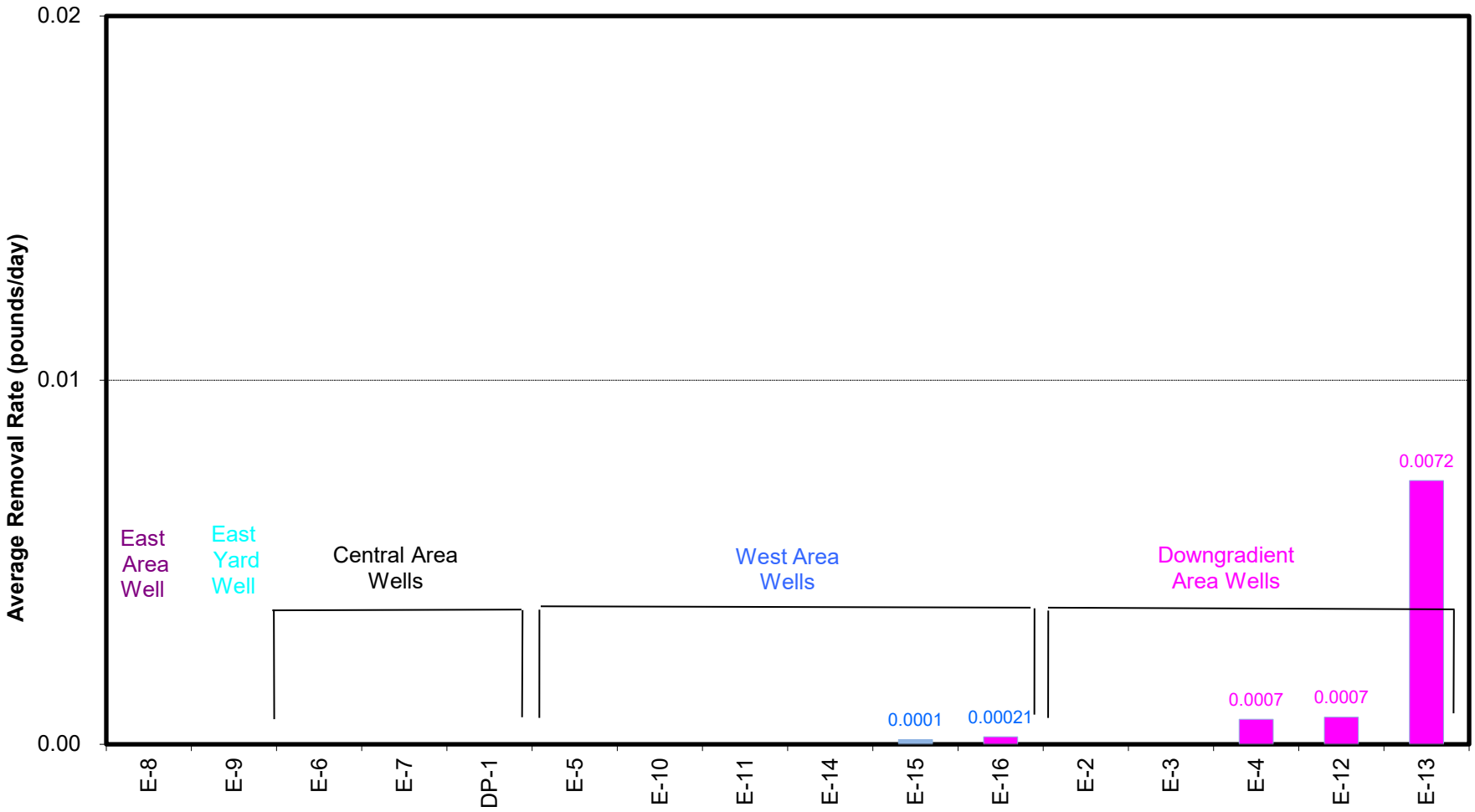
Gresham, Oregon

At-Depth TCE Vapor Results - Former Vapor Degreaser Source Area

Figure 9



Notes:
Total VOCs include the following constituents: TCA, TCE, total 1,2-DCE, PCE, and 1,1-DCE.
Extraction wells with no mass removal in 2020 are due to extraction well decommissioning or shut down because of low VOC mass removal because of concentrations below maximum contaminant cleanup level or bioremediation activities in the immediate area.

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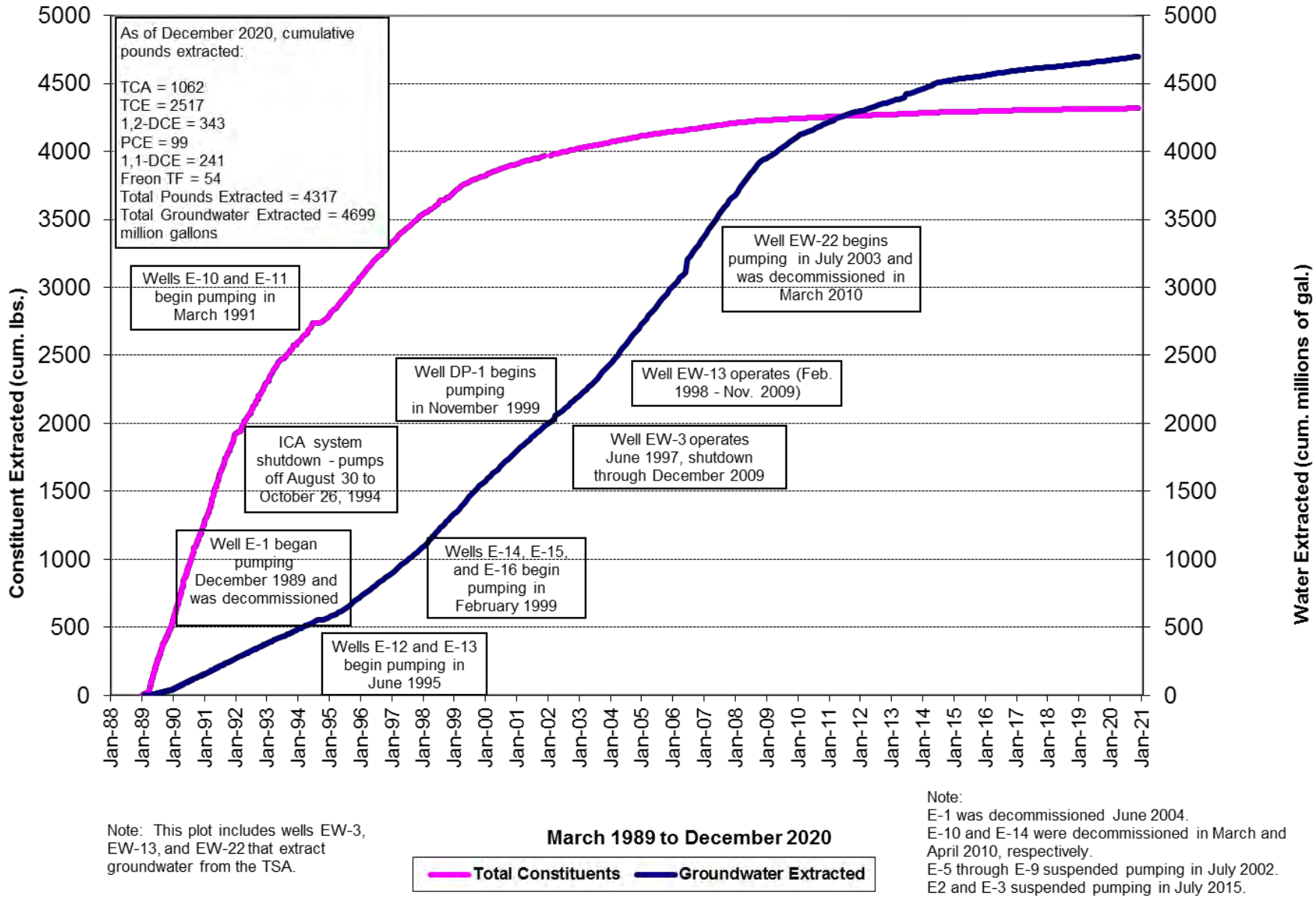
Gresham, Oregon

Average Total Mass Removal Rates for 2020

Figure
10



Note: This plot includes wells EW-3, EW-13, and EW-22 that extract groundwater from the TSA.

Note:
E-1 was decommissioned June 2004.
E-10 and E-14 were decommissioned in March and April 2010, respectively.
E-5 through E-9 suspended pumping in July 2002.
E2 and E-3 suspended pumping in July 2015.

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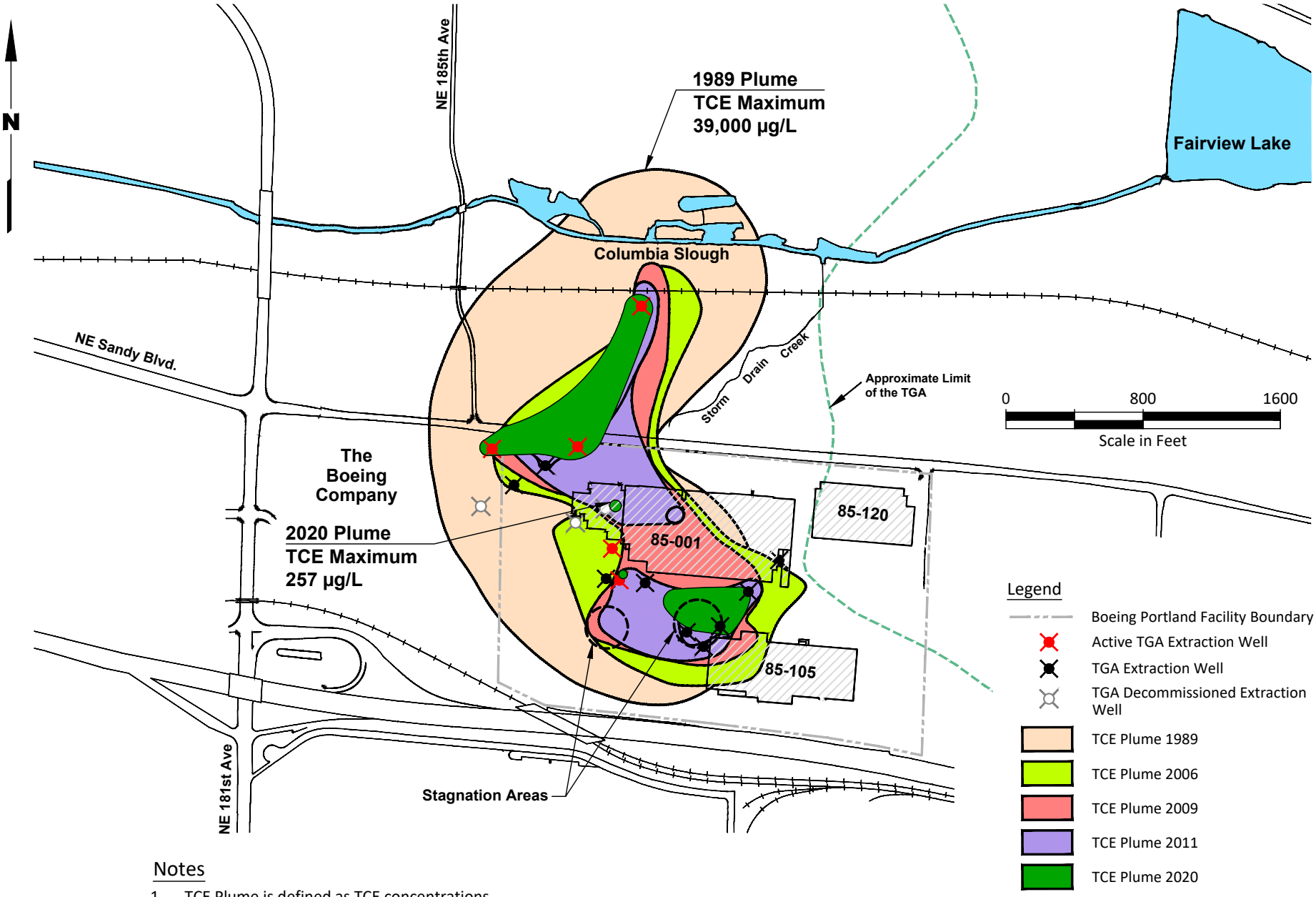
Boeing Portland Gresham, Oregon	**Groundwater Treatment System Performance**	Figure 11



Notes

1. TCE Plume is defined as TCE concentrations greater than the 5 µg/L.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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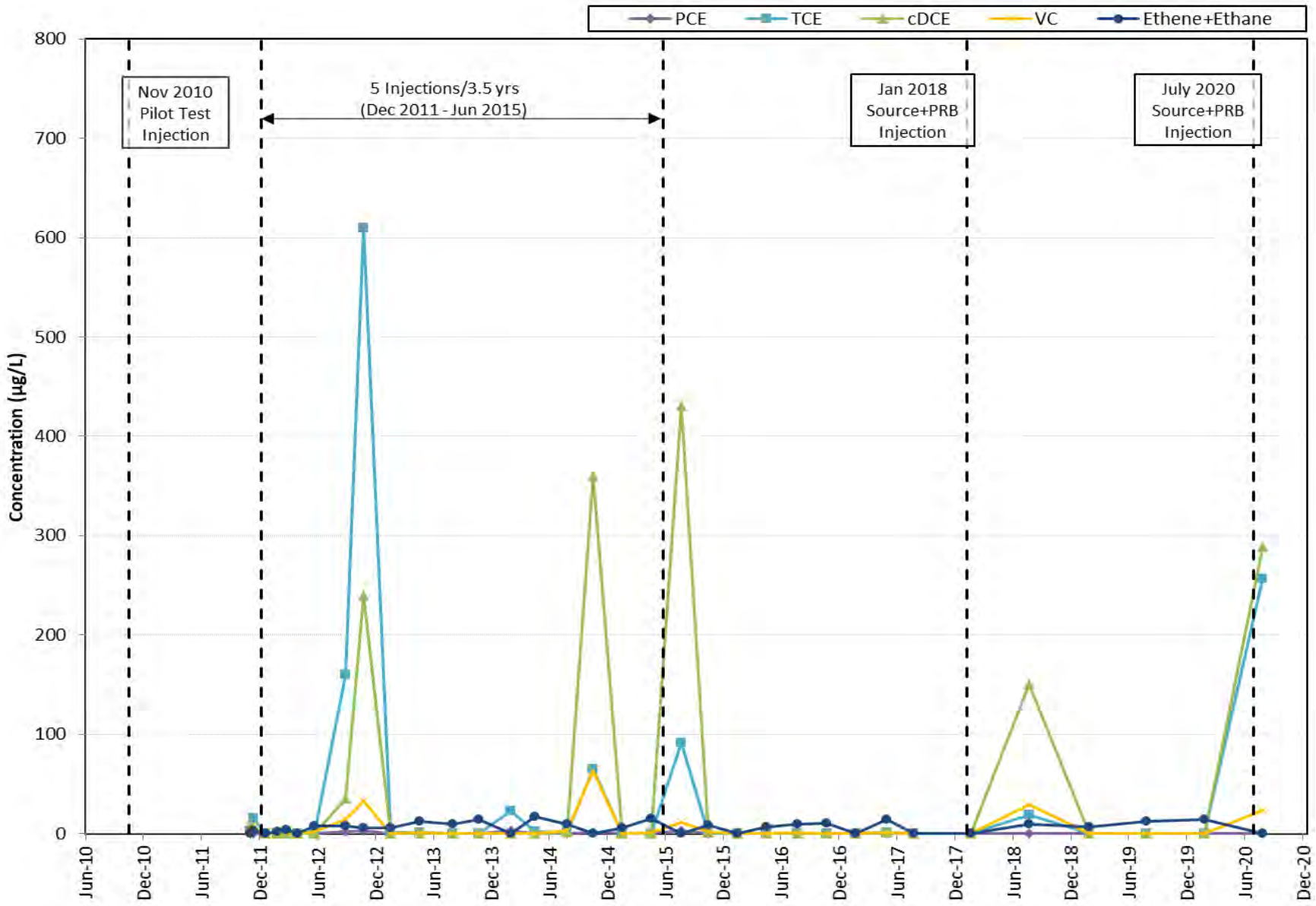
Gresham, Oregon

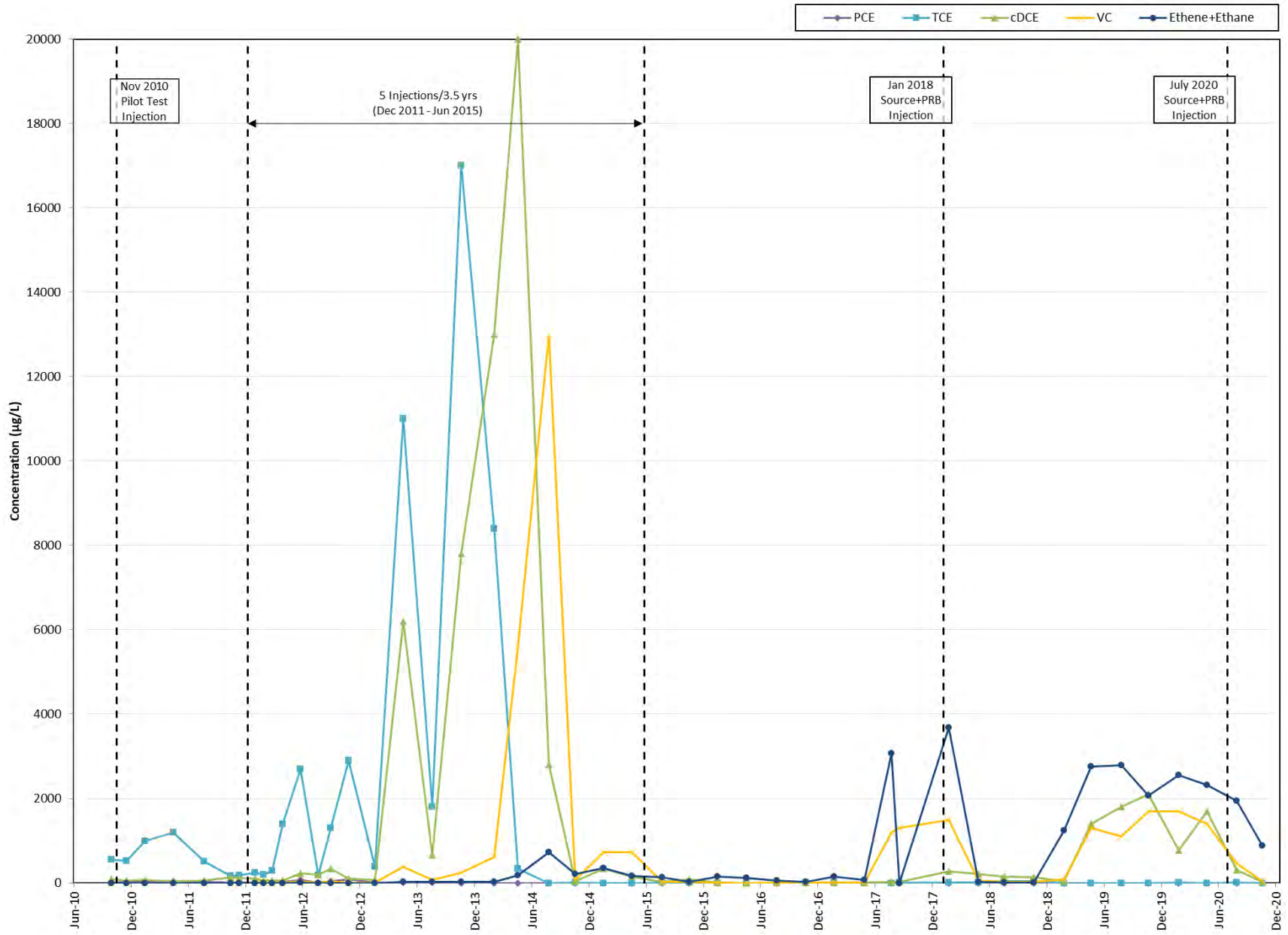
Reduction in TGA TCE Plume Extent Over Time

Figure 12



LANDAU ASSOCIATES

Boeing Portland Gresham, Oregon	**Time versus Concentration Plot BOP-80(i)**	Figure 13

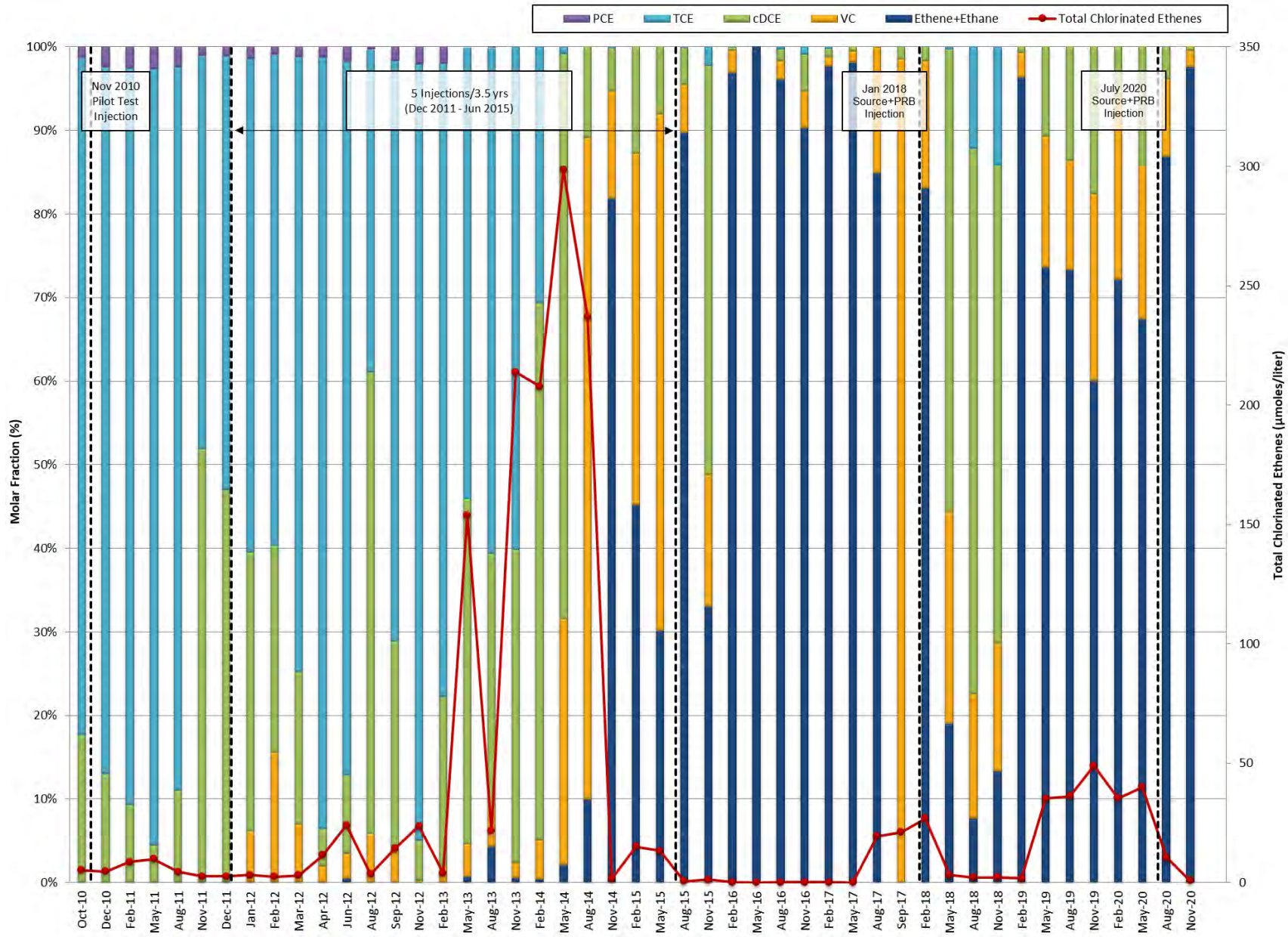


LANDAU ASSOCIATES

Boeing Portland
Gresham, Oregon

Time versus Concentration Plot
BOP-73(i)

Figure
14



LANDAU ASSOCIATES	Boeing Portland Gresham, Oregon	**Molar Fraction Plot BOP-73(i)**

Figure
15

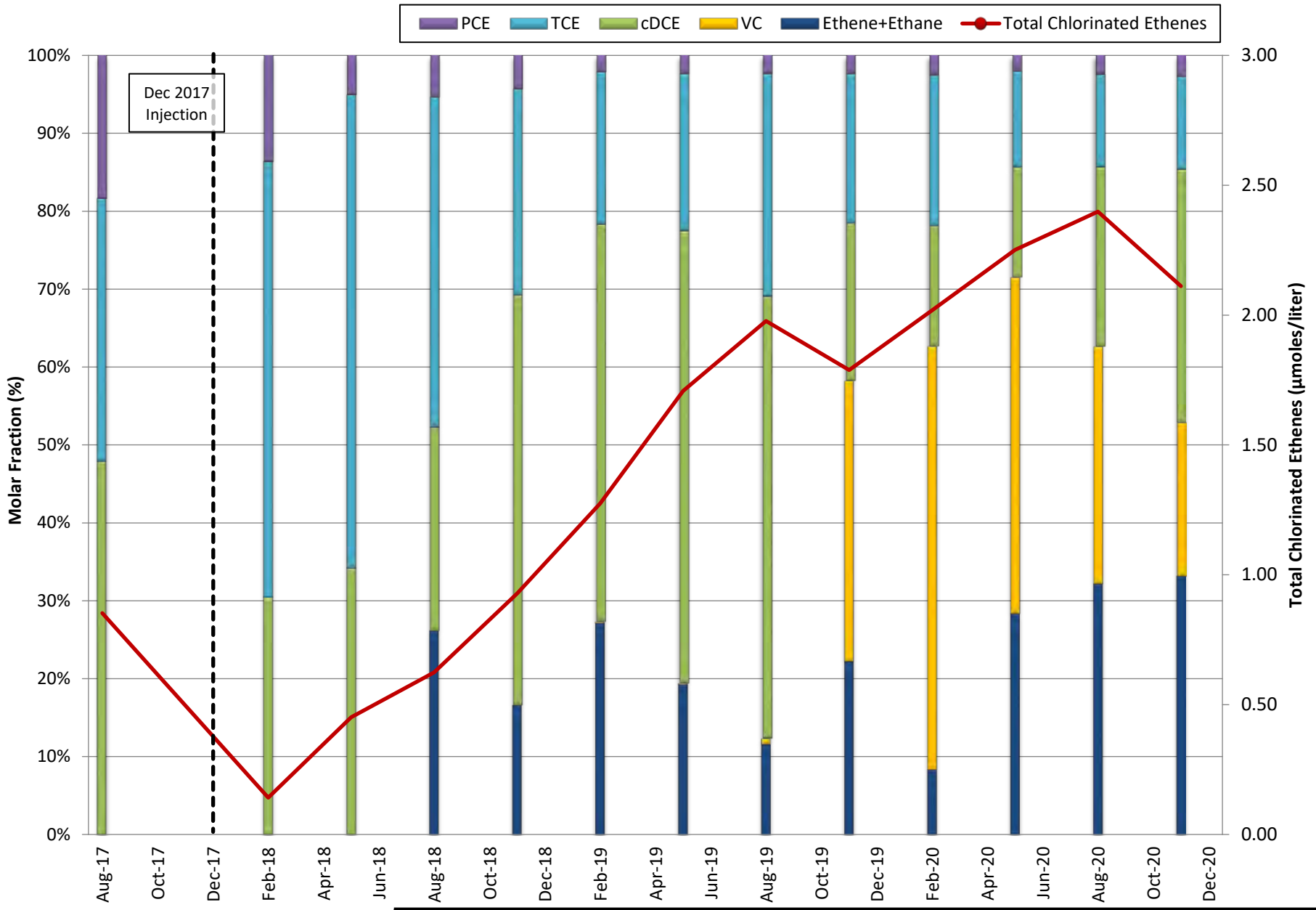
LANDAU ASSOCIATES

Boeing Portland
Gresham, Oregon

Molar Fraction Plot BOP-9(i)—Stagnation Area #1

Figure
16

2/24/21 P:\025\116\FileRm\R\TGA\TGA Annuals\2020 TGA Annual Rpt\Figures\sourcefiles\F17 Molar Fraction BOP-10i,E6,E7.docx



Note: Molar fractions are average of all three Stagnation Area #2 injection wells: BOP-10i, E-6, and E-7.

LANDAU ASSOCIATES

Boeing Portland
Gresham, Oregon

Molar Fraction Plot BOP-10(i) Area—Stagnation Area #2

Figure
17

Table 1
Performance Monitoring Program
Boeing Portland
Gresham, Oregon

Aquifer and Well Use	Location	Current Sampling Frequency		Proposed Sampling Frequency (a)	
		Groundwater Elevation	Groundwater Quality	Groundwater Elevation	Groundwater Quality
West Area					
TGA Well	BOP-16(i)	S	S	S	S
TGA Well	BOP-57(ia)	S	S	S	S
TGA Well	BOP-57(ib)	A	A	A	A
TGA Extraction Well-shutdown	E-11	S	A	S	A
TGA Extraction Well	E-15	Q	Q	Q	Q
TGA Extraction Well	E-16	Q	Q	Q	Q
Central Area					
TGA Well	BOP-10(i)	Q	Q	Q	Q
TGA Well	BOP-56(i)	S	S	S	S
TGA Well	BOP-59(i)	S	S	S	S
TGA Extraction Well-shutdown	E-6	Q	Q	Q	Q
TGA Extraction Well-shutdown	E-7	Q	Q	Q	Q
TGA Extraction Well	DP-1	Q	Q	Q	Q
Upper TSA Well	BOP-65(ds) (b)	A	A	A	A
East Yard					
Upper TSA Well	BOP-61(ds) (b)	A	A	Discontinue	Discontinue
East Area					
TGA Extraction Well-shutdown	E-8	S	A	S	A
Upper TSA Well	BOP-66(ds) (b)	A	A	A	A
Southwest Area					
TGA Well	BOP-9(i)	Q	Q	S	S
Upper TSA Well	BOP-62(ds) (b)	B	B	B	B
Downgradient Area					
TGA Well	BOP-7(i)	A	A	A	A
TGA Well	BOP-7(d)	S	S	S	S
TGA Well	D-7(i)	A	A	A	A
TGA Well	D-8(i)	S	A	S	A
TGA Well	D-11(i)	A	A	A	A
TGA Well	D-12(i)	S	A	S	A
TGA Extraction Well-shutdown	E-2	S	A	S	A
TGA Extraction Well-shutdown	E-3	S	S	S	S
TGA Extraction Well	E-4	Q	Q	Q	Q
TGA Extraction Well	E-12	Q	Q	Q	Q
TGA Extraction Well	E-13	Q	Q	Q	Q

Table 1
Performance Monitoring Program
Boeing Portland
Gresham, Oregon

Aquifer and Well Use	Location	Current Sampling Frequency		Proposed Sampling Frequency (a)	
		Groundwater Elevation	Groundwater Quality	Groundwater Elevation	Groundwater Quality
Former Vapor Degreaser Source Area					
TGA Well	BOP-72(i)	Q	Q	Q	Q
TGA Well	BOP-73(i)	Q	Q	Q	Q
TGA Well	BOP-74(i)	Q	Q	Q	Q
TGA Well	BOP-75(i)	Q	Q	Q	Q
TGA Well	BOP-76(i)	Q	Q	Q	Q
TGA Well	BOP-77(i)	Q	Q	Q	Q
TGA Well	BOP-78(i)	Q	Q	Q	Q
TGA Well	BOP-79(i)	Q	Q	Q	Q
TGA Well	BOP-80(i)	S	S	S	S
TGA Well	BOP-81(i)	S	S	S	S
TGA Well	BOP-82(i)	S	S	S	S
TGA Well	BOP-83(i)	S	S	S	S
TGA Well	BOP-84(i)	Q	Q	Q	Q
TGA Well	BOP-85(i)	Q	Q	Q	Q
TGA Well	BOP-86(i)	Q	Q	Q	Q
TGA Well	BOP-87(i)	Q	Q	Q	Q
TGA Well	BOP-88(i)	Q	Q	Q	Q
Coolant Release					
TGA Well	LAI-4	S	S/C-S	S	S/C-S
TGA Well	LAI-7	S	S/C-S	S	S/C-S
TGA Well	LAI-8	Q	Q/C-Q	Q	Q/C-Q

Notes:

(a) Proposed modifications based on performance review; will be enacted upon ODEQ approval.

(b) TSA water quality data collected to evaluate remedy performance as part of TGA corrective measure performance. Passive diffusion bag samplers to be utilized for TSA sample collection.

Red colored text indicates proposed modification to monitoring frequency.

Abbreviations and Acronyms:

A = annual
C = coolant
S = semiannual
ODEQ = Oregon Department of Environmental Quality
Q = quarterly
S/C-S = Well sampled for multiple purposes. First abbreviation indicates sampling frequency for volatile organic compound (VOC) remedy/second abbreviation indicates sampling frequency for coolant release.
TGA = Troutdale Gravel Aquifer
TSA = Troutdale Sandstone Aquifer

Table 2
Groundwater Quality Summary
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Sample Date	Sample Type	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	1,1,1-TCA (µg/L)	PCE (µg/L)	TCE (µg/L)	Vinyl Chloride (µg/L)
		MCL:	7	70	200	5	5	2
WEST AREA								
BOP-16(i)	2/7/2020	N	ND	0.80	ND	ND	0.30	1.1
	8/10/2020	N	ND	0.77	ND	ND	0.37	2.2
BOP-57(ia)	2/6/2020	N	0.70	2.6	ND	1.9	13	0.80
	8/7/2020	N	0.53	3.6	ND	0.36	7.5	1.4
BOP-57(ib)*	8/7/2020	N	46	6.0	12	1.0	43	ND
E-11	2/27/2020	N	ND	ND	ND	ND	ND	ND
	8/12/2020	N	ND	0.36	ND	ND	ND	ND
E-15	2/6/2020	N	0.70	4.9	ND	ND	0.40	3.6
	5/5/2020	N	0.90	5.1	ND	ND	0.70	3.1
	8/12/2020	N	0.28	3.1	ND	ND	0.52	2.1
	11/4/2020	N	1.3	6.3	ND	ND	1.1	4.7
E-16	2/6/2020	N	0.70	1.2	ND	ND	1.6	1.8
	5/5/2020	N	0.70	1.4	ND	ND	1.5	1.5
	8/12/2020	N	0.51	0.86	ND	ND	1.1	0.83
	11/4/2020	N	0.64	1.3	ND	ND	1.4	1.3
CENTRAL AREA								
BOP-10(i)	2/10/2020	N	0.60	7.9	ND	4.7	29	0.40
	2/10/2020	FD	0.60	7.5	ND	6.7	27	0.50
	5/8/2020	N	0.80	13	ND	6.9	28	0.70
	8/10/2020	N	1.1	15	ND	9.7	30	0.85
	11/6/2020	N	1.3 J	18 J	ND UJ	9.9 J	28 J	1.0 J
BOP-56(i)	2/6/2020	N	ND	1.2	ND	5.4	12	ND
	8/7/2020	N	ND	1.3	ND	12	12	ND
BOP-59(i)	2/6/2020	N	ND	24	ND	ND	0.40	2.8
	2/6/2020	FD	ND	24	ND	ND	0.40	2.8
	8/7/2020	FD	ND	9.7	ND	ND	0.95	4.8
	8/7/2020	N	ND	10	ND	ND	1.0	5.1
DP-1	2/6/2020	N	ND	ND	ND	ND	ND	ND
	5/5/2020	N	ND	ND	ND	ND	ND	ND
	8/11/2020	N	ND	0.54	ND	ND	ND	1.2
	11/4/2020	N	ND	1.8	ND	ND	ND	2.3
E-6	2/10/2020	N	ND	7.1	ND	ND	ND	74
	5/8/2020	N	ND	10	ND	ND	ND	84
	8/10/2020	N	ND	43	ND	ND	0.23	66
	11/6/2020	N	ND	63	ND UJ	ND	0.48	38 J
E-7	2/10/2020	N	0.80	18	ND	4.7	27	0.30
	5/8/2020	N	ND	20	ND	3.8	23	ND
	8/10/2020	N	0.81	21	ND	4.7	25	0.35
	11/6/2020	N	0.68 J	19 J	ND UJ	4.5 J	21 J	0.22 J
EAST AREA								
E-8	8/12/2020	N	ND	2.4	ND	29	9.3	ND

Table 2
Groundwater Quality Summary
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Sample Date	Sample Type	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	1,1,1-TCA (µg/L)	PCE (µg/L)	TCE (µg/L)	Vinyl Chloride (µg/L)
		MCL:	7	70	200	5	5	2
SOUTHWEST AREA								
BOP-9(i)	2/10/2020	N	ND	1.1	ND	ND	0.90	0.50
	5/11/2020	N	ND	1.1	ND	ND	0.60	1.0
	8/10/2020	N	ND	0.93	ND	ND	0.50	0.96
	11/6/2020	N	ND	0.90	ND	ND	ND	1.0 J
DOWNGRADIENT AREA								
BOP-7(d)	2/5/2020	N	ND	0.70	ND	ND	0.30	1.0
	8/7/2020	N	ND	2.1	ND	ND	ND	3.8
BOP-7(i)*	8/10/2020	FD	21	17	1.6	4.7	210	ND
	8/10/2020	N	17	15	1.3	4.5	210	ND
D-7(i)	8/7/2020	N	ND	ND	ND	ND	0.95	ND
D-8(i)	8/7/2020	N	0.75	0.35	ND	0.27	8.7	ND
	9/1/2020	N	0.21 J	ND UJ	ND UJ	ND UJ	1.4 J	ND UJ
D-12(i)	8/7/2020	N	0.65	ND	ND	ND	3.1	ND
E-2	2/12/2020	N	ND	ND	ND	ND	ND	ND
	8/12/2020	N	ND	ND	ND	ND	ND	ND
E-3	2/6/2020	N	0.80	1.4	ND	ND	6.6	0.60
	8/12/2020	N	0.38	1.6	ND	ND	2	0.57
E-4	2/6/2020	N	4.4	2.1	ND	1.0	22	ND
	5/5/2020	FD	3.3 J+	2.0 J+	ND UJ	0.70 J+	20 J+	ND UJ
	5/5/2020	N	3.4	2.0	ND	0.80	21	ND
	8/12/2020	N	2.9	2.1	ND	0.67	18	ND
	11/4/2020	FD	3.4	2.1	ND	0.68	20	ND
	11/4/2020	N	3.4	2.1	ND	0.65	20	ND
E-12	2/13/2020	N	1.2	3.6	ND	0.20	7.3	1.0
	5/5/2020	N	1.6	3.4	ND	0.30	14	0.50
	8/12/2020	N	1.3	5.8	ND	0.24	7.4	1.1
	11/4/2020	N	1.3	4.6	ND	0.25	9.0	1.1
E-13	2/5/2020	N	1.9	1.7	ND	0.30	9.0	0.30
	5/5/2020	N	2.0	1.9	ND	0.30	9.0	0.30
	8/7/2020	N	2.0	1.5	ND	0.33	9.0	0.50
	11/4/2020	N	1.6	1.3	ND	0.38	11	0.33
FORMER VAPOR DEGREASER SOURCE AREA								
BOP-72(i)	2/11/2020	N	ND	2.3	ND	ND	ND	1.1
	5/11/2020	N	ND	4.6	ND	ND	ND	2.3
	8/13/2020	N	ND	1.1	ND	ND	ND	0.83
	11/5/2020	N	ND	ND	ND	ND	ND	ND
BOP-73(i)	2/11/2020	N	ND	780	ND	ND	4.2	1700
	5/11/2020	N	ND	1700	ND	ND	ND	1400
	8/14/2020	N	ND	300	ND	ND	1.2	460
	11/5/2020	N	ND	18	ND	ND	ND	38
BOP-74(i)	2/12/2020	N	ND	2.8	ND	ND	ND	1.6
	5/11/2020	N	ND	2.7	ND	ND	ND	1.4
	11/5/2020	N	ND	5.9	ND	ND	ND	1.1

Table 2
Groundwater Quality Summary
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Sample Date	Sample Type	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	1,1,1-TCA (µg/L)	PCE (µg/L)	TCE (µg/L)	Vinyl Chloride (µg/L)
		MCL:	7	70	200	5	5	2
BOP-75(i)	2/11/2020	N	ND	0.60	ND	ND	ND	0.60
	5/11/2020	N	ND	0.30	ND	ND	ND	0.30
	8/13/2020	N	ND	0.97	ND	ND	0.40	0.21
	11/5/2020	N	ND	1.8	ND	ND	0.34	0.22
BOP-76(i)	2/12/2020	N	ND	3.4	ND	ND	0.20	1.5
	5/11/2020	N	ND	2.9	ND	ND	ND	1.5
	8/14/2020	N	ND	0.88	ND	ND	0.33	8.5
	11/5/2020	N	ND	1.4	ND	ND	0.93	2.7
BOP-77(i)	2/11/2020	N	ND	6.5	ND	ND	0.50	3.2
	5/11/2020	N	ND	17	ND	ND	0.40	9.2
	8/14/2020	N	ND	3.2	ND	ND	ND	1.4
	11/5/2020	N	ND	3.7	ND	ND	0.33	1.2
BOP-78(i)	2/7/2020	N	ND	4.0	ND	ND	0.40	11
	5/7/2020	N	ND	3.5	ND	ND	ND	12
	11/3/2020	N	ND	5.8	ND	ND	ND	12
BOP-79(i)	2/7/2020	N	ND	0.70	ND	ND	0.20	0.30
	5/7/2020	N	ND	0.40	ND	ND	ND	0.30
	11/3/2020	N	ND	3.0	ND	ND	0.22	1.4
BOP-80(i)	2/11/2020	N	ND	ND	ND	ND	ND	ND
	8/13/2020	N	9.9	290	ND	ND	260	23
BOP-81(i)	2/11/2020	N	ND	ND	ND	ND	ND	ND
	8/13/2020	N	ND	0.21	ND	ND	ND	0.24
BOP-82(i)	2/11/2020	N	1.1	0.60	ND	0.30	3.4	ND
	8/13/2020	N	0.91	1.8	ND	ND	1.3	0.40
BOP-83(i)	2/10/2020	N	0.70	16	ND	ND	3.8	ND
	8/13/2020	N	0.35	7.2	ND	ND	2.3	ND
BOP-84(i)	2/7/2020	N	ND	0.60	ND	ND	ND	0.90
	5/7/2020	N	ND	0.50	ND	ND	ND	0.70
	11/3/2020	N	ND	2.1	ND	ND	ND	1.3
BOP-85(i)	2/7/2020	N	ND	0.90	ND	ND	0.30	0.90
	5/7/2020	N	ND	0.90	ND	ND	0.30	1.1
	11/3/2020	N	ND	ND	ND	ND	ND	0.40
BOP-86(i)	2/7/2020	N	ND	0.50	ND	ND	0.70	0.40
	5/7/2020	N	ND	0.40	ND	ND	0.60	0.50
	11/3/2020	N	ND	ND	ND	ND	0.25	0.49
BOP-87(i)	2/27/2020	N	0.20	3.7	ND	ND	ND	62
	5/7/2020	N	0.30	5.3	ND	ND	0.50	82
	11/3/2020	N	ND	ND	ND	ND	ND	19
BOP-88(i)	2/12/2020	N	0.30	140	ND	0.90	24	23
	11/5/2020	N	ND	44	ND	ND	0.93	3.7
COOLANT AREA								
LAI-4	8/11/2020	N	ND	ND	ND	ND	0.50	ND
LAI-7	2/7/2020	N	ND	11	ND	2.6	7.4	ND
	8/11/2020	N	ND	3.6	ND	2.2	5.6	ND

Table 2
Groundwater Quality Summary
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Sample Date	Sample Type	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	1,1,1-TCA (µg/L)	PCE (µg/L)	TCE (µg/L)	Vinyl Chloride (µg/L)
		MCL:	7	70	200	5	5	2
LAI-8	5/8/2020	N	ND	17	ND	0.20	2.0	0.60
	8/11/2020	N	ND	19	ND	0.26	2.2	0.69
	11/6/2020	N	ND UJ	24 J	ND UJ	0.22 J	1.7 J	0.66 J
GETS INFLUENT/EFFLUENT								
Tower Effluent	2/10/2020	N	ND	ND	ND	ND	ND	ND
	2/10/2020	FD	ND	ND	ND	ND	ND	ND
	5/5/2020	N	ND	ND	ND	ND	ND	ND
	5/5/2020	FD	ND	ND	ND	ND	ND	ND
	8/11/2020	N	ND	ND	ND	ND	ND	ND
	8/11/2020	FD	ND	ND	ND	ND	ND	ND
	11/4/2020	N	ND	ND	ND	ND	ND	ND UJ
	11/4/2020	N	ND	ND	ND	ND	ND	ND UJ
Tower Influent	2/10/2020	N	1.3	1.1	ND	0.30	6.2	ND
	2/10/2020	N	1.3	1.1	ND	0.30	6.1	ND
	5/5/2020	N	1.7	1.9	ND	0.30	9.3	ND
	5/5/2020	FD	2.0	2.0	ND	0.30	9.3	ND
	8/11/2020	N	2.2	2.1	ND	0.34	9.8	0.90
	8/11/2020	FD	2.2	2.1	ND	0.33	9.9	0.92
	11/4/2020	N	1.6	1.6	ND	0.38	11	0.21 J
	11/4/2020	N	1.6	1.6	ND	0.37	10	0.23 J
LS-2	8/7/2020	N	ND	ND	ND	ND	ND	ND
TSA WELLS								
BOP-61(ds)	2/4/2020	N	ND	0.40	ND	ND	3.8	ND
	8/6/2020	N	ND	0.27	ND	ND	3.2	ND
BOP-62(ds)	8/5/2020	N	ND	0.36	ND	ND	1.0	ND
BOP-65(ds)	8/5/2020	N	ND	ND	ND	ND	0.23	ND
BOP-66(ds)	2/4/2020	N	ND	ND	ND	ND	1.8	ND
	8/6/2020	N	ND	ND	ND	ND	0.71	ND

Notes:

* Informational purposes only. Monitoring well is partly screened in the lower TGA and the upper siltstone layer of the confining layer and is not representative of TGA groundwater.

Yellow shading indicates concentration above the cleanup level.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity and the result may be biased high.

Abbreviations and Acronyms:

1,1-DCE = 1,1-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
µg/L = micrograms per liter
cis-1,2-DCE = cis-1,2-dichloroethene
DCE = dichloroethene
FD = field duplicate
MCL = maximum contaminant level
N = primary sample
ND = nondetect
PCE = tetrachloroethene
TCA = trichloroethane
TCE = trichloroethene
TGA = Troutdale Gravel Aquifer
TSA = Troutdale Sandstone Aquifer

Table 3
Water Analytical Results TPH-Dx and Field Parameters
Coolant Release Area
Boeing Portland
Gresham, Oregon

Location	SDG	Date Collected	NWTPH-Dx (mg/L) (a)			Field Parameters			Conventionals (mg/L)		
			Diesel	Motor Oil	Total TPH-Dx	pH (SU)	DO (mg/L)	ORP (mV)	TOC (Donor Indicator)	Nitrate	Sulfate
Cleanup Level (b)			N/A	N/A	1.35	N/A	N/A	N/A	N/A	N/A	N/A
LAI-4	410-10429-1	8/11/2020	1.4	2.8	4.2	7.7	7.0	-25	--	1.9	11
LAI-7	2086956	2/7/2020	0.11 U	0.27 U	ND	6.4	3.1	6.0	--	2.7	11
LAI-7	410-10429-1	8/11/2020	0.12	0.26	0.38	6.4	3.7	-43	--	4.0	14
LAI-8	2086956	2/7/2020	280	460	740	6.5	3.7	-52	--	0.10 U	1.0 U
LAI-8	2099064	5/8/2020	310 J	400 J	710	6.2	1.4	-54	80	0.50 U	1.0 U
LAI-8	410-10429-1	8/11/2020	96	88	180	6.1	2.6	-110	82	0.50 U	5.0 U
LAI-8	410-19949-1	11/6/2020	170 J	250 J	420	6.5	2.0	17	77	0.10 UJ	1.0 U

Notes:

Yellow shading indicates concentration above the cleanup level.

(a) Samples analyzed post September 2006 had silica gel and acid wash preparation.

(b) Site-specific ODEQ Risk-Based cleanup standard based on sum of diesel and motor oil components.

-- = not analyzed

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = Indicates compound was analyzed for, but was not detected at the given reporting limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Abbreviations and Acronyms:

DO = dissolved oxygen

mg/L = milligrams per liter

mV = millivolt

N/A = not applicable

ND = Not detected

ODEQ = Oregon Department of Environmental Quality

ORP = oxygen reduction potential

SDG = sample delivery group

SU = standard unit

TPH-Dx = diesel-range total petroleum hydrocarbons

Table 4
Water Elevation Data
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Date	Reference Elevation (a) (ft, MSL)	Depth to Water (ft)	Groundwater Elevation (ft)
WEST AREA				
BOP-16(i)	2/5/2020	89.08	59.07	30.01
	8/4/2020	89.08	59.43	29.65
BOP-57(ia)	2/5/2020	95.45	65.68	29.77
	8/4/2020	95.45	65.5	29.95
BOP-57(ib)	8/4/2020	94.57	62.51	32.06
E-11	2/5/2020	101.01	71.08	29.93
	8/4/2020	101.01	72.42	28.59
E-15	2/5/2020	81	60.56	20.44
	5/4/2020	81	63.58	17.42
	8/3/2020	81	62.77	18.23
	11/2/2020	81	70.30	10.70
E-16	2/5/2020	93.8	71.71	22.09
	5/4/2020	93.8	72.93	20.87
	8/3/2020	93.8	73.05	20.75
	11/2/2020	93.8	72.85	20.95
E-5	2/5/2020	93.48	60.22	33.26
	8/4/2020	93.48	59.51	33.97
CENTRAL AREA				
BOP-10(i)	2/5/2020	109.2	39.78	69.42
	5/4/2020	109.2	38.4	70.80
	8/4/2020	109.2	44.1	65.10
	11/2/2020	109.2	41.32	67.88
BOP-56(i)	2/5/2020	99.07	56.18	42.89
	8/4/2020	99.07	55.85	43.22
BOP-59(i)	2/5/2020	110.2	26.02	84.18
	8/4/2020	110.2	26.26	83.94
DP-1	2/5/2020	108.8	25.13	83.67
	5/4/2020	108.8	26.18	82.62
	8/4/2020	108.8	27.91	80.89
	11/2/2020	108.8	28.69	80.11
E-6	2/5/2020	111.1	48.18	62.92
	5/4/2020	111.1	49.25	61.85
	8/4/2020	111.1	49.71	61.39
	11/2/2020	111.1	50.16	60.94
E-7	2/5/2020	106.75	20.65	86.10
	5/4/2020	106.75	21.87	84.88
	8/4/2020	106.75	22.37	84.38
	11/2/2020	106.75	22.29	84.46
EAST YARD				
E-9	2/5/2020	80.91	6.04	74.87
	8/4/2020	80.91	7.17	73.74
EAST AREA				
E-8	2/5/2020	93.23	8.01	85.22
	8/4/2020	93.23	10.16	83.07

Table 4
Water Elevation Data
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Date	Reference Elevation (a) (ft, MSL)	Depth to Water (ft)	Groundwater Elevation (ft)
SOUTHWEST AREA				
BOP-09(i)	2/5/2020	114.74	82.05	32.69
	5/4/2020	114.74	81.8	32.94
	8/4/2020	114.74	81.59	33.15
	11/2/2020	114.74	82.64	32.10
DOWNGRADIENT AREA				
BOP-07(d)	2/5/2020	82.28	52.84	29.44
	8/4/2020	82.28	59.11	23.17
BOP-07(i)	8/4/2020	83.08	59.67	23.41
D-07(i)	8/4/2020	45.38	33.22	12.16
D-08(i)	2/5/2020	29.3	16.3	13.00
	8/4/2020	29.3	18.21	11.09
D-12(i)	2/5/2020	33.51	20.6	12.91
	8/4/2020	33.51	22.53	10.98
E-12	2/5/2020	79.35	64.37	14.98
	5/4/2020	79.35	91.46	-12.11
	8/4/2020	79.35	91.24	-11.89
	11/2/2020	79.35	97.90	-18.55
E-13	2/5/2020	43.14	64.2	-21.06
	5/4/2020	43.14	59.63	-16.49
	8/4/2020	43.14	42.58	0.56
	11/2/2020	43.14	54.21	-11.07
E-2	2/5/2020	86.38	59.33	27.05
	8/4/2020	86.38	59.19	27.19
E-3	2/5/2020	80.4	60.31	20.09
	8/4/2020	80.4	58.6	21.80
E-4	2/5/2020	74.53	61.32	13.21
	5/4/2020	74.53	60.55	13.98
	8/3/2020	74.53	60.88	13.65
	11/2/2020	74.53	61.43	13.10
FORMER VAPOR DEGREASER SOURCE AREA				
BOP-72(i)	2/3/2020	82.63	46.31	36.32
	5/4/2020	82.63	46.42	36.21
	8/4/2020	82.63	45.02	37.61
	11/2/2020	82.63	45.19	37.44
BOP-73(i)	2/3/2020	83.32	47.6	35.72
	5/4/2020	83.32	47.67	35.65
	8/4/2020	83.32	46.36	36.96
	11/2/2020	83.32	47.35	35.97
BOP-74(i)	2/3/2020	82.9	59.7	23.20
	5/4/2020	82.9	58.03	24.87
	8/4/2020	82.9	45.3	37.60
	11/2/2020	82.9	46.78	36.12
BOP-75(i)	2/3/2020	83.36	43.99	39.37
	5/4/2020	83.36	43.92	39.44
	8/4/2020	83.36	42.75	40.61
	11/2/2020	83.36	42.68	40.68

Table 4
Water Elevation Data
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Date	Reference Elevation (a) (ft, MSL)	Depth to Water (ft)	Groundwater Elevation (ft)
BOP-76(i)	2/3/2020	83.44	45.6	37.84
	5/4/2020	83.44	47.45	35.99
	8/4/2020	83.44	44.49	38.95
	11/2/2020	83.44	49.12	34.32
BOP-77(i)	2/3/2020	83.39	53.24	30.15
	5/4/2020	83.39	52.79	30.60
	8/4/2020	83.39	47.23	36.16
	11/2/2020	83.39	48.45	34.94
BOP-78(i)	2/3/2020	83.16	45.83	37.33
	5/4/2020	83.16	45.31	37.85
	8/4/2020	83.16	45.8	37.36
	11/2/2020	83.16	45.09	38.07
BOP-79(i)	2/3/2020	83.34	47.27	36.07
	5/4/2020	83.34	46.9	36.44
	8/4/2020	83.34	45.13	38.21
	11/2/2020	83.34	45.78	37.56
BOP-80(i)	2/3/2020	83.24	52.54	30.70
	8/4/2020	83.24	52.53	30.71
BOP-81(i)	2/3/2020	83.22	53.01	30.21
	8/4/2020	83.22	52.95	30.27
BOP-82(i)	2/3/2020	80.83	54.02	26.81
	8/4/2020	80.83	53.6	27.23
BOP-83(i)	2/5/2020	80.13	56.15	23.98
	8/4/2020	80.13	53.36	26.77
BOP-84(i)	2/3/2020	83.05	50.8	32.25
	5/4/2020	83.05	46.29	36.76
	8/4/2020	83.05	45.32	37.73
	11/2/2020	83.05	44.08	38.97
BOP-85(i)	2/3/2020	83.38	49.9	33.48
	5/4/2020	83.38	45.31	38.07
	8/4/2020	83.38	42.54	40.84
	11/2/2020	83.38	43.29	40.09
BOP-86(i)	2/3/2020	83.45	50.05	33.40
	5/4/2020	83.45	46.85	36.60
	8/4/2020	83.45	44.12	39.33
	11/2/2020	83.45	44.09	39.36
BOP-87(i)	2/3/2020	83.36	50.8	32.56
	5/4/2020	83.36	44.34	39.02
	8/4/2020	83.36	43.85	39.51
	11/2/2020	83.36	44.22	39.14
BOP-88(i)	2/3/2020	83.35	50.75	32.60
	5/4/2020	83.35	45.42	37.93
	8/4/2020	83.35	43.41	39.94
	11/2/2020	83.35	44.12	39.23
COOLANT AREA				
LAI-1	8/4/2020	109.86	22.92	86.94
LAI-2	8/4/2020	109.89	21.43	88.46
LAI-3	8/4/2020	109.85	19.7	90.15

Table 4
Water Elevation Data
TGA and Select TSA Wells
Boeing Portland
Gresham, Oregon

Location	Date	Reference Elevation (a) (ft, MSL)	Depth to Water (ft)	Groundwater Elevation (ft)
LAI-4	2/5/2020	110.71	21.64	89.07
	8/4/2020	110.71	20.04	90.67
LAI-5	8/4/2020	110.56	19.07	91.49
LAI-6	8/4/2020	110.65	19.56	91.09
LAI-7	2/5/2020	109.9	21.37	88.53
	8/4/2020	109.9	22.90	87.00
LAI-8	2/5/2020	110.59	26.61	83.98
	5/8/2020	110.59	26.71	83.88
	8/4/2020	110.59	27.91	82.68
	11/2/2020	110.59	28.04	82.55
TSA WELLS				
BOP-61(ds)	2/3/2020	94.64	84.95	9.69
	8/3/2020	94.64	84.33	10.31
BOP-62(ds)	8/3/2020	112.29	100.37	11.92
BOP-65(ds)	8/3/2020	104.22	92.11	12.11
BOP-66(ds)	2/3/2020	102.97	91.67	11.30
	8/3/2020	102.97	90.89	12.08

Notes:

(a) Reference Elevation for the top of PVC well casing.

(b) Wells BOP-7(i) and BOP-57(ib) are installed with screens at the base of the TGA and the first layer of the Confining Unit 1 (CU1).

Abbreviations and Acronyms:

ft = feet

MSL = mean sea level

TGA = Troutdale Gravel Aquifer

TSA = Troutdale Sandstone Aquifer

PVC = polyvinyl chloride

Table 5
Sub-Slab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatile Organic Compounds (µg/m^3; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-1 (SG-44)	05/23/2011	29 U	44 U	61 U	44 U	15,000	NA	45
VP-1	02/14/2020	3.1 U	3.9 U	6.6 U	4.8 U	6.6 U	46	--
VP-1	08/21/2020	3.0 U	4.7 U	6.5 U	4.7 U	6.9	29	--
VP-2 (SG-34)	01/06/2011	200 U	310 U	NA	1,100	280,000	NA	310 U
VP-2	02/14/2020	2.9 U	4.5 U	6.2 U	4.5 U	6.2 U	54	--
VP-2	08/21/2020	3.0 U	4.6 U	6.4 U	4.6 U	6.3 U	36	--
VP-3 (SG-42)	05/23/2011	14 U	90	4,700	27	7,400	NA	240
VP-3	02/14/2020	2.9 U	4.5 U	6.2 U	4.5 U	6.2 U	48	--
VP-3	08/21/2020	2.7 U	4.2 U	9.5	4.2 U	5.7 U	24	--
VP-4 (SG-45)	05/23/2011	290 U	440 U	610 U	660	170,000	NA	450 U
VP-4	02/14/2020	3.0 U	4.6 U	6.4 U	4.6 U	13	44	--
VP-4	08/21/2020	2.9 U	4.5 U	6.2 U	4.5 U	33	60	--
VP-5 (SG-46)	05/23/2011	1,100	1,700	2,400	3,800	850,000	NA	1,800 U
VP-5	02/14/2020	2.8 U	4.4 U	6.0 U	4.4 U	21	60	--
VP-5	08/21/2020	3.1 U	4.8 U	6.6 U	4.8 U	52	59	--
VP-6 (SG-1)	12/17/2009	13 U	59	7,600	160	3,200	NA	440
VP-6	02/14/2020	5.9 U	53	3,000	9.2 U	530	120	--
VP-6	08/21/2020	29 U	54	4,000	45 U	690	87	--
VP-7 (SG-28B)	01/06/2011	30 U	3200	NA	1,900	5,200	NA	4,900
VP-7	02/14/2020	3.0 U	13	250	6.9	21	25	--
VP-7	08/21/2020	3.2 U	6.9	240	6.6	26	34	--
VP-8 (SG-11)	02/17/2010	100 U	14,000	190,000	7,400	21,000	NA	22,000
VP-8	02/14/2020	3.2 U	19	730	30	55	45	--
VP-8	08/21/2020	15 U	33	1,900	61	130	80	--
VP-9 (SG-24)	02/18/2010	100 U	100 U	190	100 U	8,000	NA	100 U
VP-9	02/14/2020	3.0 U	4.7 U	6.5 U	4.7 U	16	40	--
VP-9	08/21/2020	2.8 U	4.3 U	5.9 U	4.3 U	74	47	--

Table 5
Sub-Slab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Notes:

Yellow highlighted results are greater than the screening level.

(a) Risk-Based Concentration screening levels with 1,000 attenuation factor for vapor intrusion through building slab (ODEQ 6/7/2012).

U = Indicates the compound was undetected at the reported concentration.

Abbreviations and Acronyms:

-- = not analyzed

µg/m^3 = micrograms per cubic meter

1,1-DCA = 1,1-dichloroethane

1,1-DCE = 1,1-dichloroethene

1,1,1-TCA = 1,1,1-trichloroethane

cDCE = cis-1,2-dichloroethene

EPA = US Environmental Protection Agency

ODEQ = Oregon Department of Environmental Quality

PCE = tetrachloroethene

TCE = trichloroethene

Table 6
Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Sample Date	Cumulative Days Since Startup	Volatile Organic Compounds (µg/m^3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
		Screening Level (a)	2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VOW-16	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	14	45	NA
VOW-17	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	52	NA
VOW-18	2/14/2020	2707	2.8 U	4.4 U	6.1 U	4.4 U	6.0 U	88	NA
BOP-78(i)	2/14/2020	2707	3.1 U	4.9 U	6.7 U	4.9 U	18	84	NA
BOP-79(i)	2/14/2020	2707	3.1 U	4.8 U	8.3	4.8 U	46	78	NA
BOP-84(i)	2/14/2020	2707	3.0 U	4.7 U	6.5 U	4.7 U	7.2	83	NA
BOP-85(i)	2/14/2020	2706	3.1 U	4.8 U	6.6 U	4.8 U	15	250	NA
BOP-86(i)	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	480	97	NA
BOP-87(i)	2/14/2020	2707	3.1 U	4.8 U	6.6 U	4.8 U	75	150	NA
BOP-88(i)	2/14/2020	2707	3.1 U	4.8 U	9.3	4.8 U	6.9	99	NA
VOW-16	8/21/2020	2896	3.1 U	4.8 U	7.2	4.8 U	6.5 U	43	NA
VOW-17	8/21/2020	2896	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	23	NA
VOW-18	8/21/2020	2896	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	61	NA
BOP-78(i)	8/21/2020	2896	3.0 U	4.6 U	6.4 U	4.6 U	30	59	NA
BOP-79(i)	8/21/2020	2896	39 U	60 U	83 U	60 U	82 U	100 U	NA
BOP-84(i)	8/21/2020	2896	3.0 U	4.6 U	6.4 U	4.6 U	32	110	NA
BOP-85(i)	8/21/2020	2896	3.6 U	5.6 U	7.7 U	5.6 U	7.6 U	82	NA
BOP-86(i)	8/21/2020	2896	41 U	64 U	88 U	64 U	350	150	NA
BOP-87(i)	8/21/2020	2896	3.6 U	5.5 U	7.6 U	5.5 U	55	120	NA
BOP-88(i)	8/21/2020	2896	3.5 U	5.5 U	7.5 U	5.5 U	7.4 U	52	NA

Notes:

(a) Soil gas screening levels were developed by the ODEQ by multiplying the Risk-Based Concentration for air in an occupational setting by an attenuation factor of 1,000 to account for vapor intrusion through building slab. Screening levels updated June 7, 2012.

U = Indicates the compound was undetected at the reported concentration.

Abbreviations and Acronyms:

µg/m^3 = micrograms per cubic meter
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
cDCE = cis-1,2-dichloroethene
EPA = US Environmental Protection Agency
N/A = not applicable
ODEQ = Oregon Department of Environmental Quality
PCE = tetrachloroethene
TCE = trichloroethene

Table 7
Extraction Well Summary - Groundwater Treatment System
Boeing Portland
Gresham, Oregon

	January 2020				February 2020				March 2020				April 2020				May 2020				June 2020			
Location	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)
E2	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E3	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E4	119,880	44,400	2.70	2.69	107,796	41,460	2.60	2.58	119,880	44,400	2.70	2.69	120,456	43,020	2.80	2.79	103,680	43,200	2.40	2.32	94,908	43,140	2.20	2.20
E5	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E6	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E7	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E8	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E9	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E11	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
E12	200,340	44,520	4.50	4.49	45,804	41,640	1.10	1.10	200,340	44,520	4.50	4.49	217,251	43,020	5.05	5.03	219,780	44,400	4.95	4.92	128,700	42,900	3.00	2.98
E13	2,203,740	44,520	49.50	49.37	2,252,724	41,640	54.10	53.94	2,203,740	44,520	49.50	49.37	2,196,171	43,020	51.05	50.84	2,224,440	44,400	50.10	49.83	1,324,800	36,000	36.80	30.67
E15	62,328	44,520	1.40	1.40	186,840	41,520	4.50	4.47	62,328	44,520	1.40	1.40	68,640	42,900	1.60	1.59	43,860	43,860	1.00	0.98	47,454	43,140	1.10	1.10
E16	64,800	43,200	1.50	1.45	201,372	41,520	4.85	4.82	64,800	43,200	1.50	1.45	214,500	42,900	5.00	4.97	219,300	43,860	5.00	4.91	252,369	43,140	5.85	5.84
EW-3	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
EW-13	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
DP1	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00
Total	**2,651,088**				**2,794,536**				**2,651,088**				**2,817,018**				**2,811,060**				**1,848,231**			

	July 2020				August 2020				September 2020				October 2020				November 2020				December 2020				Yearly Average	
	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Gallons Pumped	Run Time Operational Minutes	Pump Rate (gpm)	Avg. Yield (gpm)	Pump Rate (gpm)	Avg. Yield (gpm)
E2	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E3	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E4	88,680	44,400	2.00	1.99	115,020	42,600	2.70	2.58	106,500	42,600	2.50	2.47	88,800	44,400	2.00	1.99	85,440	42,720	2.00	1.98	84,474	44,460	1.90	1.89	2.37	2.35
E5	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E6	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E7	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E8	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E9	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E11	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
E12	77,760	43,200	1.80	1.74	250,560	43,140	5.81	5.61	250,212	43,140	5.80	5.79	257,520	44,400	5.80	5.77	187,200	37,440	5.00	4.33	155,610	44,460	3.50	3.49	4.23	4.14
E13	1,653,600	31,200	53.00	37.04	2,310,114	44,340	52.10	51.75	2,161,314	43,140	50.10	50.03	2,437,560	44,400	54.90	54.60	2,096,640	37,440	56.00	48.53	2,200,770	44,460	49.50	49.30	50.55	47.94
E15	48,840	44,400	1.10	1.09	48,840	43,200	1.13	1.09	43,140	43,140	1.00	1.00	65,700	43,800	1.50	1.47	71,136	37,440	1.90	1.65	88,920	44,460	2.00	1.99	1.64	1.60
E16	244,200	44,400	5.50	5.47	254,880	43,200	5.90	5.71	224,328	43,140	5.20	5.19	235,320	44,400	5.30	5.27	187,200	37,440	5.00	4.33	244,530	44,460	5.50	5.48	4.68	4.58
EW-3	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
EW-13	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
DP1	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00
Total	**2,113,080**				**2,979,414**				**2,785,494**				**3,084,900**				**2,627,616**				**2,774,304**					

Table 7
Extraction Well Summary - Groundwater Treatment System
Boeing Portland
Gresham, Oregon

Notes:

1. Average yield reflects total gallons pumped divided by total minutes for the measuring period.
2. The following wells have been decommissioned and are no longer shown: E-1 (June 2004); E-10 (March 2010); E-14 (April 2010); and Troutdale Sandstone Aquifer (TSA) well EW-22 (March 2010).
3. EW-3 and EW-13 are TSA extraction wells and were not operated for hydraulic control.
4. Wells E-2, E-3, E-5 through E-9, E-11 and DP-1 were not operated this year except for sampling.

Abbrevitions and Acronyms:

Avg = average
gpm = gallons per minute

Table 8
Bioremediation Progress Results
Stagnation Areas #1 and #2
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Injections (a) (days)	Volatile Organic Compounds Analytical Results							Fermentation Product		Aquifer Redox Conditions									Donor Indicators		Molar Fraction					
		Pilot Injection	PCE (µg/L)	TCE (µg/L)	CIS (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	2-Butanone (µg/L)	Acetone (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Iron, Tot (mg/L)	Iron, Diss (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	CIS	VC	Ethene	Ethane
Stagnation Area #1																												
BOP-09i	8/3/2017	-136	<0.20	4.9	1.8	<0.20	--	--	--	<5.0	55	--	--	--	--	--	--	--	--	--	--	--	0.000	0.67	0.33	0.00	0.00	0.00
Injection Well	9/19/2017	-89	--	--	--	--	<5.0	<5.0	<5.0	--	--	9.3	210	2.2	0.00	0.79	<0.40	5.2	<2.0	<0.0050	<1.0	6.3	--	--	--	--	--	--
	2/16/2018	60	0.60	2.4	5.7	<0.20	<5.0	<5.0	<5.0	53	16	0.068	-200	--	1.0	--	--	19	--	0.41	1400	5.2	0.045	0.23	0.73	0.00	0.00	0.00
	5/16/2018	149	0.90	6.7	3.2	<0.20	<5.0	<5.0	<5.0	1100	31	2.8	66	--	3.0	--	--	56	--	17	3700	4.9	0.061	0.57	0.37	0.00	0.00	0.00
	8/7/2018	233	1.0	7.3	5.4	1.0	<5.0	<5.0	<5.0	220	77	0.57	-28	--	6.5	--	--	58	--	21	3700	4.6	0.045	0.42	0.42	0.12	0.00	0.00
	11/8/2018	326	0.90	5.5	3.4	1.0	<5.0	<5.0	<5.0	290	14	0.49	-2.5	--	2.5	--	--	28	--	34	2600	4.9	0.055	0.43	0.36	0.16	0.00	0.00
	2/15/2019	424	0.70	4.0	2.0	2.0	<5.0	<5.0	<5.0	2100	17	0.27	24	--	2.0	--	--	<50	--	37	1500	4.7	0.048	0.35	0.24	0.37	0.00	0.00
	5/7/2019	506	0.40	3.4	1.6	2.3	<5.0	<5.0	<5.0	390	12	0.025	-42	--	2.5	--	--	<5.0	--	37	800	5.1	0.030	0.32	0.20	0.45	0.00	0.00
	8/9/2019	599	0.20	2.1	5.2	1.2	6.2	<5.0	<5.0	1300	27	0.41	-88	--	2.5	--	--	2.2	--	38	600	5.1	0.004	0.051	0.17	0.062	0.71	0.00
	11/7/2019	689	0.20	1.8	2.1	0.70	<5.0	<5.0	<5.0	740	29	2.7	-130	--	3.0	--	--	<1.0	--	22	690	4.8	0.025	0.29	0.45	0.23	0.00	0.00
	2/10/2020	784	<0.20	0.90	1.1	0.50	<5.0	<5.0	<5.0	990	21	0.75		--	3.0	--	--	6.2	--	36	590	5.3	0.00	0.26	0.43	0.31	0.00	0.00
	5/11/2020	875	<0.20	0.60	1.1	1.0	<5.0	<5.0	<5.0	370	8.8	0.55	-60	--	4.5	--	--	2.4	--	30	150	5.8	0.00	0.14	0.36	0.50	0.00	0.00
	8/10/2020	966	<0.40	0.50	0.93	0.96	<5.0	<5.0	<5.0	130	22	--	--		--	--	--	<5.0	--	25	120	--	0.00	0.13	0.33	0.53	0.00	0.00
	11/6/2020	1054	<0.40	<0.40	0.90	1.0	<5.0	<5.0	<5.0	57	51	0.55	-60		4.5			2.5		27	50	5.8	0.00	0.00	0.36	0.64	0.00	0.00
Stagnation Area #2																												
BOP-10(i)	8/8/2017	-131	3.6	8.7	1.0	<0.20	--	--	--	<5.0	47	--	--	--	--	--	--	--	--	--	--	--	0.22	0.67	0.11	0.00	0.00	0.00
Injection Well	9/19/2017	-89	--	--	--	--	<5.0	<5.0	<5.0	--	--	9.2	120	12.9	0.00	0.48	<0.40	12	<2.0	<0.0050	<1.0	6.3	--	--	--	--	--	--
	2/16/2018	61	0.60	3.1	1.7	<0.20	<5.0	<5.0	<5.0	25	<5.0	0.10	-170	--	1.0	--	--	140	--	<0.0050	12000	3.9	0.081	0.53	0.39	0.00	0.00	0.00
	5/16/2018	149	1.3	13	7.4	<0.20	<5.0	<5.0	<5.0	120	67	3.6	110	--	--	--	--	180	--	<0.0050	8900	4.4	0.043	0.54	0.42	0.00	0.00	0.00
	8/7/2018	233	1.2	18	12	<1.0	<5.0	<5.0	<5.0	320	69	1.5	-38	--	1.5	--	--	230	--	<0.0050	12000	4.1	0.027	0.51	0.46	0.00	0.00	0.00
	11/8/2018	326	2.3	18	7.6	<0.20	<5.0	<5.0	<5.0	180	19	0.59	24	--	2.5	--	--	160	--	0.014	9600	4.5	0.060	0.60	0.34	0.00	0.00	0.00
	2/15/2019	425	3.7	23	9.1	<1.0	<5.0	<5.0	<5.0	100	<25	0.25	69	--	1.5	--	--	<500	--	0.059	6000	4.6	0.077	0.60	0.32	0.00	0.00	0.00
	5/8/2019	506	5.5	30	11	<0.20	<5.0	<5.0	<5.0	370	<5.0	3.1	89	--	2.0	--	--	110	--	1.3	3900	4.7	0.088	0.61	0.30	0.00	0.00	0.00
	8/15/2019	606	5.6	58	11	<0.20	<5.0	<5.0	<5.0	600	41	0.46	85	--	2.0	--	--	21	--	6.1	2800	4.7	0.057	0.75	0.19	0.00	0.00	0.00
	11/7/2019	689	4.8	30	9.1	0.40	<5.0	<5.0	<5.0	100	36	0.93	-46	--	1.0	--	--	9.5	--	6.1	2600	4.7	0.081	0.64	0.26	0.018	0.00	0.00
	2/10/2020	785	4.7	29	7.9	0.40	<5.0	<5.0	<5.0	170	28	1.6	31	--	1.5	--	--	<50	--	9.3	2500	4.7	0.084	0.66	0.24	0.019	0.00	0.00
	5/8/2020	873	6.9	28	13	0.70	<5.0	<5.0	<5.0	170	23	0.23	16	--	4.5	--	--	<1.0	--	11	1400	5.0	0.10	0.53	0.34	0.028	0.00	0.00
	8/10/2020	967	9.7	30	15	0.85	<5.0	<5.0	<5.0	120	11	1.5	0.60	--	7.0	--	--	<500	--	12	1300	4.9	0.13	0.51	0.34	0.030	0.00	0.00
	11/6/2020	1055	9.9	28	18	1.0	<5.0	<5.0	<5.0	190	<5.0	0.65	21	--	6.0	--	--	<1.0	--	19	1000	5.3	0.13	0.45	0.39	0.034	0.00	0.00
E-6	8/11/2017	-129	22	24	3.6	<0.20	--	--	--	<5.0	<5.0	1.9	50	--	--	--	--	--	--	--	--	7.5	0.38	0.52	0.11	0.00	0.00	0.00
Injection Well	9/19/2017	-89	--	--	--	--	<5.0	<5.0	<5.0	--	--	4.9	170	5.8	1.0	6.32	<0.40	9.0	<2.0	<0.0050	<1.0	6.7	--	--	--	--	--	--
	2/16/2018	61	0.40	1.7	0.80	<0.20	<5.0	<5.0	<5.0	420	<5.0	0.11	-230	--	0.50	--	--	350	--	<0.0050	19000	4.6	0.10	0.55	0.35	0.00	0.00	0.00
	5/16/2018	150	0.80	11	3.3	<0.20	<5.0	<5.0	<5.0	4000	27	0.54	97	--	5.0	--	--	110	--	0.097	4800	5.1	0.039	0.68	0.28	0.00	0.00	0.00
	8/7/2018	232	4.9	15	3.9	<0.20	<5.0	<5.0	<5.0	110	48	0.46	-48	--	1.5	--	--	<50	--	0.96	1200	4.5	0.16	0.62	0.22	0.00	0.00	0.00
	11/8/2018	326	3.9	2.7	42	<0.20	<5.0	<5.0	<5.0	34	7.1	0.27	-49	--	7.0	--	--	22	--	17	200	6.1	0.049	0.043	0.91	0.00	0.00	0.00
	2/15/2019	425	<0.20	<0.20	68	0.20	<5.0	<5.0	<5.0	10	11	0.23	-31	--	1.5	--	--	<50	--	19	60	6.1	0.00	0.00	1.0	0.00	0.00	0.00
	5/8/2019	507	<0.20	<0.20	93	0.20	<5.0	<5.0	<5.0	<5.0	5.9	0.92	1.8	--	1.5	--	--	<5.0	--	16	18	6.4	0.00	0.00	1.0	0.00	0.00	0.00
	8/9/2019	600	<0.20	<0.20	94	1.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.37	-79	--	2.5	--	--	<1.0	--	10	14	6.3	0.00	0.00	0.98	0.016	0.00	0.00
	11/7/2019	689	<0.20	<0.20	16	51	<5.0	<5.0	<5.0	<5.0	18	1.2	-120	--	2.0	--	--	3.6	--	7.5	15	6.5	0.00	0.00	0.17	0.83	0.00	0.00
	2/10/2020	784	<0.20	<0.20	7.1	74	<5.0	<5.0	<5.0	<5.0	13	1.1	-44	--	2.3	--	--	1.8	--	7.2	15	6.6	0.00	0.00	0.058	0.94	0.00	0.00
	5/8/2020	873	<0.20	<0.20	10	84	19	<5.0	<5.0	<5.0	11	0.56	-75	--	4.5	--	--	2.1	--	3.7	9.2	6.3	0.00	0.00	0.049	0.63	0.32	0.00
	8/10/2020	967	<0.20	0.23	43	66	32	<5.0	<5.0	<5.0	16	1.6	-93	--	6.0	--	--	<5.0	--	2.3	8.1	6.4	0.00	0.00	0.17	0.40	0.43	0.00
	11/6/2020	1054	<0.20	0.48	63	38	24	<5.0	<5.0	<5.0	47	0.67	-49	--	5.0	--	--	2.1	--	1.9	6.9	6.4	0.00	0.00	0.31	0.28	0.41	0.00

Table 8
Bioremediation Progress Results
Stagnation Areas #1 and #2
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Injections (a) (days)	Volatile Organic Compounds Analytical Results							Fermentation Product		Aquifer Redox Conditions									Donor Indicators		Molar Fraction					
		Pilot Injection	PCE (µg/L)	TCE (µg/L)	CIS (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	2-Butanone (µg/L)	Acetone (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Iron, Tot (mg/L)	Iron, Diss (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	CIS	VC	Ethene	Ethane
E-7	8/11/2017	-129	0.30	5.1	35	<0.20	--	--	--	<5.0	<5.0	0.84	18	--	--	--	--	--	--	--	--	6.9	0.00	0.10	0.90	0.00	0.00	0.00
Injection Well	9/19/2017	-89	--	--	--	--	<5.0	<5.0	<5.0	--	--	3.2	-75	<0.10	4.0	120	<0.40	<1.0	<2.0	4.4	1.5	7.1	--	--	--	--	--	--
	2/16/2018	61	2.2	5.6	1.7	<0.20	<5.0	<5.0	<5.0	14	45	0.050	-310	--	0.50	--	--	350	--	0.31	19000	5.1	0.18	0.58	0.24	0.00	0.00	0.00
	5/16/2018	150	1.7	12	4.3	<0.20	<5.0	<5.0	<5.0	1100	50	1.2	-56	--	7.0	--	--	420	--	0.15	19000	5.2	0.070	0.63	0.30	0.00	0.00	0.00
	8/8/2018	233	1.4	14	5.5	<1.0	6.2	<5.0	<5.0	970	140	0.49	-39	<50	6.5	--	--	670	--	0.21	20000	4.9	0.021	0.27	0.14	0.00	0.56	0.00
	11/8/2018	326	1.8	18	7.2	<1.0	5.2	<5.0	<5.0	130	25	0.52	-31	--	5.5	--	--	560	--	1.0	20000	4.9	0.027	0.34	0.18	0.00	0.45	0.00
	2/15/2019	425	2.5	22	9.3	<0.20	8.1	5.6	<5.0	400	<5.0	0.29	5.9	--	7.0	--	--	510	--	5.7	23000	5.0	0.020	0.22	0.13	0.00	0.38	0.25
	5/7/2019	506	2.9	26	15	<0.20	6.5	5.3	<5.0	490	<5.0	2.2	56	--	7.0	--	--	1000	--	8.1	22000	5.1	0.022	0.25	0.20	0.00	0.30	0.23
	8/9/2019	599	3.2	26	18	<0.20	7.3	<5.0	<5.0	740	49	0.43	-110	--	7.0	--	--	540	--	15	21000	5.2	0.029	0.30	0.28	0.00	0.39	0.00
	11/7/2019	690	4.3	28	20	0.30	9.5	5.2	<5.0	2200	82	0.56	-78	--	3.0	--	--	730	--	4.5	23000	5.2	0.027	0.22	0.21	0.00	0.35	0.18
	2/10/2020	784	4.7	27	18	0.30	5.2	<5.0	<5.0	5400	81	1.3	-55	--	4.0	--	--	690	--	17	22000	5.4	0.046	0.34	0.30	0.0079	0.30	0.00
	5/8/2020	873	3.8	23	20	<2.0	6.0	<5.0	<5.0	4600	90	0.28	-71	--	4.0	--	--	720	--	15	21000	5.3	0.037	0.28	0.33	0.00	0.35	0.00
	8/10/2020	966	4.7	25	21	0.35	<5.0	<5.0	<5.0	5500	170	2.2	-3.1	--	4.5	--	--	560	--	12	21000	5.3	0.065	0.43	0.49	0.013	0.00	0.00
	11/6/2020	1054	4.5	21	19	0.22	5.2	<5.0	<5.0	10000	400	0.66	-52	--	6.5	--	--	710	--	22	22000	5.4	0.048	0.28	0.34	0.0061	0.32	0.00
DP1	8/4/2017	-136	23	25	50	<0.20	--	--	--	<5.0	<5.0	3.7	-12	--	--	--	--	--	--	--	--	6.7	0.16	0.23	0.61	0.00	0.00	0.00
Upgradient	11/2/2017	-46	25	24	47	<0.20	--	--	--	<5.0	<5.0	3.8	43	--	--	--	--	--	--	--	--	6.6	0.18	0.22	0.59	0.00	0.00	0.00
	2/7/2018	51	0.5	0.40	0.70	<0.20	<5.0	<5.0	<5.0	<5.0	<5.0	1.6	270	--	0.00	--	--	11	--	<0.0050	2.4	6.6	0.23	0.23	0.54	0.00	0.00	0.00
	5/11/2018	145	0.7	6.7	24	<0.20	<5.0	<5.0	<5.0	<5.0	<5.0	3.4	34	--	1.0	--	--	11	--	0.0078	1.2	6.9	0.014	0.17	0.82	0.00	0.00	0.00
	8/13/2018	239	<0.20	0.60	11	<0.20	--	--	--	82	160	0.34	-41	--	0.50	--	--	--	--	--	--	6.1	0.00	0.04	0.96	0.00	0.00	0.00
	11/9/2018	326	<2.0	<2.0	18	<2.0	<5.0	<5.0	<5.0	<50	250	0.90	-20	--	2.5	--	--	4.7	--	0.12	<500	6.5	0.00	0.00	1.0	0.00	0.00	0.00
	2/13/2019	423	<0.20	0.50	0.80	<0.20	<5.0	<5.0	<5.0	<5.0	31	2.1	9.2	--	1.5	--	--	1.7	--	3.8	<500	6.2	0.00	0.32	0.68	0.00	0.00	0.00
	5/6/2019	505	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<5.0	<50	61	4.6	-14	--	2.0	--	--	1.6		18	<100	6.3	--	--	--	--	--	--
	8/6/2019	597	<10	<10	<10	<10	<5.0	<5.0	<5.0	<250	300	0.78	-140	--	2.5	--	--	<50	--	13	9500	6.1	--	--	--	--	--	--
	11/12/2019	694	<0.20	0.30	3.3	1.7	<5.0	<5.0	<5.0	13	360	1.6	-4.2	--	3.5	--	--	<1.0	--	22	510	6.0	0.00	0.036	0.54	0.43	0.00	0.00
	2/6/2020	780	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<5.0	<50	57	1.6	-51	--	2.5	--	--	<1.0	--	19	350	6.4	--	--	--	--	--	--
	5/5/2020	870	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	<5.0	5.4	43	1.0	-25	--	6.3	--	--	<1.0	--	24	50	6.1	--	--	--	--	--	--
	8/11/2020	968	<0.20	<0.20	0.54	1.2	<5.0	<5.0	<5.0	<5.0	8.8	1.2	-290	--	2.0	--	--	<5.0	--	21	30	6.2	0.00	0.00	0.23	0.77	0.00	0.00
	11/4/2020	1052	<0.20	<0.20	1.8	2.3	<5.0	<5.0	<5.0	<5.0	7.4	1.5	-36	--	2.5	--	--	2.9	--	17	31	6.2	0.00	0.00	0.33	0.67	0.00	0.00
BOP-56(i)	8/11/2017	-129	2.8	7.5	0.70	<0.20	--	--	--	<5.0	91	--	--	--	--	--	--	--	--	--	--	--	0.21	0.70	0.089	0.00	0.00	0.00
Downgradient	2/6/2018	51	4.5	12	1.1	<0.20	--	--	--	<5.0	9.1	--	--	--	--	--	--	--	--	--	--	--	0.21	0.70	0.087	0.00	0.00	0.00
	8/14/2018	240	5.7	15	1.6	<0.20	--	--	--	<5.0	89	--	--	--	--	--	--	--	--	--	--	--	0.21	0.69	0.10	0.00	0.00	0.00
	2/8/2019	417	8.4	17	1.7	<0.20	--	--	--	<5.0	6.4	--	--	--	--	--	--	--	--	--	--	--	0.26	0.65	0.089	0.00	0.00	0.00
	8/2/2019	592	5.2	13	1.3	<0.20	--	--	--	<5.0	19	--	--	--	--	--	--	--	--	--	--	--	0.22	0.69	0.093	0.00	0.00	0.00
	2/6/2020	781	5.4	12	1.2	<0.20	--	--	--	<5.0	45	--	--	--	--	--	--	--	--	--	--	--	0.24	0.67	0.091	0.00	0.00	0.00
	8/7/2020	964	12	12	1.3	<0.20	--	--	--	<5.0	34	--	--	--	--	--	--	--	--	--	--	--	0.41	0.52	0.075	0.00	0.00	0.00
BOP-59(i)	8/4/2017	-136	<0.20	1.7	0.7	<0.20	--	--	--	<5.0	53	--	--	--	--	--	--	--	--	--	--	--	0.00	0.64	0.36	0.00	0.00	0.00
Upgradient	2/7/2018	51	8.3	11	4.5	<0.20	--	--	--	<5.0	18	--	--	--	--	--	--	--	--	--	--	--	0.28	0.46	0.26	0.00	0.00	0.00
	8/13/2018	239	0.40	2.8	12	<0.20	--	--	--	9.6	45	--	--	--	--	--	--	--	--	--	--	--	0.016	0.14	0.84	0.00	0.00	0.00
	2/7/2019	416	0.30	2.9	12	<0.20	--	--	--	<5.0	5.8	--	--	--	--	--	--	--	--	--	--	--	0.012	0.15	0.84	0.00	0.00	0.00
	8/5/2019	596	<0.20	1.6	13	1.8	--	--	--	<5.0	46	--	--	--	--	--	--	--	--	--	--	--	0.00	0.070	0.77	0.16	0.00	0.00
	2/6/2020	780	<0.20	0.40	24	2.8	--	--	--	<5.0	6	--	--	--	--	--	--	--	--	--	--	--	0.00	0.010	0.84	0.15	0.00	0.00
	8/7/2020	964	<0.20	1.0	10	5.1	--	--	--	<5.0	37	--	--	--	--	--	--	--	--	--	--	--	0.00	0.040	0.54	0.42	0.00	0.00

Table 8
Bioremediation Progress Results
Stagnation Areas #1 and #2
Boeing Portland
Gresham, Oregon

		Elapsed Time from Injections (a) (days)	Volatile Organic Compounds Analytical Results								Fermentation Product		Aquifer Redox Conditions									Donor Indicators		Molar Fraction					
Well	Date	Pilot Injection	PCE (µg/L)	TCE (µg/L)	CIS (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	2-Butanone (µg/L)	Acetone (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Iron, Tot (mg/L)	Iron, Diss (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	CIS	VC	Ethene	Ethane
LAI-8	2/1/2011	-2512	--	--	--	--	--	--	--	--	--	4.2	-28	<0.10	--	--	--	1.1	--	--	--	6.6	--	--	--	--	--	--
Upgradient	2/15/2018	59	--	--	--	--	--	--	--	--	--	1.4	-36	<0.10	--	--	--	<1.0	--	--	--	6.4	--	--	--	--	--	--
	8/9/2018	234	--	--	--	--	--	--	--	--	--	0.33	59	<0.10	--	--	--	<1.0	--	--	--	4.8	--	--	--	--	--	--
	2/15/2019	425	--	--	--	--	--	--	--	--	--	1.6	-5.1	<0.10	--	--	--	<1.0	--	--	--	6.3	--	--	--	--	--	--
	8/12/2019	602	--	--	--	--	--	--	--	--	--	2.0	-84	<0.50	--	--	--	<1.0	--	--	--	6.6	--	--	--	--	--	--
	2/7/2020	781	--	--	--	--	--	--	--	--	--	3.7	-52	<0.10	--	--	--	<1.0	--	--	--	6.5	--	--	--	--	--	--
	5/8/2020	873	0.20	2.0	17	0.60	--	--	--	9.7	34	1.4	-54	<0.50	--	--	--	<1.0	--	--	80	6.2	0.0060	0.076	0.87	0.048	0.00	0.00
	8/11/2020	968	0.26	2.2	19	0.69	--	--	--	9.1	33	2.6	-110	<0.50	--	--	--	<5.0	--	--	82	6.1	0.0070	0.074	0.87	0.050	0.00	0.00
	11/6/2020	1055	0.22	1.7	24	0.66	--	--	--	6.1	25	2.0	17	<0.10	--	--	--	<1.0	--	--	77	6.5	0.00	0.047	0.91	0.038	0.00	0.00

Table 8
Bioremediation Progress Results
Stagnation Areas #1 and #2
Boeing Portland
Gresham, Oregon

Notes:

-- = Data not collected or analyzed

Blue highlighted values indicate the compound with the highest micromoles per event, ethene and ethane combined are considered for maximum molar fraction. Compounds with 2 percent of maximum compound are also highlighted due t

Injection Notes:

12/18/2017 Injection at Stagnation Area #1 (BOP-09i) was conducted between 12/18/17 and 12/20/17 and consisted of 50,474 gallons mixture of water, glycerin, molasses, and ferrous chloride.

12/18/2017 Injection at Stagnation Area #2 was conducted between 11/28/17 and 12/12/17 and consisted of 83,161 gallons mixture of water, glycerin, molasses, and ferrous chloride.

Well	Potable Water (gallons)	Glycerin (gallons)	Molasses (gallons)	Ferrous Chloride (gallons)	Total Donor Mixture (gallons)	Ave Injection Rate (gpm)
E-6	51,662	7,631	6,269	156	65,718	28.4
E-7	9,271	1,387	1,260	28	11,946	3.3
BOP-10(i)	4,264	638	580	13	5,495	2.1

Abbreviations and Acronyms:

µg/L = micrograms per liter
CIS = 1,2-dichloroethene
Diss = dissolved
DO = dissolved oxygen
gpm = gallons per minute
mg/L = milligrams per liter
mV = millivolts
ORP = oxygen reduction potential
PCE = tetrachloroethene
PRB = permeable reactive barrier
TOC = total organic carbon
TCE = trichloroethene
VC = vinyl chloride

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-72(i)	10/19/2010		3.1	28	10	<1.0	<1.0	--	--	--	1.2	--	13	0.11	1.8		0.056	0.64	0.31	0.00	0.00	0.00
Monitoring Well	12/6/2010	32	<2.0	3.6	<2.0	<2.0	30	--	2.8	-26	<5.0	3.2	<5.0	0.85	3000	6.9	0.00	0.025	0.00	0.00	0.81	0.16
BOP-72(i)	2/2/2011	90	<20	<20	<20	<20	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	0.00	--	--
BOP-72(i)	5/5/2011	182	<1.0	<1.0	6.3	<1.0	--	--	0.21	160	--	--	--	--	--	6.8	0.00	0.00	1.0	0.00	--	--
BOP-72(i)	8/10/2011	279	<1.0	<1.0	10	<1.0	<1.1	<1.1	0.26	-150	<0.10	2.4	1.5	7.7	260	6.8	0.00	0.00	1.0	0.00	0.00	0.00
BOP-72(i)	11/3/2011	364	<1.0	<1.0	3.0	6.8	--	--	0.09	-140	--	--	--	--	--	6.7	0.00	0.00	0.22	0.78	--	--
BOP-72(i)	2/8/2012	42	<2.0	<2.0	<2.0	7.5	--	--	0.31	-320	--	--	--	--	--	7.5	0.00	0.00	0.00	1.0	--	--
BOP-72(i)	5/4/2012	128	<2.0	<2.0	<2.0	9.0	--	--	0.86	-66	--	--	--	--	--	6.7	0.00	0.00	0.00	1.0	--	--
BOP-72(i)	8/9/2012	225	<1.0	<1.0	<1.0	10	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-72(i)	11/8/2012	84	<0.20	<0.20	0.20	5.1	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.025	0.98	--	--
BOP-72(i)	2/5/2013	173	<0.20	<0.20	0.30	3.4	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.054	0.95	--	--
BOP-72(i)	5/2/2013	259	<0.20	<0.20	0.20	3.3	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.038	0.96	--	--
BOP-72(i)	8/6/2013	28	<0.20	<0.20	0.70	2.7	5.0	<5.0	0.58	-150	<0.10	3.0	<5.0	13	47	6.7	0.00	0.00	0.032	0.19	0.78	0.00
BOP-72(i)	11/7/2013	121	<0.20	<0.20	0.30	1.9	<5.0	<5.0	0.62	-110	<0.10	2.5	<1.0	11	42	6.7	0.00	0.00	0.092	0.91	0.00	0.00
BOP-72(i)	2/5/2014	211	<0.20	<0.20	0.20	1.9	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.064	0.94	--	--
BOP-72(i)	5/7/2014	302	<0.20	<0.20	<0.20	1.5	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-72(i)	8/13/2014	28	<0.20	<0.20	0.20	1.1	<5.0	<5.0	0.43	68	<0.10	3.0	<1.0	14	37	6.1	0.00	0.00	0.10	0.90	0.00	0.00
BOP-72(i)	11/6/2014	113	<0.20	<0.20	0.30	1.9	<5.0	<5.0	0.26	-150	<0.10	3.0	2.8	14	14	6.6	0.00	0.00	0.092	0.91	0.00	0.00
BOP-72(i)	2/5/2015	204	<0.20	<0.20	1.2	3.3	6.2	<5.0	0.25	-110	<0.10	5.5	16	13	8.6	6.3	0.00	0.00	0.043	0.18	0.77	0.00
BOP-72(i)	5/6/2015	294	<0.20	2.0	5.4	9.1	<5.0	<5.0	0.97	-90	<0.10	4.5	17	11	6.7	6.3	0.00	0.070	0.26	0.67	0.00	0.00
BOP-72(i)	8/10/2015	22	<0.20	<0.20	0.40	1.9	<5.0	<5.0	1.4	-170	<0.10	7.0	1.1	15	160	6.5	0.00	0.00	0.12	0.88	0.00	0.00
BOP-72(i)	11/4/2015	108	<0.20	<0.20	1.1	2.9	<5.0	<5.0	1.1	-100	<0.10	7.0	6.9	18	3.7	6.5	0.00	0.00	0.20	0.80	0.00	0.00
BOP-72(i)	2/3/2016	199	<0.20	<0.20	2.1	3.2	<5.0	<5.0	1.8	-58	<0.10	7.0	4.7	5.6	3.2	7.2	0.00	0.00	0.30	0.70	0.00	0.00
BOP-72(i)	5/4/2016	290	<0.20	1.0	2.2	2.9	<5.0	<5.0	1.6	-120	<0.10	7.0	9.7	16	3.9	6.3	0.00	0.10	0.30	0.60	--	--
BOP-72(i)	8/9/2016	387	<0.20	2.7	6.5	5.2	<5.0	<5.0	0.38	-120	<0.10	7.0	17	9.9	<1.0	6.3	0.00	0.12	0.39	0.49	0.00	0.00
BOP-72(i)	11/10/2016	480	<0.20	6.7	14	3.0	<5.0	<5.0	0.70	-39	<0.10	7.0	18	20	2.2	6.3	0.00	0.21	0.59	0.20	0.00	0.00
BOP-72(i)	2/7/2017	569	<0.20	4.9	16	2.7	<5.0	<5.0	0.89	-76	<0.10	7.0	16	18	3.4	6.5	0.00	0.15	0.67	0.18	0.00	0.00
BOP-72(i)	5/16/2017	667	<0.20	1.8	16	6.4	<5.0	<5.0	0.79	6.8	<0.10	1.0	14	25	7.0	6.3	0.00	0.049	0.59	0.36	0.00	0.00
BOP-72(i)	8/9/2017	752	<0.20	1.8	17	8.3	<5.0	<5.0	0.79	-43	<0.10	7.0	14	9.1	5.7	6.2	0.00	0.043	0.54	0.41	0.00	0.00
BOP-72(i)	2/8/2018	16	<0.20	0.20	2.3	1.4	<5.0	<5.0	0.33	56	0.56	3.5	200	16	6500	4.9	0.00	0.032	0.50	0.47	0.00	0.00
BOP-72(i)	5/15/2018	111	<0.20	1.0	5.5	1.0	<5.0	<5.0	0.52	39	<0.10	7.0	15	19	2600	5.1	0.00	0.095	0.71	0.20	0.00	0.00
BOP-72(i)	8/3/2018	191	<0.20	0.40	3.0	0.80	<5.0	<5.0	0.27	-39	0.23	7.0	9.9	17	1400	5.6	0.00	0.065	0.66	0.27	0.00	0.00
BOP-72(i)	2/12/2019	384	<0.20	<0.20	1.4	1.1	<5.0	<5.0	0.20	-73	<0.50	2.0	2.0	11	<50	5.9	0.00	0.00	0.45	0.55	0.00	0.00
BOP-72(i)	5/9/2019	470	<0.20	<0.20	0.80	0.80	<5.0	<5.0	0.89	-83	<0.10	6.0	<1.0	15	14	6.0	0.00	0.00	0.39	0.61	0.00	0.00
BOP-72(i)	8/13/2019	567	<0.20	<0.20	0.50	0.50	<5.0	<5.0	0.43	-62	<0.10	4.5	1.3	18	12	6.2	0.00	0.00	0.39	0.61	0.00	0.00
BOP-72(i)	11/8/2019	654	<0.20	<0.20	0.60	0.80	<5.0	<5.0	0.34	-110	<0.10	4.0	1.1	12	13	6.1	0.00	0.00	0.33	0.67	0.00	0.00
BOP-72(i)	2/11/2020	749	<0.20	<0.20	2.3	1.1	<5.0	<5.0	0.42	-65	<0.10	6.0	<1.0	17	13	7.0	0.00	0.00	0.00	0.00	0.00	0.00
BOP-72(i)	5/11/2020	839	<0.20	<0.20	4.6	2.3	<5.0	<5.0	0.62	-100	<0.50	4.0	1.2	18	9.1	6.0	0.00	0.00	0.00	0.00	0.00	0.00
BOP-72(i)	8/13/2020	29	<0.20	<0.20	1.1	0.83	<5.0	<5.0	0.23	-31	<0.50	4.5	48	13	2200	5.0	0.00	0.00	0.00	0.00	0.00	0.00
BOP-72(i)	11/5/2020	112	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	2.4	-110	<0.50	3.0	<1.0	13	150	6.5	0.00	0.00	0.00	0.00	0.00	0.00
BOP-73(i)	10/19/2010		12	560	90	<1.0	<1.0	--	--	--	0.70	--	11	0.060	1.6	--	0.014	0.81	0.18	0.00	0.00	0.00
Monitoring Well	12/6/2010	32	19	520	59	<2.0	<2.0	--	3.2	15	1.0	2.8	10	--	2.2	6.9	0.024	0.85	0.13	0.00	0.00	0.00
BOP-73(i)	2/2/2011	90	37	1000	78	<1.0	--	--	0.45	-15	--	--	--	--	--	6.4	0.026	0.88	0.093	0.00	--	--
BOP-73(i)	5/5/2011	182	43	1200	42	<3.0	--	--	0.64	16	--	--	--	--	--	6.3	0.026	0.93	0.044	0.00	--	--
BOP-73(i)	8/10/2011	279	18	510	48	<1.0	<1.1	<1.1	0.54	-25	1.0	2.4	12	1.0	1.9	6.3	0.024	0.87	0.11	0.00	0.00	0.00
BOP-73(i)	11/3/2011	364	4.7	160	130	<1.0	--	--	0.10	-43	--	--	--	--	--	6.3	0.011	0.47	0.52	0.00	--	--
BOP-73(i)	12/1/2011	392	5.0	180	120	<1.0	<1.1	<1.1	--	--	--	--	9.5	0.76	1.9	6.7	0.011	0.52	0.47	0.00	0.00	0.00
BOP-73(i)	1/19/2012	22	7.8	240	100	12	--	--	0.41	250	0.30	1.8	8.8	--	9.3	7.0	0.015	0.59	0.33	0.062	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-73(i)	2/16/2012	50	4.0	190	59	24	<1.1	<1.1	0.66	-240	0.30	2.2	12	1.4	<1.5	7.7	0.010	0.59	0.25	0.16	0.00	0.00
BOP-73(i)	3/15/2012	78	6.4	290	53	13	<1.1	<1.1	0.80	-220	0.80	1.9	11	0.54	2.1	6.9	0.013	0.74	0.18	0.069	0.00	0.00
BOP-73(i)	4/17/2012	111	26	1400	50	14	<1.1	<1.1	1.2	-240	1.0	1.5	11	0.44	<1.5	7.7	0.014	0.92	0.045	0.019	0.00	0.00
BOP-73(i)	6/12/2012	167	72	2700	220	45	2.8	<1.1	0.70	28	0.90	2.0	9.7	0.79	1.6	6.4	0.018	0.85	0.094	0.030	0.00	0.00
BOP-73(i)	8/9/2012	225	2.2	180	190	13	--	--	--	--	--	--	--	--	220	--	0.00	0.39	0.55	0.059	--	--
BOP-73(i)	9/18/2012	33	41	1300	340	38	<5.0	<5.0	0.45	-120	0.28	1.6	8.4	1.6	5.2	6.3	0.017	0.69	0.25	0.043	0.00	0.00
BOP-73(i)	11/14/2012	90	83	2900	110	2.6	<5.0	<5.0	0.83	120	0.89	0.50	10	3.2	<1.0	6.6	0.021	0.93	0.048	0.00	0.00	0.00
BOP-73(i)	2/6/2013	174	13	390	77	4.7	<5.0	<5.0	0.52	56	0.11	0.50	8.9	1.4	--	6.3	0.020	0.76	0.20	0.019	0.00	0.00
BOP-73(i)	5/7/2013	264	16	11000	6200	380	29	<5.0	2.8	-29	<0.10	2.0	7.8	2.8	--	6.4	0.00	0.54	0.41	0.039	0.007	0.00
BOP-73(i)	8/6/2013	28	6.5	1800	670	65	27	<5.0	0.52	-121	<0.10	1.5	10	4.8	2.4	6.2	0.00	0.60	0.31	0.046	0.042	0.00
BOP-73(i)	11/7/2013	121	<4.0	17000	7800	250	30	<5.0	1.1	-76	<0.10	3.0	8.6	1.9	2.0	6.4	0.00	0.60	0.37	0.019	0.00	0.00
BOP-73(i)	2/20/2014	226	<40	8400	13000	610	21	<5.0	1.2	23	<0.10	4.0	6.9	2.6	1.5	6.5	0.00	0.31	0.64	0.047	0.00	0.00
BOP-73(i)	5/8/2014	303	<20	340	20000	5600	180	<5.0	0.50	-44	<0.10	2.5	<1.0	3.4	7.2	6.9	0.00	0.0085	0.68	0.29	0.021	0.00
BOP-73(i)	8/13/2014	28	<2.0	<2.0	2800	13000	730	<5.0	1.1	17	<0.10	4.5	1.4	4.8	33	5.9	0.00	0.00	0.11	0.79	0.10	0.00
BOP-73(i)	11/6/2014	113	<0.20	1.7	47	73	210	<5.0	0.15	-110	<0.10	3.0	4.1	5.6	12	6.4	0.00	0.00	0.053	0.13	0.82	0.00
BOP-73(i)	2/5/2015	204	<2.0	<2.0	340	720	350	<5.0	0.45	-100	<0.10	5.0	1.1	8.4	4.3	6.4	0.00	0.00	0.13	0.42	0.44	0.0086
BOP-73(i)	5/6/2015	294	<2.0	<2.0	150	730	160	<5.0	1.1	-86	<0.10	5.0	1.4	13	7.2	6.4	0.00	0.00	0.082	0.62	0.30	0.00
BOP-73(i)	8/10/2015	22	<0.20	1.3	24	20	140	<5.0	0.66	-200	<0.10	7.0	4.8	12	28	6.3	0.00	0.00	0.044	0.057	0.90	0.00
BOP-73(i)	11/4/2015	108	<0.20	5.8	92	19	19	<5.0	0.51	-80	<0.10	7.0	11	7.5	5.1	6.4	0.00	0.023	0.49	0.16	0.16	0.17
BOP-73(i)	2/3/2016	199	<0.20	0.40	2.5	8.8	150	<5.0	1.1	-46	<0.10	7.0	2.4	15	9.6	7.2	0.00	0.00	0.00	0.027	0.52	0.45
BOP-73(i)	5/4/2016	290	<0.20	<0.20	<0.20	<0.20	120	<5.0	0.92	-150	<0.10	7.0	1.6	20	3.7	6.3	0.00	0.00	0.00	0.00	0.19	0.81
BOP-73(i)	8/9/2016	387	<0.20	0.70	2.7	2.6	54	<5.0	0.26	-120	<0.10	7.0	8.0	6.8	2.3	6.4	0.00	0.00	0.015	0.022	0.00	0.96
BOP-73(i)	11/10/2016	480	<0.20	1.5	5.1	3.2	32	<5.0	0.30	-60	<0.10	7.0	7.3	2.9	2.5	6.4	0.00	0.010	0.045	0.043	0.00	0.90
BOP-73(i)	2/7/2017	570	<0.20	1.4	5.7	3.4	150	<5.0	0.49	-55	<0.10	7.0	4.4	11	5.0	6.5	0.00	0.00	0.011	0.011	0.59	0.39
BOP-73(i)	5/16/2017	667	<0.20	<0.20	1.3	1.9	65	<5.0	0.51	-25	<0.10	2.0	9.3	6.1	3.9	6.4	0.00	0.00	0.006	0.013	0.35	0.63
BOP-73(i)	8/9/2017	752	<0.20	<0.20	24	1200	3100	<5.0	0.55	-43	<0.10	7.0	2.2	19	15	6.4	0.00	0.00	0.00	0.15	0.78	0.070
BOP-73(i)	9/5/2017	779	<0.20	0.80	31	1300	--	NS	1.2	-31	NS	NS	NS	NS	NS	6.5	0.00	0.00	0.015	0.98	0.00	0.00
BOP-73(i)	2/8/2018	16	<0.20	0.90	280	1500	3700	<5.0	0.18	21	<0.50	2.0	1.1	22	370	5.7	0.00	0.00	0.018	0.15	0.81	0.017
BOP-73(i)	5/15/2018	111	<0.20	1.5	210	62	22	<5.0	0.51	-35	<0.10	7.0	<1.0	7.0	18	6.4	0.00	0.00	0.55	0.25	0.079	0.11
BOP-73(i)	8/3/2018	192	<0.20	38	150	22	5.1	<5.0	0.19	-18	<0.10	3.5	11	1.4	3.4	6.3	0.00	0.122	0.65	0.15	0.077	0.00
BOP-73(i)	11/7/2018	288	<0.20	47	140	24	9.4	<5.0	7.7	-32	<0.10	6.5	11	1.2	2.9	6.5	0.00	0.142	0.57	0.15	0.13	0.00
BOP-73(i)	2/12/2019	384	<0.20	<0.20	35	86	1300	<5.0	2.4	110	<0.50	1.5	<1.0	3.9	8.8	5.3	0.00	0.00	0.0078	0.030	0.93	0.035
BOP-73(i)	5/8/2019	470	<4.0	<4.0	1400	1300	2800	<5.0	1.0	25	<0.50	3.0	<1.0	15	3.9	6.6	0.00	0.00	0.11	0.16	0.72	0.013
BOP-73(i)	8/13/2019	567	<4.0	<4.0	1800	1100	2800	<5.0	0.30	-49	<0.10	2.5	<1.0	17	2.5	6.3	0.00	0.00	0.14	0.13	0.71	0.021
BOP-73(i)	11/8/2019	653	<4.0	<4.0	2100	1700	2100	<5.0	0.72	-100	<0.10	2.5	<1.0	12	3.4	6.9	0.00	0.00	0.18	0.22	0.58	0.017
BOP-73(i)	2/11/2020	749	<4.0	4.2	780	1700	2600	<5.0	0.39	-23	<0.10	3.5	<1.0	16	2.9	7.3	0.00	0.00	0.064	0.22	0.71	0.016
BOP-73(i)	5/11/2020	838	<4.0	<4.0	1700	1400	2300	<5.0	0.56	-43	<0.50	2.0	<1.0	15	2.9	6.8	0.00	0.00	0.14	0.18	0.64	0.033
BOP-73(i)	8/14/2020	29	<1.0	1.2	300	460	1900	<5.0	0.64	-4.3	<0.50	3.5	<5.0	9.8	690	5.2	0.00	0.00	0.039	0.093	0.83	0.033
BOP-73(i)	11/5/2020	112	<0.20	<0.20	18	38	890	<5.0	0.36	-87	0.12	2.0	<1.0	17	270	6.1	0.00	0.00	0.0058	0.019	0.83	0.15
BOP-74(i)	10/19/2010		1.0	38	8.0	<1.0	<1.0	--	--	--	0.90	--	9.1	0.076	<1.5	--	0.016	0.77	0.22	0.00	0.00	0.00
PRB Well	12/6/2010	32	<1.0	24	6.5	<1.0	<1.0	--	3.1	53	0.20	0.20	9.9	--	2.8	6.6	0.00	0.73	0.27	0.00	--	--
BOP-74(i)	2/2/2011	90	2.6	44	3.8	<1.0	--	--	0.42	81	--	--	--	--	--	6.2	0.040	0.86	0.10	0.00	--	--
BOP-74(i)	5/5/2011	182	2.0	26	8.0	<1.0	--	--	0.25	57	--	--	--	--	--	6.2	0.041	0.68	0.28	0.00	0.00	0.00
BOP-74(i)	8/10/2011	279	<1.0	8.9	7.2	<1.0	<1.1	<1.1	0.50	-120	<0.10	2.0	6.6	4.3	2.7	6.4	0.00	0.48	0.52	0.00	0.00	0.00
BOP-74(i)	11/3/2011	364	<1.0	3.1	16	<1.0	--	--	0.10	-21	--	--	--	--	--	6.5	0.00	0.13	0.87	0.00	--	--
BOP-74(i)	12/1/2011	392	<1.0	8.6	17	<1.0	<1.1	<1.1	0.01	-300	<0.10	1.6	6.7	1.8	3.0	7.0	0.00	0.27	0.73	0.00	0.00	0.00
BOP-74(i)	1/19/2012	22	<1.0	11	18	<1.0	1.6	<1.1	0.21	-170	<1.0	2.0	<1.0	2.6	1500	5.5	0.00	0.26	0.58	0.00	0.00	0.16
BOP-74(i)	2/16/2012	50	<1.0	2.4	44	1.6	<1.1	<1.1	0.93	-150	<0.50	3.8	<0.5	6.7	670	5.2	0.00	0.037	0.91	0.051	0.00	0.00

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-74(i)	3/15/2012	78	<1.0	1.4	210	3.2	<1.1	<1.1	0.10	-240	<0.50	4.8	<0.5	8.4	330	6.4	0.00	0.00	0.97	0.023	0.00	0.00
BOP-74(i)	4/17/2012	111	<5.0	<5.0	79	50	<1.1	<1.1	0.13	-280	<0.10	1.8	0.8	8.8	72	6.8	0.00	0.00	0.50	0.50	0.00	0.00
BOP-74(i)	6/12/2012	167	<1.0	<1.0	1.2	14	<1.1	<1.1	0.72	-9.9	<0.10	4.8	<0.1	5.7	68	5.8	0.00	0.00	0.052	0.95	0.00	0.00
BOP-74(i)	8/9/2012	225	<1.0	<1.0	<1.0	1.9	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-74(i)	9/19/2012	34	<0.20	4.5	60	2.9	<5.0	<5.0	1.2	18	<0.10	4.0	<1.0	13	1300	4.9	0.00	0.049	0.88	0.066	0.00	0.00
BOP-74(i)	11/14/2012	90	<0.20	0.60	6.9	18	<5.0	<5.0	5.9	94	<0.10	4.0	<1.0	22	150	6.0	0.00	0.013	0.20	0.79	0.00	0.00
BOP-74(i)	2/6/2013	174	<0.20	0.50	1.7	2.9	<5.0	<5.0	0.28	-21	<0.10	5.0	<1.0	27	84	6.2	0.00	0.056	0.26	0.68	0.00	0.00
BOP-74(i)	5/7/2013	264	<0.20	4.0	2.7	1.8	<5.0	<5.0	1.2	-53	<0.10	3.0	<1.0	21	130	6.0	0.00	0.35	0.32	0.33	0.00	0.00
BOP-74(i)	8/6/2013	28	<0.20	0.60	14	8.1	<5.0	<5.0	2.4	-25	<0.10	3.5	<1.0	26	670	5.1	0.00	0.016	0.52	0.47	0.00	0.00
BOP-74(i)	11/7/2013	121	<0.20	<0.20	3.6	1.6	7.3	<5.0	1.5	96	<0.10	3.5	<1.0	17	330	6.1	0.00	0.00	0.11	0.079	0.81	0.00
BOP-74(i)	2/20/2014	226	<0.20	<0.20	2.4	0.90	5.0	<5.0	0.92	-72	<0.10	6.0	<1.0	22	66	6.4	0.00	0.00	0.12	0.070	0.00	0.81
BOP-74(i)	5/8/2014	303	<0.20	<0.20	2.8	3.3	5.9	<5.0	1.2	-34	<0.10	3.0	<1.0	19	33	6.6	0.00	0.00	0.10	0.18	0.72	0.00
BOP-74(i)	11/6/2014	113	<0.20	0.30	11	2.1	<5.0	<5.0	0.12	-130	0.63	7.0	500	21	2900	4.2	0.00	0.015	0.76	0.22	0.00	0.00
BOP-74(i)	2/6/2015	205	<0.20	0.40	15	1.9	<5.0	<5.0	0.23	-96	0.54	7.0	630	21	2200	4.9	0.00	0.016	0.82	0.16	0.00	0.00
BOP-74(i)	5/6/2015	294	<0.20	0.50	15	1.6	<5.0	<5.0	0.79	-110	0.27	7.0	250		1200	4.9	0.00	0.021	0.84	0.14	0.00	0.00
BOP-74(i)	11/4/2015	108	<0.20	<0.20	5.3	2.9	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.54	0.46	--	--
BOP-74(i)	2/3/2016	199	<0.20	<0.20	11	3.1	<5.0	<5.0	1.7	60	<1.0	7.0	1500	21	4200	5.5	0.00	0.00	0.70	0.30	0.00	0.00
BOP-74(i)	5/4/2016	290	<0.20	0.20	11	2.6	<5.0	<5.0	0.52	-22	<1.0	7.0	600	19	2500	4.6	0.00	0.010	0.72	0.27	--	--
BOP-74(i)	8/9/2016	387	<0.20	0.20	11	1.6	<5.0	<5.0	--	-37	0.45	7.0	450	18	1800	4.7	0.00	0.011	0.81	0.18	0.00	0.00
BOP-74(i)	11/10/2016	480	<0.20	0.20	9.9	1.3	<5.0	<5.0	0.34	-9.0	0.16	7.0	230	22	1400	4.9	0.00	0.012	0.82	0.17	0.00	0.00
BOP-74(i)	2/7/2017	570	<0.20	0.20	8.7	1.3	<5.0	<5.0	0.33	-18	0.24	7.0	110	23	1700	5.0	0.00	0.014	0.80	0.19	0.00	0.00
BOP-74(i)	5/16/2017	667	<0.20	<0.20	7.5	1.1	<5.0	<5.0	0.39	-36	0.26	2.0	150	28	1600	5.0	0.00	0.00	0.81	0.19	0.00	0.00
BOP-74(i)	8/9/2017	753	<0.20	<0.20	7.1	1.0	<5.0	<5.0	0.40	-22	0.19	7.0	42	23	1300	5.0	0.00	0.00	0.82	0.18	0.00	0.00
BOP-74(i)	2/27/2018	35	<0.20	<0.20	2.1	1.0	<5.0	<5.0	0.67	5.2	0.83	7.0	160	23	7300	4.9	0.00	0.00	0.58	0.42	0.00	0.00
BOP-74(i)	5/15/2018	112	<0.40	<0.40	3.2	0.70	<5.0	<5.0	0.43	32	<0.10	7.0	67	20	2000	5.1	0.00	0.00	0.75	0.25	0.00	0.00
BOP-74(i)	8/8/2018	197	<0.20	<0.20	3.6	0.80	31	<5.0	0.36	-29	<0.10	2.0	78	20	2600	4.5	0.00	0.00	0.033	0.011	0.60	0.35
BOP-74(i)	2/12/2019	384	<0.20	<0.20	3.2	2.7	<5.0	<5.0	0.35	67	<0.50	3.5	31	12	2100	4.9	0.00	0.00	0.43	0.57	0.00	0.00
BOP-74(i)	5/9/2019	470	<0.20	0.20	3.6	3.5	<5.0	<5.0	0.00	43	<0.10	4.0	20	22	1400	4.8	0.00	0.016	0.39	0.59	0.00	0.00
BOP-74(i)	8/13/2019	567	<0.20	<0.20	3.1	1.8	6.7	<5.0	0.21	-21	<0.10	2.0	49	27	1200	4.9	0.00	0.00	0.11	0.10	0.80	0.00
BOP-74(i)	11/8/2019	653	<0.20	<0.20	3.1	1.6	18	<5.0	0.32	52	<0.10	2.0	98	18	1500	4.7	0.00	0.00	0.048	0.038	0.58	0.33
BOP-74(i)	2/12/2020	749	<0.20	<0.20	2.8	1.6	14	<5.0	0.55	-4.7	<0.10	3.5	10	22	750	5.5	0.00	0.00	0.056	0.049	0.35	0.54
BOP-74(i)	5/11/2020	839	<0.20	<0.20	2.7	1.4	<5.0	<5.0	0.54	-24	0.38	3.5	23	19	650	5.0	0.00	0.00	0.55	0.45	0.00	0.00
BOP-74(i)	11/5/2020	113	<0.20	<0.20	5.9	1.1	6.2	<5.0	0.55	35	4.6	2.5	11	13	3900	4.7	0.00	0.00	0.20	0.059	0.74	0.00
BOP-75(i)	2/2/2011	90	2.5	87	11	<1.0	--	--	--	--	--	--	--	--	--	--	0.019	0.84	0.14	0.00	--	--
Upgradient Well	5/5/2011	182	1.1	52	11	<1.0	--	--	--	--	--	--	14	--	4.8	--	0.013	0.77	0.22	0.00	--	--
BOP-75(i)	8/10/2011	279	1.6	59	11	<1.0	<1.1	<1.1	1.8	-16	1.1	2.4	--	<0.00070	--	6.2	0.017	0.78	0.20	0.00	0.00	0.00
BOP-75(i)	11/3/2011	364	1.2	58	10	<1.0	--	--	--	--	--	--	--	--	--	--	0.013	0.80	0.19	0.00	--	--
BOP-75(i)	2/8/2012	42	1.3	55	9.7	<1.0	--	--	--	--	--	--	--	--	--	--	0.015	0.80	0.19	0.00	--	--
BOP-75(i)	5/4/2012	128	<1.0	52	10	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.79	0.21	0.00	--	--
BOP-75(i)	8/9/2012	225	1.6	39	7.2	<1.0	--	--	--	--	--	--	--	--	--	--	0.025	0.78	0.20	0.00	--	--
BOP-75(i)	11/8/2012	84	1.0	35	6.9	<0.20	--	--	--	--	--	--	--	--	--	--	0.018	0.78	0.21	0.00	--	--
BOP-75(i)	2/5/2013	173	1.0	54	9.5	<0.20	--	--	--	--	--	--	--	--	--	--	0.012	0.80	0.19	0.00	--	--
BOP-75(i)	5/2/2013	259	0.80	42	7.5	<0.20	--	--	--	--	--	--	--	--	--	--	0.012	0.80	0.19	0.00	--	--
BOP-75(i)	6/17/2013	305	0.70	35	9.8	<0.20	<5.0	<5.0	1.9	74	1.7	0.00	14	<0.0050	2.3	6.3	0.011	0.72	0.27	0.00	0.00	0.00
BOP-75(i)	8/6/2013	28	0.20	1.3	37	0.20	<5.0	<5.0	2.3	-160	<0.10	3.0	<1.0	0.39	51	6.4	0.00	0.025	0.96	0.0081	0.00	0.00
BOP-75(i)	11/7/2013	121	<0.20	2.2	2.4	25	<5.0	<5.0	0.77	-170	<0.10	3.5	4.5	12	5.5	6.6	0.00	0.038	0.056	0.91	0.00	0.00
BOP-75(i)	2/5/2014	211	<0.20	2.6	1.3	18	--	--	--	--	--	--	--	--	--	--	0.00	0.062	0.042	0.90	--	--
BOP-75(i)	5/7/2014	302	<0.20	7.4	2.7	14	--	--	--	--	--	--	--	--	--	--	0.00	0.18	0.090	0.73	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-75(i)	8/13/2014	28	<0.20	6.2	9.5	10	<5.0	<5.0	0.40	-30	<0.10	7.0	28	9.9	260	5.4	0.00	0.15	0.32	0.52	0.00	0.00
BOP-75(i)	11/5/2014	112	<0.20	<0.20	4.3	11	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.20	0.80	--	--
BOP-75(i)	2/6/2015	205	<0.20	9.1	8.6	4.2	<5.0	<5.0	0.26	-120	<0.10	--	3.4	14	3.9	6.1	0.00	0.31	0.39	0.30	0.00	0.00
BOP-75(i)	5/4/2015	292	<0.20	13	6.4	4.3	--	--	--	--	--	--	--	--	--	--	0.00	0.42	0.28	0.29	--	--
BOP-75(i)	8/10/2015	22	<0.20	1.5	4.2	3.3	<5.0	<5.0	0.50	-220	<0.10	7.0	260	15	1200	5.3	0.00	0.11	0.40	0.49	0.00	0.00
BOP-75(i)	11/6/2015	110	<0.20	0.40	4.7	4.2	--	--	--	--	--	--	--	--	--	--	0.00	0.026	0.41	0.57	--	--
BOP-75(i)	2/3/2016	199	<0.20	1.1	3.5	4.3	<5.0	<5.0	1.5	-66	<0.10	7.0	5.5	18	2.5	7.3	0.00	0.074	0.32	0.61	0.00	0.00
BOP-75(i)	5/5/2016	291	<0.20	2.0	3.9	5.4	--	--	--	--	--	--	--	--	--	--	0.00	0.11	0.28	0.61	--	--
BOP-75(i)	8/9/2016	387	<0.20	1.0	3.0	4.7	<5.0	<5.0	0.38	-130	<0.10	7.0	6.0	18	1.9	6.2	0.00	0.067	0.27	0.66	0.00	0.00
BOP-75(i)	11/4/2016	475	<0.20	6.2	3.0	3.4	--	--	--	--	--	--	--	--	--	--	0.00	0.36	0.23	0.41	--	--
BOP-75(i)	2/7/2017	569	<0.20	4.9	2.9	4.1	<5.0	<5.0	0.44	-67	<0.10	7.0	12	11	2.7	6.3	0.00	0.28	0.23	0.49	0.00	0.00
BOP-75(i)	5/16/2017	668	<0.20	5.3	3.2	3.4	--	--	--	--	--	--	--	--	--	--	0.00	0.32	0.26	0.43	0.00	0.00
BOP-75(i)	8/9/2017	752	<0.20	8.4	4.9	3.4	<5.0	<5.0	0.47	-51	<0.10	7.0	16	6.5	2.4	6.2	0.00	0.38	0.30	0.32	0.00	0.00
BOP-75(i)	2/27/2018	34	<0.20	<0.20	0.30	0.20	<5.0	<5.0	0.19	-99	<1.0	7.0	32	1.2	3500	4.9	0.00	0.00	0.49	0.51	0.00	0.00
BOP-75(i)	5/15/2018	111	<0.20	<0.20	0.60	0.40	<5.0	<5.0	1.1	63	0.35	7.0	24	16	3600	4.8	0.00	0.00	0.49	0.51	0.00	0.00
BOP-75(i)	8/3/2018	192	<0.20	<0.20	0.90	0.80	14	<5.0	0.33	-9.6	0.54	6.5	29	19	2600	5.3	0.00	0.00	0.42	0.58	0.00	0.00
BOP-75(i)	11/7/2018	287	<0.20	0.20	1.1	0.60	<5.0	<5.0	8.4	0.28	0.71	7.0	29	20	2100	5.5	0.00	0.068	0.50	0.43	0.00	0.00
BOP-75(i)	2/12/2019	384	<0.20	0.20	1.7	0.50	<5.0	<5.0	0.21	22	<0.50	1.5	<1.0	13	370	5.6	0.00	0.056	0.65	0.30	0.00	0.00
BOP-75(i)	5/8/2019	470	<0.20	<0.20	1.9	0.20	<5.0	<5.0	0.91	47	<0.50	2.0	<1.0	25	57	6.1	0.00	0.00	0.86	0.14	0.00	0.00
BOP-75(i)	8/13/2019	566	<0.20	<0.20	1.4	0.20	<5.0	<5.0	0.70	-110	<0.10	2.5	1.3	21	39	6.1	0.00	0.00	0.82	0.18	0.00	0.00
BOP-75(i)	11/8/2019	654	<0.20	<0.20	0.70	0.30	<5.0	<5.0	0.33	-95	<0.10	5.0	1.6	27	64	6.1	0.00	0.00	0.60	0.40	0.00	0.00
BOP-75(i)	2/11/2020	749	<0.20	<0.20	0.60	0.60	<5.0	<5.0	0.50	-37	<0.10	6.0	1.1	21	64	6.7	0.00	0.00	0.39	0.61	0.00	0.00
BOP-75(i)	5/11/2020	839	<0.20	<0.20	0.30	0.30	<5.0	<5.0	0.54	-87	<0.50	5.0	1.3	19	58	5.8	0.00	0.00	0.39	0.61	0.00	0.00
BOP-75(i)	8/13/2020	29	<0.20	0.40	0.97	0.21	<5.0	<5.0	0.49	36	<0.50	6.0	50	14	3600	4.8	0.00	0.19	0.61	0.21	0.00	0.00
BOP-75(i)	11/5/2020	112	<0.20	0.34	1.8	0.22	<5.0	<5.0	0.51	-7.0	<0.50	3.5	<1.0	16	1700	4.9	0.00	0.11	0.75	0.14	0.00	0.00
BOP-76(i)	2/2/2011	90	1.7	8.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	0.14	0.86	0.00	0.00	--	--
Monitoring Well	5/5/2011	182	<1.0	6.8	1.2	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.81	0.19	0.00	--	--
BOP-76(i)	8/10/2011	279	1.2	13	4.6	<1.0	<1.1	<1.1	3.6	110	3.8	1.1	10	<0.00070	2.4	6.2	0.047	0.64	0.31	0.00	0.00	0.00
BOP-76(i)	11/3/2011	364	1.4	27	1.6	<1.0	--	--	--	--	--	--	--	--	--	--	0.037	0.89	0.072	0.00	--	--
BOP-76(i)	2/8/2012	42	<1.0	2.1	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-76(i)	5/4/2012	128	<1.0	9.2	1.5	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.82	0.18	0.00	--	--
BOP-76(i)	8/9/2012	225	1.1	33	2.2	<1.0	--	--	--	--	--	--	--	--	--	--	0.024	0.90	0.081	0.00	--	--
BOP-76(i)	11/8/2012	84	0.80	9.8	1.7	<0.20	--	--	--	--	--	--	--	--	--	--	0.050	0.77	0.18	0.00	--	--
BOP-76(i)	2/5/2013	173	0.80	11	1.5	<0.20	--	--	--	--	--	--	--	--	--	--	0.046	0.80	0.15	0.00	--	--
BOP-76(i)	5/2/2013	259	1.4	22	1.7	<0.20	--	--	--	--	--	--	--	--	--	--	0.044	0.87	0.091	0.00	--	--
BOP-76(i)	6/17/2013	305	1.1	26	1.9	<0.20	<5.0	<5.0	1.3	76	3.7	0.00	11	<0.0050	1.6	6.2	0.030	0.88	0.087	0.00	0.00	0.00
BOP-76(i)	8/6/2013	28	<0.20	1.0	100	8.3	<5.0	<5.0	2.2	-130	<0.10	3.5	<1.0	3.4	110	6.1	0.00	0.0065	0.88	0.11	0.00	0.00
BOP-76(i)	11/7/2013	121	2.4	140	37	42	<5.0	<5.0	1.5	-200	<0.10	3.5	3.5	11	6.9	6.4	0.0068	0.50	0.18	0.31	0.00	0.00
BOP-76(i)	2/5/2014	211	1.0	45	5.8	8.5	--	--	--	--	--	--	--	--	--	--	0.011	0.63	0.11	0.25	--	--
BOP-76(i)	5/7/2014	302	<0.20	7.2	1.2	4.6	--	--	--	--	--	--	--	--	--	--	0.00	0.39	0.088	0.52	--	--
BOP-76(i)	8/13/2014	28	0.30	13	24	4.1	<5.0	<5.0	0.45	1.8	<0.10	7.0	3.2	7.6	170	5.3	0.00	0.24	0.60	0.16	0.00	0.00
BOP-76(i)	11/6/2014	113	<0.20	1.4	9.5	2.1	15	<5.0	0.20	-100	0.20	1.5	3.2	21	51	5.9	0.00	0.016	0.14	0.050	0.79	0.00
BOP-76(i)	2/5/2015	204	<0.20	1.0	7.0	2.2	30	<5.0	0.23	-150	0.21	2.8	5.1	19	13	6.1	0.00	0.0064	0.061	0.030	0.90	0.00
BOP-76(i)	5/7/2015	295	<0.20	0.60	6.6	3.9	<5.0	<5.0	1.5	-120	<0.10	4.0	5.5	20	7.5	6.1	0.00	0.034	0.50	0.46	0.00	0.00
BOP-76(i)	8/10/2015	22	<0.20	2.2	14	2.0	<5.0	<5.0	0.43	-190	<0.10	7.0	110	12	660	5.5	0.00	0.087	0.75	0.17	0.00	0.00
BOP-76(i)	11/4/2015	108	<0.20	0.90	14	2.0	<5.0	<5.0	0.83	-86	<0.10	7.0	4.0	15	120	6.2	0.00	0.037	0.79	0.17	0.00	0.00
BOP-76(i)	2/3/2016	199	<0.20	1.0	9.8	1.6	<5.0	<5.0	1.1	-85	<0.10	7.0	6.3	16	5.0	7.2	0.00	0.057	0.75	0.19	0.00	0.00
BOP-76(i)	5/4/2016	290	<0.20	0.50	10	3.8	<5.0	<5.0	8.7	-230	<0.10	7.0	4.5	18	26	6.2	0.00	0.023	0.61	0.36	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-76(i)	8/9/2016	387	<0.20	1.1	11	4.2	<5.0	<5.0	0.81	-140	<0.10	7.0	6.7	14	7.8	6.1	0.00	0.044	0.60	0.36	0.00	0.00
BOP-76(i)	11/10/2016	480	<0.20	3.5	7.4	2.5	<5.0	<5.0	0.40	-32	<0.10	7.0	22	14	3.4	6.1	0.00	0.19	0.53	0.28	0.00	0.00
BOP-76(i)	2/7/2017	569	<0.20	4.8	4.6	1.8	<5.0	<5.0	0.57	-0.40	<0.10	7.0	21	12	4.1	6.3	0.00	0.32	0.42	0.26	0.00	0.00
BOP-76(i)	5/16/2017	667	<0.20	2.1	5.3	2.5	<5.0	<5.0	0.75	-12	<0.10	3.0	18	17	4.6	6.3	0.00	0.14	0.49	0.36	0.00	0.00
BOP-76(i)	8/9/2017	752	<0.20	1.7	5.1	2.5	<5.0	<5.0	1.0	-52	<0.10	7.0	17	13	4.6	6.1	0.00	0.12	0.50	0.38	0.00	0.00
BOP-76(i)	2/8/2018	16	<0.20	<0.20	0.70	0.80	<5.0	<5.0	0.19	29	<0.50	7.0	140	13	6600	5.2	0.00	0.00	0.36	0.64	0.00	0.00
BOP-76(i)	5/15/2018	111	<0.20	0.90	2.1	1.1	<5.0	<5.0	0.54	19	0.19	7.0	31	20	3700	5.4	0.00	0.15	0.47	0.38	0.00	0.00
BOP-76(i)	8/3/2018	192	<0.20	1.1	2.7	1.8	15	<5.0	0.21	-30	0.29	4.5	32	14	3000	5.2	0.00	0.13	0.43	0.44	0.00	0.00
BOP-76(i)	11/7/2018	288	<0.20	1.2	2.9	2.1	<5.0	<5.0	10	17	0.25	7.0	33	17	2700	5.3	0.00	0.13	0.41	0.46	0.00	0.00
BOP-76(i)	2/12/2019	384	<0.20	1.5	3.6	2.8	21	<5.0	0.34	21	<0.50	2.5	<5.0	14	2000	5.0	0.00	0.12	0.40	0.48	0.00	0.00
BOP-76(i)	5/9/2019	471	<0.20	1.5	3.7	4.2	7.7	<5.0	0.35	13	<0.10	3.5	<1.0	15	1400	5.3	0.00	0.10	0.33	0.58	0.00	0.00
BOP-76(i)	8/13/2019	566	<0.20	1.1	4.6	2.1	7.8	<5.0	0.54	-53	<0.10	2.0	<1.0	15	650	5.6	0.00	0.094	0.53	0.38	0.00	0.00
BOP-76(i)	11/7/2019	653	<0.20	0.60	6.0	1.4	<5.0	<5.0	0.54	-70	0.25	4.0	<1.0	19	310	5.9	0.00	0.051	0.70	0.25	0.00	0.00
BOP-76(i)	2/12/2020	749	<0.20	0.20	3.4	1.5	<5.0	<5.0	0.50	-37	0.21	6.0	<1.0	19	370	6.7	0.00	0.025	0.58	0.40	0.00	0.00
BOP-76(i)	5/11/2020	838	<0.20	<0.20	2.9	1.5	78	<5.0	0.75	-55	<0.50	5.7	<1.0	15	140	6.2	0.00	0.00	0.55	0.45	0.00	0.00
BOP-76(i)	8/14/2020	29	<0.20	0.33	0.88	8.5	100	<5.0	0.39	-71	12	2.5	67	5.4	13000	5.2	0.00	0.017	0.061	0.92	0.00	0.00
BOP-76(i)	11/5/2020	112	<0.20	0.93	1.4	2.7	210	<5.0	0.29	-23	<0.10	4.0	46	12	6600	5.2	0.00	0.11	0.22	0.67	0.00	0.00
BOP-77(i)	2/2/2011	90	1.7	88	2.7	<1.0	--	--	--	--	--	--	--	--	--	--	0.014	0.95	0.039	0.00	--	--
Monitoring Well	5/5/2011	182	<1.0	41	3.8	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.89	0.11	0.00	--	--
BOP-77(i)	8/10/2011	279	1.8	17	1.6	<1.0	--	--	--	--	--	--	--	--	--	--	0.069	0.83	0.11	0.00	--	--
BOP-77(i)	11/3/2011	364	<1.0	11	6.7	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.55	0.45	0.00	--	--
BOP-77(i)	12/1/2011	392	1.1	32	7.1	<1.0	<1.1	<1.1	0.00	-270	0.20	0.80	8.4	<0.00070	2.4	6.8	0.021	0.75	0.23	0.00	0.00	0.00
BOP-77(i)	12/28/2011	419	--	--	--	--	--	--	--	--	--	--	--	--	12000	--	--	--	--	--	--	--
BOP-77(i)	12/28/2011	419	--	--	--	--	--	--	--	--	--	--	--	--	14000	--	--	--	--	--	--	--
BOP-77(i)	1/19/2012	22	<20	21	<20	<20	--	--	1.1	-150	<1.0	2.1	4.0	--	3800	5.4	0.00	1.0	0.00	0.00	--	--
BOP-77(i)	2/16/2012	50	<1.0	8.4	48	1.8	<1.1	<1.1	0.58	-150	<0.50	5.0	<0.50	6.6	880	5.7	0.00	0.11	0.84	0.049	0.00	0.00
BOP-77(i)	3/15/2012	78	<1.0	2.2	120	4.6	<1.1	<1.1	0.72	-260	<0.50	4.4	<0.50	10	150	7.0	0.00	0.013	0.93	0.055	0.00	0.00
BOP-77(i)	4/17/2012	111	<3.0	<3.0	21	62	<1.1	<1.1	0.40	-270	<0.10	5.6	0.60	12	210	7.1	0.00	0.00	0.18	0.82	0.00	0.00
BOP-77(i)	6/12/2012	167	<1.0	1.4	1.2	60	<1.1	<1.1	0.67	-50	<0.10	4.3	<0.10	0.31	310	6.4	0.00	0.011	0.013	0.98	0.00	0.00
BOP-77(i)	8/9/2012	225	<1.0	<1.0	<1.0	59	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-77(i)	8/16/2012	232	--	--	--	--	--	--	--	--	--	--	--	--	24000	--	--	--	--	--	--	--
BOP-77(i)	9/18/2012	33	<4.0	<4.0	28	4.1	<5.0	<5.0	0.78	26	<0.50	3.8	6.3	9.2	4700	4.7	0.00	0.00	0.81	0.19	0.00	0.00
BOP-77(i)	11/14/2012	90	<0.20	17	150	15	<5.0	<5.0	1.5	160	<1.0	3.5	<10	22	2300	5.7	0.00	0.068	0.81	0.13	0.00	0.00
BOP-77(i)	2/6/2013	174	<0.40	11	31	3.2	5.5	<5.0	0.35	6.4	<0.10	2.5	4.1	15	1100	5.8	0.00	0.13	0.49	0.079	0.30	0.00
BOP-77(i)	5/7/2013	264	<0.20	18	17	11	13	<5.0	1.5	-75	<0.10	2.5	<1.0	23	110	6.2	0.00	0.14	0.18	0.18	0.49	0.00
BOP-77(i)	8/6/2013	28	<0.20	0.70	14	13	8.6	<5.0	1.1	-44	<0.10	3.5	<1.0	17	890	5.4	0.00	0.0080	0.22	0.31	0.46	0.00
BOP-77(i)	11/7/2013	121	<0.20	<0.20	9.5	19	22	<5.0	0.91	-110	<0.10	3.5	<1.0	20	110	6.2	0.00	0.00	0.083	0.26	0.66	0.00
BOP-77(i)	2/20/2014	226	<0.20	2.7	6.1	7.6	22	<5.0	1.1	-8.9	<0.10	3.5	<1.0	19	40	6.3	0.00	0.021	0.064	0.12	0.79	0.00
BOP-77(i)	5/8/2014	303	<0.20	0.20	5.1	14	64	<5.0	0.76	-16	<0.10	3.0	<1.0	23	36	6.4	0.00	0.00	0.021	0.088	0.81	0.083
BOP-77(i)	8/13/2014	28	<0.20	0.60	81	17	24	<5.0	0.88	71	<0.50	6.0	2800	15	10000	4.3	0.00	0.00	0.42	0.14	0.43	0.00
BOP-77(i)	11/6/2014	113	<0.20	2.7	200	24	63	<5.0	0.17	-170	<0.50	7.0	1900	22	4900	4.1	0.00	0.00	0.44	0.081	0.48	0.00
BOP-77(i)	2/6/2015	205	<0.20	4.2	120	24	58	<5.0	0.83	-39	<0.50	7.0	860	26	4300	4.8	0.00	0.0086	0.33	0.10	0.56	0.00
BOP-77(i)	5/6/2015	294	<0.20	6.2	220	20	53	<5.0	0.98	-86	1.0	7.0	520	19	3000	4.8	0.00	0.010	0.50	0.071	0.37	0.041
BOP-77(i)	8/10/2015	22	<0.20	6.2	86	11	82	<5.0	0.94	-73	<1.0	7.0	3800	15	9100	4.3	0.00	0.012	0.22	0.044	0.67	0.056
BOP-77(i)	11/4/2015	108	<0.20	8.2	72	13	27	<5.0	0.59	35	<5.0	7.0	2900	15	6400	4.6	0.00	0.032	0.38	0.11	0.40	0.086
BOP-77(i)	2/3/2016	199	<0.20	6.2	61	8.7	21	<5.0	1.9	35	<1.0	--	1500	20	4700	5.8	0.00	0.030	0.41	0.090	0.37	0.11
BOP-77(i)	5/4/2016	290	<0.20	4.9	44	6.7	39	<5.0	0.73	-100	<1.0	7.0	890	17	3000	4.7	0.00	0.019	0.23	0.055	0.38	0.31
BOP-77(i)	8/9/2016	387	0.40	2.7	33	2.1	6.0	<5.0	0.22	-89	0.51	7.0	170	16	1500	5.0	0.00	0.034	0.57	0.056	0.00	0.33

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-77(i)	11/10/2016	480	<0.20	2.6	15	1.5	8.5	<5.0	0.35	-36	0.12	7.0	5.3	29	270	5.5	0.00	0.039	0.31	0.048	0.60	0.00
BOP-77(i)	2/7/2017	570	<0.20	0.30	20	2.2	8.0	<5.0	0.63	-50	<0.10	7.0	<1.0	27	85	6.0	0.00	0.00	0.40	0.069	0.00	0.52
BOP-77(i)	5/16/2017	667	<0.20	<0.20	13	2.6	25	<5.0	0.71	-60	<0.10	1.5	<1.0	17	38	6.1	0.00	0.00	0.13	0.041	0.20	0.63
BOP-77(i)	8/9/2017	752	<0.20	<0.20	0.80	4.8	15	<5.0	0.92	-37	<0.10	7.0	<1.0	32	40	5.9	0.00	0.00	0.014	0.13	0.41	0.45
BOP-77(i)	2/8/2018	16	<0.20	<0.20	1.4	0.70	14	<5.0	0.92	48	<0.50	2.0	190	18	9600	4.7	0.00	0.00	0.029	0.023	0.00	0.95
BOP-77(i)	5/15/2018	112	<0.20	0.40	6.3	1.1	12	<5.0	0.62	44	0.12	7.0	40	19	6300	4.8	0.00	0.0063	0.13	0.036	0.00	0.82
BOP-77(i)	8/3/2018	192	<0.20	0.90	8.9	1.7	12	<5.0	0.45	-12	0.68	3.0	94	15	5600	4.7	0.00	0.013	0.17	0.052	0.00	0.76
BOP-77(i)	11/8/2018	288	<0.20	1.1	6.6	0.60	12	<5.0	2.0	23	0.47	7.0	89	21	4300	4.8	0.00	0.017	0.14	0.020	0.00	0.82
BOP-77(i)	2/12/2019	384	<0.20	1.1	6.1	0.90	11	<5.0	0.63	140	<0.50	1.0	11	5.6	3400	4.7	0.00	0.019	0.14	0.032	0.00	0.81
BOP-77(i)	5/8/2019	470	<0.20	1.0	5.9	0.60	5.5	<5.0	1.2	70	<0.50	7.0	42	21	2100	4.9	0.00	0.029	0.23	0.037	0.00	0.70
BOP-77(i)	8/13/2019	566	<0.20	1.1	5.4	0.50	7.2	<5.0	0.64	30	0.17	4.0	<1.0	20	940	4.9	0.00	0.027	0.18	0.026	0.00	0.77
BOP-77(i)	11/8/2019	653	<0.20	0.60	5.6	1.1	5.3	<5.0	0.41	-55	<0.10	3.5	<1.0	21	1000	5.3	0.00	0.017	0.21	0.065	0.70	0.00
BOP-77(i)	2/11/2020	749	<0.20	0.50	6.5	3.2	8.5	<5.0	0.41	21	0.22	--	2.1	22	700	6.0	0.00	0.0090	0.16	0.12	0.71	0.00
BOP-77(i)	5/11/2020	838	<0.20	0.40	17	9.2	17	<5.0	0.58	13	<0.50	3.0	<1.0	17	280	5.0	0.00	0.00	0.19	0.16	0.65	0.00
BOP-77(i)	8/14/2020	29	<0.20	<0.20	3.2	1.4	7.9	<5.0	0.73	43	90	4.5	70	9.5	13000	4.5	0.00	0.00	0.11	0.071	0.00	0.82
BOP-77(i)	11/5/2020	113	<0.20	0.33	3.7	1.2	15	<5.0	0.36	37	<0.10	2.0	29	13	7000	4.8	0.00	0.00	0.067	0.035	0.46	0.44
BOP-78(i)	11/21/2011	382	1.7	37	6.1	<1.0	--	--	--	--	--	--	--	--	--	--	0.029	0.79	0.18	0.00	--	--
Injection Well	8/9/2012	225	1.1	30	9.3	<1.0	--	--	--	--	--	--	--	--	--	--	0.020	0.69	0.29	0.00	--	--
BOP-78(i)	11/8/2012	84	<0.20	0.30	7.2	51	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.083	0.91	--	--
BOP-78(i)	2/6/2013	174	<0.20	0.30	11	78	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.083	0.92	--	--
BOP-78(i)	5/2/2013	259	<0.20	0.30	0.60	19	--	--	--	--	--	--	--	--	--	--	0.00	0.0073	0.020	0.97	--	--
BOP-78(i)	8/7/2013	29	0.20	5.5	120	98	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.43	0.55	--	--
BOP-78(i)	11/8/2013	122	<0.20	<0.20	1.1	17	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.040	0.96	--	--
BOP-78(i)	2/5/2014	211	<0.20	1.0	1.3	3.0	--	--	--	--	--	--	--	--	--	--	0.00	0.11	0.19	0.70	--	--
BOP-78(i)	5/7/2014	302	<0.20	3.6	2.7	1.7	--	--	--	--	--	--	--	--	--	--	0.00	0.33	0.34	0.33	--	--
BOP-78(i)	11/5/2014	112	<0.20	1.7	23	2.6	--	--	--	--	--	--	--	--	--	--	0.00	0.044	0.81	0.14	--	--
BOP-78(i)	2/5/2015	204	<0.20	3.2	12	1.8	--	--	--	--	--	--	--	--	--	--	0.00	0.14	0.70	0.16	--	--
BOP-78(i)	5/4/2015	292	<0.20	1.0	7.8	2.4	--	--	--	--	--	--	--	--	--	--	0.00	0.060	0.64	0.30	--	--
BOP-78(i)	11/6/2015	110	<0.20	0.20	3.1	1.4	--	--	--	--	--	--	--	--	--	--	0.00	0.027	0.57	0.40	--	--
BOP-78(i)	2/4/2016	200	<0.20	0.30	4.2	2.2	--	--	--	--	--	--	--	--	--	--	0.00	0.028	0.54	0.44	--	--
BOP-78(i)	5/5/2016	291	<0.20	0.40	10	6.1	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.51	0.48	--	--
BOP-78(i)	8/8/2016	386	<0.20	0.90	24	13	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.54	0.45	--	--
BOP-78(i)	11/4/2016	475	<0.20	0.70	12	7.5	--	--	--	--	--	--	--	--	--	--	0.00	0.021	0.50	0.48	--	--
BOP-78(i)	2/8/2017	570	<0.20	0.60	10	11	--	--	--	--	--	--	--	--	--	--	0.00	0.016	0.36	0.62	--	--
BOP-78(i)	5/16/2017	668	<0.20	0.70	8.8	11	--	--	--	--	--	--	--	--	--	--	0.00	0.020	0.33	0.65	--	--
BOP-78(i)	8/9/2017	753	<0.20	1.3	16	18	--	--	--	--	--	--	--	--	--	--	0.00	0.021	0.36	0.62	--	--
BOP-78(i)	2/12/2018	20	<0.20	0.30	4.0	21	--	--	--	--	--	--	--	--	--	--	0.00	0.006	0.11	0.89	--	--
BOP-78(i)	5/15/2018	112	<0.20	0.50	6.6	5.5	--	--	--	--	--	--	--	--	--	--	0.00	0.024	0.43	0.55	--	--
BOP-78(i)	8/2/2018	191	<0.20	0.50	6.3	6.2	--	--	--	--	--	--	--	--	--	--	0.00	0.023	0.39	0.59	--	--
BOP-78(i)	11/7/2018	288	<0.20	0.50	5.4	5.2	--	--	2.0	23	--	7.0	--	--	--	--	0.00	0.027	0.39	0.58	--	--
BOP-78(i)	2/8/2019	380	0.20	<0.20	1.2	6.5	--	--	--	--	--	--	--	--	--	--	0.01	0.00	0.11	0.88	--	--
BOP-78(i)	5/7/2019	468	<0.20	0.50	1.8	6.6	--	--			--		--	--	--	--	0.00	0.030	0.15	0.83	--	--
BOP-78(i)	8/16/2019	570	<0.20	0.30	2.9	8.8	--	--	--	--	--	--	--	--	--	--	0.00	0.013	0.17	0.81	--	--
BOP-78(i)	11/8/2019	653	<0.20	0.50	6.1	17	--	--	--	--	--	--	--	--	--	--	0.00	0.011	0.19	0.80	--	--
BOP-78(i)	2/7/2020	745	<0.20	0.40	4.0	11	--	--	--	--	--	--	--	--	--	--	0.00	0.014	0.19	0.80	--	--
BOP-78(i)	5/7/2020	835	<0.20	<0.20	3.5	12		--	--	--	--	--	--	--	--	--	0.00	0.00	0.16	0.84	--	--
BOP-78(i)	11/3/2020	111	<0.20	<0.20	5.8	12	--	--			--		--	--			0.00	0.00	0.23	0.77	--	--
BOP-79(i)	11/21/2011	382	1.8	42	5.0	<1.0	--	--	--	--	--	--	--	--	--	--	0.028	0.84	0.13	0.00	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
Injection Well	8/9/2012	225	2.2	95	12	<1.0	--	--	--	--	--	--	--	--	--	--	0.015	0.84	0.14	0.00	--	--
BOP-79(i)	11/8/2012	84	<0.20	0.20	3.7	68	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.034	0.96	--	--
BOP-79(i)	2/6/2013	174	<0.20	0.20	0.60	5.7	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.063	0.92	--	--
BOP-79(i)	5/2/2013	259	<0.20	0.40	24	41	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.27	0.72	--	--
BOP-79(i)	8/7/2013	29	<0.20	1.0	37	20	--	--	--	--	--	--	--	--	--	--	0.00	0.011	0.54	0.45	--	--
BOP-79(i)	11/8/2013	122	<0.20	1.9	13	16	--	--	--	--	--	--	--	--	--	--	0.00	0.036	0.33	0.63	--	--
BOP-79(i)	2/5/2014	211	<0.20	3.4	17	7.2	--	--	--	--	--	--	--	--	--	--	0.00	0.082	0.55	0.36	--	--
BOP-79(i)	5/7/2014	302	0.90	58	43	15	--	--	--	--	--	--	--	--	--	--	0.00	0.39	0.39	0.21	--	--
BOP-79(i)	11/7/2014	114	<0.20	1.5	21	5.6	--	--	--	--	--	--	--	--	--	--	0.00	0.036	0.68	0.28	--	--
BOP-79(i)	2/5/2015	204	<0.20	2.1	10	3.8	--	--	--	--	--	--	--	--	--	--	0.00	0.089	0.57	0.34	--	--
BOP-79(i)	5/4/2015	292	<0.20	0.40	2.2	2.0	--	--	--	--	--	--	--	--	--	--	0.00	0.053	0.39	0.55	--	--
BOP-79(i)	11/6/2015	110	<0.20	0.50	8.6	4.3	--	--	--	--	--	--	--	--	--	--	0.00	0.024	0.55	0.43	--	--
BOP-79(i)	2/4/2016	200	<0.20	0.40	4.5	3.5	--	--	--	--	--	--	--	--	--	--	0.00	0.029	0.44	0.53	--	--
BOP-79(i)	5/5/2016	291	<0.20	0.50	3.6	3.6	--	--	--	--	--	--	--	--	--	--	0.00	0.039	0.38	0.58	--	--
BOP-79(i)	8/8/2016	386	<0.20	0.70	4.2	3.4	--	--	--	--	--	--	--	--	--	--	0.00	0.052	0.42	0.53	--	--
BOP-79(i)	11/4/2016	475	<0.20	0.60	4.7	3.7	--	--	--	--	--	--	--	--	--	--	0.00	0.041	0.43	0.53	--	--
BOP-79(i)	2/8/2017	570	<0.20	0.50	3.9	4.0	--	--	--	--	--	--	--	--	--	--	0.00	0.035	0.37	0.59	--	--
BOP-79(i)	5/16/2017	668	<0.20	0.70	5.2	4.8	--	--	--	--	--	--	--	--	--	--	0.00	0.039	0.40	0.57	--	--
BOP-79(i)	8/9/2017	753	<0.20	0.70	4.0	3.3	--	--	--	--	--	--	--	--	--	--	0.00	0.054	0.42	0.53	--	--
BOP-79(i)	2/12/2018	19	<0.20	0.30	4.4	2.5	--	--	--	--	--	--	--	--	--	--	0.00	0.026	0.52	0.46	--	--
BOP-79(i)	5/15/2018	112	<0.20	0.50	11	8.8	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.44	0.55	--	--
BOP-79(i)	8/2/2018	191	<0.20	0.40	6.6	6.7	--	--	--	--	--	--	--	--	--	--	0.00	0.017	0.38	0.60	--	--
BOP-79(i)	11/7/2018	288	<0.20	0.30	5.8	4.4	--	--	--	--	--	--	--	--	--	--	0.00	0.017	0.45	0.53	--	--
BOP-79(i)	2/8/2019	380	0.20	<0.20	0.50	1.3	--	--	--	--	--	--	--	--	--	--	0.044	0.00	0.19	0.77	--	--
BOP-79(i)	5/7/2019	468	<0.20	<0.20	0.80	1.5	--	--			--		--	--	--		0.00	0.00	0.26	0.74	--	--
BOP-79(i)	8/16/2019	570	<0.20	<0.20	0.30	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.33	0.67	--	--
BOP-79(i)	11/8/2019	653	<0.20	<0.20	0.90	0.60	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.49	0.51	--	--
BOP-79(i)	2/7/2020	745	<0.20	0.20	0.70	0.30	--	--	--	--	--	--	--	--	--	--	0.00	0.11	0.53	0.35	--	--
BOP-79(i)	5/7/2020	835	<0.20	<0.20	0.40	0.30		--	--	--	--	--	--	--	--	--	0.00	0.00	0.46	0.54	--	--
BOP-79(i)	11/3/2020	111	<0.20	0.22	3.0	1.4	--	--			--		--	--			0.00	0.031	0.57	0.40	--	--
BOP-80(i)	11/21/2011	382	<1.0	2.4	7.0	7.0	--	--	--	--	--	--	--	--	--	--	0.00	0.090	0.36	0.55	--	--
Downgradient Well	12/1/2011	392	<1.0	15	6.1	5.3	2.9	<1.1	0.00	-270	<0.10	2.4	3.8	4.0	2.4	6.7	0.00	0.31	0.17	0.23	0.28	0.00
BOP-80(i)	1/9/2012	12	<1.0	<1.0	<1.0	1.4	--	--	0.15	-260	0.20	1.7	0.40	--	4.9	6.8	0.00	0.00	0.00	1.0	--	--
BOP-80(i)	2/16/2012	50	<1.0	<1.0	<1.0	<1.0	2.2	<1.1	0.29	-240	0.10	2.7	2.4	7.4	3.3	7.1	0.00	0.00	0.00	0.00	0.00	1.0
BOP-80(i)	3/15/2012	78	<1.0	<1.0	<1.0	1.7	4.0	<1.1	0.43	-240	<0.10	4.0	0.50	8.0	4.7	7.0	0.00	0.00	0.00	0.17	0.35	0.49
BOP-80(i)	4/17/2012	111	<1.0	<1.0	<1.0	<1.0	<1.1	<1.1	0.28	-260	<0.10	3.6	1.0	13	2.9	7.0	ND	ND	ND	ND	ND	ND
BOP-80(i)	6/12/2012	167	<1.0	<1.0	<1.0	1.7	7.3	<1.1	0.24	13	<0.10	2.3	0.10	10	2.5	6.0	0.00	0.00	0.00	0.10	0.37	0.53
BOP-80(i)	9/18/2012	33	2.0	160	35	14	7.1	<5.0	0.28	-160	<0.10	2.9	1.9	14	14	6.4	0.006	0.59	0.18	0.11	0.00	0.12
BOP-80(i)	11/14/2012	90	3.0	610	240	33	6.1	<5.0	1.5	76	<0.10	2.5	3.1	7.5	1.5	6.5	0.00	0.59	0.31	0.067	0.00	0.026
BOP-80(i)	2/6/2013	174	<0.20	1.4	<0.20	0.40	5.2	<5.0	0.40	-7.0	0.15	3.0	<1.0	23	1.2	6.4	0.00	0.056	0.00	0.034	0.00	0.91
BOP-80(i)	5/9/2013	266	<0.20	0.80	<0.20	0.70	12	<5.0	0.57	-14	0.11	2.5	<1.0	20	1.3	6.3	0.00	0.015	0.00	0.027	0.00	0.96
BOP-80(i)	8/19/2013	41	<0.20	<0.20	<0.20	0.40	9.7	<5.0	1.2	-54	0.36	2.5	2.3	17	1.5	5.5	0.00	0.00	0.00	0.019	0.00	0.98
BOP-80(i)	11/11/2013	125	<0.20	<0.20	<0.20	0.20	14	<5.0	0.57	-65	<0.10	4.5	<1.0	22	1.4	6.0	0.00	0.00	0.00	0.0068	0.00	0.99
BOP-80(i)	2/21/2014	227	2.7	23	0.40	<0.20	<5.0	<5.0	2.6	110	3.8	0.50	18	0.45	2.6	6.6	0.083	0.90	0.021	0.00	0.00	0.00
BOP-80(i)	5/7/2014	302	<0.20	2.0	<0.20	<0.20	17	<5.0	1.2	-26	0.19	2.5	1.0	16	3.8	6.7	0.00	0.026	0.00	0.00	0.00	0.97
BOP-80(i)	8/14/2014	29	<0.20	0.50	1.1	3.1	9.0	<5.0	1.1	-110	0.29	4.0	290	13	910	5.3	0.00	0.010	0.031	0.14	0.00	0.82
BOP-80(i)	11/6/2014	113	0.80	65	360	63	<5.0	<5.0	0.45	-74	<0.10	2.5	11	2.9	1.4	6.8	0.00	0.095	0.71	0.19	0.00	0.00
BOP-80(i)	2/6/2015	205	<0.20	<0.20	<0.20	0.30	5.6	<5.0	0.30	-120	<0.10	7.0	1.4	15	2.7	6.2	0.00	0.00	0.00	0.025	0.00	0.97

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-80(i)	5/6/2015	294	<0.20	<0.20	0.20	0.60	15	<5.0	1.5	-73	<0.10	4.0	<1.0	21	2.4	6.3	0.00	0.00	0.00	0.019	0.00	0.98
BOP-80(i)	8/10/2015	22	3.0	91	430	11	<5.0	<5.0	0.30	-170	<0.10	7.0	8.2	3.6	1.6	6.3	0.00	0.13	0.83	0.033	0.00	0.00
BOP-80(i)	11/4/2015	108	<0.20	<0.20	0.50	2.1	8.9	<5.0	1.2	-59	<0.10	7.0	1.6	20	2.3	6.4	0.00	0.00	0.015	0.10	0.00	0.88
BOP-80(i)	2/3/2016	199	<0.20	<0.20	<0.20	0.20	<5.0	<5.0	2.0	-24	<0.10	5.0	1.4	27	1.1	6.9	0.00	0.00	0.00	1.0	0.00	0.00
BOP-80(i)	5/4/2016	291	<0.20	<0.20	<0.20	0.40	6.7	<5.0	0.90	-33	<0.10	7.0	<1.0	15	<1.0	6.2	0.00	0.00	0.00	1.0	--	--
BOP-80(i)	8/11/2016	389	<0.20	<0.20	0.20	0.70	9.0	<5.0	0.19	-98	<0.10	7.0	<1.0	21	2.5	6.1	0.00	0.00	0.0066	0.036	0.00	0.96
BOP-80(i)	11/11/2016	481	<0.20	<0.20	<0.20	0.30	10	<5.0	0.68	-9.2	<0.10	7.0	<1.0	20	2.7	6.2	0.00	0.00	0.00	0.014	0.00	0.99
BOP-80(i)	2/7/2017	570	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	1.1	20	<0.10	2.0	<1.0	26	2.8	6.1	ND	ND	ND	ND	ND	ND
BOP-80(i)	5/16/2017	668	<0.20	0.50	0.50	0.60	14	<5.0	0.35	-16	<0.10	0.50	<1.0	29	2.8	6.0	0.00	0.0079	0.011	0.020	0.00	0.96
BOP-80(i)	8/10/2017	754	<0.20	<0.20	<0.20	0.30	<5.0	<5.0	0.24	33	<0.10	2.0	<1.0	18	3.4	6.2	0.00	0.00	0.00	1.0	0.00	0.00
BOP-80(i)	2/8/2018	15	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.14	30	<0.10	2.0	1.7	28	41	6.3	ND	ND	ND	ND	ND	ND
BOP-80(i)	8/8/2018	196	<0.20	19	150	29	9.5	<5.0	0.42	-34	<0.10	3.0	<1.0	22	5.1	6.2	0.00	0.059	0.63	0.19	0.00	0.13
BOP-80(i)	2/14/2019	386	<0.20	<0.20	<0.20	<0.20	6.6	<5.0	0.35	-32	<0.10	3.0	<1.0	21	4.5	6.1	0.00	0.00	0.00	0.00	0.00	1.0
BOP-80(i)	8/13/2019	567	<0.20	<0.20	<0.20	<0.20	12	<5.0	0.44	-82	<0.10	2.5	<1.0	27	2.6	6.0	0.00	0.00	0.00	0.00	0.00	1.0
BOP-80(i)	2/11/2020	748	<0.20	<0.20	<0.20	<0.20	14	<5.0	0.65	-41	<0.10	3.8	<1.0	18	5.1	6.9	0.00	0.00	0.00	0.00	0.00	1.0
BOP-80(i)	8/13/2020	29	<0.20	260	290	23	<5.0	<5.0	0.58	-41	<0.50	2.0	10	3.8	2.9	6.9	0.00	0.37	0.56	0.070	0.00	0.00
BOP-81(i)	11/21/2011	382	<1.0	<1.0	1.6	6.2	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.14	0.86	--	--
Downgradient Well	12/1/2011	392	<1.0	<1.0	1.0	4.1	4.2	<1.1	0.00	-280	<0.10	1.1	0.50	8.3	2.4	6.8	0.00	0.00	0.047	0.30	0.32	0.33
BOP-81(i)	12/28/2011	419	--	--	--	--	--	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--	--
BOP-81(i)	1/9/2012	12	<1.0	<1.0	<1.0	1.9	--	--	0.33	-240	0.20	1.5	0.50	--	2.7	6.7	0.00	0.00	0.00	1.0	0.00	0.00
BOP-81(i)	2/16/2012	50	<1.0	<1.0	<1.0	<1.0	<1.1	<1.1	0.23	-240	<0.10	1.9	0.50	16	3.3	7.2	ND	ND	ND	ND	ND	ND
BOP-81(i)	3/15/2012	78	<1.0	<1.0	<1.0	<1.0	<1.1	<1.1	0.31	-250	0.10	2.7	0.30	25	3.0	7.0	ND	ND	ND	ND	ND	ND
BOP-81(i)	4/17/2012	111	<1.0	<1.0	<1.0	<1.0	<1.1	<1.1	0.28	-270	<0.10	2.6	0.20	23	2.5	6.8	ND	ND	ND	ND	ND	ND
BOP-81(i)	6/12/2012	167	<1.0	<1.0	<1.0	<1.0	1.8	<1.1	0.36	-1.8	<0.10	4.3	<0.10	21	2.3	6.1	0.00	0.00	0.00	0.00	0.00	1.0
BOP-81(i)	8/16/2012	232	--	--	--	--	--	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--
BOP-81(i)	9/18/2012	33	<0.20	<0.20	<0.20	0.60	8.4	<5.0	0.21	-130	<0.10	1.7	<1.0	18	3.0	6.5	0.00	0.00	0.00	0.033	0.00	0.97
BOP-81(i)	11/14/2012	90	<0.20	<0.20	<0.20	0.50	8.6	<5.0	0.60	43	0.11	2.0	1.4	15	<1.0	6.5	0.00	0.00	0.00	0.027	0.00	0.97
BOP-81(i)	2/6/2013	174	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.56	-93	0.12	2.0	2.0	30	<1.0	6.6	ND	ND	ND	ND	ND	ND
BOP-81(i)	5/9/2013	266	<0.20	0.30	<0.20	0.50	<5.0	<5.0	2.7	-18	0.39	1.5	7.4	7.1	<1.0	6.5	0.00	0.22	0.00	0.78	0.00	0.00
BOP-81(i)	8/19/2013	41	<0.20	<0.20	<0.20	0.90	<5.0	<5.0	4.0	-24	1.2	0.00	16	3.4	<1.0	6.7	0.00	0.00	0.00	1.0	0.00	0.00
BOP-81(i)	11/11/2013	125	<0.20	<0.20	<0.20	0.40	8.9	<5.0	0.42	-75	0.26	4.5	3.8	20	1.2	6.0	0.00	0.00	0.00	0.021	0.00	0.98
BOP-81(i)	2/21/2014	227	0.60	0.60	<0.20	<0.20	<5.0	<5.0	3.6	74	0.61	0.50	14	0.33	1.4	6.1	0.44	0.56	0.00	0.00	0.00	0.00
BOP-81(i)	5/7/2014	302	<0.20	0.20	<0.20	<0.20	5.2	<5.0	0.65	-50	<0.10	2.0	2.3	24	2.0	6.7	0.00	0.0087	0.00	0.00	0.00	0.99
BOP-81(i)	8/14/2014	29	<0.20	<0.20	<0.20	0.40	6.0	<5.0	1.2	-141	<0.10	4.5	50	12	230	5.8	0.00	0.00	0.00	0.031	0.00	0.97
BOP-81(i)	11/6/2014	113	<0.20	<0.20	<0.20	0.30	11	<5.0	0.50	-86	<0.10	2.5	<1.0	25	1.5	6.3	0.00	0.00	0.00	0.013	0.00	0.99
BOP-81(i)	2/6/2015	205	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.10	-130	<0.10	5.0	6.7	20	1.0	6.3	ND	ND	ND	ND	ND	ND
BOP-81(i)	5/6/2015	294	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.82	-74	<0.10	7.0	2.5	22	<1.0	6.3	ND	ND	ND	ND	ND	ND
BOP-81(i)	8/11/2015	23	<0.20	<0.20	0.60	1.2	<5.0	<5.0	1.5	-130	0.14	7.0	4.2	13	1.6	6.2	0.00	0.00	0.24	0.76	0.00	0.00
BOP-81(i)	11/4/2015	108	<0.20	<0.20	0.30	0.70	5.4	<5.0	0.54	-43	<0.10	6.5	1.7	20	1.6	6.3	0.00	0.00	0.016	0.058	0.00	0.93
BOP-81(i)	2/4/2016	200	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	1.9	-4.5	<0.10	5.0	7.1	10	<1.0	6.9	ND	ND	ND	ND	ND	ND
BOP-81(i)	5/4/2016	291	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	2.9	-47	<0.10	7.0	3.8	21	<1.0	6.2	ND	ND	ND	ND	--	--
BOP-81(i)	8/11/2016	389	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.25	-84	<0.10	7.0	<1.0	22	2.1	6.1	ND	ND	ND	ND	ND	ND
BOP-81(i)	11/11/2016	481	<0.20	<0.20	<0.20	0.30	<5.0	<5.0	0.51	17	<0.10	7.0	1.2	23	1.3	6.2	0.00	0.00	0.00	1.0	ND	ND
BOP-81(i)	2/7/2017	570	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	1.6	4.0	<0.10	1.5	5.4	11	1.5	6.3	ND	ND	ND	ND	ND	ND
BOP-81(i)	5/16/2017	668	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.23	-7.3	<0.10	1.5	5.2	11	1.3	6.4	ND	ND	ND	ND	ND	ND
BOP-81(i)	8/10/2017	754	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.36	40	<0.10	7.0	<1.0	23	1.6	6.2	ND	ND	ND	ND	ND	ND
BOP-81(i)	2/8/2018	15	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.21	64	<0.10	2.5	5.1	16	1.4	6.4	ND	ND	ND	ND	ND	ND
BOP-81(i)	8/8/2018	196	<0.20	<0.20	<0.20	0.20	7.8	<5.0	0.47	-28	<0.10	3.5	<1.0	23	3.1	6.0	0.00	0.00	0.00	0.012	0.00	0.99

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-81(i)	2/14/2019	386	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.29	-48	<0.10	6.5	<1.0	22	3.4	6.2	ND	ND	ND	ND	ND	ND
BOP-81(i)	8/14/2019	568	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.12	-44	<0.50	3.0	<1.0	19	3.9	6.1	ND	ND	ND	ND	ND	ND
BOP-81(i)	2/11/2020	748	<0.20	<0.20	<0.20	<0.20	<5.0	<5.0	0.59	-48	<0.10	3.0	<1.0	20	4.1	6.8	ND	ND	ND	ND	ND	ND
BOP-81(i)	8/13/2020	29	<0.20	<0.20	0.21	0.24	<5.0	<5.0	0.25	-31	3.8	2.0	<5.0	18	49	6.6	ND	ND	ND	ND	ND	ND
BOP-82(i)	11/21/2011	382	4.6	91	1.6	<1.0	--	--	--	--	--	--	--	--	--	--	0.038	0.94	0.022	0.00	--	--
Downgradient Well	12/1/2011	392	4.0	66	1.4	<1.0	<1.1	<1.1	0.00	-150	3.3	1.1	9.4	<0.00070	<1.5	6.4	0.045	0.93	0.027	0.00	0.00	0.00
BOP-82(i)	12/28/2011	419	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOP-82(i)	1/9/2012	12	2.6	47	1.0	<1.0	--	--	0.31	-240	<0.20	2.1	7.3	--	9.8	6.7	0.041	0.93	0.027	0.00	--	--
BOP-82(i)	2/16/2012	50	1.9	38	6.8	<1.0	<1.1	<1.1	1.6	-200	1.7	0.10	10	0.014	4.9	6.9	0.031	0.78	0.19	0.00	0.00	0.00
BOP-82(i)	3/15/2012	78	2.0	36	11	<1.0	<1.1	<1.1	0.82	-180	1.3	1.5	10	<0.00070	3.3	7.0	0.030	0.69	0.28	0.00	0.00	0.00
BOP-82(i)	4/17/2012	111	1.6	29	4.5	<1.0	<1.1	<1.1	1.3	-220	1.8	0.60	11	<0.00070	2.5	6.8	0.035	0.80	0.17	0.00	0.00	0.00
BOP-82(i)	6/12/2012	167	1.3	24	2.5	<1.0	<1.1	<1.1	2.8	150	1.8	0.10	9.9	<0.00070	2.6	5.5	0.036	0.84	0.12	0.00	0.00	0.00
BOP-82(i)	8/16/2012	232	--	--	--	--	--	--	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--
BOP-82(i)	9/18/2012	33	1.0	19	1.6	0.50	<5.0	<5.0	2.8	-0.50	1.8	1.0	9.9	<0.015	1.4	6.5	0.034	0.83	0.094	0.046	0.00	0.00
BOP-82(i)	11/14/2012	90	1.6	24	1.6	0.30	<5.0	<5.0	3.0	73	1.8	0.00	10	0.036	<1.0	6.6	0.045	0.86	0.077	0.022	0.00	0.00
BOP-82(i)	2/6/2013	174	1.5	15	1.8	0.40	<5.0	<5.0	3.5	94	1.3	0.00	11	0.036	<1.0	6.5	0.061	0.77	0.13	0.043	0.00	0.00
BOP-82(i)	5/6/2013	263	1.1	17	0.90	0.30	<5.0	<5.0	4.2	200	1.0	0.00	12	0.48	<1.0	6.3	0.044	0.86	0.062	0.032	0.00	0.00
BOP-82(i)	8/19/2013	41	1.4	19	0.50	<0.20	<5.0	<5.0	--	14	1.1	0.00	12	0.11	<1.0	6.2	0.053	0.91	0.033	0.00	0.00	0.00
BOP-82(i)	11/7/2013	121	1.1	17	0.50	<0.20	--	--	--	--	--	--	--	--	--	--	0.047	0.92	0.037	0.00	--	--
BOP-82(i)	2/21/2014	227	1.0	14	0.40	<0.20	<5.0	<5.0	3.2	190	0.88	0.50	9.2	1.3	2.5	6.1	0.052	0.91	0.035	0.00	0.00	0.00
BOP-82(i)	5/7/2014	302	0.70	12	0.50	<0.20	<5.0	<5.0	1.3	83	0.30	0.00	8.4	1.0	1.9	6.3	0.042	0.91	0.051	0.00	0.00	0.00
BOP-82(i)	8/14/2014	29	1.0	12	0.60	<0.20	<5.0	<5.0	0.45	-140	<0.10	7.0	8.8	1.5	36	5.8	0.058	0.88	0.060	0.00	0.00	0.00
BOP-82(i)	11/7/2014	114	0.60	8.1	2.7	0.70	--	--	--	--	--	--	--	--	--	--	0.035	0.59	0.27	0.11	--	--
BOP-82(i)	2/6/2015	205	0.70	11	1.7	0.50	<5.0	<5.0	0.68	-63	0.36	3.0	13	3.0	1.8	6.3	0.037	0.74	0.15	0.070	0.00	0.00
BOP-82(i)	5/4/2015	292	0.70	9.7	1.3	<0.20	--	--	--	--	--	--	--	--	--	--	0.046	0.81	0.15	0.00	--	--
BOP-82(i)	8/11/2015	23	0.60	8.6	1.4	0.60	<5.0	<5.0	1.1	-190	<0.10	7.0	5.5	7.5	9.5	6.3	0.039	0.70	0.16	0.10	0.00	0.00
BOP-82(i)	11/6/2015	110	0.30	6.0	2.5	1.2	--	--	--	--	--	--	--	--	--	--	0.020	0.49	0.28	0.21	--	--
BOP-82(i)	2/4/2016	200	0.50	8.5	1.4	0.40	<5.0	<5.0	1.8	36	0.22	3.0	12	2.3	<1.0	7.0	0.034	0.73	0.16	0.072	0.00	0.00
BOP-82(i)	5/3/2016	289	0.60	8.3	0.90	<0.20	--	--	--	--	--	--	--	--	--	--	0.048	0.83	0.12	0.00	--	--
BOP-82(i)	8/11/2016	389	0.60	8.7	0.60	<0.20	<5.0	<5.0	0.75	15	0.40	1.5	13	1.0	1.3	6.1	0.048	0.87	0.081	0.00	0.00	0.00
BOP-82(i)	11/16/2016	487	0.50	8.7	0.60	<0.20	--	--	--	--	--	--	--	--	--	--	0.040	0.88	0.082	0.00	--	--
BOP-82(i)	2/13/2017	575	0.40	7.1	0.60	<0.20	<5.0	<5.0	0.91	170	0.43	2.5	15	0.58	1.6	6.5	0.039	0.86	0.10	0.00	0.00	0.00
BOP-82(i)	5/12/2017	664	0.40	7.1	0.50	<0.20	--	--	--	--	--	--	--	--	--	--	0.039	0.88	0.084	0.00	0.00	0.00
BOP-82(i)	8/10/2017	754	0.30	5.8	0.70	<0.20	<5.0	<5.0	0.52	60	0.63	0.5	16	<0.0050	1.1	6.4	0.034	0.83	0.14	0.00	0.00	0.00
BOP-82(i)	2/7/2018	15	0.40	6.0	0.40	<0.20	<5.0	<5.0	0.33	140	<0.10	5.0	8.2	0.35	6.7	6.5	0.046	0.87	0.079	0.00	0.00	0.00
BOP-82(i)	8/8/2018	196	0.30	4.5	0.80	<0.20	<5.0	<5.0	0.49	-25	<0.10	1.0	9.5	7.8	4.6	6.0	0.041	0.77	0.19	0.00	0.00	0.00
BOP-82(i)	2/14/2019	386	0.40	4.3	0.60	<0.20	<5.0	<5.0	0.28	-4.3	0.12	1.5	7.6	1.9	1.9	6.1	0.058	0.79	0.15	0.00	0.00	0.00
BOP-82(i)	8/12/2019	565	0.40	4.1	0.50	<0.20	<5.0	<5.0	0.45	13	0.11	2.5	10	1.2	3.7	6.4	0.062	0.80	0.13	0.00	0.00	0.00
BOP-82(i)	2/11/2020	748	0.30	3.4	0.60	<0.20	5.3	<5.0	0.44	-29	0.18	1.0	7.8	0.99	3.4	6.7	0.0086	0.12	0.029	0.00	0.00	0.84
BOP-82(i)	8/13/2020	28	<0.20	1.3	1.8	0.40	<5.0	<5.0	0.37	-32	<0.50	3.5	11	0.93	17	6.7	0.00	0.28	0.54	0.18	0.00	0.00
BOP-83(i)	11/21/2011	382	<1.0	31	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
Downgradient Well	12/1/2011	392	<1.0	16	<1.0	<1.0	<1.1	<1.1	0.00	-150	8.0	1.0	20	<0.00070	<1.5	6.7	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	12/28/2011	419	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOP-83(i)	1/9/2012	12	1.8	36	<1.0	<1.0	--	--	6.2	-200	7.2	0.10	20	--	<1.5	6.7	0.038	0.96	0.00	0.00	--	--
BOP-83(i)	2/16/2012	50	2.6	58	2.5	<1.0	<1.1	<1.1	5.4	-180	6.6	0.10	25	<0.00070	2.7	7.1	0.032	0.91	0.053	0.00	0.00	0.00
BOP-83(i)	3/15/2012	78	1.1	19	<1.0	<1.0	<1.1	<1.1	6.4	-160	7.5	0.10	17	<0.00070	1.9	6.9	0.044	0.96	0.00	0.00	0.00	0.00
BOP-83(i)	4/17/2012	111	<1.0	7.3	<1.0	<1.0	<1.1	<1.1	3.6	-210	5.2	0.10	14	<0.00070	<1.5	6.3	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	6/12/2012	167	<1.0	3.1	<1.0	<1.0	<1.1	<1.1	8.2	150	6.8	0.10	14	<0.015	<1.5	6.0	0.00	1.0	0.00	0.00	0.00	0.00

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

		Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
Well	Date	Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-83(i)	8/16/2012	232	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOP-83(i)	9/18/2012	33	0.50	9.7	0.30	<0.20	<5.0	<5.0	5.1	66	6.6	0.00	14	<0.015	1.2	6.1	0.038	0.92	0.039	0.00	0.00	0.00
BOP-83(i)	11/14/2012	90	<0.20	5.3	<0.20	<0.20	<5.0	<5.0	7.0	110	6.3	0.00	12	0.0064	<1.0	6.7	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	2/6/2013	174	1.2	21	0.90	<0.20	<5.0	<5.0	7.7	150	5.9	0.00	12	<0.0050	<1.0	6.6	0.041	0.91	0.053	0.00	0.00	0.00
BOP-83(i)	5/6/2013	263	0.80	14	0.60	<0.20	<5.0	<5.0	9.4	210	6.0	0.00	12	<0.0050	<1.0	6.3	0.041	0.91	0.053	0.00	0.00	0.00
BOP-83(i)	8/22/2013	44	<0.20	3.4	<0.20	<0.20	<5.0	<5.0	7.1	170	5.7	0.00	12	<0.0050	<1.0	6.4	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	11/7/2013	121	<0.20	2.4	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-83(i)	2/21/2014	227	<0.20	2.3	<0.20	<0.20	<5.0	<5.0	4.1	180	5.4	0.50	11	<0.0050	<1.0	6.3	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	5/7/2014	302	0.40	5.7	0.40	<0.20	<5.0	<5.0	6.9	140	4.3	0.00	11	0.19	1.2	6.4	0.048	0.87	0.083	0.00	0.00	0.00
BOP-83(i)	8/14/2014	29	<0.20	2.2	<0.20	<0.20	<5.0	<5.0	7.7	-81	4.6	0.50	12	0.041	1.5	6.1	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	11/11/2014	118	<0.20	2.1	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-83(i)	2/6/2015	205	0.40	12	1.0	<0.20	<5.0	<5.0	7.7	53	3.6	0.00	8.9	0.38	<1.0	6.4	0.023	0.88	0.10	0.00	0.00	0.00
BOP-83(i)	5/4/2015	292	<0.20	2.0	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-83(i)	8/11/2015	23	<0.20	2.0	<0.20	<0.20	<5.0	<5.0	7.7	50	4.2	0.50	10	0.1	<1.0	6.5	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	11/6/2015	110	<0.20	1.9	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-83(i)	2/4/2016	200	<0.20	1.7	<0.20	<0.20	<5.0	<5.0	7.5	52	3.3	1.0	7.5	0.36	<1.0	7.3	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	5/6/2016	292	<0.20	2.4	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	1.0	0.00	0.00	--	--
BOP-83(i)	8/11/2016	389	<0.20	2.6	<0.20	<0.20	<5.0	<5.0	7.0	90	3.3	0.50	9.1	0.0069	<1.0	6.0	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	11/16/2016	487	0.50	10	4.5	<0.20	--	--	--	--	--	--	--	--	--	--	0.024	0.61	0.37	0.00	--	--
BOP-83(i)	2/13/2017	575	<0.20	2.7	<0.20	<0.20	<5.0	<5.0	6.2	180	2.7	0.50	9.4	<0.0050	<1.0	6.6	0.00	1.0	0.00	0.00	0.00	0.00
BOP-83(i)	5/12/2017	664	0.30	3.2	<0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.069	0.93	0.00	0.00	0.00	0.00
BOP-83(i)	8/10/2017	754	0.20	3.3	<0.20	<0.20	<5.0	<5.0	3.1	59	2.1	0.50	8.9	<0.0050	<1.0	6.4	0.046	0.95	0.00	0.00	0.00	0.00
BOP-83(i)	2/7/2018	15	0.40	8.6	13	0.70	<5.0	<5.0	2.6	250	1.3	0.50	5.6	0.055	2.0	6.3	0.011	0.31	0.63	0.053	0.00	0.00
BOP-83(i)	8/8/2018	197	0.20	3.0	<0.20	<0.20	<5.0	<5.0	0.87	44	3.0	0.50	9.4	0.052	2.2	4.7	0.050	0.95	0.00	0.00	0.00	0.00
BOP-83(i)	2/14/2019	386	0.20	5.6	14	0.20	<5.0	<5.0	0.65	-6.5	0.54	1.0	3.2	0.76	2.0	6.0	0.0063	0.22	0.75	0.017	0.00	0.00
BOP-83(i)	8/15/2019	569	0.20	3.3	7.7	<0.20	<5.0	<5.0	1.8	160	1.7	2.0	8.2	0.056	1.9	6.1	0.011	0.24	0.75	0.00	0.00	0.00
BOP-83(i)	2/10/2020	748	<0.20	3.8	16	<0.20	<5.0	<5.0	1.3	-1.5	0.14	0.50	2.2	0.19	3.2	6.4	0.00	0.15	0.85	0.00	0.00	0.00
BOP-83(i)	8/13/2020	28	<0.20	2.3	7.2	<0.20	<5.0	<5.0	2.3	180	0.79	0.50	7.4	0.13	1.5	6.6	0.00	0.19	0.81	0.00	0.00	0.00
BOP-84(i)	2/8/2012	42	<1.0	7.1	55	1.4	--	--	--	--	--	--	--	--	--	--	0.00	0.084	0.88	0.035	--	--
Injection Well	5/4/2012	128	<1.0	<1.0	1.8	150	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.0077	0.99	--	--
BOP-84(i)	6/12/2012	167	<1.0	<1.0	1.2	14	14	<1.1	0.65	-37	<0.10	3.7	<0.10	9.8	17	6.3	0.00	0.00	0.017	0.31	0.67	0.00
BOP-84(i)	8/9/2012	225	<1.0	<1.0	1.3	8.4	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.091	0.91	--	--
BOP-84(i)	8/16/2012	232	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BOP-84(i)	9/19/2012	34	<0.40	4.1	69	2.9	<5.0	<5.0	0.28	18	<0.10	3.5	<1.0	14	2600	4.6	0.00	0.040	0.90	0.059	0.00	0.00
BOP-84(i)	11/8/2012	84	<0.20	0.50	11	35	5.7	<5.0	--	--	<0.10	--	<1.0	22	280	--	0.00	0.00	0.13	0.65	0.00	0.22
BOP-84(i)	11/9/2012	85	--	--	--	--	--	--	0.81	130	--	3.0	--	--	--	6.4	--	--	--	--	--	--
BOP-84(i)	2/5/2013	173	<0.20	0.50	0.70	2.3	<5.0	<5.0	0.97	-44	<0.10	2.0	<1.0	26	81	6.3	0.00	0.080	0.15	0.77	0.00	0.00
BOP-84(i)	5/6/2013	263	<0.20	0.40	0.50	1.6	<5.0	<5.0	1.9	-75	<0.10	2.0	<1.0	21	100	6.1	0.00	0.090	0.15	0.76	0.00	0.00
BOP-84(i)	8/7/2013	29	<0.20	2.2	18	15	--	--	--	--	--	--	--	--	--	--	0.00	0.038	0.42	0.54	--	--
BOP-84(i)	11/8/2013	122	<0.20	0.70	3.3	1.3	--	--	--	--	--	--	--	--	--	--	0.00	0.089	0.57	0.35	--	--
BOP-84(i)	2/5/2014	211	<0.20	0.20	2.5	0.60	<5.0	<5.0	2.0	-120	<0.10	5.5	<1.0	19	380	6.5	0.00	0.041	0.70	0.26	0.00	0.00
BOP-84(i)	5/8/2014	303	<0.20	<0.20	2.0	1.9	7.4	<5.0	1.2	-33	<0.10	--	<1.0	14	40	6.6	0.00	0.00	0.066	0.10	0.84	0.00
BOP-84(i)	11/7/2014	114	<0.20	<0.20	8.0	2.9	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.64	0.36	--	--
BOP-84(i)	2/3/2015	202	<0.20	0.50	15	3.4	--	--	--	--	--	--	--	--	--	--	0.00	0.018	0.73	0.26	--	--
BOP-84(i)	5/4/2015	292	<0.20	0.30	8.9	3.1	--	--	--	--	--	--	--	--	--	--	0.00	0.016	0.64	0.35	--	--
BOP-84(i)	11/6/2015	110	<0.20	<0.20	2.8	2.1	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.46	0.54	--	--
BOP-84(i)	2/4/2016	200	<0.20	<0.20	3.4	2.0	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.52	0.48	--	--
BOP-84(i)	5/5/2016	291	<0.20	<0.20	3.8	2.2	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.53	0.47	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-84(i)	8/8/2016	386	<0.20	<0.20	4.6	1.7	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.64	0.36	--	--
BOP-84(i)	11/4/2016	475	<0.20	<0.20	4.6	1.5	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.66	0.34	--	--
BOP-84(i)	2/8/2017	571	<0.20	0.20	4.0	2.3	--	--	--	--	--	--	--	--	--	--	0.00	0.019	0.52	0.46	--	--
BOP-84(i)	5/16/2017	668	<0.20	0.30	4.3	2.1	--	--	--	--	--	--	--	--	--	--	0.00	0.028	0.55	0.42	--	--
BOP-84(i)	8/9/2017	753	<0.20	0.20	4.1	1.5	--	--	--	--	--	--	--	--	--	--	0.00	0.022	0.62	0.35	--	--
BOP-84(i)	2/12/2018	19	<0.20	<0.20	0.90	0.70	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.45	0.55	--	--
BOP-84(i)	5/17/2018	114	<0.20	0.20	1.9	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.045	0.58	0.38	--	--
BOP-84(i)	8/2/2018	191	<0.20	0.20	1.8	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.046	0.56	0.39	--	--
BOP-84(i)	2/8/2019	380	<0.20	0.20	1.4	3.1	--	--	--	--	--	--	--	--	--	--	0.00	0.023	0.22	0.76	--	--
BOP-84(i)	5/7/2019	468	<0.20	<0.20	1.3	4.2	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.17	0.83	--	--
BOP-84(i)	8/16/2019	570	0.20	<0.20	1.2	1.6	--	--	--	--	--	--	--	--	--	--	0.031	0.00	0.32	0.65	--	--
BOP-84(i)	11/8/2019	654	<0.20	<0.20	0.80	1.1	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.32	0.68	--	--
BOP-84(i)	2/7/2020	745	<0.20	<0.20	0.60	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.30	0.70	--	--
BOP-84(i)	5/7/2020	835	<0.20	<0.20	0.50	0.70		--	--	--	--	--	--	--	--	--	0.00	0.00	0.32	0.68	--	--
BOP-84(i)	11/3/2020	111	<0.20	<0.20	2.1	1.3	--	--			--		--	--			0.00	0.00	0.51	0.49	--	--
BOP-85(i)	2/8/2012	42	1.6	33	6.5	<1.0	--	--	--	--	--	--	--	--	--	--	0.029	0.77	0.20	0.00	--	--
Injection Well	5/4/2012	128	<1.0	29	6.5	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.77	0.23	0.00	--	--
BOP-85(i)	8/9/2012	225	1.2	32	5.7	<1.0	--	--	--	--	--	--	--	--	--	--	0.023	0.79	0.19	0.00	--	--
BOP-85(i)	11/8/2012	84	0.90	20	4.3	<0.20	--	--	--	--	--	--	--	--	--	--	0.027	0.75	0.22	0.00	--	--
BOP-85(i)	2/6/2013	174	0.80	37	7.0	<0.20	--	--	--	--	--	--	--	--	--	--	0.013	0.79	0.20	0.00	--	--
BOP-85(i)	5/2/2013	259	1.1	30	5.8	<0.20	--	--	--	--	--	--	--	--	--	--	0.023	0.77	0.20	0.00	--	--
BOP-85(i)	8/7/2013	29	0.50	1.5	22	0.80	--	--	--	--	--	--	--	--	--	--	0.012	0.045	0.89	0.050	--	--
BOP-85(i)	11/8/2013	122	<0.20	0.20	2.4	2.1	--	--	--	--	--	--	--	--	--	--	0.00	0.025	0.41	0.56	--	--
BOP-85(i)	2/5/2014	211	<0.20	<0.20	<0.20	1.3	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-85(i)	5/7/2014	302	<0.20	<0.20	<0.20	1.5	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-85(i)	11/5/2014	112	<0.20	1.6	3.4	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.23	0.65	0.12	--	--
BOP-85(i)	2/3/2015	202	<0.20	1.4	5.2	0.30	--	--	--	--	--	--	--	--	--	--	0.00	0.15	0.78	0.069	--	--
BOP-85(i)	5/4/2015	292	<0.20	0.80	5.1	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.094	0.81	0.10	--	--
BOP-85(i)	11/6/2015	110	<0.20	<0.20	0.40	0.30	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.46	0.54	--	--
BOP-85(i)	2/4/2016	200	<0.20	<0.20	0.70	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.47	0.53	--	--
BOP-85(i)	5/5/2016	291	<0.20	<0.20	1.0	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.42	0.58	--	--
BOP-85(i)	8/8/2016	386	<0.20	0.30	1.3	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.076	0.45	0.48	--	--
BOP-85(i)	11/4/2016	474	<0.20	0.30	1.3	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.076	0.45	0.48	--	--
BOP-85(i)	2/8/2017	571	<0.20	0.30	1.3	1.1	--	--	--	--	--	--	--	--	--	--	0.00	0.069	0.40	0.53	--	--
BOP-85(i)	5/16/2017	668	<0.20	0.30	1.5	1.1	--	--	--	--	--	--	--	--	--	--	0.00	0.065	0.44	0.50	--	--
BOP-85(i)	8/9/2017	753	<0.20	0.40	1.4	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.10	0.45	0.45	--	--
BOP-85(i)	2/12/2018	20	<0.20	<0.20	0.30	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	0.00	1.0	0.00	--	--
BOP-85(i)	5/15/2018	111	<0.20	0.20	0.60	0.30	--	--	--	--	--	--	--	--	--	--	0.00	0.12	0.49	0.38	--	--
BOP-85(i)	8/2/2018	191	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	--	--
BOP-85(i)	11/7/2018	288	<0.20	0.20	0.80	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.086	0.46	0.45	--	--
BOP-85(i)	2/8/2019	380	<0.20	0.20	0.90	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.064	0.39	0.54	--	--
BOP-85(i)	5/6/2019	468	<0.20	0.30	0.90	0.60	--	--	--	--	--	--	--	--	--	--	0.00	0.11	0.44	0.45	--	--
BOP-85(i)	8/16/2019	569	<0.20	0.30	1.1	0.70	--	--	--	--	--	--	--	--	--	--	0.00	0.092	0.46	0.45	--	--
BOP-85(i)	11/8/2019	654	<0.20	0.40	1.1	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.11	0.39	0.50	--	--
BOP-85(i)	2/7/2020	745	<0.20	0.30	0.90	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.088	0.36	0.55	--	--
BOP-85(i)	5/7/2020	835	<0.20	0.30	0.90	1.1		--	--	--	--	--	--	--	--	--	0.00	0.078	0.32	0.60	--	--
BOP-85(i)	11/3/2020	111	<0.20	<0.20	<0.20	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-86(i)	2/8/2012	42	1.2	21	17	<1.0	--	--	--	--	--	--	--	--	--	--	0.021	0.47	0.51	0.00	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
Injection Well	5/4/2012	128	<1.0	28	5.2	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.80	0.20	0.00	--	--
BOP-86(i)	8/9/2012	225	1.0	39	7.7	<1.0	--	--	--	--	--	--	--	--	--	--	0.016	0.78	0.21	0.00	--	--
BOP-86(i)	11/8/2012	84	0.90	20	4.6	0.50	--	--	--	--	--	--	--	--	--	--	0.025	0.71	0.22	0.038	--	--
BOP-86(i)	2/6/2013	174	0.60	31	6.2	<0.2	--	--	--	--	--	--	--	--	--	--	0.012	0.78	0.21	0.00	--	--
BOP-86(i)	5/2/2013	259	0.70	35	7.4	<0.2	--	--	--	--	--	--	--	--	--	--	0.012	0.77	0.22	0.00	--	--
BOP-86(i)	8/7/2013	29	0.60	9.1	15	1.0	--	--	--	--	--	--	--	--	--	--	0.015	0.28	0.64	0.066	--	--
BOP-86(i)	11/8/2013	122	<0.20	1.4	2.0	2.6	--	--	--	--	--	--	--	--	--	--	0.00	0.15	0.28	0.57	--	--
BOP-86(i)	2/5/2014	211	0.30	0.40	0.40	0.60	--	--	--	--	--	--	--	--	--	--	0.097	0.16	0.22	0.52	--	--
BOP-86(i)	5/7/2014	302	<0.20	0.40	1.3	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.10	0.46	0.44	--	--
BOP-86(i)	11/5/2014	112	<0.20	0.60	4.6	3.0	--	--	--	--	--	--	--	--	--	--	0.00	0.046	0.47	0.48	--	--
BOP-86(i)	2/3/2015	202	<0.20	0.90	5.5	3.5	--	--	--	--	--	--	--	--	--	--	0.00	0.057	0.47	0.47	--	--
BOP-86(i)	5/4/2015	292	<0.20	3.5	5.0	2.8	--	--	--	--	--	--	--	--	--	--	0.00	0.22	0.42	0.36	--	--
BOP-86(i)	11/6/2015	110	<0.20	0.30	1.6	2.8	--	--	--	--	--	--	--	--	--	--	0.00	0.036	0.26	0.70	--	--
BOP-86(i)	2/4/2016	200	<0.20	0.30	1.9	2.2	--	--	--	--	--	--	--	--	--	--	0.00	0.040	0.34	0.62	--	--
BOP-86(i)	5/5/2016	291	<0.20	0.40	2.0	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	0.13	0.87	0.00	--	--
BOP-86(i)	8/8/2016	386	<0.20	0.60	2.5	1.7	--	--	--	--	--	--	--	--	--	--	0.00	0.079	0.45	0.47	--	--
BOP-86(i)	11/4/2016	474	<0.20	0.60	2.3	1.6	--	--	--	--	--	--	--	--	--	--	0.00	0.085	0.44	0.48	--	--
BOP-86(i)	2/8/2017	571	<0.20	0.60	2.2	1.3	--	--	--	--	--	--	--	--	--	--	0.00	0.10	0.47	0.43	--	--
BOP-86(i)	5/16/2017	668	<0.20	0.70	2.4	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.12	0.56	0.32	--	--
BOP-86(i)	8/9/2017	753	<0.20	0.60	2.0	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.12	0.52	0.36	--	--
BOP-86(i)	2/12/2018	19	<0.20	<0.20	0.40	0.20	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.56	0.44	--	--
BOP-86(i)	5/15/2018	111	<0.20	0.50	0.60	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.21	0.34	0.44	--	--
BOP-86(i)	8/2/2018	191	<0.20	1.1	0.40	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.41	0.20	0.39	--	--
BOP-86(i)	2/8/2019	380	<0.20	2.3	1.0	0.70	--	--	--	--	--	--	--	--	--	--	0.00	0.45	0.26	0.29	--	--
BOP-86(i)	5/7/2019	468	<0.20	2.6	1.1	0.50	--	--			--		--	--	--		0.00	0.51	0.29	0.20	--	--
BOP-86(i)	8/16/2019	569	<0.20	2.1	0.90	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.50	0.29	0.20	--	--
BOP-86(i)	11/8/2019	654	<0.20	1.3	0.70	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.42	0.31	0.27	--	--
BOP-86(i)	2/7/2020	745	<0.20	0.70	0.50	0.40	--	--	--	--	--	--	--	--	--	--	0.00	0.32	0.31	0.38	--	--
BOP-86(i)	5/7/2020	835	<0.20	0.60	0.40	0.50		--	--	--	--	--	--	--	--	--	0.00	0.27	0.25	0.48	--	--
BOP-86(i)	11/3/2020	111	<0.20	0.25	<0.20	0.49	--	--			--		--	--			0.00	0.19	0.00	0.81	--	--
BOP-87(i)	2/8/2012	42	1.3	14	1.8	<1.0	--	--	--	--	--	--	--	--	--	--	0.059	0.80	0.14	0.00	--	--
Injection Well	5/4/2012	128	<1.0	24	1.4	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.93	0.073	0.00	--	--
BOP-87(i)	8/9/2012	225	2.2	52	2.6	<1.0	--	--	--	--	--	--	--	--	--	--	0.030	0.91	0.062	0.00	--	--
BOP-87(i)	11/8/2012	84	1.2	9.7	1.6	<0.20	--	--	--	--	--	--	--	--	--	--	0.074	0.76	0.17	0.00	--	--
BOP-87(i)	2/6/2013	174	0.40	8.5	1.2	<0.20	--	--	--	--	--	--	--	--	--	--	0.030	0.81	0.16	0.00	--	--
BOP-87(i)	5/2/2013	259	0.20	7.1	1.2	<0.20	--	--	--	--	--	--	--	--	--	--	0.018	0.80	0.18	0.00	--	--
BOP-87(i)	8/7/2013	29	0.70	21	6.3	0.30	--	--	--	--	--	--	--	--	--	--	0.018	0.68	0.28	0.021	--	--
BOP-87(i)	11/8/2013	122	<0.20	0.60	6.2	0.60	--	--	--	--	--	--	--	--	--	--	0.00	0.058	0.82	0.12	--	--
BOP-87(i)	2/5/2014	211	<0.20	0.30	1.2	1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.074	0.40	0.52	--	--
BOP-87(i)	5/7/2014	302	<0.20	<0.20	0.30	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.28	0.72	--	--
BOP-87(i)	11/5/2014	112	<0.20	0.60	1.5	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.14	0.47	0.39	--	--
BOP-87(i)	2/3/2015	202	<0.20	2.1	2.2	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.30	0.43	0.27	--	--
BOP-87(i)	5/4/2015	292	<0.20	1.4	2.8	0.70	--	--	--	--	--	--	--	--	--	--	0.00	0.21	0.57	0.22	--	--
BOP-87(i)	11/6/2015	110	<0.20	<0.20	0.30	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.28	0.72	--	--
BOP-87(i)	2/4/2016	200	<0.20	<0.20	0.50	0.60	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.35	0.65	--	--
BOP-87(i)	5/5/2016	291	<0.20	0.20	0.60	1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.064	0.26	0.67	--	--
BOP-87(i)	8/8/2016	386	<0.20	0.30	0.90	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.094	0.38	0.53	--	--
BOP-87(i)	11/4/2016	474	<0.20	0.30	1.0	0.80	--	--	--	--	--	--	--	--	--	--	0.00	0.090	0.41	0.50	--	--

Table 9
Bioremediation Progress Results
Former Degreaser Source Area
Boeing Portland
Gresham, Oregon

Well	Date	Elapsed Time from Previous Injection (days)	Volatile Organic Compounds Analytical Results						Aquifer Redox Conditions						Donor Indicators		Molar Fraction					
		Source Zone Wells + PRB Injection	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	E+E (µg/L)	Acetylene (µg/L)	DO (mg/L)	ORP (mV)	Nitrate (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (b) (mg/L)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene	Ethane
BOP-87(i)	2/8/2017	571	<0.20	0.40	1.3	1.1	--	--	--	--	--	--	--	--	--	--	0.00	0.089	0.39	0.52	--	--
BOP-87(i)	5/16/2017	668	<0.20	0.50	1.9	1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.10	0.50	0.41	--	--
BOP-87(i)	8/9/2017	753	<0.20	0.40	1.6	0.90	--	--	--	--	--	--	--	--	--	--	0.00	0.090	0.49	0.42	--	--
BOP-87(i)	2/12/2018	20	<0.20	<0.20	0.20	<0.20	--	--	--	--	--	--	--	--	--	--	0.00	0.00	1.0	0.00	--	--
BOP-87(i)	5/15/2018	112	<0.20	<0.20	1.1	0.50	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.59	0.41	--	--
BOP-87(i)	8/2/2018	191	<0.20	<0.20	0.80	4.2	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.11	0.89	--	--
BOP-87(i)	11/7/2018	288	<0.20	0.20	0.60	3.7	--	--	--	--	--	--	--	--	--	--	0.00	0.023	0.092	0.88	--	--
BOP-87(i)	2/8/2019	380	<0.20	0.30	0.90	30	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.019	0.98	--	--
BOP-87(i)	5/7/2019	468	<0.20	0.50	1.2	68	--	--			--		--	--	--	--	0.00	0.00	0.011	0.99	--	--
BOP-87(i)	8/16/2019	570	<0.20	0.30	1.8	65	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.018	0.98	--	--
BOP-87(i)	11/8/2019	654	<0.20	0.40	2.1	86	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.015	0.98	--	--
BOP-87(i)	2/27/2020	764	<0.20	<0.20	3.7	62	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	1.0	--	--
BOP-87(i)	5/7/2020	835	<0.20	0.50	5.3	82		--	--	--	--	--	--	--	--	--	0.00	0.00	0.040	0.96	--	--
BOP-87(i)	11/3/2020	111	<0.20	<0.20	<0.20	19	--	--			--		--	--			0.00	0.00	0.00	1.0	--	--
BOP-88(i)	2/8/2012	42	2.0	26	2.2	<1.0	--	--	--	--	--	--	--	--	--	--	0.052	0.85	0.10	0.00	--	--
Injection Well	5/4/2012	128	<1.0	19	2.5	<1.0	--	--	--	--	--	--	--	--	--	--	0.00	0.85	0.15	0.00	--	--
BOP-88(i)	8/9/2012	225	2.8	130	8.9	<1.0	--	--	--	--	--	--	--	--	--	--	0.015	0.90	0.084	0.00	--	--
BOP-88(i)	11/8/2012	84	1.2	11	1.5	<0.20	--	--	--	--	--	--	--	--	--	--	0.068	0.79	0.15	0.00	--	--
BOP-88(i)	2/6/2013	174	0.90	11	1.4	0.20	--	--	--	--	--	--	--	--	--	--	0.051	0.78	0.14	0.030	--	--
BOP-88(i)	5/2/2013	259	0.60	14	2.2	1.2	--	--	--	--	--	--	--	--	--	--	0.024	0.70	0.15	0.13	--	--
BOP-88(i)	8/7/2013	29	0.80	7.8	11	0.20	<5.0	<5.0	1.2	-130	<0.10	2.0	<1.0	1.9	290	5.9	0.027	0.33	0.63	0.018	0.00	0.00
BOP-88(i)	11/11/2013	125	<0.20	0.20	85	4.1	<5.0	<5.0	1.2	-90	<0.10	4.0	<1.0	17	460	6.2	0.00	0.00	0.93	0.069	0.00	0.00
BOP-88(i)	2/5/2014	211	<0.20	0.90	3.0	27	--	--	--	--	--	--	--	--	--	--	0.00	0.015	0.066	0.92	--	--
BOP-88(i)	5/7/2014	302	<0.20	1.0	3.5	7.7	--	--	--	--	--	--	--	--	--	--	0.00	0.046	0.22	0.74	--	--
BOP-88(i)	11/11/2014	118	<0.20	1.9	30	4.2	<5.0	<5.0	1.4	-210	<1.0	4.0	280	13	3200	4.6	0.00	0.037	0.79	0.17	0.00	0.00
BOP-88(i)	2/9/2015	208	0.30	12	90	4.0	<5.0	<5.0	0.46	-95	<1.0	7.0	240	12	4000	4.9	0.00	0.084	0.86	0.059	0.00	0.00
BOP-88(i)	5/6/2015	294	1.0	28	150	8.5	7.4	<5.0	0.82	-97	<1.0	7.0	140	16	3400	4.8	0.00	0.10	0.71	0.063	0.12	0.00
BOP-88(i)	11/4/2015	108	<0.20	0.80	8.7	2.4	--	--	--	--	--	--	--	--	--	--	0.00	0.045	0.67	0.29	--	--
BOP-88(i)	2/4/2016	200	<0.20	1.6	24	4.1	7.2	<5.0	1.7	58	<1.0	7.0	2300	11	8600	5.6	0.00	0.021	0.43	0.11	0.44	0.00
BOP-88(i)	5/5/2016	291	<0.20	3.3	65	6.8	7.9	<5.0	1.1	9.7	<1.0	7.0	2400	15	8800	4.7	0.00	0.023	0.62	0.10	0.26	0.00
BOP-88(i)	8/9/2016	387	<0.20	8.9	100	7.0	9.3	<5.0	0.39	-44	4.8	7.0	2300	14	10000	4.7	0.00	0.044	0.67	0.073	0.21	0.00
BOP-88(i)	11/8/2016	478	<0.40	6.2	110	7.4	11	<5.0	0.92	120	1.1	7.0	2600	12	9800	4.4	0.00	0.028	0.67	0.070	0.23	0.00
BOP-88(i)	2/8/2017	570	0.30	11	120	8.9	14	<5.0	4.6	110	<1.0	6.0	2500	13	9000	4.5	0.00	0.043	0.63	0.072	0.25	0.00
BOP-88(i)	5/17/2017	669	<0.40	6.3	120	6.1	11	<5.0	3.7	110	1.5	7.0	2600	13	9300	4.8	0.00	0.027	0.70	0.055	0.22	0.00
BOP-88(i)	8/9/2017	753	<0.40	2.1	41	4.8	18	<5.0	0.62	59	1.3	7.0	2300	18	8400	4.6	0.00	0.014	0.37	0.066	0.55	0.00
BOP-88(i)	2/20/2018	27	<0.40	3.0	10	0.90	8.3	<5.0	0.18	29	<0.50	5.0	90	13	7800	4.9	0.00	0.052	0.24	0.033	0.68	0.00
BOP-88(i)	5/15/2018	112	<0.40	6.8	35	2.9	9.4	<5.0	0.38	52	<0.10	7.0	91	14	4000	5.0	0.00	0.065	0.45	0.058	0.42	0.00
BOP-88(i)	8/9/2018	198	<0.40	2.0	12	1.1	8.8	<5.0	0.12	-0.13	<1.0	5.0	240	11	11000	4.9	0.00	0.032	0.26	0.037	0.67	0.00
BOP-88(i)	11/8/2018	288	<0.40	3.9	19	2.6	18	<5.0	0.85	21	<0.50	7.0	210	15	14000	4.8	0.00	0.033	0.22	0.046	0.71	0.00
BOP-88(i)	2/14/2019	386	<0.40	6.0	36	5.7	29	<5.0	0.69	-22	<2.0	7.0	230	15	16000	4.8	0.00	0.030	0.24	0.059	0.67	0.00
BOP-88(i)	5/9/2019	471	<0.40	8.5	53	6.6	14	<5.0	0.41	33	<1.0	7.0	220	8.8	16000	4.8	0.00	0.053	0.45	0.087	0.41	0.00
BOP-88(i)	8/14/2019	568	<0.40	9.9	72	7.2	38	<5.0	0.51	100	<2.0	7.0	9.9	20	15000	4.8	0.00	0.033	0.32	0.050	0.59	0.00
BOP-88(i)	11/7/2019	653	0.70	24	160	22	48	<5.0	0.59	41	1.6	5.5	290	12	16000	4.8	0.00	0.047	0.42	0.090	0.44	0.00
BOP-88(i)	2/12/2020	750	0.90	24	140	23	49	<5.0	3.7	44	2.1	6.5	290	15	17000	5.0	0.00	0.049	0.39	0.10	0.47	0.00
BOP-88(i)	11/5/2020	113	<0.40	0.93	44	3.7	160	<5.0	0.24	-130	0.89	2.5	160	9.6	20000	5.8	0.00	0.00	0.07	0.010	0.57	0.34

Table 9
Bioremediation Progress Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Notes:

-- Data not collected or analyzed

Boxed results indicate concentrations are above the respective cleanup levels.

Blue highlighted values indicate the compound with the highest micromoles per event, ethene and ethane combined are considered for maximum molar fraction. Compounds with 2 percent of maximum compound are also highlighted due to potential laboratory variability.

Injection Notes:

November 4-9, 2010: Conduct pilot injection test at BOP-72(i) with 900 gal of water mixed with 3/4 drum of Wilclear sodium lactate.

December 28, 2011: PRB injection at BOP-74(i). Injected 15 drums of LactOil, Newman Zone vegetable oil emulsion, and Wilclear sodium lactate with 15,000 gallons of water. Injection rates were between 70 to 80 gpm.

August 18, 2012: Conducted PRB injection at BOP-74(i) with 30,000 gallons of lactoil and water mixture.

July 2-9, 2013: Conducted gravity injection at seven source area zone injection wells (BOP-78, 79, 84, 85, 86, 87, 88). Injection of 10,000 gallons total LactOil donor and water. Average injection rates ranged from 4.8 to 11.7 gpm.

July 12-16, 2014: Conducted source area zone injection by gravity flow to seven multi-purpose injection wells and pump flow to PRB well BOP-74(i). Injection consisted of 50,000-gallon mixture of water, Textrol BR, glycerin, and ferrous sulfate.

June 8-19, 2015: Conducted source area zone injection by gravity flow to seven multi-purpose injection wells and pump flow to PRB well BOP-74(i). Injection consisted of 50,000-gallon mixture of water, Textrol BR, glycerin, and ferrous sulfate.

January 15-24, 2018: Conducted source area zone injection by pump flow to eight multi-purpose injection wells and PRB well BOP-74(i). Injection consisted of 53,898-gallon mixture of water, HRO and glycerin.

July 2-16, 2020: Conducted source area zone injection by pump flow to seven multi-purpose injection wells and PRB well BOP-74(i). Injection consisted of 46,138-gallon mixture of water, HRO and glycerin. Select wells received sulfated zero valent iron.

Abbreviations and Acronyms:

µg/L = micrograms per liter
cDCE = 1,2-dichloroethene
DO = dissolved oxygen
E+E = ethene and ethane
gpm = gallons per minute
mg/L = milligrams per liter
mV = millivolt
NS = not sampled
ORP = oxygen reduction potential
PCE = tetrachloroethene
PRB = permeable reactive barrier
TOC = total organic carbon
TCE = trichloroethene
VC = vinyl chloride

APPENDIX B

Historical TGA and Select TSA Groundwater Quality Data

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-10(i)-Dup	3/2/1987	32	2600	130	--	23	2.4	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	12/9/1987	29	2200	89	--	16	2.0	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	7/14/1988	26	1600	110	--	14	3.9	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	7/14/1988	27	1700	110	--	14	3.6	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	1/30/1989	6.6 M	1300	120	--	3.1 M	7.7 M	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	5/17/1989	3.7	1800	150	--	1.8	4.9	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	7/26/1989	--	2100	200	--	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	11/7/1989	4.1	1600	180	700	2.6	4.2	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/15/1990	--	1600	200	1100	3.1 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	2/15/1990	6.5	1700	190	1100	4.5	5.4	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	6/8/1990	--	2200	240	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/7/1990	6.2	1800	110	1300	7.1	3.3 M	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	11/6/1990	25 U	1500	120	1100	25 U	75 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/7/1991	25 U	1500	120	1200	25 U	75 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	5/15/1991	7 M	1100	100	1000	7.7 J	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/9/1991	20 U	980	69	730	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	8/9/1991	8.6 M	1000	71	750	11	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	1/21/1992	5.0 U	700	49	470	10 U	15 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	1/21/1992	5.5	550	55	400	7.0	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	7/15/1992	20 U	640	43	430	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/17/1993	3.7 J	480 J	37 J	440 J	6.6 J	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	7/27/1993	2.8	440	33	340	3.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	3/2/1994	2.8 J	310 J	25 J	250 J	3.6 J	2.0 UJ	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	5/24/1994	2.5	330	23	240	3.2	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/10/1994	1.8	340	25	250	2.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	10/24/1994	2.6	440	16	240	3.8	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/18/1995	5.0 U	670	20	360	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/19/1996	5.0 U	840	16	410	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/5/1996	5.0 U	1300	28	670	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/18/1997	25 U	1900	46 J	960	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	2/18/1997	10 U	1800	36 J	960	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/21/1997	3.0 U	2900	62	1900	3.0 U	6.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/27/1998	23 U	2700	52	2100	23 U	45 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/24/1998	1.1	1500	49	1500	1.8	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/15/1999	1.0 U	1200	38	1300	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/20/1999	5.0 U	530	17	620	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/17/2000	1.0 U	530	22	640	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/29/2000	1.0 U	180	20	200	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/22/2001	1.0 U	120 J	24	90	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/15/2001	1.0 U	87	18	59	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/28/2002	1.0 U	59	14	27	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/16/2002	1.0 U	51	15	18	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/13/2003	1.0 U	40	15	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/12/2003	1.0 U	40	15	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/24/2004	1.0 U	33	11	7.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/12/2004	1.0 U	34	11	9.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/9/2005	1.0 U	34	10	8.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/8/2005	1.0 U	29	9.3	7.1	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-10(i)	2/8/2006	1.0 U	38	12	8.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/7/2006	1.0 U	33	12	6.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/9/2007	1.0 U	37	15	7.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/16/2007	1.0 U	41	19	6.0	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/7/2008	1.0 U	72	60	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/11/2008	1.0 U	72	73	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/9/2009	1.0 U	120	120 J	16	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	2/9/2009	1.0 U	100	95 J	14	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/18/2009	1.0 U	98	110	16	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/3/2010	1.0 U	100	140	14	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/11/2010	1.0 U	87	130	15	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/7/2011	5.0 U	85	120	13	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/10/2011	1.0 U	61	85	9.7	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/2/2012	1.0 U	47	41	5.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/14/2012	1.0 U	30	26	3.5	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/4/2013	0.5 U	23	13	2.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/21/2013	0.5 U	16	6.5	2.0	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/5/2014	0.5 U	14	7.8	1.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/3/2015	0.5 U	13	8.0	1.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/5/2015	0.5 U	14	9.0	1.9	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/5/2016	0.5 U	13	7.2	1.6	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/8/2016	0.5 U	13	6.6	1.5	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/10/2017	0.5 U	11	5.4	1.2	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/8/2017	0.5 U	8.7	3.6	1.0	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-Dup	8/8/2017	0.5 U	8.5	3.7	1.0	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	9/19/2017	--	--	--	--	--	--	12.9	11.9	1.0 U	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)-Dup	2/16/2018	0.5 U	3.3	0.7	1.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	2/16/2018	0.5 U	3.1	0.6	1.7	0.2 U	0.2 U	--	141	12400	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)	5/16/2018	0.5 U	13	1.3	7.4	0.2 U	0.2 U	--	180	8920	5.0 UJ	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	BOP-10(i)	8/7/2018	2.5 U	18 J	1.2	12 J	1.0 UJ	1.0 U	--	233	11500	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)-Dup	8/7/2018	0.5 U	6.9 J	1	5.4 J	0.4 J	1	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	11/8/2018	0.5 U	18	2.3	7.6	0.3	0.2 U	--	156	9610	14	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)	2/15/2019	2.5 U	23	3.7	9.1	1.0 U	1.0 U	--	500 U	6020	59 J	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	BOP-10(i)	5/8/2019	0.5 U	30 J	5.5	11	0.6	0.2 U	--	114	3910	1300 J	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)-Dup	8/15/2019	0.5 U	26 J	4.1 J	12	0.6	0.2 UJ	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	8/15/2019	0.5 UJ	58 J	5.6 J	11 J	0.7 J	0.2 UJ	--	20.9	2820	6100 J	5.0 U	5.0 U
Central Corrective Action Area Wells	BOP-10(i)	11/7/2019	0.5 U	30	4.8	9.1	0.6	0.4	--	9.5	2630	6100 J	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	BOP-10(i)	2/10/2020	0.50 U	29	4.7	7.9	0.60	0.40	--	50 U	2470	9.3	0.50 U	0.50 U
Central Corrective Action Area Wells	BOP-10(i)-Dup	2/10/2020	0.50 U	27	6.7	7.5	0.60	0.50	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)	5/8/2020	0.50 U	28	6.9	13.0	0.80	0.70	--	1.0 U	1370	11	0.50 U	0.50 U
Central Corrective Action Area Wells	BOP-10(i)	8/10/2020	0.50 U	30	9.7	14.8	1.14	0.85	--	500 U	1330	12	0.50 U	0.50 U
Central Corrective Action Area Wells	BOP-10(i)	11/6/2020	0.50 UJ	28 J	9.9 J	17.9 J	1.27 J	1.0 UJ	--	1.0 U	988	19	0.50 U	0.50 U
Central Corrective Action Area Wells	BOP-10(i)-58	11/7/2008	0.5 U	91	91	8.9	0.5 U	0.5 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-64	11/7/2008	0.5 U	76	74	8.2	0.5 U	0.5 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-70	11/7/2008	0.5 U	80	65	11	0.5 U	0.5 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-70-Dup	11/7/2008	0.5 U	80	66	10	0.5 U	0.5 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-10(i)-76	11/7/2008	0.5 U	78	57	11	0.5 U	0.5 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/23/1994	9.8	170	54	47	11	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-56(i)	11/4/1994	15	200	56	62	12	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/7/1995	15	200	50	47	12	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	5/23/1995	16	200	53	53	13	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/16/1995	9.5	180	38	50	10	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/9/1996	8.7	130	25	37	8.4	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/19/1996	4.3	160	37	52	6.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/25/1997	4.9	180	28	47	7.3	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/21/1997	2.0	150	29	46	4.3	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	3/7/1998	2.5	210	50	50	4.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/25/1998	2.7	170	51	50	3.5	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/18/1999	1.0 U	79	19	16	1.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/21/1999	1.0 U	70	19	13	1.4	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/23/2000	1.0 U	65	23	13	1.4	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/31/2000	1.0 U	37	7.4	9.2	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/24/2001	1.0 U	63	19	13	1.2	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/21/2001	1.0 U	17	3.5	4.0	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	3/7/2002	1.0 U	11	2.8	2.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/16/2002	1.0 U	18	5.7	4.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/24/2003	1.0 U	40	14	7.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/14/2003	1.0 U	46	15	9.5	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/27/2004	1.0 U	43	10	8.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/19/2004	1.0 U	35	6.4	8.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/16/2005	1.0 U	18	3.9	4.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/10/2005	1.0 U	42	9.8	8.5	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/9/2006	1.0 U	51	14	7.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/16/2006	1.0 U	34	7.0	6.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/9/2007	1.0 U	49	11	7.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/14/2007	1.0 U	42	8.5	5.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/7/2008	1.0 U	48	10	7.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/11/2008	1.0 U	40	9.8	5.6	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/10/2009	1.0 U	35	8.0	4.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/21/2009	1.0 U	31	6.3	4.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/3/2010	1.0 U	20	5.2	3.2	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/12/2010	1.0 U	35	7.9	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/3/2011	1.0 U	17	4.7	2.5	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/12/2011	1.0 U	19	6.0	3.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/2/2012	1.0 U	17	5.1	2.6	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/9/2012	1.0 U	13	4.7	1.7	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/4/2013	0.5 U	23	2.8	3.9	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/21/2013	0.5 U	22	5.7	2.5	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/18/2014	0.5 U	23	3.7	2.9	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/3/2015	0.5 U	16	2.5	2.1	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/4/2015	0.5 U	16	3.7	1.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/1/2016	0.5 U	17	2.5	2.2	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/8/2016	0.5 U	11	3.9	1.2	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/8/2017	0.5 U	11	3.2	1.1	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/11/2017	0.5 U	7.5	2.8	0.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/6/2018	0.5 U	12	4.5	1.1	0.2 U	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-56(i)	8/14/2018	0.5 U	15	5.7	1.6	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/8/2019	0.5 U	17	8.4	1.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/2/2019	0.5 U	13	5.2	1.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	2/6/2020	0.50 U	12	5.4	1.2	0.20 U	0.20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-56(i)	8/7/2020	0.50 U	12	12	1.3	0.20 U	0.20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/26/1994	2.0 U	220	2.0 U	110	2.0 U	4.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	11/4/1994	3.0	400	11	170	2.2	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/24/1995	2.9	1200	26	510	2.8	2.2	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	5/23/1995	10 U	1800	29	880	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/8/1995	10 U	1200	25	590	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/13/1996	10 U	810	15	460	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/13/1996	10 U	1700	29	1100	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/18/1997	10 U	1400	23	1200	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/25/1997	15 U	1800	28	1800	15 U	30 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	3/9/1998	1.0 U	1600	30	1700	1.3	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/26/1998	1.0 U	72	1.2	74	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/17/1999	1.0 U	170	5.4	170	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/17/1999	1.0 U	200	5.3	170	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/24/1999	1.0 U	130	4.2	110	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/24/1999	1.0 U	120	4.0	110	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/17/2000	1.0 U	80	3.2	56	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/17/2000	1.0 U	83	3.3	58	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/30/2000	1.0 U	91	2.6	80	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/30/2000	1.0 U	83	2.4	75	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/21/2001	1.0 U	88 J	3.1	120	1.0 U	2.8	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/21/2001	1.0 UJ	83 J	3.1 J	110 J	1.0 UJ	3.3 J	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/21/2001	1.0 U	54	2.0	75	1.0 U	1.3	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/21/2001	1.0 U	59	2.1	82	1.0 U	1.5	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/24/2002	1.0 U	47	1.9	51	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/24/2002	1.0 U	48	1.9	52	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/16/2002	1.0 U	29	1.4	26	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/16/2002	1.0 U	34	1.6	27	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/17/2003	1.0 U	38	5.9	31	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/17/2003	1.0 U	38	6.0	32	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/15/2003	1.0 U	30	14	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/15/2003	1.0 U	30	14	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/24/2004	1.0 U	30	9.3	9.6	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/24/2004	1.0 U	32	10	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/12/2004	1.0 U	29	8.7	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/12/2004	1.0 U	28	7.7	9.5	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/11/2005	1.0 U	30	14	8.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/11/2005	1.0 U	30	14	8.6	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/9/2005	1.0 U	36	24	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/9/2005	1.0 U	36	25	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/8/2006	1.0 U	29	10	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/8/2006	1.0 U	27	9.8	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/7/2006	1.0 U	35	15	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/7/2006	1.0 U	35	13	12	1.0 U	1.0 U	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-59(i)	2/9/2007	1.0 U	31	11	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/9/2007	1.0 U	31	11	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/8/2007	0.2 U	18	1.8	16	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/8/2007	0.2 U	18	2.2	16	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/7/2008	1.0 U	18	1.6	18	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/7/2008	1.0 U	18	1.6	17	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/11/2008	1.0 U	18	1.1	24	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/11/2008	1.0 U	18	1.3	24	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/9/2009	1.0 U	18	1.2	24	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/9/2009	1.0 U	15	1.0	21	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/19/2009	1.0 U	19	1.2	21	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/19/2009	1.0 U	19	1.2	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/3/2010	1.0 U	26	1.5	23	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/11/2010	1.0 U	23	1.1	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/11/2010	1.0 U	22	1.1	21	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/7/2011	1.0 U	20	1.7	18	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/7/2011	1.0 U	20	1.6	18	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/10/2011	1.0 U	16	3.9	15	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/10/2011	1.0 U	16	3.8	15	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/2/2012	1.0 U	24	26	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/2/2012	1.0 U	23	26	19	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/7/2012	1.0 U	24	22	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/7/2012	1.0 U	22	18	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/12/2013	0.5 U	11	4.2	6.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/12/2013	0.5 U	12	4.4	6.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/7/2013	0.5 U	7.1	0.2 U	3.6	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/7/2013	0.5 U	7.0	0.2 U	3.4	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/5/2014	0.5 U	9.4	5.5	2.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/5/2014	0.5 U	9.3	5.4	2.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/3/2015	0.5 U	4.2	0.2 U	6.1	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/3/2015	0.5 U	4.3	0.2 U	6.4	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/4/2015	0.5 U	7.0	7.0	2.5	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/4/2015	0.5 U	7.7	7.6	2.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/5/2016	0.5 U	4.5	0.3	3.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/5/2016	0.5 U	4.5	0.3	3.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/8/2016	0.5 U	5.4	1.9	1.3	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/8/2016	0.5 U	5.7	2.0	1.4	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/10/2017	0.5 U	4.5	1.5	1	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/10/2017	0.5 U	4.7	1.7	1.0	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/4/2017	0.5 U	1.6	0.2 U	0.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/4/2017	0.5 U	1.7	0.2 U	0.7	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/7/2018	0.5 U	11	9.1	4.9	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/7/2018	0.5 U	11	8.3	4.5	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/13/2018	0.5 U	2.8	0.4	12	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/13/2018	0.5 U	2.6	0.4	11	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/7/2019	0.5 U	2.9	0.3	12	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/7/2019	0.5 U	2.9	0.3	11	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/5/2019	0.5 U	1.6	0.2 U	13	0.2 U	1.7	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	BOP-59(i)	8/5/2019	0.5 U	1.6	0.2 U	13	0.2 U	1.8	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	2/6/2020	0.50 U	0.40	0.20 U	24.0	0.20 U	2.8	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	2/6/2020	0.50 U	0.40	0.20 U	24.0	0.20 U	2.8	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)-Dup	8/7/2020	0.50 U	0.95	0.20 U	9.7	0.20 U	4.8	--	--	--	--	--	--
Central Corrective Action Area Wells	BOP-59(i)	8/7/2020	0.50 U	1.0	0.20 U	10.3	0.20 U	5.1	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	10/28/1998	1.0 U	1000	20	850	1.2	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/4/2000	1.0 U	120	4.1	94	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/1/2000	1.0 U	160	4.5	190	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/1/2000	1.0 U	200	4.4	220	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/1/2000	5.0 U	220	5 J	350	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/1/2001	1.0 U	380 J	7.5	450	1 J	2.0	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/1/2001	5.0 U	380	8.0	460	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/6/2001	5.0 U	230	5.7	290	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/1/2001	3.0 U	200	4.4	240	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/2/2002	5.0 U	160	5.0 U	180	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/8/2002	3.0 U	170	4.5	210	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/1/2002	1.0 U	130	3.8	160	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/4/2002	1.0 U	100	3.4	120	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/4/2003	1.0 U	93	3.7	120	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/7/2003	1.0 U	87	11	110	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/6/2003	1.0 U	81	23	96	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/5/2003	1.0 U	75	18	100	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/3/2004	1.0 U	60	18	71	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/6/2004	1.0 U	54	12	64	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/3/2004	1.0 U	58	12	66	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/1/2004	1.0 U	57	12	67	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/3/2005	1.0 U	53	12	61	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/3/2005	1.0 U	55	13	78	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/2/2005	1.0 U	57	14	82	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	12/16/2005	1.0 U	52	10	76	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/6/2006	1.0 U	54	7.4	82	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/9/2006	1.0 U	51	5.9	88	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/8/2006	1.0 U	48	6.1	70	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/9/2006	0.2 U	44	6.3	70	0.5	0.8	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/6/2007	0.2 U	49	5.8	84	0.3	0.9	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/10/2007	1.0 U	61	4.3	120	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/8/2007	0.2 U	6.4	0.3	1.4	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/7/2007	0.2 U	8.0	0.3	1.9	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/11/2008	1.0 U	43	1.9	86	1.0 U	3.7	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/12/2008	1.0 U	46	2.2	110	1.0 U	1.2	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/11/2008	1.0 U	47	2.1	110	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/5/2008	1.0 U	49	2.2	130	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/3/2009	1.0 U	40	1.0 U	98	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/6/2009	1.0 U	34	1.6	94	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/2/2010	1.0 U	33	1.8	87	1.0 U	1.0	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/9/2010	5.0 U	36	5.0 U	95	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/3/2011	1.0 U	31	2.2	81	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/3/2011	1.0 U	30	4.0	93	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	DP-1	2/3/2012	1.0 U	28	21	48	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/8/2012	1.0 U	23	17	30	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/7/2012	0.5 U	25	20	60	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/4/2013	0.5 U	32	23	110	0.4	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/9/2013	0.5 U	34	24	120	0.4	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/7/2013	0.5 U	30	20	110	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/12/2013	0.5 U	31	20	98	0.4	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/12/2014	0.5 U	24	21	68	0.4	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/5/2014	0.5 U	18	16	57	0.4	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/5/2015	0.5 U	32	20	99	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/7/2015	0.5 U	35	19	120	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/4/2015	0.5 U	34	14	120	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/6/2015	0.5 U	28	14	97	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/5/2016	0.5 U	22	13	74	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/3/2016	0.5 U	24	16	88	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/10/2016	0.5 U	21	11	74	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/7/2016	0.5 U	26	17	87	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/10/2017	0.5 U	22	17	74	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	5/11/2017	0.5 U	22	24	66	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	8/4/2017	0.5 U	25	23	50	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/2/2017	0.5 U	24	25	47	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	2/7/2018	0.5 U	0.4	0.5	0.7	0.2 U	0.2 U	--	11.2	2.4	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	DP-1	5/11/2018	0.5 U	6.7	0.7	24	0.2 U	0.2 U	--	10.7	1.2	7.8	5.0 U	5.0 U
Central Corrective Action Area Wells	DP-1	8/13/2018	0.5 UJ	0.6 J	0.2 UJ	11 J	0.2 UJ	0.2 UJ	--	--	--	--	--	--
Central Corrective Action Area Wells	DP-1	11/9/2018	5.0 U	2.0 U	2.0 U	18	2.0 U	2.0 U	--	4.7	500 U	120	5.0 U	5.0 U
Central Corrective Action Area Wells	DP-1	2/13/2019	0.5 U	0.5	0.2 U	0.8	0.2 U	0.2 U	--	1.7	500 U	3800 J	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	DP-1	5/6/2019	5.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	--	1.6	100 U	18000 J	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	DP-1	8/6/2019	25 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	--	50.0 U	9540	13000	5.0 U	5.0 U
Central Corrective Action Area Wells	DP-1	11/12/2019	0.5 U	0.3	0.2 U	3.3 J	0.2 U	1.7	--	1.0 U	507	22000	5.0 U	5.0 U
Central Corrective Action Area Wells	DP-1	2/6/2020	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	--	1.0 U	346	19	0.50 U	0.50 U
Central Corrective Action Area Wells	DP-1	5/5/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	1.0 U	50	24	0.50 U	0.50 U
Central Corrective Action Area Wells	DP-1	8/11/2020	0.50 U	0.20 U	0.20 U	0.54	0.20 U	1.2	--	5.0 U	30	2.5	0.50 U	0.50 U
Central Corrective Action Area Wells	DP-1	11/4/2020	0.50 U	0.20 U	0.20 U	1.8	0.20 U	2.3	--	2.9	31	16.9	0.50 U	0.50 U
Central Corrective Action Area Wells	E-6	3/28/1989	21 J	3900	150	3400	12 J	7.7 J	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/6/1989	16 J	3700	150	3700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/12/1989	25 U	3900	180	3700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/18/1989	25 U	3800	150	3100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/25/1989	25 U	4200	150	3900	180	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/2/1989	25 U	4300	200	4200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/9/1989	25 U	3900	170	3100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/16/1989	25 U	4500	210	4200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/23/1989	25 U	3900	190	3100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/30/1989	25 U	3900	180	4000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/7/1989	25 U	3800	170	3000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/13/1989	11 M	4100	200	3500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/20/1989	25 U	4200	180	3900	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/27/1989	25 U	4300	180	3000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/5/1989	8.9 M	4600	170	3500	--	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-6	7/11/1989	25 U	4200	180	3700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/18/1989	25 U	4300	170	3800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/25/1989	25 U	5000	180	4100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/1/1989	63 U	5100	220	3700 J	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/8/1989	13 M	3700	180	4400	7.6 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/15/1989	12 M	5200	230	5300	7.1 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/22/1989	50 U	4300	200	4800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/29/1989	33 U	4400	200	4600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/5/1989	14 M	5300	210	5400	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/12/1989	13	5700	200	7100	9.6	6.8	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/15/1989	14 J	3900	150	3500	9.1 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/21/1989	20 J	4500	170	3500	12 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/28/1989	22 J	5300	170	3800	9.5 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/5/1989	23 M	6700	200	4400	12 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/12/1989	20 M	6400	190	4600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/19/1989	22 J	6800	230	6000	12 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/4/1990	25 J	6900	210	5600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/17/1990	59	7100	230	4900	17 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/31/1990	25 M	5500	200	4100	10 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/14/1990	24 J	5800	190	4500	11 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/28/1990	21 M	5800	200	3900	11 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/14/1990	33 U	7400	290	4200	11 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/28/1990	33 U	7400	240	4600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/11/1990	25 U	8100	210	4200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/25/1990	33 U	6800	170	3700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/8/1990	33 U	6900	210	4500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/22/1990	33 U	7700	220	4200	97	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/6/1990	33 U	8400	220	4800	100	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/19/1990	33 U	8200	210	4500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/3/1990	33 U	7000	210	4700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/17/1990	33 U	7700	200	5000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/31/1990	50 U	7100	190	4700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/14/1990	15	6600 B	160	4700	16	5.8	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/28/1990	50 U	5700	130	3800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/11/1990	50 U	5000	130	3400	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/27/1990	19 M	5800	180	4000	15 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/9/1990	50 U	5600	140	3800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/29/1990	50 U	6800	170	4200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/14/1990	50 U	5500	160	3100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/28/1990	50 U	5100	140	3500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/11/1990	50 U	4400	110	2900	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/2/1991	50 U	4700	130	3000	50 U	150 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/15/1991	50 U	4500	120	3100	50 U	150 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/5/1991	50 U	4700	120	3500	50 U	150 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/5/1991	50 U	4000	130	2000	50 U	150 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/2/1991	50 U	3300	85	2400	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/7/1991	100 U	3800	110	2600	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/3/1991	50 U	4000	100	2800	52	100 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-6	7/1/1991	50 U	4500	120	3000	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/5/1991	50 U	3700	100	2500	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/3/1991	25 U	4100	110	2600	50 U	75 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/2/1991	50 U	3300	110	2400	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/4/1991	25 U	2500	74	1700	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/4/1991	25 U	1800	59	1200	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/6/1992	25 U	2200	76	1500	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/4/1992	25 U	2200	70	1600	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/3/1992	25 U	1800	51	1200	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/6/1992	25 U	2100	80	1400	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/4/1992	25 U	1700	50	1100	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/2/1992	25 U	1700	56	1100	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/6/1992	25 U	1700	51	1200	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/10/1992	25 U	1900	62	1100	25 U	50 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/1/1992	50 U	2000	62	1200	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/1/1992	50 U	1500	46 J	870	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/2/1992	50 U	1400	38 J	950	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/1/1992	5.3 M	990	32	650	6.4 M	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/1/1993	8 M	1000	36	680	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/1/1993	10 U	1500	46	920	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/3/1993	20 U	1310	38	790	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/29/1993	20 U	750	20 M	500	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/28/1993	18 U	740	20	370	18 U	36 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/25/1993	20 U	750	22	420	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/23/1993	10 U	600	20	390	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	7/30/1993	10 U	740	25	430	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/25/1993	10 U	740	25	430	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/29/1993	10 U	630	22	350	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/27/1993	5.0 U	580	20	340	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/22/1993	5.0 U	600	20	340	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/27/1993	6.2	600	20	320	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	1/26/1994	2.0 U	190	6.1	110	2.0 U	4.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/23/1994	3.9	470	18	320	4.3	4.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/4/1994	5.0 U	500	15	280	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	4/26/1994	5.0 U	440	13	260	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/29/1994	5.0 U	480	17	280	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	10/26/1994	2.4	470	16	250	2.8	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/3/1995	2.6 J	390 J	12	190	3.0	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	6/1/1995	2.9	440	13	200	2.9	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/29/1995	5.0 U	680	16	300	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/9/1995	5.0 U	740	16	320	6.1	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/4/1996	5.0 U	750	18	340	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/31/1996	5.0 U	930	17	420	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/26/1996	5.0 U	1000	19	530	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/20/1996	5.0 U	1100	18	530	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	3/6/1997	5.0 U	980	24	830	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/27/1997	10 U	1300	22	810	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/2/1997	9.0 U	1500	29	1200	9.0 U	18 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-6	11/3/1997	1.7	1400	36	1000	2.4	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/24/1998	10 U	1200	19	1100	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/5/1998	1.3 J	1300	28	1100	2.2	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/3/1998	1.0	980	20	800	1.9	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/2/1998	1.0 U	1100	27	890	1.8	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/1/1999	1.0 U	1100	23	980	1.7	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/3/1999	1.0 U	1100	17	1100	1.3	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/2/1999	3.0 U	660	12	680	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/1/1999	5.0 U	430	8.3	450	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/4/2000	1.0 U	420	8.3	420	1.1	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/1/2000	1.0 U	320	8.2	400	1.1	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/2/2000	1.0 U	250	8.6	250	1.0	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/1/2000	1.0 U	250	15	300	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/1/2001	3.0 U	310 J	13	330	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/1/2001	1.0 U	270	14	380	1.2	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/6/2001	5.0 U	280	14	380	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/1/2001	3.0 U	220	12	300	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/2/2002	3.0 U	190	14	240	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/8/2002	1.0 U	130	12	160	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/1/2002	3.0 U	110	13	140	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/4/2002	1.0 U	100	16	99	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/4/2002	1.0 U	95	14	94	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/4/2003	1.0 U	69	16	44	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/7/2003	1.0 U	54	14	28	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/6/2003	1.0 U	52	16	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/5/2003	1.0 U	59	12	24	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/3/2004	1.0 U	45	12	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/6/2004	1.0 U	39	9.5	16	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/3/2004	1.0 U	46	12	14	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/1/2004	1.0 U	46	12	15	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/3/2005	1.0 U	33	8.8	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/3/2005	1.0 U	29	9.0	8.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/2/2005	1.0 U	28	9.2	7.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	12/16/2005	1.0 U	71	62	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/6/2006	1.0 U	22	7.6	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/9/2006	1.0 U	24	10	5.6	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/8/2006	1.0 U	38	18	7.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/9/2006	0.2 U	44	26	11	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/6/2007	0.2 U	41	34	10	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/10/2007	1.0 U	62	54	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/8/2007	1.0 U	60	59	9.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/8/2007	1.0 U	44	57	8.2	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/11/2008	1.0 U	31	30	5.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	5/12/2008	1.0 U	19	32	3.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/11/2008	1.0 U	17	26	3.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	11/6/2008	0.2 U	41	40	15	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	2/12/2009	1.0 U	25	28	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/6/2009	1.0 U	27	28	12	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-6	8/6/2010	1.0 U	17	10	3.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/3/2011	1.0 U	16	17	7.4	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/8/2012	1.0 U	15	16	6.0	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/2/2013	0.5 U	19	21	8.5	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/12/2014	0.5 U	17	17	8.2	0.2	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/5/2015	0.5 U	22	22	3.5	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/18/2016	0.5 U	13	7.0	2.8	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	8/11/2017	0.5 U	24	22	3.6	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-6	9/19/2017	--	--	--	--	--	--	5.8	9.0	1.0 U	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	2/16/2018	0.5 UJ	1.7 J	0.4 J	0.8 J	0.2 UJ	0.2 UJ	--	347	19000	5.0 U	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	5/16/2018	0.5 U	11	0.8	3.3	0.2 U	0.2 U	--	109	4810	97 J	5.0 UJ	5.0 UJ
Central Corrective Action Area Wells	E-6	8/7/2018	0.5 U	15	4.9	3.9	0.2 U	0.2 U	--	50.0 U	1160	960	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	11/8/2018	0.5 U	2.7	3.9	42 J	0.2 U	0.2 U	--	21.5	199	17000	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	2/15/2019	0.5 U	0.2 U	0.2 U	68	0.3	0.2	--	50.0 U	60.0	19000	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	5/8/2019	0.5 U	0.2 U	0.2 U	93	0.3	0.2	--	5.0 U	17.7	16000	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	8/9/2019	0.5 U	0.2 U	0.2 U	94	0.3	1	--	1.0 U	14.1	10000	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	11/7/2019	0.5 U	0.2 U	0.2 U	16	0.2 U	51	--	3.6	15.2	7500	5.0 U	5.0 U
Central Corrective Action Area Wells	E-6	2/10/2020	0.50 U	0.20 U	0.20 U	7.1	0.20 U	74	--	1.8	15	7.2	0.50 U	0.50 U
Central Corrective Action Area Wells	E-6	5/8/2020	0.50 U	0.20 U	0.20 U	10.0	0.20 U	84	--	2.1	9.2	3.7	0.50 U	0.19
Central Corrective Action Area Wells	E-6	8/10/2020	0.50 U	0.23	0.20 U	43.0	0.20 U	66	--	5.0 U	8.1	2.3	0.50 U	0.32
Central Corrective Action Area Wells	E-6	11/6/2020	0.50 UJ	0.48	0.20 U	62.9	0.20 U	38 J	--	2.1	6.9	1.9	0.50 U	0.24
Central Corrective Action Area Wells	E-7	3/28/1989	9.4	590	49	590	6.0	6.4 M	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/6/1989	9.3	1100	86	1100	4.8 J	8.7	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/12/1989	--	2100	160	1900	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/18/1989	--	2500	150	2000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/25/1989	--	3300	170	3000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/2/1989	--	3400	160	2900	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/9/1989	--	3700	190	2900	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/16/1989	--	4200	220	3600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/23/1989	--	3900	240	3000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/30/1989	--	3900	220	3700	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/7/1989	--	4000	220	3100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/13/1989	12 M	3700	210	3000	7.2 M	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/20/1989	--	3700	190	3200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/27/1989	8.6 M	2800	160	2000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/5/1989	11 M	3100	160	2400	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/11/1989	12 J	3000	170	2600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/18/1989	12 M	2600	160	2500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/25/1989	10 M	2700	150	2300	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/1/1989	9.3	2700	180	2300	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/8/1989	16 J	2000	140	2500	11 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/15/1989	15 J	2400	180	2800	8 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/22/1989	15 J	2300	160	3000	9.3 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/29/1989	20	2500	190	2900	10 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/5/1989	18 J	2500	160	2900	11 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/12/1989	16	3400	160	2000	11	8.4	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/15/1989	9.3 J	2100	100	2200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/21/1989	16 J	2900	150	2700	8 J	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-7	11/28/1989	13 J	1700	99	1400	7.6	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/5/1989	13 J	2100	130	2000	7 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/12/1989	13 J	1900	120	1800	6.6 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/19/1989	11 J	2200	120	2000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/4/1990	13 M	2700	150	3000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/17/1990	15 J	2000	130	1800	7.6 J	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/31/1990	--	1500	99	1400	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/14/1990	13 J	1400	92	1300	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/28/1990	12 M	1400	140	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/14/1990	--	1600	120	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/28/1990	--	2000	95	1500	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/11/1990	--	1500	100	970	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/25/1990	--	2100	170	1200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/8/1990	--	1700	140	1200	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/22/1990	--	2400	130	1600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/6/1990	--	2200	160	1400	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/19/1990	--	1600	100	1000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/3/1990	--	1400	100	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/17/1990	--	1300	87	930	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/31/1990	--	2600	140	1800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/14/1990	9.4	2500 B	110	1900	9.7	5.8	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/28/1990	8.0	1500	86	960	8.1	4.1 M	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/10/1990	--	2100	110	1600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/27/1990	--	5800	150	3800	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/9/1990	--	1500	99	1000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/29/1990	--	1700	100	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/14/1990	--	1600	110	1000	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/28/1990	--	2100	120	1600	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/11/1990	--	1500	95	1100	--	--	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/2/1991	20 U	2000	110	1500	20 U	60 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/15/1991	11	820	71	620	9.8 J	30 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/5/1991	10	1600	89	1300	11	30 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/5/1991	9.3 M	1100	74	600	5.7 M	30 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/2/1991	9.7 J	1100	84	820	7.7 M	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/7/1991	10 U	900	75	650	6.8 M	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/3/1991	8.4 J	950	67	720	12	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/1/1991	7.4 M	2000	110	1500	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/5/1991	6.2 J	910	60	710	7.6 J	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/3/1991	6.1 M	1100	69	710	20 U	30 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/2/1991	6.3 J	790	64	650	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/4/1991	7 M	870	62	650	5.5	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/4/1991	5.8	800	60	570	5.5	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/6/1992	6.3	1300	92	970	7.0	9.4 J	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/4/1992	7.0	550	51	410	4.6 J	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/3/1992	4.7 M	710	49	530	6.1	4.1 M	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/6/1992	7.5	810	86	700	4.8 J	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/4/1992	3.7 J	680	60	520	4.5 J	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/2/1992	4.1 J	800	57	640	5.0	10 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-7	7/6/1992	3.5 M	950	54	700	3.5 M	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/10/1992	10 U	1400	88	1000	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/1/1992	50 U	1200	84	820	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/1/1992	10 U	950	62	610	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/2/1992	20 U	1900	68	1400	20 U	40 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/1/1992	50 U	2900	190	2200	50 U	100 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/1/1993	3 M	680	50	570	4.8 J	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/1/1993	5.1	1300	61	1100	5.2	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/3/1993	4.8 J	1300	50	950	6.5	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/29/1993	10 U	610	29	490	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/28/1993	10 U	970	43	770	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/25/1993	10 U	870	52	680	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/23/1993	10 U	310	22	250	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	7/30/1993	10 U	520	31	380	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/25/1993	10 U	960	46	850	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/29/1993	10 U	500	27	420	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/27/1993	5.0 U	920	60	960	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/22/1993	10 U	880	64	840	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/27/1993	5.0 U	220	12	150	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	1/26/1994	10 U	920	52	670	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/23/1994	10 U	410	22	290	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/4/1994	10 U	1200	51	720	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	4/26/1994	5.0 U	1200	46	680	5.0 U	10 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/29/1994	10 U	940	43	580	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	10/26/1994	1.0 U	39	4.7	18	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/21/1994	1.9	650	32	410	1.3	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/3/1995	1.0 UJ	640 J	30 J	350 J	1.0 UJ	2.0 UJ	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	6/1/1995	1.1	700	37	480	1.2	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/29/1995	10 U	760	41	560	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/9/1995	10 U	540	27	440	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/4/1996	10 U	380	28	280	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/31/1996	10 U	380	28	370	10 U	20 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/26/1996	1.0 U	180	25	160	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/20/1996	2.0 U	240	25	240	2.0 U	4.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	3/6/1997	1.0 U	160	24	180	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/27/1997	1.0 U	100	20	110	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/2/1997	1.0 U	120	30	120	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/3/1997	1.0 U	83	25	66	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/24/1998	1.0 U	70	21	61	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/5/1998	1.0 U	77	22	71	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/3/1998	1.0 U	81	18	67	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/2/1998	1.0 U	100	24	55	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/1/1999	1.0 U	220	33	190	1.0 U	2.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/3/1999	1.0 U	240	24	150	2.6	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/2/1999	1.0 U	440	65	460	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/1/1999	1.0 U	150	20	140	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/4/2000	1.0 U	47	11	40	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/1/2000	1.0 U	85	32	47	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-7	8/2/2000	1.0 U	100	25	52	1.6	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/1/2000	1.0 U	48	32	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/1/2001	1.0 U	61	34	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/1/2001	1.0 U	52	27	20	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/6/2001	1.0 U	82	42	17	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/1/2001	1.0 U	88	49	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/2/2002	1.0 U	100	26	17	2.0	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/8/2002	1.0 U	72	38	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/1/2002	1.0 U	78	25	14	1.4	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/4/2002	1.0 U	53	41	8.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/4/2002	1.0 U	77	20	16	1.4	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/4/2003	1.0 U	34	28	5.8	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/7/2003	1.0 U	25	12	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/6/2003	1.0 U	20	8.4	3.2	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/5/2003	1.0 U	34	8.0	5.7	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/3/2004	1.0 U	21	9.5	3.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/6/2004	1.0 U	22	8.6	3.1	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/3/2004	1.0 U	43	7.7	8.7	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/1/2004	1.0 U	22	6.2	5.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/3/2005	1.0 U	67	8.5	13	1.1	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/3/2005	1.0 U	32	16	6.2	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/2/2005	1.0 U	49	34	7.3	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	12/16/2005	1.0 U	88	92	16	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/6/2006	1.0 U	160	180	22	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/9/2006	1.0 U	83	100	13	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/8/2006	1.0 U	80	97	12	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/9/2006	0.2 U	79	120	16	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/6/2007	0.2 U	62	100	15	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/10/2007	1.0 U	53	77	10	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/16/2007	1.0 U	140	200	22	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/8/2007	1.0 U	100	180	14	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/11/2008	1.0 U	140	250	22	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	5/12/2008	1.0 U	28	51	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/11/2008	1.0 U	18	62	11	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	11/4/2008	3.0 U	150	300	26	3.0 U	3.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	2/3/2009	1.0 U	21	34	17	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/6/2009	1.0 U	77	120	33	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/6/2010	5.0 U	39	120	12	5.0 U	5.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/3/2011	1.0 U	11	38	5.0	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/8/2012	1.0 U	29	62	33	1.0 U	1.0 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/2/2013	0.5 U	38	23	35	1.1	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/12/2014	0.5 U	19	0.2 U	8.6	0.3	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/12/2015	0.5 U	23	75	7.7	0.2 U	0.2 UJ	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/12/2016	0.5 U	14	37	13	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	8/11/2017	0.5 U	5.1	0.3	35	0.2 U	0.2 U	--	--	--	--	--	--
Central Corrective Action Area Wells	E-7	9/19/2017	--	--	--	--	--	--	0.10 U	1.0 U	1.5	4400	5.0 U	5.0 U
Central Corrective Action Area Wells	E-7	2/16/2018	0.5 U	5.6	2.2	1.7	0.2 U	0.2 U	--	352	18900	310	5.0 U	5.0 U
Central Corrective Action Area Wells	E-7	5/16/2018	0.5 U	12	1.7	4.3	0.2 U	0.2 U	--	424	19400	150 J	5.0 UJ	5.0 UJ

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Central Corrective Action Area Wells	E-7	8/8/2018	2.5 U	14	1.4	5.5	1.0 U	1.0 U	50.0 U	672	20300	210 J	5.0 U	6.2 J
Central Corrective Action Area Wells	E-7	11/8/2018	2.5 U	18	1.8	7.2	1.0 U	1.0 U	--	562	20300	1000 J	5.0 U	5.2 J
Central Corrective Action Area Wells	E-7	2/15/2019	0.5 U	22	2.5	9.3	0.5	0.2 U	--	505	23200	5700	5.6 J	8.1 J
Central Corrective Action Area Wells	E-7	5/7/2019	0.5 U	26	2.9	15	0.6	0.2 U	--	1020	21800	8100	5.3 J	6.5 J
Central Corrective Action Area Wells	E-7	8/9/2019	0.5 U	26	3.2	18	0.7	0.2 U	--	535	21200	15000	5.0 U	7.3 J
Central Corrective Action Area Wells	E-7	11/7/2019	0.5 U	28	4.3	20	0.8	0.3	--	732	22800	4500 J	5.2 J	9.5 J
Central Corrective Action Area Wells	E-7	2/10/2020	0.50 U	27	4.7	18.0	0.80	0.30	--	688	22200	17	0.50 U	0.52
Central Corrective Action Area Wells	E-7	5/8/2020	5.0 U	23	3.8	20.0	2 U	2.0 U	--	727	20900	15	0.50 U	0.60 J
Central Corrective Action Area Wells	E-7	8/10/2020	0.50 U	25	4.7	21.1	0.81	0.35	--	555	20800	11.7	0.50 U	0.50 U
Central Corrective Action Area Wells	E-7	11/6/2020	0.50 UJ	21 J	4.5 J	18.6 J	0.68 J	0.22 J	--	712	21700 J	21.5	0.50 U	0.52 J
Coolant Release Area Wells	LAI-4	10/5/2006	200 U	200 U	200 U	200 U	200 U	200 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	3/12/2007	0.6 U	0.6 U	0.6 U	3.9	0.6 U	0.6 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	4/5/2007	1.0 U	1.0 U	1.0 U	4.0	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	5/11/2007	0.6 U	0.6 U	0.6 U	6.1	0.6 U	0.6 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	6/13/2007	1.0 U	1.0 U	1.0 U	1.9	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	7/12/2007	1.0 U	1.0 U	1.0 U	1.9	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	8/16/2007	1.0 U	1.0 U	1.0 U	1.6	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	9/7/2007	0.2 U	0.4	0.2 U	2.0	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	11/13/2007	0.2 U	0.3	0.2 U	1.4	0.2 U	0.2	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	2/5/2008	0.2 U	0.9	0.2	3.3	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	5/14/2008	1.0 U	1.0 U	1.0 U	2.2	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	8/14/2008	0.2 U	0.7	0.2	2.1	0.2 U	1.1	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	11/6/2008	0.6 U	0.6 U	0.6 U	1.7	0.6 U	1.0	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	2/5/2009	1.0 U	1.0 U	1.0 U	2.0	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	5/7/2009	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-4	5/5/2010	1.0 U	1.0 U	1.0 U	1.8	1.0 U	1.0 U	0.1 U	0.2	--	--	--	--
Coolant Release Area Wells	LAI-4	8/10/2010	1.0 U	1.2	1.0 U	2.2	1.0 U	1.0 U	0.1 U	0.1	--	--	--	--
Coolant Release Area Wells	LAI-4	11/16/2010	1.0 U	1.0 U	1.0 U	1.5	1.0 U	1.0 U	0.1 U	0.3	--	--	--	--
Coolant Release Area Wells	LAI-4	2/1/2011	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	0.1 U	0.2	--	--	--	--
Coolant Release Area Wells	LAI-4	5/3/2011	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.4	0.1 U	1.1	--	--	--	--
Coolant Release Area Wells	LAI-4	8/8/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0	0.5 U	1.7	--	--	--	--
Coolant Release Area Wells	LAI-4	11/1/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	0.1 U	0.9	--	--	--	--
Coolant Release Area Wells	LAI-4	2/6/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	40.1	--	--	--	--
Coolant Release Area Wells	LAI-4	5/8/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.2	41.5	--	--	--	--
Coolant Release Area Wells	LAI-4	8/13/2012	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	2.2	6.1	--	--	--	--
Coolant Release Area Wells	LAI-4	2/8/2013	0.5 U	1.3	0.2 U	0.7	0.2 U	0.8	0.1 U	1.0 U	--	--	--	--
Coolant Release Area Wells	LAI-4	8/20/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	3.7	--	--	--	--
Coolant Release Area Wells	LAI-4	8/18/2014	0.5 U	0.7	0.2 U	0.5	0.2 U	0.2 U	0.10 U	5.0	--	--	--	--
Coolant Release Area Wells	LAI-4	2/9/2015	0.5 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	0.68	9.5	--	--	--	--
Coolant Release Area Wells	LAI-4	8/12/2015	0.5 U	0.8	0.2 U	0.3	0.2 U	0.2 U	0.25	18.0	--	--	--	--
Coolant Release Area Wells	LAI-4	2/5/2016	0.5 U	0.9	0.2 U	0.2	0.2 U	0.2 U	0.55	7.6	--	--	--	--
Coolant Release Area Wells	LAI-4	8/4/2016	0.5 U	0.8	0.2 U	0.3	0.2 U	0.2 U	0.10 U	9.1	--	--	--	--
Coolant Release Area Wells	LAI-4	2/6/2017	0.5 U	1.4	0.2 U	0.4	0.2 U	0.2 U	0.35	8.2	--	--	--	--
Coolant Release Area Wells	LAI-4	8/8/2017	0.5 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	1.5 J	5.6 J	--	--	--	--
Coolant Release Area Wells	LAI-4	8/9/2018	0.5 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	0.70	7.6	--	--	--	--
Coolant Release Area Wells	LAI-4	8/11/2020	0.50 U	0.50	0.20 U	0.20 U	0.20 U	0.20 U	1.9	11	--	--	--	--
Coolant Release Area Wells	LAI-6	10/5/2006	0.2 U	5.6	0.5	7.9	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	3/12/2007	0.2 U	7.4	0.5	8.4	0.2 U	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Coolant Release Area Wells	LAI-6	4/4/2007	0.2 U	7.3	0.5	8.2	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	5/11/2007	0.2 U	10	0.6	9.4	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	6/12/2007	1.0 U	7.8	1.0 U	6.2	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	7/11/2007	1.0 U	9.7	1.0 U	6.2	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	8/14/2007	0.2 U	7.2	0.5	6.0	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	9/7/2007	0.2 U	8.0	0.7	6.0	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	11/9/2007	0.2 U	13	0.9	8.8	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	2/6/2008	1.0 U	4.5	1.0 U	4.5	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	5/14/2008	1.0 U	28	1.8	14	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	8/15/2008	0.2 U	14	1.5	6.8	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	11/7/2008	0.2 U	16	1.3	5.4	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	2/5/2009	1.0 U	21	1.3	9.6	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	5/7/2009	1.0 U	3.2	1.0 U	3.2	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	8/25/2009	1.0 U	3.2	1.0 U	3.4	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	11/9/2009	1.0 U	3.0	1.0 U	3.0	1.0 U	1.0 U	1.6	8.2	--	--	--	--
Coolant Release Area Wells	LAI-6	2/8/2010	1.0 U	5.3	1.0 U	7.3	1.0 U	1.0 U	1.7	7.9	--	--	--	--
Coolant Release Area Wells	LAI-6	5/5/2010	1.0 U	9.8	1.0 U	13	1.0 U	1.0 U	1.5	7.3	--	--	--	--
Coolant Release Area Wells	LAI-6	8/10/2010	1.0 U	3.4	1.0 U	3.1	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	11/16/2010	1.0 U	3.0	1.0 U	3.1	1.0 U	1.0 U	1.8	8.6	--	--	--	--
Coolant Release Area Wells	LAI-6	2/1/2011	1.0 U	5.7	1.0 U	7.5	1.0 U	1.0 U	1.8	8.7	--	--	--	--
Coolant Release Area Wells	LAI-6	5/3/2011	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.4	1.8	8.7	--	--	--	--
Coolant Release Area Wells	LAI-6	8/10/2011	1.0 U	4.7	1.0 U	4.7	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-6	11/1/2011	1.0 U	2.1	1.0 U	2.2	1.0 U	1.0 U	1.7	8.9	--	--	--	--
Coolant Release Area Wells	LAI-6	5/8/2012	1.0 U	1.7	1.0 U	1.6	1.0 U	1.0 U	1.8	11.9	--	--	--	--
Coolant Release Area Wells	LAI-6	8/13/2012	1.0 U	1.5	1.0 U	1.4	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	10/4/2006	0.2 U	1.2	0.6	3.0	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	3/14/2007	0.2 U	6.7	2.1	23	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	4/4/2007	0.2 U	6.9	3.4	21	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	5/10/2007	0.2 U	6.6	2.3	22	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	6/12/2007	1.0 U	4.3	1.4	12	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	7/12/2007	1.0 U	4.3	1.9	14	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	8/13/2007	0.2 U	5.4	2.2	15	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	9/7/2007	0.2 U	3.7	1.4	23	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	11/9/2007	0.6 U	2.8	1.0	30	0.6 U	0.6 UJ	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	2/6/2008	1.0 U	5.2	1.2	43	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	5/13/2008	0.2 U	7.4	2.2	47	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	8/14/2008	0.2 U	6.6	1.9	60	0.2 U	0.2 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	11/6/2008	0.2 U	5.2	1.5	73	0.2 U	0.2	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	2/4/2009	1.0 U	8.7	2.1	56	1.0 U	1.0 U	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	5/7/2009	1.0 U	7.2	2.2	110	1.0 U	3.4	--	--	--	--	--	--
Coolant Release Area Wells	LAI-7	8/25/2009	1.0 U	13	6.1	83	1.0 U	1.0 U	0.2	12.1	--	--	--	--
Coolant Release Area Wells	LAI-7	11/9/2009	1.0 U	14	7.4	56	1.0 U	1.0 U	0.5	17.1	--	--	--	--
Coolant Release Area Wells	LAI-7	2/8/2010	1.0 U	12	7.5	70	1.0 U	1.0 U	0.8	14.4	--	--	--	--
Coolant Release Area Wells	LAI-7	5/5/2010	1.0 U	14	12	22	1.0 U	1.0 U	1.4	17.3	--	--	--	--
Coolant Release Area Wells	LAI-7	8/10/2010	1.0 U	13	12	10	1.0 U	1.0 U	1.2	18.4	--	--	--	--
Coolant Release Area Wells	LAI-7	11/16/2010	1.0 U	12	11	14	1.0 U	1.0 U	1.3	19.5	--	--	--	--
Coolant Release Area Wells	LAI-7	2/1/2011	1.0 U	15	14	22	1.0 U	1.0 U	2.1	22.1	--	--	--	--
Coolant Release Area Wells	LAI-7	5/3/2011	1.0 U	12	11	9.3	1.0 U	1.0 U	4.2	26.2	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Coolant Release Area Wells	LAI-7	8/8/2011	1.0 U	11	9.7	6.0	1.0 U	1.0 U	4.1	27	--	--	--	--
Coolant Release Area Wells	LAI-7	11/1/2011	1.0 U	11	9.9	7.9	1.0 U	1.0 U	0.5	27.4	--	--	--	--
Coolant Release Area Wells	LAI-7	2/6/2012	1.0 U	9.3	6.7	7.1	1.0 U	1.0 U	3.8	35.4	--	--	--	--
Coolant Release Area Wells	LAI-7	5/8/2012	1.0 U	9.5	6.9	3.8	1.0 U	1.0 U	4.8	24.6	--	--	--	--
Coolant Release Area Wells	LAI-7	8/13/2012	1.0 U	9.5	13	3.4	1.0 U	1.0 U	0.8	20.9	--	--	--	--
Coolant Release Area Wells	LAI-7	2/8/2013	0.5 U	6.3	5.9	4.6	0.2 U	0.2 U	3.2	19.8	--	--	--	--
Coolant Release Area Wells	LAI-7	8/20/2013	0.5 U	3.0	3.0	2.3	0.2 U	0.2 U	0.1 U	13.4	--	--	--	--
Coolant Release Area Wells	LAI-7	8/18/2014	0.5 U	6.8	9.7	2.1	0.2 U	0.2 U	3.0	15.1	--	--	--	--
Coolant Release Area Wells	LAI-7	2/9/2015	0.5 U	7.2	4.6	3.4	0.2 U	0.2 U	4.8	17.6	--	--	--	--
Coolant Release Area Wells	LAI-7	8/12/2015	0.5 U	3.6	1.5	1.6	0.2 U	0.2 U	2.3	19.5	--	--	--	--
Coolant Release Area Wells	LAI-7	2/5/2016	0.5 U	5.1	2.0	2.1	0.2 U	0.2 U	2.9	16.0	--	--	--	--
Coolant Release Area Wells	LAI-7	8/4/2016	0.5 U	4.8	2.7	1.6	0.2 U	0.2 U	3.9	15	--	--	--	--
Coolant Release Area Wells	LAI-7	2/6/2017	0.5 U	2.8	1.4	0.8	0.2 U	0.2 U	1.2	6.3	--	--	--	--
Coolant Release Area Wells	LAI-7	8/8/2017	0.5 U	4.7	3.0	1.1	0.2 U	0.2 U	4.9	13.2	--	--	--	--
Coolant Release Area Wells	LAI-7	2/15/2018	0.5 U	6.3	15	1.2	0.2 U	0.2 U	4.8	12.5	--	--	--	--
Coolant Release Area Wells	LAI-7	8/9/2018	0.5 U	6.2	14	1.7	0.2 U	0.2 U	4.1	13.7	--	--	--	--
Coolant Release Area Wells	LAI-7	2/15/2019	0.5 U	5.6	8.2	2.1	0.2 U	0.2 U	3.5	15.6	--	--	--	--
Coolant Release Area Wells	LAI-7	8/12/2019	0.5 U	5.9	5.1	2.3	0.2 U	0.2 U	4.2	15.3	--	--	--	--
Coolant Release Area Wells	LAI-7	2/7/2020	0.50 U	7.4	2.6	11.0	0.20 U	0.20 U	2.7	11	--	--	--	--
Coolant Release Area Wells	LAI-7	8/11/2020	0.50 U	5.6	2.2	3.6	0.20 U	0.20 U	4.0	14	--	--	--	--
Coolant Release Area Wells	LAI-8	2/15/2019	--	--	--	--	--	--	0.10 U	1.0 U	--	--	--	--
Coolant Release Area Wells	LAI-8	8/12/2019	--	--	--	--	--	--	0.50 U	1.0 U	--	--	--	--
Coolant Release Area Wells	LAI-8	2/7/2020	--	--	--	--	--	--	0.10 U	1.0 U	--	--	--	--
Coolant Release Area Wells	LAI-8	5/8/2020	0.50 U	2.0	0.20	17.0	0.20 U	0.60	0.50 U	1.0 U	80	--	--	--
Coolant Release Area Wells	LAI-8	8/11/2020	0.50 U	2.2	0.26	18.7	0.20 U	0.69	0.50 U	5.0 U	82	--	--	--
Coolant Release Area Wells	LAI-8	11/6/2020	0.50 UJ	1.7 J	0.22 J	24.2 J	0.20 UJ	0.66 J	0.10 UJ	1.0 U	77	--	--	--
Downgradient Corrective Action Area Wells	BOP-07(d)	2/13/2019	0.5 U	0.6	0.2 U	1.3	0.2 U	1.2	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-07(d)	8/5/2019	0.5 U	0.3	0.2 U	1.7	0.2 U	1.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-07(d)	2/5/2020	0.50 U	0.30	0.20 U	0.70	0.20 U	1.0	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-07(d)	8/7/2020	0.50 U	0.20 U	0.20 U	2.1	0.20 U	3.8	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	3/25/1987	890	860	31	--	38	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/19/1987	1200	896	26	--	11 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/20/1987	1910	931	24 J	--	13 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/21/1987	859	780	15 J	--	4 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/21/1987	1210	852	17 J	--	8 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/22/1987	1260	837	15 J	--	6 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	10/20/1987	1800	890	38	--	47	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	12/3/1987	2100	960	40	--	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	7/19/1988	2200	600	38	--	86	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/1/1989	1500	680	37	--	95	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/19/1989	560	1200	44	--	69	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/8/1989	510	840	54	--	78	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/13/1989	610	1000	39	130	73	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/6/1990	880	1000	41	100	81	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	6/7/1990	750	1500	42	--	130	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/5/1990	540	1200	44	110	120	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/5/1991	530	1400	48	130	130	75 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/6/1991	530	1400	44	130	130	75 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	BOP-7(i)	5/14/1991	360	980	42	100	100	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/15/1991	350	960	40	95	89	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/11/1993	190	1300	40	72	68	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/11/1993	180	1200	35	70	71	40 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/10/1993	150	1000	30	61	63	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/29/1993	120	890	30	48	44	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/14/1994	100	730	29	51	52	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/31/1994	100	760	31	47	49	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	7/30/1994	60 J	720 J	20 J	35 J	33 J	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	7/30/1994	83 J	920 J	28 J	44 J	46 J	0.2 UJ	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	10/24/1994	1.0 U	14	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/20/1995	61	440	28	44	41	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/20/1995	60	500	27	44	40	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/30/1995	55	740	20	31	32	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/22/1995	64	760	23	37	39	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/10/1995	56	680	19	34	35	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/10/1995	58	670	20	34	36	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/21/1996	46	670	17	30	29	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/29/1996	37 J	610	17	25	24 J	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/29/1996	49 J	580	21	30	33 J	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/7/1996	35 J	580	16 J	24	25	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/7/1996	45 J	670	20 J	29	34	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/18/1996	41	710	17	33	35	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/20/1997	33	610	16	27	25	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/27/1997	29	510	13	26	25	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/12/1997	35	610	18	29	30	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/25/1998	36	620	19	29	30	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/24/1998	35	840	21	33	38	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/15/1999	27	660	16	26	30	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/19/1999	19	450	13	23	21	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/8/2000	18	440	12	22	22	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/27/2000	16	320	11	18	14	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/16/2001	16 J	400 J	11 J	18 J	19 J	1.0 UJ	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/13/2001	12	330	8.0	16	16	5.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/27/2002	10	280	6.9	12	11	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/9/2002	7.5	210	5.3	8.0	10	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/11/2003	8.1	180	6.6	9.4	10	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/7/2003	7.7	210	6.9	9.2	9.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/17/2004	5.8	210	6.4	9.8	12	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/6/2004	6.3	230	5.8 U	10	12	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/7/2005	5.0 U	210	5.6	8.6	8.0	5.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/4/2005	4.6	160	5.1	7.9	8.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/10/2006	4.7	160	4.7	6.6	8.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/15/2006	2.9	140	3.1	5.8	5.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/8/2007	3.1	110	3.5	5.6	5.9	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/7/2007	2.7	120	3.2	5.2	6.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/20/2008	2.5	100	3.2	5.2	6.8	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/12/2008	1.8	82	2.4	3.7	5.0	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	BOP-7(i)	11/11/2008	1.8	68	2.3	3.0	4.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/12/2009	2.8	160	3.6	6 J	8.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/12/2009	3.1	150	3.6	7.4 J	8.8	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/21/2009	2.6	170	3.9	6.1	9.6	1.0 U	1.7	7.4	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)	8/26/2009	2.8 J	130	4.5	24	9.5	0.2 U	1.1	7.5	1.5 U	212	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)	11/12/2009	3.0 U	130	3.4	12	6.6	3.0 U	1.1	8.4	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/5/2010	1.6	90	2.7	7.7	5.6	0.6 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/6/2010	3.0 U	220	4.0	8.0	11	3.0 U	1.8	6.6	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/26/2010	1.6	120	3.2	4.8	6.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/17/2010	1.5	110	2.9	4.2	6.3	1.0 U	1.7	9.4	1.5 U	5.5	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/17/2010	1.6	100	2.9	4.4	6.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/17/2010	3.0 U	87	3.0 U	3.4	4.7	3.0 U	1.8	9.4	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/17/2010	3.0 U	86	3.0 U	3.2	4.5	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/14/2011	1.4	100	3.2	3.3	6.2	1.0 U	2.0	9.1	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/14/2011	1.5	100	3.2	3.4	6.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/4/2011	1.1	91	2.6	3.3	4.5	1.0 U	2.1	9.8	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/4/2011	1.0 U	81	2.4	3.0	4.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/8/2011	1.2	85	2.6	3.3	5.2	1.0 U	2.2	9.9	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/8/2011	1.2	86	2.5	3.4	5.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/2/2011	1.4	98	2.5	3.5	5.6 J	1.0 U	2.2	9.4	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/2/2011	1.5	110	2.8	4.5	7.2 J	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/7/2012	1.3	86	2.4	3.3	5.2	1.0 U	2.3	9.5	1.5 U	11.8	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/7/2012	1.3	86	2.4	3.4	5.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/3/2012	1.5	84	2.2	3.7	6.2	1.0 U	2.1	9.1	1.5 U	34.3	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/3/2012	1.6	87	2.3	4.0	6.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/7/2012	1.5	110	2.7	4.1	6.1	1.0 U	1.5	8.7	2.49	4770	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/7/2012	1.4	110	2.7	3.8	5.9	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/9/2012	3.1	270	3.1	12	20	1.0 U	0.1 U	1.3	1.0 U	550	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/9/2012	2.9	310	2.6	11	18	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/5/2013	3.4	300	5.3	12	21 J	0.4 U	2.1	7.5	1.0 U	1300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/5/2013	3.6	310	5.5	13	17 J	0.4 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/6/2013	3.7	330	5.5	12	16	1.0 U	2.4	7.8	1.0 U	5.0	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/6/2013	4.0	350	5.3	12	14	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/19/2013	4.0	300	4.9	13 J	19 J	1.0 U	2.5	8.1	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/19/2013	4.5	310	5.6	16 J	24 J	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/11/2013	4.0	220	5.4	12	18	0.2 U	2.4	8.7	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/11/2013	4.0	210	5.2	12	17	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/14/2014	3.0	190	4.4	9.6	13	1.0 U	2.3	9.0	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/14/2014	3.4	160	5.2	10	15	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/7/2014	2.8 J	250	3.9 J	15	17 J	1.0 U	2.4	8.2	1.0 U	11	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/7/2014	3.6 J	240	6.8 J	18	22 J	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/9/2015	3.5	400	6.5	17	23	1.0 U	2.4	7.5	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/9/2015	3.3	360	5.8	17	20	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/8/2015	1.8	73	0.5	54	7.3	0.2 U	0.15	8.6	1.0 U	40	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/8/2015	2.0	61	0.6	52	8.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/11/2015	1.0 U	50	1.1	12	4.3	0.4 UJ	0.10 U	7.9	12.9	4700	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/11/2015	0.9	60	1.2	12	4.9	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/5/2015	8.8 J	310 J	4.7 J	17 J	17 J	2.0 U	2.3	8.7	1.0 U	5.7	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/5/2015	3.5 J	250 J	5.8 J	21 J	23 J	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/4/2016	5 U	350	5.0	20	19	2 U	2.1	7.7	1 U	7.0	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/4/2016	3.4	350	5.6	22	22	1 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/4/2016	3.6	250	7.1	25	23	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/4/2016	5.0 U	250	5.5	21	17	2.0 U	2.1	9.1	1.0 U	6.6	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/11/2016	1.6	140	2.6 J	11 J	9.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/11/2016	1.9	160	3.2 J	14 J	12	0.4 U	1.1	8.0	1.0 U	5300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	11/8/2016	2.5	160 J	4.7	19	18	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	11/8/2016	2.2	230 J	4.5	18	16	0.4 U	1.4	8.9	1.0 U	1800	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	2/8/2017	0.7	67	2.0	5.5	5.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	2/8/2017	0.7	66	2.0	5.7	5.5	0.2 U	0.54	8.4	1.2	3800	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	5/15/2017	2.3	190	3.6	19	15	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	5/15/2017	2.3	190	3.8	19	15	0.2 U	2.0	9.2	1.0 U	11	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)	8/10/2017	1.5	120	2.6	12	9.6	0.2 U	3.0	9.1	1.0 U	130	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)	8/7/2018	1.4	200	3.1	14	16	0.4 U	1.3	6.7	1.7	2600	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)	8/15/2019	2.5 U	240	4.5	16	17	1.0 UJ	2.1	10.5	1.5	39	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	BOP-7(i)-Dup	8/10/2020	1.6	205	4.7	17.1	20.7	0.20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)	8/10/2020	1.3	208	4.5	15.1	17.2	0.20 U	1.7	7.6	1.9	0.27	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	BOP-7(i)-157	11/11/2008	1.9	67	2.2	2.9	4.9	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-163	11/11/2008	1.3	42	1.6	1.8	3.1	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-169	11/11/2008	1.3	44	1.7	1.9	3.2	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	BOP-7(i)-175	11/11/2008	1.6	60	2.0	2.4	4.3	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	4/27/1989	2.9	15	--	--	1.1 M	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)-Dup	4/27/1989	2.9	15	--	--	1 M	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	7/31/1989	0.8 M	5.5	--	--	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	3/1/1990	--	1.9	--	--	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)-Dup	3/1/1990	--	1.9	--	--	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/16/1990	0.7 J	5.7	--	0.9 J	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/18/1991	1.0 U	1.4	1.0 U	1.0 U	1.0 U	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/21/1991	0.7 M	4.2	1.0 U	0.9 J	1.6 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	11/25/1991	0.6 M	3.8	1.0 U	0.8 J	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	1/16/1992	0.6 J	4.9	1.0 U	1.0 U	2.0 U	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	7/22/1992	0.6 M	5.1	1.0 U	0.9 J	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/9/1993	1.0 U	8.3	1.0 U	1.6	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)-Dup	2/9/1993	1.0 U	8.7	1.0 U	1.6	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	7/19/1993	0.8 J	5.5	1.0 U	1.2	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/22/1994	1.0 U	5.4	1.0 U	1.0	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/24/1994	0.41	3.5	0.24	0.74	0.26	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/23/1995	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/17/1995	1.0 U	1.1	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/15/1996	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/8/1996	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/14/1997	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/7/1997	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/27/1998	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/24/1998	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/15/1999	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/19/1999	1.0 U	5.1	1.0 U	1.1	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-11(i)	2/16/2000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/28/2000	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/14/2001	0.3	5.2	0.2 U	0.8	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/21/2001	1.0 U	4.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/26/2002	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/14/2002	1.0 U	3.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/14/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/12/2003	1.0 U	4.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/26/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/11/2004	1.0 U	3.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/10/2005	1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/8/2005	1.0 U	2.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/7/2006	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/7/2006	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/7/2007	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/10/2007	0.2 U	2.5	0.2 U	0.5	0.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/20/2008	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/7/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	2/10/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/20/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/13/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/11/2011	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/14/2012	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/2/2013	0.5 U	1.5	0.2	0.3	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/4/2014	0.5 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/7/2015	0.5 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/2/2016	0.5 U	2.3	0.2	0.3	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/4/2017	0.5 U	2.7	0.3	0.2	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/2/2018	0.5 U	4.7	0.3	1.2	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-11(i)	8/2/2019	0.5 U	3.4	0.2 U	0.5	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	3/1/1990	24	110	4.5	4.7	15	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/16/1990	25	170	5.1	5.1	35	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/18/1991	22	150	4.0	4.1	30	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/21/1991	21	150	4.0	4.5	33	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	11/25/1991	21	160	4.2	5.4	19	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	1/16/1992	25	200	4.2	4.6	22	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	7/22/1992	21	160	4.2	4.5	24	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)-Dup	7/22/1992	19	140	3.5	3.9	22	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/9/1993	18	140	3.9	4.5	22	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	7/19/1993	14	120	3.1	3.4	22	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/28/1994	14	110	3.0	3.8	17	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/24/1994	11	95	3.0	3.8	15	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)-Dup	8/24/1994	11	96	2.9	3.6	15	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/23/1995	6.4 J	64	1.8 J	1.7	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)-Dup	2/23/1995	5.2 J	55	1.3 J	1.6	9.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/17/1995	17	96	3.0	6.8	14	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/15/1996	8.1	45	1.3	3.3	7.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/8/1996	7.3	47	1.7	4.2	6.5	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-12(i)	2/13/1997	3.5	29	1.1	2.5	3.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)-Dup	2/13/1997	3.2	27	1.0 U	2.2	3.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/25/1997	4.0	38	1.5	4.2	4.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/27/1998	1.8	20	1.0 U	1.7	2.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/24/1998	1.4	17	1.0 U	1.2	1.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/15/1999	1.0 U	12	1.0 U	1.0 U	1.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/19/1999	1.1	12	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/15/2000	1.6	16	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/28/2000	1.7	16	1.0 U	1.0 U	2.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/14/2001	2.1	25	0.8	0.9	2.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/21/2001	1.3	15	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/24/2002	1.1	15	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/14/2002	1.0 U	10	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/14/2003	1.0 U	9.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/12/2003	1.0 U	8.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/26/2004	1.0 U	9.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/11/2004	1.0 U	7.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/10/2005	1.0 U	6.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/9/2005	1.0 U	5.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/7/2006	1.0 U	4.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/7/2006	1.0 U	4.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/7/2007	0.2 U	5.4	0.2	0.2 U	0.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/10/2007	0.2 U	4.6	0.2 U	0.2 U	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/20/2008	0.2 U	4.1	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/7/2008	1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/10/2009	1.0 U	4.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/20/2009	1.0 U	2.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/3/2010	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)-Dup	2/3/2010	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/13/2010	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/14/2011	1.0 U	2.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/11/2011	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/2/2012	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/14/2012	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/4/2013	0.5 U	2.8	0.2 U	0.2 U	0.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/2/2013	0.5 U	1.6	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/4/2014	0.5 U	2.7	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/3/2015	0.5 U	2.7	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/7/2015	0.5 U	3.1	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/1/2016	0.5 U	3.2	0.2 U	0.2 U	0.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/2/2016	0.5 U	3.2	0.3	0.2 U	0.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/10/2017	0.5 U	3.2	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/4/2017	0.5 U	3.1	0.2 U	0.2 U	0.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/6/2018	0.5 U	2.8	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/2/2018	0.5 U	2.9	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	2/6/2019	0.5 U	2.8	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/2/2019	0.5 U	3.1	0.2 U	0.2 U	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-12(i)	8/7/2020	0.50 U	3.1	0.20 U	0.20 U	0.65	0.20 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-13(i)	11/5/1991	1.0 U	1.1	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	1/16/1992	1.0 U	1.9	1.0 U	1.0 U	2.0 U	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	7/22/1992	1.0 U	2.6	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	10/26/1992	1.0 U	3.8	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/8/1993	1.0 U	4.2	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)-Dup	2/8/1993	1.0 U	4.1	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	7/20/1993	1.0 U	4.0	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)-Dup	7/20/1993	1.0 U	4.0	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/16/1994	1.0 U	4.0	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/11/1994	0.6	5.1	0.2 U	0.21	0.28	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	3/1/1995	0.51	4.3	0.2 U	0.2 U	0.27	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/15/1995	1.0 U	3.4	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/16/1996	1.0 U	3.6	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/2/1996	1.0 U	3.0	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/24/1997	1.0 U	2.7	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/18/1997	1.0 U	2.1	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	3/9/1998	1.0 U	1.8	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/26/1998	1.0 U	1.7	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/18/1999	1.0 U	1.3	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/20/1999	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/18/2000	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/29/2000	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/15/2001	0.2 U	1.3	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/21/2001	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/25/2002	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/19/2002	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/14/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/18/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/26/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/13/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/11/2005	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/9/2005	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/3/2006	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/7/2006	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/8/2007	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/10/2007	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	8/8/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-13(i)	2/10/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	6/27/1988	49	64	2.5	--	2.7	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	7/19/1988	58	76	2.9	--	2.6	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	11/29/1988	58	96	2.6	--	2.8	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	7/27/1989	16	30	1.0	--	0.9 J	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/26/1990	20	36	0.8 J	--	3.6	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/15/1990	15	45	1.1 M	4.7	2.8	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)-Dup	8/15/1990	14	48	1.1 M	5.3	2.6	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/18/1991	18	48	1.4	5.7	3.7	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	5/16/1991	17	46	1.6	6.6 M	3.8	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-7(i)-Dup	5/16/1991	17	45	1.6	6.4	3.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	7/10/1991	18	64	2.1	7.2	5.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/20/1991	19	66	1.9	7.3	5.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	1/15/1992	23	84	1.6	10	4.1	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)-Dup	1/15/1992	21	76	1.5	8.6	4.0	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	7/21/1992	17	60	1.8	6.3	3.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/9/1993	18	71	2.1	7.3	4.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	7/19/1993	18	77	1.9	7.6	5.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)-Dup	7/19/1993	12	57	1.8	5.8	3.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/22/1994	15	70	1.9	7.4	4.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)-Dup	2/22/1994	14	68	2.0	7.1	4.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/3/1994	9.4	49	1.5	5.5	2.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/7/1995	8.4	49	1.6	4.2	3.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/10/1995	7.4	42	1.0	4.2	2.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/13/1996	5.1	40	1.1	3.4	2.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/12/1996	2.6	28	1.0 U	2.2	1.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/11/1997	1.7	24	1.0 U	1.7	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/22/1997	1.6	25	1.0 U	1.6	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/25/1998	1.6	26	1.5	1.8	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/20/1998	1.0	21	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/17/1999	1.0 U	12	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/23/1999	1.0 U	8.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/9/2000	1.0 U	7.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/21/2000	1.0 U	3.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/14/2001	0.2	4.4	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/21/2001	1.0 U	3.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/26/2002	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/19/2002	1.0 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/14/2003	1.0 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/18/2003	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/26/2004	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/13/2004	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/14/2005	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/10/2005	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/8/2006	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/7/2006	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/2/2007	1.0 U	1.26	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/7/2007	0.2 U	1.5	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/10/2007	0.2 U	1.2	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/20/2008	0.2 U	1.5	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/7/2008	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	2/10/2009	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/20/2009	1.0 U	15	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/13/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/11/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/14/2012	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/2/2013	0.5 U	1.1	0.2 U	0.2 U	0.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/4/2014	0.5 U	1.3	0.2 U	0.2 U	0.3	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-7(i)	8/7/2015	0.5 U	1.4	0.2 U	0.2 U	0.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/2/2016	0.5 U	1.5	0.6	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/4/2017	0.5 U	1.5	0.2 U	0.2 U	0.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/2/2018	0.5 U	1.2	0.2 U	0.2 U	0.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/2/2019	0.5 U	1.0	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-7(i)	8/7/2020	0.50 U	0.95	0.20 U	0.20 U	0.20 U	0.20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	7/25/1988	950	440	23	--	50	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	11/28/1988	900	570	18	--	43	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	7/27/1989	96	110	5.1	--	13	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/26/1990	36	120	3.7	--	13	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/15/1990	41	120	3.8	9.4	16	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/18/1991	20	71	2.2	5.3	11	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)-Dup	2/18/1991	22	77	2.4	4.7	11	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/20/1991	30	120	3.7	9.0	15	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	11/25/1991	31	110	3.7	9.2	9.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	1/15/1992	35	150	3.2	9.3	13	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	7/21/1992	29	120	3.3	7.8	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)-Dup	7/21/1992	30	120	3.4	7.6	10	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/9/1993	27	110	3.4	7.0	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	7/19/1993	23	100	3.1	7.1	13	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/22/1994	30	130	4.5	9.6	14	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/3/1994	20	110	3.4	7.4	9.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/7/1995	3.7	33	1.0	1.3	4.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/10/1995	42	140	4.5	12	14	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/13/1996	25	120	3.5	8.6	9.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/12/1996	24	160	5.1	10	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/11/1997	14	120	3.8	8.0	8.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/22/1997	14	140	4.7	8.9	8.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/25/1998	9.9	110	3.2	5.8	6.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/20/1998	8.4	120	4.2	5.8	6.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/17/1999	6.1	110	2.6	4.3	5.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/23/1999	5.3	75	2.3	3.6	4.8	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/9/2000	4.0	70	1.9	3.3	4.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/21/2000	2.5	43	1.2	1.6	2.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/14/2001	2.0	39	1.2	1.3	2.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/21/2001	1.7	27	1.0 U	1.0	1.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/26/2002	1.5	28	1.0 U	1.3	1.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/19/2002	1.0 U	22	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/14/2003	1.6	28	1.0 U	1.2	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/18/2003	1.0 U	26	1.0 U	1.1	1.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/26/2004	1.0 U	24	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/13/2004	1.3	27	1.0 U	1.4	2.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/14/2005	1.0	23	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/10/2005	1.0	26	1.0 U	1.2	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/8/2006	1.1	25	1.0 U	1.0	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/7/2006	1.0 U	21	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/7/2007	0.7	20	0.8	0.9	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/10/2007	0.7	19	0.6 U	0.8	1.3	0.6 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	D-8(i)	2/20/2008	0.9	24	0.9	1.0	1.8	0.6 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/7/2008	1.0 U	17	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/10/2009	1.0 U	34	1.0 U	1.5	2.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/20/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	10/7/2009	1.0 U	22	1.0 U	1.1	1.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/3/2010	1.0 U	20	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/13/2010	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/14/2011	1.0 U	34	1.1	1.3	2.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/11/2011	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/2/2012	1.0 U	9.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/14/2012	1.0 U	23	1.0 U	1.0	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/4/2013	0.6	29	0.7	1.3	1.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/2/2013	0.6	30	0.9	1.7	2.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/4/2014	0.5 U	25	0.8	1.0	1.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/6/2015	0.5 U	23	0.7	0.8	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/7/2015	0.5 U	7.4	0.3	0.4	0.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/1/2016	0.5	26	0.9	1.3	2.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/2/2016	0.7	32	1.3	1.8	2.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/10/2017	0.5 U	6.1	0.5	0.4	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/4/2017	0.5 U	3.1	0.2	0.2	0.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/20/2018	0.5 U	2.7	0.2 U	0.2	0.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/2/2018	0.5 U	2.1	0.2 U	0.2 U	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	2/6/2019	0.5 U	12	0.4	0.5	1	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	3/6/2019	0.5 U	2.8	0.2 U	0.2 U	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/2/2019	0.5 U	18	0.6	0.7	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/23/2019	0.5 U	1.7	0.2 U	0.2 U	0.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	D-8(i)	8/7/2020	0.50 U	8.7	0.27	0.35	0.75	0.20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	12/21/1994	14	53	1.7	5.2	5.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	4/11/1995	12	47	1.6	3.5	5.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	4/19/1995	15	71	2.2	4.8	6.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	4/27/1995	15	82	2.9	5.3	6.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	6/29/1995	14	74	2.6	5.9	6.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	7/27/1995	9.7	58	2.0	4.0	4.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/29/1995	9.8	59	2.0	4.4	4.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/9/1995	8.1	52	1.6	4.7	5.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	3/4/1996	5.9	43	1.5	2.8	3.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/31/1996	5.3	42	1.3	2.8	2.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/26/1996	5.0	35	1.1	2.5	2.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/20/1996	5.0	40	1.4	2.8	2.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	3/6/1997	3.6	36	1.2	2.9	2.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/27/1997	2.8	26	1.0 U	1.8	1.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	9/2/1997	3.3	34	1.3	2.2	2.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/3/1997	3.0	37	1.0 U	2.4	2.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/24/1998	2.4	23	1.0 U	1.7	1.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/5/1998	1.9 J	22	1.0 U	1.5	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/3/1998	1.9	21	1.0 U	1.4	1.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/2/1998	1.0 U	25	1.0 U	1.9	1.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/1/1999	1.0 U	21	1.0 U	1.1	1.3	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-12	5/3/1999	1.0 U	17	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/2/1999	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/1/1999	1.0 U	11	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/4/2000	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/1/2000	1.0 U	10	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/2/2000	1.0 U	9.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/1/2000	1.0 U	9.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/1/2001	1.0 U	10	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/1/2001	1.0 U	9.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/6/2001	1.0 U	9.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/1/2001	1.0 U	8.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/2/2002	1.0 U	7.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/8/2002	1.0 U	8.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/1/2002	1.0 U	8.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/4/2002	1.0 U	8.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/4/2003	1.0 U	8.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/7/2003	1.0 U	7.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/6/2003	1.0 U	7.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/5/2003	1.0 U	8.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/3/2004	1.0 U	6.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/6/2004	1.0 U	6.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/3/2004	1.0 U	6.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/1/2004	1.0 U	5.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/3/2005	1.0 U	4.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/3/2005	1.0 U	5.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/2/2005	1.0 U	4.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	12/16/2005	1.0 U	5.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/7/2006	1.0 U	5.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/9/2006	1.0 U	4.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/8/2006	1.0 U	5.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/9/2006	0.2	6.0	0.2	0.2	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/7/2007	0.2	6.2	0.2	0.3	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/11/2007	0.4	5.0	0.2 U	0.2	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/13/2007	0.2	4.8	0.2 U	0.2 U	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/7/2007	0.2	5.0	0.2 U	0.2	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/12/2008	1.0 U	4.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/12/2008	1.0 U	5.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/12/2008	1.0 U	4.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/7/2008	0.2	4.0	0.2 U	0.2	0.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/3/2009	1.0 U	5.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/6/2009	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/2/2010	1.0 U	5.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/11/2010	1.0 U	5.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/3/2011	1.0 U	5.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/3/2011	1.0 U	6.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	2/3/2012	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/8/2012	1.0 U	6.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/7/2012	0.5 U	7.3	0.3	0.4	0.9	0.2 U	3.1	12	1.0 U	72	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-12	2/4/2013	0.5 U	9.1	0.4	0.4	1.1	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/2/2013	0.5 U	10	0.4	0.4	1.1	0.2 U	2.9	12	1.0 U	300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	8/2/2013	0.5 U	11	0.4	0.4	1.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/12/2013	0.5 U	11	0.4	0.4	1.1	0.2 U	2.9	11.2	1.0 U	78	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	8/14/2014	0.5 U	11	0.4	0.8	1.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/11/2014	0.5 U	9.4	0.4	0.5	1.1	0.2 U	2.4	11.9	1.0 U	340	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/4/2015	0.5 U	8.7	0.3	0.4	1.0	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/7/2015	0.5 U	11	0.4	0.5	1.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/5/2015	0.5 U	13	0.4	2.2	1.5	0.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/5/2015	0.5 U	19	0.6	1.7	1.9	0.3	1.3	11.2	1.0 U	3600	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/5/2016	0.5 U	16	0.5	1.5	1.6	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/3/2016	0.5 U	16	0.6	1.6	1.7	0.2	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/10/2016	0.5 U	17	0.6	1.6	2.1	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	11/7/2016	0.5 U	17	0.5	2.0	2.0	0.2 UJ	1.8	9.9	1.1	1400	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/10/2017	0.5 U	20	0.6	2.6	2.3	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/9/2017	0.5 U	18	0.5	1.9	2.0	0.2	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/10/2017	0.5 U	17	0.5	2.0	2.1	0.2	1.7	10.0	1.0 U	1700	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	11/2/2017	0.5 U	17	0.5	1.9	1.8	0.2 U	1.6	9.1	1.0 U	1500	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/6/2018	0.5 U	20	0.5	3.3	2.7	0.5	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/11/2018	0.5 U	17	0.5	4.0	2.1	0.8	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/10/2018	0.5 U	17	0.4	4.2	2.1	0.8	0.54	6.9	1.0 U	7300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	11/2/2018	0.5 U	14	0.4	2.7	1.7	0.5	1.0	9.4 J	1.2	5700	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/5/2019	0.5 U	11	0.3	3.6	1.4	0.8	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/1/2019	0.5 U	14	0.4	2.5	1.5	0.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/6/2019	0.5 U	14	0.3	3.9	1.7	0.6	0.88	9.6	2.3	7000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	11/12/2019	0.5 U	13	0.3	4.4	1.6	0.7	0.58 J	6.8	1.1	6900	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-12	2/13/2020	0.50 U	7.3	0.20	3.6	1.20	1.0	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	5/5/2020	0.50 U	14	0.30	3.4	1.60	0.50	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12	8/12/2020	0.50 U	7.4	0.24	5.8	1.30	1.1	0.50 U	7.4	19	4.8	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-12	11/4/2020	0.50 U	9.0	0.25	4.6	1.31	1.1	0.86 J	7.3	1.2	5.2	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-12-123	11/7/2008	0.2	5.1	0.2 U	0.3	0.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-123	11/7/2008	0.5 U	5.8 U	0.5 U	0.5 U	0.54	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-136	11/7/2008	0.3	5.8	0.2 U	0.4	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-136	11/7/2008	0.5 U	6.8	0.5 U	0.5 U	0.6	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-149	11/7/2008	0.2	5.1	0.2 U	0.3	0.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-149	11/7/2008	0.5 U	5.8	0.5 U	0.5 U	0.55	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-161	11/7/2008	0.3	7.8	0.2 U	0.5	0.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-12-161	11/7/2008	0.5 U	9.7	0.5 U	0.5 U	0.77	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	12/22/1994	2.0	12	1.0 U	1.0 U	1.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	12/22/1994	2.0	11	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	4/11/1995	1.7	12	1.0 U	1.0 U	1.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	4/19/1995	4.3	24	1.0 U	1.2	4.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	4/27/1995	12	53	2.0	3.3	6.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	6/29/1995	13	57	2.0	4.8	7.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	7/27/1995	11	50	1.9	4.4	6.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/29/1995	15	63	2.1	5.3	7.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/9/1995	10	55	1.8	5.0	6.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	3/4/1996	4.9	32	1.1	2.1	4.2	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-13	5/31/1996	4.4	34	1.1	2.6	3.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/26/1996	4.9	36	1.2	3.3	3.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/20/1996	4.2	38	1.3	3.3	4.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	3/6/1997	2.8	31	1.0 U	2.9	3.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/27/1997	2.7	30	1.1	2.6	2.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	9/2/1997	2.2	29	1.0 U	2.7	2.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/3/1997	2.7	35	1.3	3.2	3.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/24/1998	1.5	18	1.0 U	1.0	1.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/5/1998	1.6 J	21	1.0 U	1.2	1.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/3/1998	1.4	16	1.0 U	1.1	1.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/2/1998	1.0 U	22	1.0 U	1.0 U	2.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	1/20/1999	1.4	19	1.0 U	1.0	2.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/1/1999	1.0 U	21	1.0 U	1.0	2.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	3/2/1999	1.0 U	15	1.0 U	1.0 U	1.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/3/1999	1.0 U	19	1.0 U	1.0 U	2.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/2/1999	1.3	22	1.0 U	1.0 U	2.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/1/1999	1.2	18	1.0 U	1.0 U	1.9	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/4/2000	1.5	20	1.0 U	1 J	2.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/1/2000	1.4	16	1.0 U	1.0 U	1.8	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/2/2000	1.4	16	1.0 U	1.0 U	2.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/1/2000	1.0 U	9.1	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/1/2001	1.2	15	1.0 U	1.0 U	1.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/1/2001	1.0 U	14	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/6/2001	1.0 U	8.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/1/2001	1.0 U	13	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/2/2002	1.0 U	9.6	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/8/2002	1.0 U	11	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/1/2002	1.0 U	9.2	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/4/2002	0.5	10	0.3	0.4	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/4/2003	1.0 U	5.9	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/7/2003	1.0 U	6.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/6/2003	1.0 U	8.4	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/5/2003	1.0 U	7.6	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/3/2004	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/6/2004	1.0 U	6.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/3/2004	1.0 U	6.7	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/1/2004	1.0 U	6.5	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/3/2005	1.0 U	5.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/3/2005	1.0 U	4.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/2/2005	1.0 U	4.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	12/16/2005	1.0 U	4.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/7/2006	1.0 U	4.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/9/2006	1.0 U	6.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/8/2006	1.0 U	6.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/9/2006	0.3	6.9	0.3	0.2 U	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/7/2007	0.2 U	5.5	0.2	0.2	0.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/11/2007	0.2 U	4.3	0.2 U	0.2 U	0.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/10/2007	0.2 U	5.1	0.2 U	0.2 U	1.0	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-13	11/7/2007	0.2 U	4.1	0.2 U	0.2 U	1.0	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/12/2008	1.0 U	2.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/12/2008	1.0 U	5.6	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/7/2008	1.0 U	5.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/5/2008	0.3	7.6	0.3	0.3	1.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/3/2009	1.0 U	11	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/6/2009	1.0 U	7.8	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/2/2010	1.0 U	5.5	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/11/2010	1.0 U	6.4	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/3/2011	1.0 U	7.2	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/3/2011	1.0 U	7.6	1.0 U	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	2/3/2012	1.0 U	7.7	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/8/2012	1.0 U	7.9	1.0 U	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/7/2012	0.5 U	7.8	0.3	0.4	1.5	0.2 U	2.6	10.1	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/4/2013	0.5 U	11	0.4	0.5	1.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/2/2013	0.5 U	9.7	0.4	0.5	1.9	0.2 U	2.8	9.8	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	8/2/2013	0.5 U	9.3	0.4	0.7	2.0	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/12/2013	0.5 U	7.8	0.3	0.7	1.6	0.2 U	2.5	9.2	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	8/14/2014	0.5 U	8.4	0.4	0.9	1.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/5/2014	0.5 U	12	0.4	1.4	2.3	0.2 U	2.6	9.3	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/5/2015	0.5 U	12	0.5	1.4	2.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/7/2015	0.5 U	16	0.5	1.7	3.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/7/2015	0.5 U	12	0.5	2.2	2.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/5/2015	0.5 U	11	0.4	1.3	2.1	0.2 U	2.4	10.1	1.0 U	72	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/1/2016	0.5 U	13	0.4	1.6	2.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/3/2016	0.5 U	11	0.4	1.2	2.3	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/4/2016	0.5 U	12	0.4	1.4	2.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/7/2016	0.5 U	10	0.4	1.3	2.2	0.2 UJ	2.3	8.9	2.2	65	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/10/2017	0.5 U	13	0.4	1.5	3.1	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/9/2017	0.5 U	15	0.5	1.9	3.6	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/4/2017	0.5 U	15	0.5	2.3	3.7	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/2/2017	0.5 U	13	0.4	2.0	3.0	0.2 U	1.5	7.8	1.0 U	62	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/6/2018	0.5 U	13	0.4	2.0	3.7	0.6	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/14/2018	0.5 U	12	0.4	2.5	3.0	0.6	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/2/2018	0.5 U	11	0.4	2.3	2.8	0.5	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/2/2018	0.5 U	10	0.4	2.0	2.3	0.6	1.5	9.9	1.0 U	240	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/5/2019	0.5 U	9.2	0.3	1.6	2.1	0.5	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/1/2019	0.5 U	10	0.3	1.9	2.2	0.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/6/2019	0.5 U	9.8	0.3	1.9	2.3	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/12/2019	0.5 U	8.1	0.3	1.8	1.8	0.3	1.6 J	9.1	1.0 U	100	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-13	2/5/2020	0.50 U	9.0	0.30	1.7	1.90	0.30	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	5/5/2020	0.50 U	9.0	0.30	1.9	2.00	0.30	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	8/7/2020	0.50 U	9.0	0.33	1.5	1.95	0.50	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-13	11/4/2020	0.50 U	11	0.38	1.3	1.56	0.33	2.0 J	10.0	1.0 U	0.14	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-2	3/28/1989	980	440	18	130	57	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/6/1989	1200	520	28	120	60	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/12/1989	1100	440	--	110	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/18/1989	1000	540	--	100	--	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-2	4/25/1989	820	460	--	92	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/2/1989	850	470	--	90	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/9/1989	700	430	--	72	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/16/1989	830	500	--	90	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/23/1989	670	440	--	70	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/30/1989	760	440	--	79	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/7/1989	760	510	--	71	--	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/13/1989	650	490	22	77	42	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/20/1989	680	460	18	76	42	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/27/1989	500	450	18	53	32	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/5/1989	560	460	18	58	31	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/11/1989	580	440	17	66	35	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/18/1989	600	460	20	68	40	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/25/1989	550	470	18	64	34	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/1/1989	530	490	22	59	34	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/8/1989	560	400	18	89	36	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/15/1989	640	550	26	100	45	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/22/1989	470	440	22	81	32	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/29/1989	530	490	24	87	37	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/5/1989	540	550	23	99	38	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/12/1989	550	570	16	82	29	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/26/1989	510	510	20	79	32	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/3/1989	470	460	20	79	35	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/10/1989	430	440	19	66	30	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/17/1989	460	490	20	82	39	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/24/1989	520	580	26	90	40	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/15/1989	300	430	16	70	25	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/21/1989	320	480	17	55	25	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/28/1989	330	490	17	60	29	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/5/1989	330	520	18	56	27	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/12/1989	320	510	20	61	25	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/19/1989	460	680	25	81	31	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/4/1990	420	610	21	88	34	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/17/1990	440	680	24	95	37	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/31/1990	970	1000	38	130	68	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/14/1990	470	580	19	71	39	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/28/1990	520	640	28	59	28	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/14/1990	560	760	27	62	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/28/1990	570	770	22	64	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/11/1990	470	800	28	55	46	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/25/1990	460	730	23	51	52	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/8/1990	510	730	31	62	62	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/22/1990	480	700	24	54	59	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/6/1990	470	700	23	48	59	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/19/1990	420	670	21	46	46	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/3/1990	370	570	19	49	38	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/17/1990	400	550	19	46	50	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/31/1990	430	580	13	45	62	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-2	8/14/1990	460	650 B	21	52	57	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/28/1990	400	540	20	46	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/11/1990	400	540	19	48	52	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/27/1990	360	530	18	49	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/9/1990	410	550	19	47	57	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/29/1990	380	530	18	42	58	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/14/1990	400	550	18	36	58	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/28/1990	440	550	22	48	58	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/11/1990	390	560	18	57	64	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/2/1991	390	510	18	41	59	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/15/1991	420	540	19	44	62	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/5/1991	450	560	18	47	66	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/5/1991	430	550	19	31	69	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/2/1991	180	320	10	32	34	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/7/1991	110	220	7.7	22	24	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/3/1991	99	210	7.0	22	23	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/1/1991	110	230	7.5	20	24	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/5/1991	73	160	5.6	17	19	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/3/1991	85	220	6.7	23	20	6.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/2/1991	56	130	5.6	16	10	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/4/1991	61	160	5.8	18	12	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/4/1991	53	150	4.7	14	12	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/6/1992	45	130	5.5	14	10	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/4/1992	44	130	4.6	15	16	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/3/1992	35	110	3.7	12	11	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/6/1992	47	140	6.0	16	15	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/4/1992	36	120	4.3	13	11	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/2/1992	36	110	3.9	13	11	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/6/1992	37	120	4.2	11	12	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/10/1992	17	60	2.1	5.9	5.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/1/1992	40	140	5.1	13	12	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/1/1992	38	140	4.9	13	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/2/1992	36	130	4.1	11	9.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/1/1992	34	110	4.1	11	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/1/1993	29	97	3.7 J	9.7	9.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/1/1993	31	120	3.8	11	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/3/1993	31	120	4.2	12	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/29/1993	25	100	2.6	9.3	8.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/28/1993	26	110	3.0	9.5	9.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/25/1993	26	110	3.1	11	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/23/1993	24	94	3.0	9.5	8.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	7/30/1993	23	93	2.9	8.7	8.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/25/1993	23	96	1.0 U	9.0	9.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/29/1993	22	95	2.6	8.4	8.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/27/1993	21	95	2.8	8.6	9.2	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/22/1993	20	96	3.1	8.6	8.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/27/1993	20	90	2.9	8.6	8.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/26/1994	19	92	3.0	7.8	8.9	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-2	2/23/1994	19	86	3.0	8.6	9.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/4/1994	18	80	2.7	7.3	7.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	4/26/1994	17 J	72	2.2	7.1	7.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/29/1994	20	85	3.2	7.8	9.3	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	10/26/1994	22	83	2.9	6.9	5.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/21/1994	22	110	3.8	9.9	9.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/3/1995	19 J	110 J	3.7	7.5	8.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	6/1/1995	18	110	3.7	7.7	8.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/29/1995	17	93	3.2	7.6	9.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/9/1995	13 J	69 J	2.1 J	5.6 J	6 J	2.0 UJ	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/4/1996	18	130	4.0	7.0	7.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/31/1996	21	150	4.6	7.7	8.8	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/26/1996	13	85	2.4	5.9	6.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/20/1996	11	77	2.2	5.8	6.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	3/6/1997	16	130	4.0	8.6	8.6	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/27/1997	11	94	2.8	6.1	5.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	9/2/1997	9.6	83	2.6	6.2	6.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/3/1997	9.6	84	2.7	6.4	7.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/24/1998	7.6	62	1.8	4.9	5.1	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/5/1998	8.2 J	68	2.3	5.9	6.4	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/3/1998	5.7	57	1.9	4.3	4.7	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/2/1998	8.7	95	2.8	6.1	7.5	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/1/1999	2.6	35	1.0	1.9	3.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/3/1999	3.3	45	1.2	2.3	3.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/2/1999	2.6	42	1.2	2.1	2.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/1/1999	2.2	33	1 J	1.8	3.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/4/2000	3.0	45	1.0 U	2.2	3.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/1/2000	1.7	22	1.0 U	1.3	2.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/2/2000	1.2	16	1.0 U	1.1	1.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/1/2000	1.0 U	12	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/1/2001	1 J	13	1.0 U	1 J	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/1/2001	1.0 U	9.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/6/2001	1.0 U	13	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/1/2001	1.0	14	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/2/2002	1.0 U	13	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/8/2002	1.0 U	16	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/1/2002	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/4/2002	1.0 U	13	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/4/2003	1.0 U	11	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/7/2003	1.0 U	14	1.0 U	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/6/2003	1.0 U	11	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/5/2003	1.0 U	10	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/3/2004	1.0 U	14	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/6/2004	1.0 U	14	1.0 U	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/3/2004	1.0 U	16	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/1/2004	1.0 U	14	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/3/2005	1.0 U	12	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/3/2005	1.0 U	13	1.0 U	1.0	1.2	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-2	8/2/2005	1.0 U	13	1.0 U	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	12/16/2005	1.0 U	8.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/7/2006	1.0 U	12	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/9/2006	1.0 U	10	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/8/2006	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/9/2006	0.6	12	0.4	0.6	1.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/7/2007	0.7	13	0.4	0.7	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/11/2007	0.7	13	0.4	0.6	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/13/2007	0.7	12	0.4	0.6	1.4	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/7/2007	0.7	15	0.4	0.7	1.8	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/14/2008	1.0 U	7.4	1.0 U	1.0 U	1.0 U	1.0 U	2.82	12.6	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/12/2008	1.0 U	19	1.3	1.0 U	1.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/12/2008	1.0 U	8.2	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/5/2008	0.9	2.2	0.2 U	0.2	1.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/3/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.1 U	254	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/6/2009	1.0 U	2.5	1.0 U	5.9	1.2	1.0 U	0.1 U	7.4	11.1	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/6/2009	1.0 U	10	1.0 U	5.8	2.0	1.0 U	1.3 J	10.3	4.62	5270	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	11/4/2009	1.0 U	3.8	1.0 U	3.1	1.4	1.9 J	1.3	8.2	2.65	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/2/2010	1.0 U	13	1.0 U	1.3	1.9	1.0	6.2	11.3	12.8 J	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/5/2010	1.0 U	22	1.0 U	1.5	2.6	1.0 U	1.8	8.8	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/9/2010	1.0 U	16	1.0 U	1.0 U	2.0	1.0 U	2.0	9.4	11.7	8100	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	11/15/2010	1.0 U	14	1.0 U	1.0 U	1.9	1.0 U	1.8	9.3	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-2	1/31/2011	1.0 U	17	1.0 U	1.0 U	2.2	1.0 U	1.9	9.0	1.5 U	8900	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	5/2/2011	1.0 U	16	1.0 U	1.0 U	2.0	1.0 U	1.6	8.4	1.5 U	8430	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2-Dup	5/2/2011	1.0 U	16	1.0 U	1.0 U	2.0	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/2/2011	1.0 U	9.6	1.0 U	1.0 U	1.1	1.0 U	1.5	7.8	1.5 U	4430	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	10/31/2011	1.0 U	3.8	1.0 U	1.0 U	1.0 U	1.0 U	1.1	7.5	1.5 U	7430	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2-Dup	10/31/2011	1.0 U	4.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/7/2012	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	1.6	9.6	1.5 U	5350	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	5/7/2012	1.0 U	4.2	1.0 U	1.0 U	1.0 U	1.0 U	1.6	8.7	1.8 J	14200	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2-Dup	5/7/2012	1.0 U	4.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/8/2012	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0	6.9	4.51	18700	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-2	11/7/2012	0.5 U	3.2	0.8	0.8	0.7	0.2	2.2	10	1.0 U	2200 J	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	11/7/2012	0.5 U	3.2	0.8	0.9	0.6	0.2	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/8/2013	0.5 U	3.2	0.7	0.7	0.5 J	0.3	0.86	7.3	1.0 U	24000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	5/7/2013	0.5 U	3.0	0.6	0.7	0.4	0.5	0.53	5.8	1.9	13000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	5/7/2013	0.5 U	2.8	0.5	0.6	0.3	0.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/2/2013	0.5 U	2.9	0.7	0.7	0.7	0.3	1.9	8.2	1.1	5900	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	11/12/2013	0.5 U	2.6	0.5	0.5	0.6	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2-Dup	11/12/2013	0.5 U	2.5	0.6	0.5	0.6	0.3	1.9	8.5	1.0 U	7600	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	8/14/2014	0.5 U	2.4	0.4	0.7	0.5	0.4	0.10 U	48.8	113	11000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	11/3/2014	0.5 U	2.7 J	0.5	0.9	0.7	0.4	1.2 J	9.2	1.4	9300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	11/3/2014	0.5 U	2.2 J	0.4	0.8	0.6	0.4	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/4/2015	0.5 U	2.1	0.4	0.5	0.5	0.3	1.8	9.7	1.0 U	8900	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	5/7/2015	0.5 U	2.4	0.4	0.5	0.5	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2-Dup	5/7/2015	0.5 U	2.4	0.4	0.5	0.5	0.3	1.6	8.3	1.0 U	9200	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	7/13/2015	0.5 U	3.6	0.4	1.4	0.5	0.6	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	8/5/2015	0.5 U	2.5	0.4	1.7	0.4	0.7	0.5	4.5	71.4	20000	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-2	11/5/2015	0.5 U	3.1	0.5	0.9	0.4	0.2 U	1.2	14.5	1.0 U	11000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	11/5/2015	0.5 U	2.9	0.5	1.0	0.4	0.3	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	2/5/2016	0.5 U	1.4	0.2	1	0.2	1.1	0.12	4.2	2.0	26000	5 U	5 U
Downgradient Corrective Action Area Wells	E-2	5/5/2016	0.5 U	1.3	0.2	1.0	0.2	1.2	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/5/2016	0.5 U	1.5	0.3	1.0	0.2	1.2	0.26	2.8	1.0 U	32000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	8/10/2016	0.5 U	1.8	0.2	1.5	0.4	0.6	0.10 U	5.3	1.1	27000	8.5	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	11/7/2016	0.5 U	0.6	0.2 U	1.2	0.2	0.6 J	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	11/7/2016	0.5 U	0.7	0.2 U	1.3	0.2	0.6 J	0.10 U	4.1	2.0	24000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	2/10/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24	3.8	2.4	770	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2-Dup	5/15/2017	0.5 U	0.2 U	0.2 U	0.7	0.2 U	1.4 J	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-2	5/15/2017	0.5 U	0.2 U	0.2 U	0.6	0.2 U	1.0 J	0.10 UJ	1.0 U	3.3	43000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	8/11/2017	0.5 U	0.2 U	0.2 U	0.7	0.2 U	1.3	0.10 U	1.0 U	2.4	28000	6.4	5.0 U
Downgradient Corrective Action Area Wells	E-2	2/7/2018	0.5 U	0.2 U	0.2 U	0.4	0.2 U	0.9	0.10 U	5.5	455	40000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	8/13/2018	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	1.2	0.10 U	1.0 U	4.3	21000 J	5.0 UJ	5.0 UJ
Downgradient Corrective Action Area Wells	E-2	2/13/2019	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.50 U	3.0	2.4	16000 J	5.0 UJ	5.0 UJ
Downgradient Corrective Action Area Wells	E-2	8/7/2019	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.50 U	1.0 U	2.3	2000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-2	2/12/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	2.6	1.8	0.37	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-2	8/12/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	1.3	1.7	0.55	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-3	3/28/1989	430	680	21	100	33	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/6/1989	590	890	44	120	50	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/12/1989	570	850	27	120	45	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/18/1989	430	820	36	86	38	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/25/1989	420	790	31	100	41	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/2/1989	410	770	37	93	40	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/9/1989	400	750	25	81	39	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/16/1989	570	900	31	110	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/23/1989	520	800	31	85	52	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/30/1989	450	700	29	89	43	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/7/1989	890	1100	48	120	75	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/13/1989	460	860	37	95	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/20/1989	430	780	31	91	50	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/27/1989	370	750	30	66	41	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/5/1989	480	830	37	82	51	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/11/1989	460	780	33	85	52	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/18/1989	490	870	38	85	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/25/1989	500	960	37	90	59	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/1/1989	450	880	40	76	55	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/8/1989	490	720	34	110	60	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/15/1989	420	790	39	110	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/22/1989	470	800	42	110	53	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/29/1989	580	940	47	130	65	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/5/1989	570	1000	46	130	67	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/12/1989	550	1100	29	110	50	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/26/1989	470	920	39	110	63	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/3/1989	550	870	40	120	68	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/10/1989	470	780	35	94	51	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/17/1989	540	950	38	130	70	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/24/1989	690	1000	53	140	84	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-3	11/15/1989	210	600	23	74	34	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/21/1989	400	800	30	76	45	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/28/1989	420	870	34	82	57	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/5/1989	440	920	35	81	51	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/12/1989	420	880	36	88	52	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/19/1989	290	720	26	84	37	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/4/1990	390	820	28	100	42	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/17/1990	480	920	32	120	56	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/31/1990	440	710	29	85	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/14/1990	450	740	24	91	54	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/28/1990	450	830	36	78	41	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/14/1990	480	1000	49	76	81	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/28/1990	480	990	36	85	83	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/11/1990	470	1100	36	82	85	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/25/1990	350	850	28	66	59	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/8/1990	420	940	43	79	88	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/22/1990	420	950	33	73	93	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/6/1990	400	910	32	68	90	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/19/1990	300	810	27	59	59	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/3/1990	310	800	29	67	66	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/17/1990	290	740	23	61	70	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/31/1990	320	750	17	59	80	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/14/1990	360	830 B	28	72	100	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/28/1990	310	760	30	64	84	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/11/1990	260	640	22	53	77	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/27/1990	280	730	25	66	78	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/9/1990	350	840	27	66	100	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/29/1990	300	750	26	60	98	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/14/1990	96	330	11	21	34	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/28/1990	180	530	20	42	72	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/11/1990	260	730	23	69	82	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/2/1991	260	700	26	54	86	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/15/1991	230	610	21	53	68	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/5/1991	230	580	19	53	69	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/5/1991	200	510	18	32	63	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/2/1991	230	650	21	53	75	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/7/1991	190	540	19	41	66	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/3/1991	170	520	16	40	62	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/1/1991	250	660	23	44	95	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/5/1991	170	520	18	38	75	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/3/1991	140	560	20	39	53	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/2/1991	120	390	17	34	37	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/4/1991	130	500	17	36	39	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/4/1991	110	420	16	31	41	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/6/1992	120	460	18	33	43	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/4/1992	87	380	13	27	46	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/3/1992	82	370	12	23	40	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/6/1992	110	400	18	34	59	4.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-3	5/4/1992	83	360	14	27	40	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/2/1992	73	310	11	25	32	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/6/1992	72	340	11	23	37	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/10/1992	71	370	11	22	44	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/1/1992	110	530	16	30	49	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/1/1992	110	540	17	30	48	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/2/1992	100	510	15	27	45	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/1/1992	76	350	11	20	37	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/1/1993	53	250	11	19	32	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/1/1993	62	360	11	21	33	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/3/1993	74	410	14	23	43	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/29/1993	43	280	6.9	15	26	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/28/1993	46	310	7.7	14	29	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/25/1993	47	310	8.6	17	37	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/23/1993	34	220	6.5	14	24	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	7/30/1993	43	320	9.0	16	30	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/25/1993	59	410	12	20	43	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/29/1993	37	260	7.3	15	30	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/27/1993	48	360	9.5	17	38	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/22/1993	36	280	7.3	14	27	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/27/1993	30	230	5.6	12	21	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/26/1994	28	150	6.3	11	19	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/23/1994	25	190	5.9	12	22	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/4/1994	26	210	6.1	10	21	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	4/26/1994	22 J	170	4.2	8.9	18	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/29/1994	25	190	6.5	10	20	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	10/26/1994	24	180	5.9	8.8	20	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/21/1994	11	83	3.1	4.6	11	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/3/1995	7.7 J	57 J	2.0	3.2	9.0	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	6/1/1995	6.7	54	2.0	2.6	7.9	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/29/1995	21	250	6.0	9.1	24	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/9/1995	25	270 J	10 U	12	29 J	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/4/1996	20	220	6.5	8.6	20	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/31/1996	26	280	8.2	11	23	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/26/1996	22	240	10 U	10 U	21	20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/20/1996	29	300	7.4	11	31	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	3/6/1997	26	330	8.2	15	32	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/27/1997	18	220	6.3	9.0	18	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	9/2/1997	18	250	6.9	8.9	22	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/3/1997	23	290	8.1	11	30	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/24/1998	14	180	5.0	7.3	14	6.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/5/1998	20 J	320	7.9	11	29	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/3/1998	15	220	7.0	8.8	27	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/2/1998	15	270	7.8	8.3	26	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/1/1999	13	320	7.1	7.5	28	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/3/1999	16	290	8.0	8.8	31	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/2/1999	12	260	6.4	8.5	23	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/1/1999	12	200	6.2	8.3	25	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-3	2/4/2000	20	250	10	12	40	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/1/2000	11	200	5.6	5.9	23	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/2/2000	11	200	5.2	6.5	24	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/1/2000	22	220	10	14	35	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/1/2001	14	230	6.9	10	31	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/1/2001	8.0	140	2.7	8.3	19	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/6/2001	11	210	5.8	9.2	27	5.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/1/2001	12	210	5.5	8.1	27	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/2/2002	8.8	160	4.1	6.2	20	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/8/2002	7.4	140	4.0	7.3	18	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/1/2002	6.6	150	3.6	7.2	17	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/4/2002	10	200	5.9	9.3	26	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/4/2003	5.5	93	3.0	5.6	12	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/7/2003	4.9	79	2.8	5.8	12	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/6/2003	7.5	160	5.2	7.8	18	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/5/2003	10	190	5.3	9.1	28	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/3/2004	3.9	120	3.6	5.8	14	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/6/2004	5.3	130	3.7	7.4	20	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/3/2004	5.8	140	4.1	7.7	18	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/1/2004	5.7	160	4.4	8.3	22	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/3/2005	4.4	130	3.7	5.9	14	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/3/2005	4.6	98	3.2	5.6	12	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/2/2005	3.4	100	3.6	5.3	14	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	12/16/2005	3.5	78	2.6	5.1	10	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/7/2006	3.2	78	2.4	4.2	9.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/9/2006	2.3	65	2.3	4.2	7.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/8/2006	2.8	76	1.5	4.9	7.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/9/2006	3.2	110	3.0	5.3	12	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/7/2007	2.6	67	2.6	4.2	6.9	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/10/2007	3.3	93	2.6	5.4	11	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/13/2007	2.6	86	2.5	4.4	10	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/14/2008	2.2	73	2.5	4.1	10	1.0 U	2.32	9.8	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/12/2008	2.4	72	2.7	4.7	10	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/12/2008	1.8	63	2.2	3.6	6.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	11/7/2008	2.5	71	2.6	4.4	9.0	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/11/2009	2.0	34	1.4	32	7.7	1.0 U	0.1 U	2.1	54.4	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/6/2009	1.0 U	18	1.0 U	5.9	2.6	1.0 U	2.6	11.6	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/6/2009	1.0 U	20	1.0 U	9.2	3.4	1.0 U	2.4 J	10.1	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	11/4/2009	1.2	23	1.1	11	4.4	2.3 J	2.2	8.5	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-3	2/2/2010	1.0 U	11	1.0 U	1.8	1.6	2.8	6.4	12.8	14.8	--	--	--
Downgradient Corrective Action Area Wells	E-3	5/5/2010	1.0 U	14	1.0 U	2.3	2.1	1.2	2.3	9.8	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/9/2010	1.3	35	1.5	3.9	4.8	3.5 J	1.9	9.5	2.85	4160	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	11/15/2010	1.0	35	1.4	3.1	4.3	2.6	1.8	9.9	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-3	1/31/2011	1.0 U	24	1.0 U	2.4	3.1	1.1	1.8	9.4	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	5/2/2011	1.0 U	38	1.4	2.7	4.8	2.0	0.8	9.6	1.5 U	3940	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	8/2/2011	1.0 U	40	1.4	2.8	5.1	2.4	0.6	8.6	1.5 U	6520	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	10/31/2011	1.0 U	30	1.0	2.8	3.8	3.2	1.0	9.0	1.5 U	4770	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	2/7/2012	1.0 U	12	1.0 U	2.1	1.4	2.4	0.2	8.6	1.5 U	8530	1.2 U	1.1 U

Appendix B-1
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Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-3	5/7/2012	1.0 U	19	1.0 U	2.1	2.8	1.6	0.8	9.5	1.65	7590	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	8/8/2012	1.0 U	22	1.0 U	2.9	2.5	2.0	0.6	9.1	3.18	5150	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-3	11/7/2012	0.5 U	26	1.0	4.1	4.2	3.1	0.72	9.1	1.0 U	1800	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/8/2013	0.5 U	30	0.7	6.1	5.1	8.2	0.1 U	4.4	1.0	12000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	5/2/2013	0.5 U	21	0.7	3.7	2.5	3.4	0.16	7.2	1.0 U	6200	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	8/2/2013	0.5 U	17	0.7	3.5	2.2	4.0	0.16	5.9	1.3	4600	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	11/12/2013	0.5 U	18	0.7	3.1	2.1	1.8	1.1	8.3	1.0 U	1900	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	8/14/2014	0.5 U	10	0.7	2.5	1.3	1.2	0.10 U	9.1	8.3	3100	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	11/3/2014	0.5 U	15	0.7	4.0	2.0	1.5	0.95 J	7.6	1.2	2100	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/4/2015	0.5 U	10	0.8	2.3	1.1	0.5	1.1	8.3	1.0 U	1500	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	5/7/2015	0.5 U	9.2	0.6	2.3	1.1	0.6	1.1	8.0	1.0 U	2300	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	7/10/2015	0.5 U	8.2	0.2 U	5.0	1.3	4.1	--	--	428	--	--	--
Downgradient Corrective Action Area Wells	E-3	8/5/2015	0.5 U	2.0	0.2 U	5.6	0.9	4.4	0.10 U	1.0 U	175	28000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	11/6/2015	0.5 U	3.6	0.2 U	7.1	1.2	4.1	0.10 U	1.0 U	1.8	33000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/5/2016	0.5 U	1.2	0.2 U	3.6	0.6	3.5	0.1 U	1 U	8.0	30000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	5/5/2016	0.5 U	2.1	0.2 U	3.2	0.6	2.9	0.10 U	1.1	1.0 U	32000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	8/10/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.5	1.6	38000	9.3	5.0 U
Downgradient Corrective Action Area Wells	E-3	11/7/2016	0.5 U	9.2	0.2 U	4.0	1.4	2.3 J	0.10 U	1.0 U	2.5	31000	5.1	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/10/2017	0.5 U	5.9	0.2 U	3.3	1	2.3	0.10 U	1.2	2.0	32000	6.2	5.0 U
Downgradient Corrective Action Area Wells	E-3	5/15/2017	0.5 U	2.3	0.2 U	2.5	0.6	1.7	0.10 UJ	1.1	1.9	37000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	8/10/2017	0.5 U	7.0	0.2 U	3.0	1.1	1.8	0.10 U	2.0	1.6	30000 J	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/7/2018	0.5 U	1.7	0.2 U	3.3	0.7	2.0	0.10 U	1.0 U	50.8	17000 J	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	8/13/2018	0.5 U	5.6	0.2 U	2.3	0.8	1.0	0.10 U	1.0 U	3.9	18000 J	5.0 UJ	5.0 UJ
Downgradient Corrective Action Area Wells	E-3	2/13/2019	0.5 U	5.2	0.2 U	2.0	0.7	1.1	0.50 U	1.5	2.4	25000 J	5.0 UJ	5.0 UJ
Downgradient Corrective Action Area Wells	E-3	8/6/2019	0.5 U	5.3	0.2 U	1.7	0.7	0.7	0.71	1.5	2.8	21000	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-3	2/6/2020	0.50 U	6.6	0.20 U	1.4	0.80	0.60	0.10 U	1.0 U	2.8	21	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-3	8/12/2020	0.50 U	2.0	0.20 U	1.6	0.38	0.57	0.50 U	5.0 U	53	16.5	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-3-107	11/7/2008	2.0	60	1.0 U	3.9	8.3	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-107	11/7/2008	2.3	66	1.5	3.7	8.0	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-107-Dup	11/7/2008	2.3	65	1.5	3.5	8.0	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-118	11/7/2008	2.2	61	1.0 U	4.1	8.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-118	11/7/2008	2.5	69	2.2	3.9	8.3	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-85	11/7/2008	1.2	43	1.0 U	3.0	4.7	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-85	11/7/2008	1.4	49	1.2	2.8	4.6	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-96	11/7/2008	2.2	78	1.0 U	4.6	9.5	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-3-96	11/7/2008	2.5	79	2.0	4.7	9.3	0.5 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/28/1989	270	590	26	29	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/6/1989	250	440	26 B	33 B	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/12/1989	230	540		34	160	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/18/1989	240	640	27	38	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/25/1989	220	580	25	38	180	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/2/1989	250	610	35	40	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/9/1989	210	540	25	31	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/16/1989	270	600	30	39	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/23/1989	230	530	30	30	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/30/1989	240	500	27	35	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/7/1989	240	530	28	29	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/13/1989	220	530	28	32	190	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-4	6/20/1989	250	520	26	34	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/27/1989	190	490	23	25	150	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/5/1989	230	510	26	26	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/11/1989	230	470	23	29	180	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/18/1989	240	520	28	29	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/25/1989	230	510	25	26	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/1/1989	220	530	32	25	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/8/1989	260	460	24	44	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/15/1989	220	490	34	39	170	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/22/1989	260	450	32	28	300	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/29/1989	290	600	34	49	240	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/5/1989	300	690	37	51	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/12/1989	280	650	37	64	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/26/1989	300	690	37	48	240	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/3/1989	270	610	31	42	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/10/1989	250	590	31	40	220	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/17/1989	270	650	32	49	260	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/24/1989	53	130	6.3	8.4	44	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/15/1989	200	540	25	36	190	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/21/1989	280	630	27	38	220	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/28/1989	250	620	28	34	230	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/5/1989	270	650	30	32	230	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/12/1989	250	620	29	34	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/19/1989	230	580	26	36	160	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/4/1990	230	560	25	36	180	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/17/1990	290	650	29	37	240	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/31/1990	250	520	61	30	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/14/1990	210	440	17	28	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/28/1990	210	500	26	23	160	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/14/1990	200	570	28	21	320	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/28/1990	180	530	19	22	260	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/11/1990	170	540	24	20	260	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/25/1990	140	460	19	16	220	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/8/1990	160	460	20	19	280	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/22/1990	160	510	21	19	270	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/6/1990	130	470	22	15	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/19/1990	130	440	18	14	220	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/3/1990	120	400	17	14	260	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/17/1990	130	410	16	15	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/31/1990	120	410	16	13	270	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/14/1990	100	380 B	13	15	200	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/28/1990	130	400	26	16	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/11/1990	85	320	13	12	190	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/27/1990	100	400	17	14	240	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/9/1990	120	420	16	13	260	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/29/1990	110	370	16	13	250	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/14/1990	110	370	14	11	230	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/28/1990	120	400	16	15	250	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-4	12/11/1990	100	370	14	17	210	--	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/2/1991	18	63	2.8	2.2	40	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/15/1991	92	330	15	12	210	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/5/1991	84	310	12	13	200	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/5/1991	75	260	11	9.3	160	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/2/1991	96	340	14	12	260	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/7/1991	68	270	11	8.0	180	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/3/1991	76	290	12	9.1	210	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/1/1991	84	300	13	7.5	230	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/5/1991	66	270	11	7.6	190	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/3/1991	55	230	11	7.6	119	15 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/2/1991	61	240	13	7.1	120	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/4/1991	78	330	14	10	140	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/4/1991	55	240	11	6.9	120	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/6/1992	50	220	11	6.4	110	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/4/1992	54	250	11	6.6	130	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/3/1992	38	180	7.4	4.9	97	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/6/1992	52	230	12	6.9	150	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/4/1992	42	210	9.3	5.2	92	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/2/1992	37	170	7.6	4.6	92	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/6/1992	44	220	9.4	5.3	110	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/10/1992	48	240	10	5.4	140	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/1/1992	55	280	11	6.1	140	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/1/1992	60	350	14	6.5	150	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/2/1992	52	280	11	5.4	140	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/1/1992	45	240	11	5.1	130	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/1/1993	42	200	9.5	4.4	110	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/1/1993	45	260	9.7	5.4	130	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/3/1993	48	270	11	5.6	130	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/29/1993	32	190	6.5 M	3.5 J	98	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/28/1993	38	230	7.6	3.2 J	110	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/25/1993	37	230	8.2	4.2 J	140	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/23/1993	31	180	6.8	3.8 J	93	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	7/30/1993	26	160	5.7	5.0 U	79	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/25/1993	30	200	7.4	4.1 J	100	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/29/1993	31	200	6.7	3.1 J	97	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/27/1993	33	210	8.2	4.3	110	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/22/1993	32	190	8.5	4.3	99	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/27/1993	31	210	7.4	3.7	81	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/26/1994	31	210	7.8	4.1	100	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/23/1994	26	190	7.1	4.3	88	4.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/4/1994	22	160	6.3	3.1	73	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	4/26/1994	23 J	150	5.3	3.0	66	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/29/1994	26	170	7.2	3.3	86	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	10/26/1994	35	270	12	5.0	130	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/21/1994	27	170	7.9	3.9	82	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/3/1995	24 J	180 J	6.6	3.1	74	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	6/1/1995	19	160	6.2	5.0 U	68	10 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-4	8/29/1995	28	200	7.4	3.4	96	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/9/1995	23	180	6.3	3.5	82	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/4/1996	16	130	5.5	2.5	64	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/31/1996	21	200	7.5	3.6	78	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/26/1996	17	160	5.7	5.0 U	59	10 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/20/1996	17	180	6.8	3.9	73	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	3/6/1997	16	160	5.8	3.3	67	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/27/1997	18	200	7.0	3.4	73	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	9/2/1997	14	160	6.0	3.2	57	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/3/1997	17	160	6.8	3.5	75	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/24/1998	13	160	5.0	2.9	56	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/5/1998	15 J	160	6.6	2.8	70	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/3/1998	11	150	5.2	2.6	56	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/2/1998	17	180	7.1	3.2	99	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/1/1999	13 J	120 J	7.3 J	3.1	78 J	2.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/3/1999	12	180	6.0	2.1	76	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/2/1999	7.8	150	4.8	1.9	45	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/1/1999	7.8	120	4.8	1.8	48	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/4/2000	14	200	7.9	3.2	60	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/1/2000	8.5	120	4.4	1.8	54	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/2/2000	9.4	150	5.1	2.1	59	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/1/2000	12	140	7.3	3.3	64	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/1/2001	14	200	7.8	3.7	71	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/1/2001	7.2	130	3.4	3.0	43	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/6/2001	11	200	7.4	5.0 U	76	5.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/1/2001	13	220	7.1	3.6	81	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/2/2002	8.5	150	4.7	3.0 U	42	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/8/2002	5.8	130	4.4	1.8	45	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/1/2002	9.2	200	6.7	3.4	62	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/4/2002	10	240	8.4	5.0	63	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/4/2003	8.1	150	5.7	2.6	56	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/7/2003	4.3	86	3.4	1.4	30	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/6/2003	7.8	170	6.5	2.8	50	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/5/2003	11	250	7.2	3.6	78	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/3/2004	5.2	160	6.1	2.8	57	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/6/2004	5.5	160	5.0	2.5	61	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/3/2004	6.5	180	6.2	2.7	59	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/1/2004	6.7	180	6.7	2.9	86	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/3/2005	4.7	150	4.8	2.3	43	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/3/2005	5.0	140	4.7	2.3	42	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/2/2005	3.9	120	4.6	2.1	44	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	12/16/2005	4.9	140	5.1	2.5	47	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/7/2006	3.6	110	3.4	1.6	30	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/9/2006	2.6	97	3.4	1.4	28	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/8/2006	3.6	160	1.5	2.2	22	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/9/2006	6.5	200	8.7	3.5	50	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/7/2007	3.4	100	4.5	2.3	19	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/10/2007	3.3	120	4.2	2.0	36	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-4	8/13/2007	3.9	170	4.7	2.6	41	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/7/2007	3.4	140	5.1	2.4	47	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/14/2008	2.2	92	3.4	1.5	29	1.0 U	2.21	9.6	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/12/2008	2.6	120	4.2	1.6	34	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/12/2008	2.9	170	4.9	2.3	35	1.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/5/2008	4.0	260	9.1	3.0 U	54	3.0 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/3/2009	1.0 U	260	7.4	3.0	43	1.0 U	0.1 U	5.7	3.18	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/6/2009	1.3	66	2.2	1.0 U	18	1.0 U	2.8	9.3	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/6/2009	1.4	86	2.8	1.1	22	1.0 U	2.4 J	8.9	1.5 U	25	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	11/4/2009	1.6	85	3.1	1.3	23	1.0 U	2.9	9.1	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/2/2010	1.9	100	3.3	1.5	16	1.0 U	7.2	11.8	11.4	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/5/2010	1.6	100	3.3	1.7	10	1.0 U	2.7	8.6	4.06	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/9/2010	3.0 U	79	3.0 U	3.0 U	14	3.0 U	2.9	9.1	1.57	7.9	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	11/15/2010	3.0 U	95	3.1	3.0 U	17	3.0 U	2.9	9.2	1.5 U	--	--	--
Downgradient Corrective Action Area Wells	E-4	1/31/2011	1.0 U	55	1.8	1.0	9.5	1.0 U	3.1	8.7	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	5/2/2011	1.0 U	52	1.8	1.0 U	8.4	1.0 U	2.4	9.0	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	8/2/2011	1.0 U	56	1.9	1.0 U	9.5	1.0 U	2.3	9.2	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	11/10/2011	1.0 U	41	1.6	1.0 U	4.9	1.0 U	2.4	9.8	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	2/7/2012	1.0 U	56	2.0	1.1	9.0	1.0 U	1.9	10	1.5 U	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	5/7/2012	1.0 U	45	1.8	1.0 U	6.8	1.0 U	1.8	9.6	1.22	0.7 U	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	8/8/2012	1.0 U	45	1.7	1.0 U	6.7	1.0 U	1.7	10	2.81	3.7	1.2 U	1.1 U
Downgradient Corrective Action Area Wells	E-4	11/7/2012	0.5 U	48	2.0	1.1	10	0.2 U	2.0	10.4	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/8/2013	0.5 U	38	1.6	1.0	7.0	0.2 U	1.5	9.8	1.0 U	18	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	5/9/2013	0.5 U	29	1.4	0.7	5.1	0.2 U	1.2	8.7	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	8/2/2013	0.5 U	28	1.5	0.8	5.3	0.2 U	1.3	8.5	1.0 U	24	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	11/12/2013	0.5 U	35	1.8	1.0	6.9	0.2 U	1.5	9.0	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	8/14/2014	0.5 U	25	1.3	1.0	5.1	0.2 U	1.5	8.5	1.2	15	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	11/5/2014	0.5 U	28	1.5	1.5	6.3	0.2 U	1.4	8.3	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/4/2015	0.5 U	25	1.3	1.4	4.5	0.2 U	1.3	8.3	1.0 U	5.0 U	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	5/7/2015	0.5 U	18	0.9	1.3	4.1	0.2 U	1.4	8.1	1.0 U	11	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	8/5/2015	0.5 U	21	1.0	1.3	4.0	0.2 U	1.1	7.5	1.0 U	18	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	11/9/2015	1.2	200	7.4	7.0	28	0.5	0.77	9.2	1.0 U	120	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/4/2016	0.5 U	26	1.2	2.1	4.9	0.2 U	0.78	6.9	1 U	7.2	5 U	5 U
Downgradient Corrective Action Area Wells	E-4	5/5/2016	0.5 U	21	1.2	1.6	4.2	0.2 U	0.88	7.6	1.0 U	99	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	8/10/2016	0.5 U	21	0.8	1.3	2.9	0.2 U	1.0	7.6	1.0 U	30	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	11/7/2016	0.5 U	22	1.1	1.8	5.0	0.2 UJ	0.90	6.6	1.3	45	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/10/2017	0.5 U	20	1.0	1.7	4.2	0.2 U	0.96	6.5	1.0 U	7.9	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	5/15/2017	0.5 U	22	0.9	1.4	3.7	0.2 U	1.1	7.8	1.0 U	120	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	8/8/2017	0.5 U	24	0.9	1.4	4.1	0.2 U	0.88	6.9	1.0 U	150	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4-Dup	11/2/2017	0.5 U	21	0.8	1.3	4.2	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/2/2017	0.5 U	24	0.8	1.2	3.8	0.2 U	0.64	5.5	1.0 U	60	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/7/2018	0.5 U	23	0.9	1.5	4.2	0.2 U	0.67	5.4	1.7	34	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	5/11/2018	0.5 U	21	0.7	1.5	3.6	0.2 U	0.63	5.5	1.0 U	26	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4-Dup	5/11/2018	0.5 U	21	0.7	1.5	3.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/10/2018	0.5 U	23	0.7	1.9	3.9	0.2 U	0.47	5.1	1.0 U	33	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	11/9/2018	0.5 UJ	21 J	0.8 J	1.8 J	3.5 J	0.2 UJ	0.29	5.3	1.0 U	100	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4-Dup	11/9/2018	0.5 UJ	22 J	0.9 J	1.8 J	3.6 J	0.2 UJ	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	2/13/2019	0.5 U	21	0.8	1.9	3.2	0.2 U	0.50 U	5.2	1.0	8.0 J	5.0 UJ	5.0 UJ

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Downgradient Corrective Action Area Wells	E-4	5/6/2019	0.5 U	22	0.8	2.0	3.5	0.2 U	--	4.2	1.0 U	22	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4-Dup	5/6/2019	0.5 U	22	0.7	2.0	3.5	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/8/2019							0.57	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	8/6/2019	0.5 U	23	0.8	2.1	3.7	0.2 U	0.76	6.5	1.6	24	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4-Dup	11/12/2019	0.5 U	24	0.9	2.0	3.9	0.2 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/12/2019	0.5 U	24	0.9	2.1	3.7	0.2 U	0.66 J	5.2	1.0 U	190	5.0 U	5.0 U
Downgradient Corrective Action Area Wells	E-4	2/6/2020	0.50 U	22	1.0	2.1	4.40	0.20 U	0.43	4.3	1.8	0.32	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-4-Dup	5/5/2020	0.50 UJ	20 J+	0.70 J+	2.0 J+	3.30 J+	0.20 UJ	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	5/5/2020	0.50 U	21	0.80	2.0	3.40	0.20 U	0.78	8.7	1.0 U	0.21	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-4	8/12/2020	0.50 U	18	0.67	2.1	2.90	0.20 U	0.24	3.9	1.0 U	0.24	0.50 U	0.50 U
Downgradient Corrective Action Area Wells	E-4-Dup	11/4/2020	0.50 U	20	0.68	2.1	3.36	0.20 U	--	--	--	--	--	--
Downgradient Corrective Action Area Wells	E-4	11/4/2020	0.50 U	20	0.65	2.1	3.41	0.20 U	0.28 J	3.6	1.0 U	0.28	0.50 U	0.50 U
East Corrective Action Area Wells	E-8	3/28/1989	47	140	57	150	25	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/6/1989	44	140	75	150	24	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/12/1989	50	140	58	160	26	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/18/1989	45	140	78	130	26	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/25/1989	43	130	67	130	26	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/2/1989	50	130	72	120	32	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/9/1989	43	120	57	99	26	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/16/1989	60	130	44	120	36	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/23/1989	50	110	61	88	30	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/30/1989	60	100	53	100	37	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/7/1989	61	110	56	89	35	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/13/1989	58	115	57	100	40	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/20/1989	56	100	49	93	36	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/27/1989	48	100	49	67	32	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/5/1989	57	93	45	73	33	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/11/1989	60	91	45	80	35	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/18/1989	61	99	47	77	41	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/25/1989	62	94	44	80	37	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/1/1989	59	91	42	73	40	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/8/1989	66	79	42	98	38	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/15/1989	71	98	56	110	46	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/22/1989	65	77	39	98	39	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/29/1989	51	70	32	79	31	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/5/1989	74	100	45	110	48	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/12/1989	69	96	59	130	44	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/15/1989	34	100	25	76	24	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/21/1989	53	94	28	73	33	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/28/1989	50	81	27	64	34	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/5/1989	55	85	30	71	35	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/12/1989	51	84	25	69	31	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/19/1989	57	86	28	75	36	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/4/1990	50	82	26	75	29	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/17/1990	64	94	30	73	41	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/31/1990	47	85	26	57	29	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/14/1990	50	60	28	55	33	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/28/1990	56	67	24	51	26	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Corrective Action Area Wells	E-8	3/14/1990	50	71	24	45	49	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/28/1990	42	66	22	46	38	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/11/1990	44	70	21	45	41	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/25/1990	43	62	20	41	39	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/8/1990	45	68	21	46	46	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/22/1990	45	77	22	44	45	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/6/1990	46	62	19	39	48	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/19/1990	34	70	17	35	34	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/3/1990	38	61	17	43	36	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/17/1990	37	54	15	36	42	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/31/1990	40	58	16	36	48	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/14/1990	38	62	17	38	41	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/28/1990	35	54	13	34	43	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/11/1990	37	57	14	36	46	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/27/1990	34	55	13	34	39	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/9/1990	39	47	14	34	50	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/29/1990	35	55	13	30	43	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/14/1990	38	56	14	27	45	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/28/1990	38	62	13	33	40	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/11/1990	36	58	14	30	43	--	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/2/1991	31	73	14	27	40	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/15/1991	28	51	12	26	39	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/5/1991	30	60	12	29	41	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/5/1991	27	39	10	16	34	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/2/1991	27	43	13	24	38	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/7/1991	24	48	12	20	34	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/3/1991	23	45	12	20	34	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/1/1991	21	39	11	16	31	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/5/1991	23	42	12	17	32	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/3/1991	20	37	11	17	19	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/2/1991	18	42	10	16	16	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/4/1991	19	52	12	17	16	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/4/1991	14	140	14	19	19	3.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/6/1992	16	54	12	15	23	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/4/1992	15	40	10	12	19	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/3/1992	12	36	8.8	11	16	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/6/1992	14	40	12	15	18	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/4/1992	11	40	9.8	14	15	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/2/1992	11	35	11	13	16	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/6/1992	12	54	11	13	14	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/10/1992	12	52	12	16	17	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/1/1992	10	47	11	13	13	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/1/1992	11	38	11	12	14	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/2/1992	9.8	28	8.6	12	15	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/1/1992	10	30	9.4	11	15	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/1/1993	8.2	37	9.1	11	13	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/1/1993	7.9	35	8.7	10	11	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/3/1993	8.4	52	10	12	12	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Corrective Action Area Wells	E-8	3/29/1993	6.2	34	7.1	9.0	10	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/28/1993	5.4	31	7.8	9.1	8.3	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/25/1993	5.8	39	8.1	10	10	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/23/1993	5.1	45	9.4	9.9	7.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	7/30/1993	4.2	33	8.5	8.3	7.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/25/1993	4.9	44	9.5	9.8	8.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/29/1993	4.5	47	8.4	9.0	7.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/27/1993	4.7	42	8.4	9.1	7.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/22/1993	4.0	38	8.2	8.5	6.8	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/27/1993	4.6	39	9.4	9.7	7.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	1/26/1994	2.8	27	7.2	6.7	4.7	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/23/1994	3.3	39	9.1	8.9	6.3	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/4/1994	3.1	41	8.9	8.0	5.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	4/26/1994	2.5 J	20	6.6	6.2	4.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/29/1994	3.1	45	8.2	8.4	5.7	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	10/26/1994	1.6	20	6.7	6.6	2.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/21/1994	2.2	29	8.5	7.3	3.5	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/3/1995	2.2 J	31 J	7.8 J	6.5 J	3.4 J	2.0 UJ	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	6/1/1995	1.8	47	9.2	7.2	3.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/29/1995	2.2	67	10	9.1	4.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/9/1995	1.2	36	6.8	6.9	4.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/4/1996	1.0 U	39	11	6.0	2.0	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/31/1996	1.0 U	54	12	7.9	2.6	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/26/1996	1.0 U	30	13	7.3	1.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/20/1996	1.0 U	43	14	7.4	1.8	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	3/6/1997	1.0 U	33	13	6.9	1.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/27/1997	1.0 U	100	15	12	3.7	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	9/2/1997	1.0 U	82	19	12	2.5	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/3/1997	1.0 U	71	18	11	2.1	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/24/1998	1.0 U	34	12	6.2	1.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/5/1998	1.0 U	36	12	5.9	1.6	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/3/1998	1.0 U	41	11	6.5	2.2	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/23/1998	1.0 U	15	4.6	5.9	1.7	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/1/1999	1.0 U	110	10	11	1.6	2.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/3/1999	1.0 U	120	9.6	11	3.6	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/2/1999	1.0 U	66	8.5	6.9	2.4	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/1/1999	1.0 U	41	6.0	4.7	1.9	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/4/2000	1.0 U	83	5.6	9.4	3.3	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/1/2000	1.0 U	69	6.4	6.5	3.2	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/2/2000	1.0 U	120	7.2	9.4	4.5	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/1/2000	1.0 U	9.1	2.5	1.2	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/1/2001	1.0 U	30	4.4	4.3	1.9	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/1/2001	1.0 U	120	8.0	12	5.4	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/6/2001	1.0 U	19	3.1	2.9	1.3	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/1/2001	1.0 U	23	3.5	2.0	1.4	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/2/2002	1.0 U	110	6.8	9.4	5.3	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/8/2002	1.0 U	14	3.8	2.2	1.4	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/1/2002	1.0 U	110	7.3	11	4.6	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Corrective Action Area Wells	E-8	11/4/2002	1.0 U	33	4.7	4.3	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/4/2002	1.0 U	53	4.6	6.1	2.0	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/4/2003	1.0 U	6.6	2.2	1.3	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/7/2003	1.0 U	8.0	2.2	1.5	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/6/2003	1.0 U	10	2.1	1.8	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/5/2003	1.0 U	6.6	1.6	1.3	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/3/2004	1.0 U	5.4	2.5	1.1	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/6/2004	1.0 U	8.2	2.2	1.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/3/2004	1.0 U	8.8	1.5	1.6	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/1/2004	1.0 U	12	2.1	1.9	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/3/2005	1.0 U	12	2.1	2.1	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/3/2005	1.0 U	7.7	2.6	1.5	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/2/2005	1.0 U	9.1	3.3	1.9	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	12/16/2005	1.0 U	12	3.3	2.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/6/2006	1.0 U	15	3.9	2.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/9/2006	1.0 U	12	4.1	2.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/8/2006	1.0 U	8.2	1.8	1.6	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/9/2006	0.2 U	1.5	1.2	0.2	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/6/2007	0.2 U	9.4	4.5	1.5	0.2	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/10/2007	0.2 U	10	4.6	1.7	0.2	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/8/2007	0.2 U	11	4.9	1.8	0.5	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/8/2007	0.2 U	13	5.4	2.3	0.7	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/11/2008	1.0 U	8.8	5.0	1.6	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	5/12/2008	1.0 U	8.5	5.0	1.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/11/2008	1.0 U	6.2	3.7	1.4	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	11/5/2008	0.2 U	12	5.6	2.5	0.7	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	2/12/2009	1.0 U	11	5.6	2.1	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/6/2009	1.0 U	10	4.7	1.9	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/6/2010	1.0 U	7.5	4.0	1.5	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/3/2011	1.0 U	7.4	4.5	1.2	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/8/2012	1.0 U	6.4	3.5	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/2/2013	0.5 U	5.3	2.7	1.7	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/14/2014	0.5 U	7.0	5.3	1.0	0.3	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/13/2015	0.5 U	7.0	6.1	0.8	0.2 U	0.2 UJ	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/12/2016	0.5 U	2.3	3.0	0.3	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/11/2017	0.5 U	3.7	3.3	0.7	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/14/2018	0.5 U	3.1	3.0	0.5	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/7/2019	0.5 U	4.2	11	0.8	0.2 U	0.2 U	--	--	--	--	--	--
East Corrective Action Area Wells	E-8	8/12/2020	0.50 U	9.3	29	2.4	0.20 U	0.20 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	3/3/1994	7.7	16	1.0 U	1.0 U	9.3	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	5/31/1994	11 J	38 J	1.0 U	1.6 J	15 J	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	7/25/1994	6.4 J	29 J	0.2 UJ	1.1 J	5.6 J	0.2 UJ	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	10/28/1994	8.0	34	1.0 U	1.7	9.6	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/16/1995	4.2	10	0.2 U	0.45	1.7	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/8/1995	4.1	21	1.0 U	1.0 U	6.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/7/1996	1.8	9.1	1.0 U	1.0 U	2.6	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/13/1996	1.8	9.9	1.0 U	1.0 U	2.7	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/17/1997	1.3	5.9	1.0 U	1.0 U	1.8	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Yard Corrective Action Area Wells	BOP-48(i)	8/21/1997	1.2	12	1.0 U	1.0 U	1.3	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	3/2/1998	1.0 U	5.8	1.0 U	1.0 U	1.6	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/26/1998	1.0 U	12	1.0 U	1.0 U	2.2	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/18/1999	1.0 U	4.4	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/24/1999	1.0 U	9.4	1.0 U	1.0 U	1.8	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/23/2000	1.0 U	9.1	1.0 U	1.0 U	1.8	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/31/2000	1.0 U	10	1.0 U	1.0 U	1.6	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/23/2001	1.0 U	6.6	1.0 U	1.0 U	1.8	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/16/2001	1.0 U	8.2	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/28/2002	1.0 U	4.9	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/16/2002	1.0 U	5.3	1.0 U	1.0 U	1.4	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/21/2003	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/15/2003	1.0 U	8.1	1.0 U	1.0 U	1.7	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	3/2/2004	1.0 U	3.6	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/19/2004	1.0 U	6.6	1.0 U	1.0 U	1.1	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/16/2005	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/6/2005	1.0 U	5.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/9/2006	1.0 U	3.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/7/2006	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/9/2007	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/8/2007	0.2 U	2.2	0.2 U	0.2 U	0.3	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/21/2008	0.2 U	2.1	0.2 U	0.2 U	0.4	0.2 U	2.02	6.2	1.5 U	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/12/2008	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	2/9/2009	1.0 U	1.6	1.0 U	1.0 U	1.0 U	1.0 U	1.7	6.4	1.5 U	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/19/2009	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/15/2010	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/12/2011	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/14/2012	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/21/2013	0.5 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/5/2014	0.5 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/5/2015	0.5 U	0.8	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/8/2016	0.5 U	0.9	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/3/2017	0.5 U	0.8	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	BOP-48(i)	8/14/2018	0.5 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/28/1989	210	56	1.1	12	25	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/6/1989	250	49	1.0 U	13	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/12/1989	190	64	--	12	26	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/18/1989	180	75	--	13	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/25/1989	170	71	--	16	29	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/2/1989	170	68	--	13	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/9/1989	140	63	--	11	25	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/16/1989	170	70	--	14	31	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/23/1989	140	64	--	11	26	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/30/1989	150	65	--	13	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/7/1989	140	62	--	9.8	27	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/13/1989	150	73	3.9	14	32	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/20/1989	130	60	2.9	11	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/27/1989	110	52	2.4	7.4	22	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Yard Corrective Action Area Wells	E-9	7/5/1989	110	43	1.6	6.5	19	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/11/1989	110	39	1.2	7.0	19	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/18/1989	95	37	1.1	5.9	20	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/25/1989	130	51	1.7	7.4	27	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/1/1989	96	36	0.9	5.4	20	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/8/1989	81	31	0.8	5.7	17	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/15/1989	97	31	0.9	8.8	18	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/22/1989	73	27	0.7	5.9	14	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/29/1989	69	25	3.2	5.5	12	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/5/1989	47	34	0.7 M	4.3	13	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/19/1989	110	33	0.4 M	3.8	9.3	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/4/1990	73	50	1.1	5.3	18	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/17/1990	67	62	1.8	6.0	20	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/31/1990	60	61	1.8	6.3	20	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/14/1990	62	68	3.6	8.4	21	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/28/1990	73	77	3.4	8.2	18	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/14/1990	35	49	1.1	2.8	15	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/28/1990	68	49	--	4.4	21	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/11/1990	63	66	1.2	4.3	26	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/25/1990	79	78	2.7	6.2	26	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/8/1990	75	76	2.6	6.9	33	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/22/1990	82	68	1.9	5.9	30	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/6/1990	67	76	2.5	5.2	31	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/19/1990	58	64	1.9	4.8	23	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/3/1990	62	59	1.3	4.9	26	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/17/1990	61	47	1.2	4.2	25	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/31/1990	64	46	0.9 M	3.6	28	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/14/1990	64	70	1.9 M	--	33	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/28/1990	63	65	1.7	5.3	32	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/11/1990	52	56	1.4	4.3	27	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/27/1990	55	37	0.7 M	3.8	22	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/9/1990	56	51	0.7 M	3.7	29	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/29/1990	56	37	0.7 J	3.8	24	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/14/1990	63	40	0.5 M	3.0	24	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/28/1990	79	30	--	4.5	21	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/11/1990	77	25	--	3.1	18	--	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/2/1991	66	39	0.7 M	3.8	24	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/15/1991	65	36	0.6 J	3.6	24	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/5/1991	97	31	0.5 M	4.0	24	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/5/1991	62	55	2.0	3.6	27	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/2/1991	57	71	2.6	6.2	28	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/7/1991	88	39	0.9 J	3.2	24	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/3/1991	64	55	2.0	4.0	25	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/1/1991	55	47	1.7	3.0	25	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/5/1991	50	57	2.3	3.8	28	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/3/1991	48	50	1.9	3.8	24	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/2/1991	47	32	0.7 J	2.5	14	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/4/1991	45	39	0.8 M	3.0	14	2.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Yard Corrective Action Area Wells	E-9	12/4/1991	43	59	1.2	2.8	20	3.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/6/1992	50	37	0.9 J	2.8	17	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/4/1992	38	50	1.4	3.4	24	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/3/1992	32	55	2.0	4.0	19	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/6/1992	41	50	1.6	3.4	21	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/4/1992	53	24	1.0 U	2.4	14	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/2/1992	34	48	1.7	3.4	17	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/6/1992	32	38	0.9 M	2.1	17	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/10/1992	36	39	1.0 U	2.3	18	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/1/1992	34	36	1.0 U	2.2	16	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/1/1992	33	32	1.0 U	2.1	13	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/2/1992	35	23	1.0 U	1.9	14	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/1/1992	34	29	1.0 U	1.9	16	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/1/1993	37	36	0.8 J	2.0	16	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/1/1993	40	40	0.8 J	1.9	14	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/3/1993	43	52	0.9 J	2.5	18	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/29/1993	30	42	0.7 M	1.8	14	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/28/1993	28	43	1.0	2.2	15	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/25/1993	28	42	1.2	2.3	16	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/23/1993	21	23	1.0 U	1.6	7.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	7/30/1993	24	31	0.8 J	1.3	11	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/25/1993	25	29	1.0 U	1.4	10	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/29/1993	24	33	0.8 J	1.8	13	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/27/1993	19	28	1.0 U	1.3	11	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/22/1993	15	26	1.0 U	1.2	9.1	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/27/1993	15	30	1.0 U	1.4	10	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	1/26/1994	9.3	22	1.0 U	1.0 U	5.9	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/23/1994	14	34	1.0 U	1.8	10	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/4/1994	14	36	1.0 U	1.7	9.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	4/26/1994	14 J	32	1.0 U	1.6	8.9	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	10/26/1994	29	6.6	1.0 U	1.2	2.1	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/21/1994	22	22	1.0 U	1.3	7.8	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/3/1995	20 J	22	1.0 U	1.0	6.9	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	6/1/1995	31	22	1.0 U	1.3	7.1	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/29/1995	12	25	1.0 U	1.1	8.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/9/1995	6.0	23	1.0 U	1.2	8.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/4/1996	24	20	1.0 U	1.0	6.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/31/1996	9.4	21	1.0 U	1.0 U	5.4	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/26/1996	6.0	21	1.0 U	1.0 U	6.6	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/20/1996	3.7	24	1.0 U	1.0 U	6.7	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	3/6/1997	15	19	1.0 U	1.2	5.3	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/27/1997	12	17	1.0 U	1.0	3.9	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	9/2/1997	2.4	9.2	1.0 U	2.8	1.5	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/5/1998	2.6 J	18	1.0 U	1.0 U	3.8	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/3/1998	9.7	3.1	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/2/1998	3.5	13	1.0 U	1.0 U	2.1	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/1/1999	2.0	19	1.0 U	1.0 U	3.9	2.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/3/1999	7.2	5.3	1.0 U	1.0 U	11	1.0 U	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Yard Corrective Action Area Wells	E-9	8/2/1999	5.0	5.5	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/1/1999	1.1	9.5	1.0 U	1.0 U	1.6	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/4/2000	1.6	15	1.0 U	1.0 U	2.8	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/1/2000	1.6	14	1.0 U	1.0 U	2.6	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/2/2000	1.4	13	1.0 U	1.0 U	2.6	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/1/2000	1.0 U	9.6	1.0 U	1.0 U	1.5	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/1/2001	1.0 U	11	1.0 U	1.0 U	2.1	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/1/2001	1.0 U	11	1.0 U	1.0 U	2.1	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/6/2001	1.0 U	7.7	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/1/2001	1.0 U	6.2	1.0 U	1.0 U	1.0	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/24/2002	1.3	10	1.0 U	1.0 U	2.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/8/2002	1.0 U	10	1.0 U	1.0 U	1.6	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/1/2002	1.0 U	6.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/4/2002	1.0	6.9	1.0 U	1.0 U	1.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/4/2002	1.3	3.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/6/2003	1.1	1.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/7/2003	1.0 U	2.7	1.0 U	1.1	1.0 U	8.0	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/13/2003	1.0 U	2.2	1.0 U	2.3	1.0 U	10	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/5/2003	1.0 U	2.5	1.0 U	1.0 U	1.0 U	5.8 J	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/3/2004	1.0 U	2.0	1.0 U	1.0 U	1.0 U	3.8	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/6/2004	1.0 U	2.6	1.0 U	1.0 U	1.0 U	5.9	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/3/2004	1.0 U	1.2	1.0 U	1.0 U	1.0 U	3.0	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/1/2004	1.0 U	2.6	1.0 U	1.1	1.0 U	9.3	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/3/2005	1.0 U	1.6	1.0 U	1.0 U	1.0 U	7.9	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/3/2005	1.0 U	1.8	1.0 U	1.0 U	1.0 U	3.1	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/2/2005	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	15	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	12/16/2005	1.0 U	7.7	1.0 U	1.4	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/6/2006	2.1	2.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/9/2006	1.0 U	20	1.6	2.8	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/8/2006	10	47	2.1	9.1	2.2	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/9/2006	0.2 U	3.4	0.6	0.3	0.2 U	0.5	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/6/2007	0.2 U	2.8	0.4	0.3	0.2 U	0.3	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/10/2007	9.2	45	3.4	10	6.8	0.2	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/22/2007	1.4	5.4	0.9	1.0	0.6 U	2.7	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/8/2007	0.2 U	2.1	0.4	0.3	0.2 U	1.0	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/12/2008	1.0 U	4.4	1.0 U	1.0 U	1.0 U	1.9	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	5/12/2008	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/11/2008	1.0 U	3.7	1.0 U	1.0 U	1.0 U	2.1	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	11/5/2008	0.7	1.3	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	2/3/2009	1.0 U	4.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/6/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/6/2010	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/3/2011	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.5	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/8/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/2/2013	0.5 U	0.4	0.4	0.2 U	0.2 U	0.6	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/14/2014	0.5 U	0.5	0.5	0.2 U	0.2 U	0.7	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/13/2015	0.5 U	0.7	0.3	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/12/2016	0.5 U	0.6	0.3	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
East Yard Corrective Action Area Wells	E-9	8/11/2017	0.5 U	0.6	0.3	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/14/2018	0.5 U	0.6	0.3	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
East Yard Corrective Action Area Wells	E-9	8/7/2019	0.5 U	0.9	0.4	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	10/19/2010	1.0 U	28	3.1	10	2.7	1.0 U	1.2	12.9	1.77	106	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	12/6/2010	2.0 U	3.6	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	5.0 U	3020	849	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/2/2011	20 U	20 U	20 U	20 U	20 U	20 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/5/2011	1.0 U	1.0 U	1.0 U	6.3	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/10/2011	1.0 U	1.0 U	1.0 U	10	1.0 U	1.0 U	1.0 U	1.5	263	7700	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/3/2011	1.0 U	1.0 U	1.0 U	3.0	1.0 U	6.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/8/2012	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	7.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/4/2012	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	9.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/8/2012	0.5 U	0.2 U	0.2 U	0.2	0.2 U	5.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/5/2013	0.5 U	0.2 U	0.2 U	0.3	0.2 U	3.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/2/2013	0.5 U	0.2 U	0.2 U	0.2	0.2 U	3.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/6/2013	0.5 U	0.2 U	0.2 U	0.7	0.2 U	2.7	0.1 U	5.0 U	47.4	13000	5.0 U	5.0
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/7/2013	0.5 U	0.2 U	0.2 U	0.3	0.2 U	1.9	0.1 U	1.0 U	41.7	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/13/2014	0.5 U	0.2 U	0.2 U	0.2	0.2 U	1.1	0.1 U	1.0 U	36.6	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/6/2014	0.5 U	0.2 U	0.2 U	0.3	0.2 U	1.9	0.1 U	2.8	13.6	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/5/2015	0.5 U	0.2 U	0.2 U	1.2	0.2 U	3.3	0.10 U	16.2	8.6	13000	5.0 U	6.2
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/6/2015	0.5 U	2.0	0.2 U	5.4	0.2	9.1	0.10 U	16.8	6.7	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/10/2015	0.5 U	0.2 U	0.2 U	0.4	0.2 U	1.9	0.10 UJ	1.1	161	15000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/4/2015	0.5 U	0.2 U	0.2 U	1.1	0.2 U	2.9	0.10 U	6.9 J	3.7	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/3/2016	0.5 U	0.2 U	0.2 U	2.1	0.2 U	3.2	0.1 U	4.7	3.2	5600	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/4/2016	0.5 U	1	0.2 U	2.2	0.2 U	2.9	0.10 U	9.7	3.9	16000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/9/2016	0.5 U	2.7	0.2 U	6.5	0.2 U	5.2	0.10 U	16.5	1.0 U	9900	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/10/2016	0.5 U	6.7	0.2 U	14	1.1	3.0	0.10 U	17.7	2.2	20000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/7/2017	0.5 U	4.9	0.2 U	16	1.2	2.7	0.10 U	16.4	3.4	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/16/2017	0.5 U	1.8	0.2 U	16	0.7	6.4	0.10 U	13.7	7.0	25000	25 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/9/2017	0.5 U	1.8	0.2 U	17	0.7	8.3	0.10 U	14.2	5.7	9100 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/8/2018	0.5 U	0.2	0.2 U	2.3	0.2 U	1.4	0.56	195	6530	16000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/15/2018	0.5 U	1	0.2 U	5.5	0.2 U	1.0	0.10 U	14.6 J	2630	19000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/3/2018	0.5 UJ	0.4 J	0.2 UJ	3.0 J	0.2 UJ	0.8 J	0.23 J	9.9 J	1440 J	17000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/12/2019	0.5 U	0.2 U	0.2 U	1.4	0.2 U	1.1	0.50 U	2.0	50.0 U	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/9/2019	0.5 U	0.2 U	0.2 U	0.8	0.2 U	0.8	0.10 U	1.0 U	13.9	15000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/13/2019	0.5 U	0.2 U	0.2 U	0.5	0.2 U	0.5	0.10 U	1.3	11.6	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/8/2019	0.5 U	0.2 U	0.2 U	0.6	0.2 U	0.8	0.10 U	1.1	12.9	12000 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	2/11/2020	0.50 U	0.20 U	0.20 U	2.3	0.20 U	1.1	0.10 U	1.0 U	13	17	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	5/11/2020	0.50 U	0.20 U	0.20 U	4.6	0.20 U	2.3	0.50 U	1.2	9.1	18	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	8/13/2020	0.50 U	0.20 U	0.20 U	1.1	0.20 U	0.83	0.50 U	48	2200	12.7	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)	11/5/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	1.0 U	154	12.7	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-72(i)-55	2/4/2010	1.0 U	20	1.0 U	3.7	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-55	5/1/2010	1.0 U	24	1.0 U	17	3.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-55	8/15/2010	1.0 U	20	2.4	16	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-61	2/4/2010	1.0 U	49	1.0 U	5.6	4.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-61	5/1/2010	1.0 U	30	1.0 U	15	3.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-61	8/15/2010	1.0 U	30	5.6	17	2.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-67	2/4/2010	1.0 U	48	1.2	5.4	3.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-67	5/1/2010	1.0 U	28	1.0 U	13	3.5	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-72(i)-67	8/15/2010	1.0 U	33	8.2	14	2.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-67	8/9/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-73	2/4/2010	1.0 U	37	1.0 U	4.8	3.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-73	5/1/2010	1.0 U	18	1.0 U	24	3.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-73	8/15/2010	1.0 U	6.6	1.0	42	3.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-78	2/4/2010	1.0 U	4.5	1.0 U	1.1	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-78	5/1/2010	1.0 U	1.0 U	1.0 U	24	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-72(i)-78	8/15/2010	1.0 U	1.0 U	1.0 U	23	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	10/19/2010	1.0 U	560 J	12	90	2.4	1.0 U	0.7	11	1.6	59.9	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	12/6/2010	2.0 U	520	19	59	2.6	2.0 U	1.0	10.3	2.24	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/2/2011	1.0 U	1000	37	78 E	3.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/5/2011	3.0 U	1200	43	42	3.0 U	3.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/9/2011	1.0 U	510	18	48	2.7	1.0 U	1.0	11.8	1.88	1010	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/3/2011	1.0 U	160	4.7	130	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	12/1/2011	1.0 U	180	5.0	120	2.3	1.0 U	0.6	9.5	1.93	759	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	1/19/2012	5.0 U	240	7.8	100	5.0 U	12	0.3	8.8	9.26	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/16/2012	1.0 U	190	4.0	59	1.7	24	0.3	11.5	1.5 U	1350	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	3/15/2012	1.0 U	290	6.4	53	2.0	13	0.8	11.2	2.14	535	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	4/17/2012	5.0 U	1400	26	50	5.0 U	14	1.0	10.7	1.5 U	438	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	6/12/2012	1.0 U	2700 J	72 J	220 J	2.3 J	45 J	0.9	9.7	1.61	787	1.2 U	2.8
Former Vapor Degreaser Source Area Wells	BOP-73(i)	9/18/2012	5.0 U	1300	41	340	2.4	38	0.28	8.4	5.2	1600	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/14/2012	5.0 U	2900	83	110	2.9	2.6	0.89	10.2	1.0 U	3200	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/6/2013	1.0 U	390	13	77	2.3 J	4.7	0.11	8.9	1.9	1400	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/7/2013	1.0 U	11000	16	6200	11	380	0.1 U	7.8	2.0	2800	5.0 U	29
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/6/2013	5.0 U	1800	6.5	670	3.0	65	0.1 U	10.2	2.4	4800	5.0 U	27
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/7/2013	10 U	17000	4.0 U	7800	14	250	0.1 U	8.6	2.0	1900	5.0 U	30
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/13/2014	5.0 U	2.0 U	2.0 U	2800	4.9	13000	0.1 U	1.4	32.9	4800	5.0 U	730
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/6/2014	0.5 U	1.7	0.2 U	47	0.2 U	73	0.1 U	4.1	11.9	5600	5.0 U	210
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/5/2015	5.0 U	2.0 U	2.0 U	340	2.0 U	720	0.10 U	1.1	4.3	8400	7.1	340
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/6/2015	5.0 U	2.0 U	2.0 U	150	2.0 U	730	0.10 U	1.4	7.2 J	13000	5.0 U	160
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/10/2015	0.5 U	1.3	0.2 U	24	0.2 U	20	0.10 UJ	4.8	28.4	12000	5.0 U	140
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/4/2015	0.5 U	5.8	0.2 U	92	0.5	19	0.10 U	10.9	5.1	7500	9.9	8.7
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/3/2016	0.5 U	0.4	0.2 U	2.5	0.2 U	8.8	0.1 U	2.4	9.6	15000	72	77
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/4/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.6	3.7	20000	98	22
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/9/2016	0.5 U	0.7	0.2 U	2.7	0.2 U	2.6	0.10 U	8.0	2.3	6800	54	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/10/2016	0.5 U	1.5	0.2 U	5.1	0.2 U	3.2	0.10 U	7.3	2.5	2900	32	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/7/2017	0.5 U	1.4	0.2 U	5.7	0.2	3.4	0.10 U	4.4	5.0	11000	60	85
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/16/2017	0.5 U	0.2 U	0.2 U	1.3	0.2 U	1.9	0.10 U	9.3	3.9	6100	43	22
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/9/2017	0.5 U	0.2 U	0.2 U	24	0.2 U	1200	0.10 U	2.2	15.4	19000	270	2800
Former Vapor Degreaser Source Area Wells	BOP-73(i)	9/5/2017	0.5 U	0.8	0.2 U	31	0.2 U	1300	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/8/2018	0.5 U	0.9	0.2 U	280	0.4 J	1500	0.50 U	1.1	370	22000	83	3600
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/15/2018	0.5 U	1.5	0.2 U	210	0.5	62	0.10 U	1.0 U	17.8	7000	13	8.7
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/3/2018	0.5 UJ	38 J	0.2 UJ	150 J	1.0 J	22 J	0.10 UJ	11.2 J	3.4 J	1400 J	5.0 UJ	5.1 J
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/7/2018	0.5 UJ	47	0.2 UJ	140	1.0 J	24	0.10 U	11.4	2.9	1200	5.0 U	9.4
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/12/2019	0.5 U	0.2 U	0.2 U	35	0.2 U	86	0.50 U	1.0 U	8.8	3900	49	1200
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/8/2019	10 UJ	4.0 UJ	4.0 UJ	1400 J	4.0 UJ	1300 J	0.50 U	1.0 U	3.9	15000 J	51	2700 J
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/13/2019	10 U	4.0 U	4.0 U	1800	4.0 U	1100	0.10 U	1.0 U	2.5	17000	85	2700
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/8/2019	10 U	4.0 U	4.0 U	2100	4.0 U	1700	0.10 U	1.0 U	3.4	12000 J	63	2000 J

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
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Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-73(i)	2/11/2020	10 U	4.2	4.0 U	780	4.0 U	1700	0.10 U	1.0 U	2.9	16	0.59	2.5
Former Vapor Degreaser Source Area Wells	BOP-73(i)	5/11/2020	10 U	4.0 U	4.0 U	1700	4.0 U	1400	0.50 U	1.0 U	2.9	15	0.12	2.2
Former Vapor Degreaser Source Area Wells	BOP-73(i)	8/14/2020	2.5 U	1.2	1.0 U	302	1 U	463	0.50 U	5.0 U	694	9.8	0.80	1.9
Former Vapor Degreaser Source Area Wells	BOP-73(i)	11/5/2020	0.50 U	0.20 U	0.20 U	17.9	0.20 U	38	0.12	1.0 U	274	17	0.15	0.74
Former Vapor Degreaser Source Area Wells	BOP-73(i)-60	2/4/2010	1.0 U	110	4.0	5.3	2.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-60	5/1/2010	3.0 U	86	3.0 U	8.0	3.0 U	3.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-60	8/15/2010	1.0 U	14	1.0 U	12	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-66	2/4/2010	1.0 U	92	4.4	3.7	2.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-66	5/1/2010	3.0 U	68	3.0 U	8.8	3.0 U	3.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-66	8/15/2010	1.0 U	46	2.1	22	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-71	2/4/2010	1.0 U	320	11	7.7	3.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-71	5/1/2010	1.0 U	34	1.5	4.4	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-71	8/15/2010	1.0 U	210	7.3	60 E	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-78	2/4/2010	1.0 U	900	17	33	3.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-78	5/1/2010	1.0 U	360	4.8	91	3.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-78	8/15/2010	1.0 U	520	14	180	2.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-78	8/9/2012	1.0 U	180	2.2	190	1.5	13	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-82	2/4/2010	1.0 U	170	3.4	350	3.1	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-82	5/1/2010	1.0 U	14	1.0 U	9.0	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-73(i)-82	8/15/2010	1.0 U	3.2	1.0 U	520	1.7	2.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)	10/19/2010	1.0 U	38	1.0	8.0	3.9	1.0 U	0.9	9.1	1.5 U	75.6	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	12/6/2010	1.0 U	24	1.0 U	6.5	1.6	1.0 U	0.2	9.9	2.79	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/2/2011	1.0 U	44	2.6	3.8	2.7	1.0 U	0.1 U	6.6	2.69	4270	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/5/2011	1.0 U	26	2.0	8.0	1.6	1.0 U	0.1 U	6.7	3.03	1830	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/9/2011	1.0 U	8.9	1.0 U	7.2	1.0 U	1.0 U	0.1 U	6.6	2.69	4270	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/3/2011	1.0 U	3.1	1.0 U	16	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)	12/1/2011	1.0 U	8.6	1.0 U	17	1.0 U	1.0 U	0.1 U	6.7	3.03	1830	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	1/19/2012	1.0 U	11	1.0 U	18	1.0 U	1.0 U	1.0 U	1.0 U	1450	2550	1.6	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/16/2012	1.0 U	2.4	1.0 U	44	1.0 U	1.6	0.5 U	0.5 U	668	6680	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	3/15/2012	1.0 U	1.4	1.0 U	210	1.0 U	3.2	0.5 U	0.5 U	330	8410	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	4/17/2012	5.0 U	5.0 U	5.0 U	79	5.0 U	50	0.1 U	0.8	72	8800	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	6/12/2012	1.0 U	1.0 U	1.0 U	1.2	1.0 U	14	0.1 U	0.1 U	67.6	5720	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	9/19/2012	0.5 U	4.5	0.2 U	60	1.1	2.9	0.1 U	1.0 U	1280	13000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/14/2012	0.5 U	0.6	0.2 U	6.9	0.9	18	0.1 U	1.0 U	145	22000	7.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/6/2013	0.5 U	0.5	0.2 U	1.7	0.4 J	2.9	0.1 U	1.0 U	83.7	27000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/7/2013	0.5 U	4.0	0.2 U	2.7	0.3	1.8	0.1 U	1.0 U	128	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/6/2013	0.5 U	0.6	0.2 U	14	0.5	8.1	0.1 U	1.0 U	669	26000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/7/2013	0.5 U	0.2 U	0.2 U	3.6	0.2 U	1.6	0.1 U	1.0 U	330	17000	5.0 U	7.3
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/6/2014	0.5 U	0.3	0.2 U	11	0.3	2.1	0.63	501	2860	21000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/6/2015	0.5 U	0.4	0.2 U	15	0.3	1.9	0.54	626	2230	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/6/2015	0.5 U	0.5	0.2 U	15	0.3	1.6	0.27	247	1240	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/4/2015	0.5 U	0.2 U	0.2 U	5.3	0.2 U	2.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/3/2016	0.5 U	0.2 U	0.2 U	11	0.3	3.1	1.0 U	1460	4200	21000	5 U	5 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/4/2016	0.5 U	0.2	0.2 U	11	0.2 U	2.6	1.0 U	601	2480	19000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/9/2016	0.5 U	0.2	0.2 U	11	0.2 U	1.6	0.45	453	1840	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/10/2016	0.5 U	0.2	0.2 U	9.9	0.2 U	1.3	0.16	225	1430	22000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/7/2017	0.5 U	0.2	0.2 U	8.7	0.2 U	1.3	0.24	110	1690	23000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/16/2017	0.5 U	0.2 U	0.2 U	7.5	0.2 U	1.1	0.26	147	1580	28000	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/9/2017	0.5 U	0.2 U	0.2 U	7.1	0.2 U	1 J	0.19	42.2	1310	23000 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/27/2018	0.5 U	0.2 U	0.2 U	2.1	0.2 U	1 J	0.83	158	7320	23000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/15/2018	1.0 U	0.4 U	0.4 U	3.2	0.4 U	0.7	0.10 U	67.1	2000	20000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/8/2018	0.5 U	0.2 U	0.2 U	3.6	0.2 U	0.8	0.10 U	77.9	2550	20000	12	19
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/12/2019	0.5 U	0.2 U	0.2 U	3.2	0.2 U	2.7	0.50 U	30.7	2070	12000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/9/2019	0.5 U	0.2	0.2 U	3.6	0.2 U	3.5	0.10 U	20.3	1410	22000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	8/13/2019	0.5 U	0.2 U	0.2 U	3.1	0.2 U	1.8	0.10 U	48.9	1150	27000	5.0 U	6.7
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/8/2019	0.5 U	0.2 U	0.2 U	3.1	0.2 U	1.6	0.10 U	97.9	1510	18000	6.7	11
Former Vapor Degreaser Source Area Wells	BOP-74(i)	2/12/2020	0.50 U	0.20 U	0.20 U	2.8	0.20 U	1.6	0.10 U	10	752	22	0.85	0.51
Former Vapor Degreaser Source Area Wells	BOP-74(i)	5/11/2020	0.50 U	0.20 U	0.20 U	2.7	0.20 U	1.4	0.38 J	23	646	19	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-74(i)	11/5/2020	0.50 U	0.20 U	0.20 U	5.9	0.20 U	1.1	4.6	11	3910	13.3	0.50 U	0.62
Former Vapor Degreaser Source Area Wells	BOP-74(i)-60	2/4/2010	1.0 U	36	1.5	3.4	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-60	5/1/2010	1.0 U	29	1.0 U	3.9	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-60	8/15/2010	1.0	50	1.7	6.6	4.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-66	2/4/2010	1.0 U	38	2.4	3.4	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-66	5/1/2010	1.0 U	35	1.4	4.4	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-66	8/15/2010	1.1	53	1.6	7.0	5.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-71	2/4/2010	1.0 U	38	2.2	3.7	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-71	5/1/2010	1.0 U	74	1.9	9.1	2.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-71	8/15/2010	1.1	52	1.6	6.6	5.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-71	8/9/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-78	2/4/2010	1.0 U	37	1.9	3.4	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-78	5/1/2010	1.0 U	33	1.1	4.4	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-78	8/15/2010	1.0 U	55	1.6	7.0	5.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-82	2/4/2010	1.0 U	15	1.0 U	9.9	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-82	5/1/2010	1.0 U	27	1.0 U	400	1.1	5.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-74(i)-82	8/15/2010	1.0 U	24	1.0 U	28	4.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/8/2012	0.5 U	35	1.0	6.9	2.9	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/2/2013	0.5 U	42	0.8	7.5	3.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	6/17/2013	0.5 U	35	0.7	9.8	3.2	0.2 U	1.7	13.6	2.3	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/6/2013	0.5 U	1.3	0.2	37	2.9	0.2	0.1 U	1.0 U	51.3	390	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/7/2013	0.5 U	2.2	0.2 U	2.4	0.4	25	0.1 U	4.5	5.5	12000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/13/2014	0.5 U	6.2	0.2 U	9.5	0.9	10	0.1 U	27.7	258	9900	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/5/2014	0.5 U	0.2 U	0.2 U	4.3	0.4	11	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/6/2015	0.5 U	9.1	0.2 U	8.6	1.1	4.2	0.10 U	3.4	3.9	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/4/2015	0.5 U	13	0.2 U	6.4	0.4	4.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/10/2015	0.5 U	1.5	0.2 U	4.2	0.3	3.3	0.10 UJ	255	1170	15000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/6/2015	0.5 U	0.4	0.2 U	4.7	0.3	4.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/3/2016	0.5 U	1.1	0.2 U	3.5	0.3	4.3	0.1 U	5.5	2.5	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/5/2016	0.5 U	2.0	0.2 U	3.9	0.4	5.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/9/2016	0.5 U	1.0	0.2 U	3.0	0.3	4.7	0.10 U	6.0	1.9	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/4/2016	0.5 U	6.2	0.2 U	3.0	0.5	3.4 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/7/2017	0.5 U	4.9	0.2 U	2.9	0.4	4.1	0.10 U	11.6	2.7	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/16/2017	0.5 U	5.3	0.2 U	3.2	0.5	3.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/9/2017	0.5 U	8.4	0.2 U	4.9	0.8	3.4 J	0.10 U	16.1	2.4	6500	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/27/2018	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.2 J	1.0 U	31.7	3450	1200 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/15/2018	0.5 U	0.2 U	0.2 U	0.6	0.2 U	0.4	0.35	23.6	3630	16000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/3/2018	0.5 UJ	0.2 UJ	0.2 UJ	0.9 J	0.2 UJ	0.8 J	0.54 J	28.8 J	2560 J	19000 J	5.6 J	8.6 J

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/7/2018	0.5 U	0.2	0.2 U	1.1	0.2 U	0.6	0.71	28.7	2100	20000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/12/2019	0.5 UJ	0.2 J	0.2 UJ	1.7 J	0.2 UJ	0.5 J	0.50 U	1.0 U	373	13000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/8/2019	0.5 UJ	0.2 UJ	0.2 UJ	1.9 J	0.2 UJ	0.2 J	0.50 U	1.0 U	56.8	25000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/13/2019	0.5 U	0.2 U	0.2 U	1.4	0.2 U	0.2 J	0.10 U	1.3	39.2	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/8/2019	0.5 U	0.2 U	0.2 U	0.7	0.2 U	0.3	0.10 U	1.6	64.1	27000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	2/11/2020	0.50 U	0.20 U	0.20 U	0.60	0.20 U	0.60	0.10 U	1.1	64	21	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	5/11/2020	0.50 U	0.20 U	0.20 U	0.30	0.20 U	0.30	0.50 U	1.3	58	19	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	8/13/2020	0.50 U	0.40	0.20 U	0.97	0.20 U	0.21	0.50 U	50	3620	14.2	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)	11/5/2020	0.50 U	0.34	0.20 U	1.8	0.20 U	0.22	0.50 U	1.0 U	1740	15.9	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	2/2/2011	1.0 U	48	1.0 U	10	3.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	5/5/2011	1.0 U	11	1.0 U	4.7	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	8/10/2011	1.0 U	14	1.0 U	4.9	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	11/3/2011	1.0 U	21	1.0 U	6.0	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	2/8/2012	1.0 U	24	1.0 U	7.1	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-50	5/4/2012	1.0 U	17	1.0 U	6.9	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-56.5	2/2/2011	1.0 U	53	2.0	9.5	3.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-56.5	5/5/2011	1.0 U	40	1.2	8.0	2.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-56.5	11/3/2011	1.0 U	39	2.2	7.4	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-56.5	2/8/2012	1.0 U	40	1.4	8.2	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-56.5	5/4/2012	1.0 U	43	1.3	9.0	2.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-57	8/10/2011	1.0 U	41	2.1	7.8	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-62.5	2/2/2011	1.0 U	78	2.4	10	6.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-62.5	5/5/2011	1.0 U	48	1.0 U	13	4.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-62.5	11/3/2011	1.0 U	38	1.8	6.7	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-62.5	2/8/2012	1.0 U	41	1.4	7.9	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-62.5	5/4/2012	1.0 U	43	1.0	9.1	2.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-63	8/10/2011	1.0 U	39	1.9	7.6	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.5	11/3/2011	1.0 U	58	1.2	10	4.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	2/2/2011	1.0 U	87	2.5	11	6.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	5/5/2011	1.0 U	52	1.1	11	4.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	2/8/2012	1.0 U	55	1.3	9.7	4.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	5/4/2012	1.0 U	52	1.0 U	10	4.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	8/9/2012	1.0 U	39	1.6	7.2	1.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-68.7	2/5/2013	0.5 U	54	1.0	9.5	5.4	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-69	8/10/2011	1.0 U	59	1.6	11	4.7	1.0 U	1.1	13.5	4.77	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-75(i)-73.5	2/2/2011	1.0 U	53	1.0 U	9.0	4.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-73.5	5/5/2011	1.0 U	46	1.0 U	12	4.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-73.5	11/3/2011	1.0 U	51	1.0 U	14	4.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-73.5	2/8/2012	1.0 U	48	1.0 U	12	4.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-73.5	5/4/2012	1.0 U	43	1.0 U	13	4.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-75(i)-74	8/10/2011	1.0 U	54	1.2	16	4.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/8/2012	0.5 U	9.8	0.8	1.7	1.4	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/2/2013	0.5 U	22	1.4	1.7	1.3	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)	6/17/2013	0.5 U	26	1.1	1.9	1.5	0.2 U	3.7	11	1.6	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/6/2013	0.5 U	1.0	0.2 U	100	1.2	8.3	0.1 U	1.0 U	111	3400	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/7/2013	0.5 U	140	2.4	37	0.6	42	0.1 U	3.5	6.9	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/13/2014	0.5 U	13	0.3	24	0.7	4.1	0.1 U	3.2	170	7600	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/6/2014	0.5 U	1.4	0.2 U	9.5	0.6	2.1	0.2	3.2	51.2	21000	5.0 U	15

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/5/2015	0.5 U	1.0	0.2 U	7.0	0.5	2.2	0.21	5.1	12.7	19000	5.0 U	30
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/7/2015	0.5 U	0.6	0.2 U	6.6	0.3	3.9	0.10 U	5.5	7.5	20000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/10/2015	0.5 U	2.2	0.2 U	14	0.6	2.0	0.10 UJ	108	659	12000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/4/2015	0.5 U	0.9	0.2 U	14	0.5	2.0	0.10 U	4.0	115	15000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/3/2016	0.5 U	1	0.2 U	9.8	0.7	1.6	0.1 U	6.3	5.0	16000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/4/2016	0.5 U	0.5	0.2 U	10	0.6	3.8	0.10 U	4.5	26.4	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/9/2016	0.5 U	1.1	0.2 U	11	0.5	4.2	0.10 U	6.7	7.8	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/10/2016	0.5 U	3.5	0.2 U	7.4	0.4	2.5	0.10 UJ	21.9	3.4	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/7/2017	0.5 U	4.8	0.2 U	4.6	0.6	1.8	0.10 U	21.2	4.1	12000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/16/2017	0.5 U	2.1	0.2 U	5.3	0.2	2.5	0.10 U	17.8	4.6	17000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/9/2017	0.5 U	1.7	0.2 U	5.1	0.2	2.5 J	0.10 U	16.6	4.6	13000 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/8/2018	0.5 U	0.2 U	0.2 U	0.7	0.2 U	0.8	0.50 U	140	6860	13000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/15/2018	0.5 U	0.9	0.2 U	2.1	0.2 U	1.1	0.19	30.8	3670	20000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/3/2018	0.5 UJ	1.1 J	0.2 UJ	2.7 J	0.2 UJ	1.8 J	0.29 J	32.4 J	2970 J	14000 J	15 J	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/7/2018	0.5 U	1.2	0.2 U	2.9	0.2 U	2.1	0.25	33.1	2660	17000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/12/2019	0.5 U	1.5	0.2 U	3.6	0.2 U	2.8	0.50 U	5.0 U	2020	14000	14	7.1
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/9/2019	0.5 U	1.5	0.2 U	3.7	0.2 U	4.2	0.10 U	1.0 U	1350	15000 J	5.0 UJ	7.7 J
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/13/2019	0.5 U	1.1	0.2 U	4.6	0.2 U	2.1 J	0.10 U	1.0 U	653	15000	5.0 U	7.8
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/7/2019	0.5 U	0.6	0.2 U	6.0	0.2 U	1.4	0.25 J	1.0 U	310	19000 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-76(i)	2/12/2020	0.50 U	0.20	0.20 U	3.4	0.20 U	1.5	0.21	1.0 U	370	19	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)	5/11/2020	0.50 U	0.20 U	0.20 U	2.9	0.20 U	1.5	0.50 U	1.0 U	141	15	0.22	0.56
Former Vapor Degreaser Source Area Wells	BOP-76(i)	8/14/2020	0.50 U	0.33	0.20 U	0.88	0.20 U	8.5	12	67	12700	5.4	0.28	0.74
Former Vapor Degreaser Source Area Wells	BOP-76(i)	11/5/2020	0.50 U	0.93	0.20 U	1.4	0.20 U	2.7	0.10 U	46	6630	12.4	0.63	0.15
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	2/2/2011	1.0 U	6.9	1.5	1.0 U	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	5/5/2011	1.0 U	5.2	1.0 U	1.0	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	8/9/2011	1.0 U	12	1.5	4.5	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	11/3/2011	1.0 U	40	1.4	2.4	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	2/8/2012	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-50	5/4/2012	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	2/2/2011	1.0 U	7.7	2.5	1.0 U	1.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	5/5/2011	1.0 U	7.0	1.2	1.1	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	8/9/2011	1.0 U	12	1.6	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	11/3/2011	1.0 U	28	2.2	1.6	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	2/8/2012	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-56.5	5/4/2012	1.0 U	6.6	1.0 U	1.8	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	2/2/2011	1.0 U	8.3	1.6	1.0 U	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	5/5/2011	1.0 U	7.0	1.0 U	1.1	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	8/9/2011	1.0 U	12	1.6	4.6	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	11/3/2011	1.0 U	26	1.2	1.6	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	2/8/2012	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-62.5	5/4/2012	1.0 U	8.7	1.0 U	1.6	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	2/2/2011	1.0 U	8.5	1.7	1.0 U	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	5/5/2011	1.0 U	6.8	1.0 U	1.2	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	8/9/2011	1.0 U	13	1.2	4.6	1.0 U	1.0 U	3.8	10.2	2.37	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	11/3/2011	1.0 U	27	1.4	1.6	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	2/8/2012	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	5/4/2012	1.0 U	9.2	1.0 U	1.5	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	8/9/2012	1.0 U	33	1.1	2.2	1.0	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-76(i)-68.7	2/5/2013	0.5 U	11	0.8	1.5	1.8	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	2/2/2011	1.0 U	8.1	1.4	1.0 U	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	5/5/2011	1.0 U	6.6	1.0 U	1.2	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	8/9/2011	1.0 U	9.3	1.0 U	42	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	11/3/2011	1.0 U	25	1.1	1.6	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	2/8/2012	1.0 U	2.6	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-76(i)-73.5	5/4/2012	1.0 U	9.0	1.0 U	1.5	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)	12/1/2011	1.0 U	32	1.1	7.1	1.0 U	1.0 U	0.2	8.4	2.41	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	1/19/2012	20 U	21	20 U	20 U	20 U	20 U	1.0 U	4.0	3800	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/16/2012	1.0 U	8.4	1.0 U	48	1.0 U	1.8	0.5 U	0.5 U	884	6600	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	3/15/2012	1.0 U	2.2	1.0 U	120	1.0 U	4.6	0.5 U	0.5 U	148	10000	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	4/17/2012	3.0 U	3.0 U	3.0 U	21	3.0 U	62	0.1 U	0.6	208	12200	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	6/12/2012	1.0 U	1.4	1.0 U	1.2	1.0 U	60	0.1 U	0.1 U	314	8380	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	9/18/2012	10 U	4.0 U	4.0 U	28	4.0 U	4.1	0.5 U	6.3	4670	9200	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/14/2012	0.5 U	17	0.2 U	150	0.6	15	1.0 U	10 U	2270	22000	6.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/6/2013	1.0 U	11	0.4 U	31	0.4 U	3.2	0.1 U	4.1	1130	15000	5.0 U	5.5
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/7/2013	0.5 U	18	0.2 U	17	0.2 U	11	0.1 U	1.0 U	112	23000	5.0 U	13
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/6/2013	0.5 U	0.7	0.2 U	14	0.2 U	13	0.1 U	1.0 U	888	17000	5.0 U	8.6
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/7/2013	0.5 U	0.2 U	0.2 U	9.5	0.2 U	19	0.1 U	1.0 U	111	20000	5.0 U	22
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/13/2014	0.5 U	0.6	0.2 U	81	0.2 U	17	0.5 U	2750	10100	15000 J	5.0 UJ	24 J
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/6/2014	0.5 U	2.7	0.2 U	200	0.3	24	0.5 U	1850	4920	22000 J	5.0 UJ	63 J
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/6/2015	0.5 U	4.2	0.2 U	120 J	0.3	24	0.5 U	855	4330	26000	5.0 U	58
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/6/2015	0.5 U	6.2	0.2 U	220	0.3	20	1.0	519	3030	19000	5.6	47
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/10/2015	0.5 U	6.2	0.2 U	86	0.2 U	11	1.0 U	3830	9110	15000	6.8	75
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/4/2015	0.5 U	8.2	0.2 U	72	0.2 U	13	50 U	2860	6350	15000	5.1	22
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/3/2016	0.5 U	6.2	0.2 U	61	0.2 U	8.7	1 U	1530	4650	20000	5.0	16
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/4/2016	0.5 U	4.9	0.2 U	44	0.2 U	6.7	1.0 U	892	2990 J	17000	18	21
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/9/2016	0.5 U	2.7	0.4	33	0.2 U	2.1	0.51	165	1450	16000	6.0	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/10/2016	0.5 U	2.6	0.2 U	15	0.2 U	1.5	0.12 J	5.3	265	29000	5.0 U	8.5
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/7/2017	0.5 U	0.3	0.2 U	20	0.2 U	2.2	0.10 U	1.0 U	85.1	27000	8.0	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/16/2017	0.5 U	0.2 U	0.2 U	13	0.2 U	2.6	0.10 U	1.0 U	38.3	17000	19	5.6
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/9/2017	0.5 U	0.2 U	0.2 U	0.8	0.2 U	4.8 J	0.10 U	1.0 U	39.6	32000 J	8.1	6.9
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/8/2018	0.5 U	0.2 U	0.2 U	1.4	0.2 U	0.7	0.50 U	192	9600	18000	14	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/15/2018	0.5 U	0.4	0.2 U	6.3	0.2 U	1.1	0.12	39.8	6260	19000 J	12 J	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/3/2018	0.5 UJ	0.9 J	0.2 UJ	8.9 J	0.2 UJ	1.7 J	0.68 J	93.7 J	5600 J	15000 J	12 J	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/8/2018	0.5 U	1.1	0.2 U	6.6	0.2 U	0.6	0.47	88.7	4340	21000	12	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/12/2019	0.5 U	1.1	0.2 U	6.1	0.2 U	0.9	0.50 U	11.0 J	3360	5600	11	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/8/2019	0.5 UJ	1.0 J	0.2 UJ	5.9 J	0.2 UJ	0.6 J	0.50 U	41.9	2140	21000 J	5.5	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/13/2019	0.5 UJ	1.1 J	0.2 UJ	5.4 J	0.2 UJ	0.5 J	0.17	1.0 U	943	20000	7.2	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/8/2019	0.5 U	0.6	0.2 U	5.6	0.2 U	1.1	0.10 U	1.0 U	1030	21000	5.0 U	5.3
Former Vapor Degreaser Source Area Wells	BOP-77(i)	2/11/2020	0.50 U	0.50	0.20 U	6.5	0.20 U	3.2	0.22	2.1	703	22	0.50 U	0.85
Former Vapor Degreaser Source Area Wells	BOP-77(i)	5/11/2020	0.50 U	0.40	0.20 U	17.0	0.20 U	9.2	0.50 U	1.0 U	282	17	0.50 U	0.17
Former Vapor Degreaser Source Area Wells	BOP-77(i)	8/14/2020	0.50 U	0.20 U	0.20 U	3.2	0.20 U	1.4	90	70	13200	9.5	0.79	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)	11/5/2020	0.50 U	0.33	0.20 U	3.7	0.20 U	1.2	0.10 U	29	6990	12.8	0.74	0.72
Former Vapor Degreaser Source Area Wells	BOP-77(i)-60	2/2/2011	1.0 U	53	2.6	2.5	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-60	5/5/2011	1.0 U	34	1.5	3.7	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-60	8/9/2011	1.0 U	51	2.8	1.8	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-60	11/3/2011	1.0 U	10	1.0 U	5.5	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-77(i)-66.5	2/2/2011	1.0 U	51	3.2	2.4	1.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-66.5	5/5/2011	1.0 U	38	2.2	3.6	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-66.5	8/9/2011	1.0 U	20	2.1	1.5	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-66.5	11/3/2011	1.0 U	9.3	1.1	6.2	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-72.5	2/2/2011	1.0 U	50	2.9	2.4	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-72.5	5/5/2011	1.0 U	38	1.6	3.6	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-72.5	8/9/2011	1.0 U	17	1.9	1.6	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-72.5	11/3/2011	1.0 U	9.3	1.0 U	5.9	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-78.7	2/2/2011	1.0 U	88	1.7	2.7	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-78.7	5/5/2011	1.0 U	41	1.0 U	3.8	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-78.7	8/9/2011	1.0 U	17	1.8	1.6	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-78.7	11/3/2011	1.0 U	11	1.0 U	6.7	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-78.7	8/9/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	59	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-83.5	2/2/2011	1.0 U	690	2.3	51	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-83.5	5/5/2011	1.0 U	19	1.0 U	58	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-77(i)-83.5	8/9/2011	1.0 U	17	1.6	1.6	1.2	1.0 U	0.1 U	6.5	2.35	5480	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-77(i)-83.5	11/3/2011	1.0 U	6.4	1.0 U	42	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/2/2013	0.5 U	0.3	0.2 U	0.6	0.2 U	19	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	8/7/2013	0.5 U	5.5	0.2	120	0.6	98	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/8/2013	0.5 U	0.2 U	0.2 U	1.1	0.2 U	17	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/5/2014	0.5 U	1.7	0.2 U	23	0.2 U	2.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/5/2015	0.5 U	3.2	0.2 U	12	0.2 U	1.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/4/2015	0.5 U	1.0	0.2 U	7.8	0.2 U	2.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/6/2015	0.5 U	0.2	0.2 U	3.1	0.2 U	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/4/2016	0.5 U	0.3	0.2 U	4.2	0.2 U	2.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/5/2016	0.5 U	0.4	0.2 U	10	0.2 U	6.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	8/8/2016	0.5 U	0.9	0.2 U	24	0.2 U	13	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/4/2016	0.5 U	0.7	0.2 U	12	0.2 U	7.5 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/8/2017	0.5 U	0.6	0.2 U	10	0.2 U	11	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/16/2017	0.5 U	0.7	0.2 U	8.8	0.2 U	11	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	8/9/2017	0.5 U	1.3	0.2 U	16	0.2 U	18 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/12/2018	0.5 U	0.3	0.2 U	4.0	0.2 U	21	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/15/2018	0.5 U	0.5	0.2 U	6.6	0.2 U	5.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	8/2/2018	0.5 U	0.5	0.2 U	6.3	0.2 U	6.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/7/2018	0.5 U	0.5	0.2 U	5.4	0.2 U	5.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/8/2019	0.5 U	0.2 U	0.2	1.2	0.2 U	6.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/7/2019	0.5 U	0.5	0.2 U	1.8	0.2 U	6.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	8/16/2019	0.5 U	0.3	0.2 U	2.9	0.2 U	8.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/8/2019	0.5 U	0.5	0.2 U	6.1	0.2 U	17	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	2/7/2020	0.50 U	0.40	0.20 U	4.0	0.20 U	11	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	5/7/2020	0.50 U	0.20 U	0.20 U	3.5	0.20 U	12	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)	11/3/2020	0.50 U	0.20 U	0.20 U	5.8	0.20 U	12	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-51.5	11/21/2011	1.0 U	39	1.6	5.6	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-51.5	8/9/2012	1.0 U	160	3.4	3.2	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-51.5	11/8/2012	0.5 U	0.7	0.2 U	6.1	0.2 U	49	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-57.5	11/21/2011	1.0 U	35	1.9	5.6	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-57.5	8/9/2012	1.0 U	31	1.2	8.1	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-57.5	11/8/2012	0.5 U	0.4	0.2 U	7.1	0.2 U	50	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-78(i)-63.5	11/21/2011	1.0 U	36	1.6	5.8	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-63.5	8/9/2012	1.0 U	31	1.3	9.4	1.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-63.5	11/8/2012	0.5 U	0.3	0.2 U	7.0	0.2 U	52	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-69.5	11/21/2011	1.0 U	37	1.7	6.1	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-69.5	8/9/2012	1.0 U	30	1.1	9.3	1.7	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-69.5	11/8/2012	0.5 U	0.3	0.2 U	7.2	0.2 U	51	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-69.5	2/6/2013	0.5 U	0.3	0.2 U	11	0.2 U	78	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-75.5	11/21/2011	1.0 U	39	1.7	6.7	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-75.5	8/9/2012	1.0 U	30	1.2	9.5	1.7	1.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-78(i)-75.5	11/8/2012	0.5 U	0.3	0.2 U	7.0	0.2 U	52	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/2/2013	0.5 U	0.4	0.2 U	24	0.2 U	41	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	8/7/2013	0.5 U	1.0	0.2 U	37	0.3	20	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/8/2013	0.5 U	1.9	0.2 U	13	0.2 U	16	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/7/2014	0.5 U	1.5	0.2 U	21	0.2 U	5.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/5/2015	0.5 U	2.1	0.2 U	10	0.2 U	3.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/4/2015	0.5 U	0.4	0.2 U	2.2	0.2 U	2.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/6/2015	0.5 U	0.5	0.2 U	8.6	0.2 U	4.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/4/2016	0.5 U	0.4	0.2 U	4.5	0.2 U	3.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/5/2016	0.5 U	0.5	0.2 U	3.6	0.2 U	3.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	8/8/2016	0.5 U	0.7	0.2 U	4.2	0.2 U	3.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/4/2016	0.5 U	0.6	0.2 U	4.7	0.2 U	3.7 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/8/2017	0.5 U	0.5	0.2 U	3.9	0.2 U	4.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/16/2017	0.5 U	0.7	0.2 U	5.2	0.2 U	4.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	8/9/2017	0.5 U	0.7	0.2 U	4.0	0.2 U	3.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/12/2018	0.5 U	0.3	0.2 U	4.4	0.2 U	2.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/15/2018	0.5 U	0.5	0.2 U	11	0.2 U	8.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	8/2/2018	0.5 U	0.4	0.2 U	6.6	0.2 U	6.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/7/2018	0.5 U	0.3	0.2 U	5.8	0.2 U	4.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/8/2019	0.5 U	0.2 U	0.2	0.5	0.2 U	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/7/2019	0.5 U	0.2 U	0.2 U	0.8	0.2 U	1.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	8/16/2019	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/8/2019	0.5 U	0.2 U	0.2 U	0.9	0.2 U	0.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	2/7/2020	0.50 U	0.20	0.20 U	0.70	0.20 U	0.30	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	5/7/2020	0.50 U	0.20 U	0.20 U	0.40	0.20 U	0.30	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)	11/3/2020	0.50 U	0.22	0.20 U	3.0	0.20 U	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-51.5	11/21/2011	1.0 U	42	1.2	5.5	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-51.5	8/9/2012	1.0 U	74	2.0	10	1.1	3.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-51.5	11/8/2012	0.5 U	0.5	0.2 U	3.8	0.2 U	64	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-57.5	11/21/2011	1.0 U	42	1.6	4.7	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-57.5	8/9/2012	1.0 U	90	2.1	12	1.3	2.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-57.5	11/8/2012	0.5 U	0.5	0.2 U	3.7	0.2 U	58	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-63.5	11/21/2011	1.0 U	43	1.8	5.6	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-63.5	8/9/2012	1.0 U	99	3.0	12	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-63.5	11/8/2012	0.5 U	0.3	0.2 U	4.1	0.2 U	70	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-69.5	11/21/2011	1.0 U	42	1.8	5.0	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-69.5	8/9/2012	1.0 U	95	2.2	12	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-69.5	11/8/2012	0.5 U	0.2	0.2 U	3.7	0.2 U	68	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-69.5	2/6/2013	0.5 U	0.2	0.2 U	0.6	0.2 U	5.7	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-79(i)-75.5	11/21/2011	1.0 U	41	1.6	5.2	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-75.5	8/9/2012	1.0 U	89	1.9	12	1.3	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-79(i)-75.5	11/8/2012	0.5 U	0.2 U	0.2 U	2.6	0.2 U	68	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)	12/1/2011	1.0 U	15	1.0 U	6.1	1.0 U	5.3	0.1 U	3.8	2.43	3970	1.2 U	2.9
Former Vapor Degreaser Source Area Wells	BOP-80(i)	1/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	0.2	0.4	4.93	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/16/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1	2.4	3.28	7440	2.2	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	3/15/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7	0.1 U	0.5	4.72	7980	2.4	1.6
Former Vapor Degreaser Source Area Wells	BOP-80(i)	4/17/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	1.0	2.89	12800	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	6/12/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7	0.1 U	0.1	2.5	10400	4.4	2.9
Former Vapor Degreaser Source Area Wells	BOP-80(i)	9/18/2012	1.0 U	160	2.0	35	3.5	14	0.1 U	1.9	13.9	14000	7.1	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	11/14/2012	2.5 U	610	3.0	240	12	33	0.1 U	3.1	1.5	7500	6.1	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/6/2013	0.5 U	1.4	0.2 U	0.2 U	0.6 J	0.4	0.15	1.0 U	1.2	23000	5.2	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	5/9/2013	0.5 U	0.8	0.2 U	0.2 U	0.4	0.7	0.11	1.0 U	1.3	20000	12	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/19/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.36	2.3	1.5	17000	9.7	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	11/11/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.1 U	1.0 U	1.4	22000	14	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/14/2014	0.5 U	0.5	0.2 U	1.1	0.2 U	3.1	0.29 J	293 J	909	13000	9.0	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	11/6/2014	0.5 U	65	0.8	360	10	63	0.1 U	10.9	1.4	2900	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/6/2015	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.10 U	1.4	2.7	15000	5.6	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	5/6/2015	0.5 U	0.2 U	0.2 U	0.2	0.2 U	0.6	0.10 U	1.0 U	2.4	21000	15	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/10/2015	0.5 U	91	3.0	430	15	11	0.10 UJ	8.2	1.6	3600	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	11/4/2015	0.5 U	0.2 U	0.2 U	0.5	0.2 U	2.1	0.10 U	1.6	2.3	20000	8.9	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/3/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.1 U	1.4	1.1	27000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	5/4/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.10 U	1.0 U	1.0 U	15000	6.7	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/11/2016	0.5 U	0.2 U	0.2 U	0.2	0.2 U	0.7	0.10 U	1.0 U	2.5	21000	9.0	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	11/11/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.10 U	1.0 U	2.7	20000	10	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/7/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	2.8	26000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	5/16/2017	0.5 U	0.5	0.2 U	0.5	0.2 U	0.6	0.10 U	1.0 U	2.8	29000 J	14	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/10/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.10 U	1.0 U	3.4	18000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/8/2018	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 UJ	1.7	41.1	28000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/8/2018	0.5 U	19	0.2 U	150	3.3	29	0.10 U	1.0 U	5.1	22000	9.5	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/14/2019	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	4.5	21000	6.6	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/13/2019	0.5 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.10 U	1.0 U	2.6	27000	12	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	2/11/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	1.0 U	5.1	18	0.14	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)	8/13/2020	0.50 U	257	0.20 U	289	9.85	23	0.50 U	10	2.9	3.8	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-80(i)-102.5	11/21/2011	1.0 U	2.4	1.0 U	7.0	1.0 U	7.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)-63.5	11/21/2011	1.0 U	6.0	1.0 U	9.8	2.0	5.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)-73.25	11/21/2011	1.0 U	3.7	1.0 U	8.1	1.0 U	7.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)-83	11/21/2011	1.0 U	3.1	1.0 U	7.4	1.0 U	7.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-80(i)-92.75	11/21/2011	1.0 U	2.4	1.0 U	7.0	1.0 U	7.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)	12/1/2011	1.0 U	1.0 U	1.0 U	1.0	1.0 U	4.1	0.1 U	0.5	2.38	8300	2.2	2.0
Former Vapor Degreaser Source Area Wells	BOP-81(i)	1/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.9	0.2	0.5	2.65	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/16/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.5	3.26	16400	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	3/15/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1	0.3	3.0	24700	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	4/17/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.2	2.51	23400	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	6/12/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.1 U	2.34	20900	1.8	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	9/18/2012	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6	0.1 U	1.0 U	3.0	18000	8.4	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	11/14/2012	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	0.11	1.4	1.0 U	15000	8.6	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/6/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.3 J	0.2 U	0.12	2.0	1.0 U	30000	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-81(i)	5/9/2013	0.5 U	0.3	0.2 U	0.2 U	0.5	0.5	0.39	7.4	1.0 U	7100	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/19/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.9	1.2	16.4	1.0 U	3400	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	11/11/2013	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.26	3.8	1.2	20000	8.9	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/14/2014	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.1 U	49.7	225	12000	6.0	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	11/6/2014	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.1 U	1.0 U	1.5	25000 J	11 J	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/6/2015	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	6.7	1.0	20000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	5/6/2015	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	2.5	1.0 U	22000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/11/2015	0.5 U	0.2 U	0.2 U	0.6	0.2 U	1.2	0.14	4.2	1.6	13000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	11/4/2015	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.7	0.10 U	1.7	1.6	20000	5.4	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/4/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	7.1	1 U	10000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	5/4/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	3.8	1.0 U	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/11/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	2.1	22000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	11/11/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.10 U	1.2	1.3	23000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/7/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	5.4	1.5	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	5/16/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	5.2	1.3	11000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/10/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	1.6	23000 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/8/2018	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 UJ	5.1	1.4	16000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/8/2018	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.10 U	1.0 U	3.1	23000	7.8	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/14/2019	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	3.4	22000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/14/2019	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.50 U	1.0 U	3.9	19000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	2/11/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	1.0 U	4.1	2.0	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)	8/13/2020	0.50 U	0.20 U	0.20 U	0.21	0.20 U	0.24	3.8	5.0 U	49	18.2	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-81(i)-59.5	11/21/2011	1.0 U	2.5	1.0 U	1.0 U	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)-69.25	11/21/2011	1.0 U	1.0 U	1.0 U	1.2	1.0 U	4.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)-79	11/21/2011	1.0 U	1.0 U	1.0 U	1.4	1.0 U	5.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)-88.75	11/21/2011	1.0 U	1.0 U	1.0 U	1.1	1.0 U	3.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-81(i)-98.5	11/21/2011	1.0 U	1.0 U	1.0 U	1.6	1.0 U	6.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	12/1/2011	1.0 U	66	4.0	1.4	1.0 U	1.0 U	3.3	9.4	1.5 U	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	1/19/2012	1.0 U	47	2.6	1.0	1.0 U	1.0 U	0.2 U	7.3	9.81	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/16/2012	1.0 U	38	1.9	6.8	1.0 U	1.0 U	1.7	10.3	4.85	14.4	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	3/15/2012	1.0 U	36	2.0	11	1.0 U	1.0 U	1.3	10	3.25	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	4/17/2012	1.0 U	29	1.6	4.5	1.0 U	1.0 U	1.8	10.6	2.46	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	6/12/2012	1.0 U	24	1.3	2.5	1.0 U	1.0 U	1.8	9.9	2.56	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	9/18/2012	0.5 U	19	1.0	1.6	0.4	0.5	1.8	9.9	1.4	15 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	11/14/2012	0.5 U	24	1.6	1.6	0.6	0.3	1.8	10.3	1.0 U	36	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/6/2013	0.5 U	15 J	1.5	1.8	0.9 J	0.4	1.3	10.7	1.0 U	36	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	5/6/2013	0.5 U	17	1.1	0.9	0.6	0.3	1.0	11.6	1.0 U	480	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/19/2013	0.5 U	19	1.4	0.5	0.6	0.2 U	1.1	11.5	1.0 U	110	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	11/7/2013	0.5 U	17	1.1	0.5	0.7	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/14/2014	0.5 U	12	1.0	0.6	0.7	0.2 U	0.1 U	8.8	36.4	1500 J	5.0 UJ	5.0 UJ
Former Vapor Degreaser Source Area Wells	BOP-82(i)	11/7/2014	0.5 U	8.1	0.6	2.7	0.7	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/6/2015	0.5 U	11	0.7	1.7	0.7	0.5	0.36	13.2	1.8	3000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	5/4/2015	0.5 U	9.7	0.7	1.3	0.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/11/2015	0.5 U	8.6	0.6	1.4	0.7	0.6	0.10 U	5.5	9.5	7500	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	11/6/2015	0.5 U	6.0	0.3	2.5	0.7	1.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/4/2016	0.5 U	8.5	0.5	1.4	0.6	0.4	0.22	11.5	1 U	2300	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	5/3/2016	0.5 U	8.3	0.6	0.9	0.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/11/2016	0.5 U	8.7	0.6	0.6	0.7	0.2 U	0.40	13.4	1.3	1000	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-82(i)	11/16/2016	0.5 U	8.7	0.5	0.6	0.7	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/13/2017	0.5 U	7.1	0.4	0.6	0.6	0.2 U	0.43	14.8	1.6	580	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	5/12/2017	0.5 U	7.1	0.4	0.5	0.7	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/10/2017	0.5 U	5.8	0.3	0.7	0.7	0.2 U	0.63	16.3	1.1	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/7/2018	0.5 U	6.0	0.4	0.4	0.6	0.2 U	0.10 U	8.2	6.7	350	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/8/2018	0.5 U	4.5	0.3	0.8	0.9	0.2 U	0.10 U	9.5	4.6	7800 J	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/14/2019	0.5 U	4.3	0.4	0.6	0.9	0.2 U	0.12	7.6	1.9	1900	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/12/2019	0.5 U	4.1	0.4	0.5	0.8	0.2 U	0.500.11 U	10.4	3.7	1200	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	2/11/2020	0.50 U	3.4	0.30	0.60	1.10	0.20 U	0.18	7.8	3.4	0.99	0.53	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)	8/13/2020	0.50 U	1.3	0.20 U	1.8	0.91	0.40	0.50 U	11	17	0.93	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-82(i)-55.5	11/21/2011	1.0 U	16	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)-64	11/21/2011	1.0 U	70	3.9	1.3	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)-72.5	11/21/2011	1.0 U	91	4.6	1.6	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)-81	11/21/2011	1.0 U	76	4.5	1.5	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-82(i)-89.5	11/21/2011	1.0 U	80	3.9	1.5	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	12/1/2011	1.0 U	16	1.0 U	1.0 U	1.0 U	1.0 U	8.0	20	1.5 U	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	1/19/2012	1.0 U	36	1.8	1.0 U	1.0 U	1.0 U	7.2	19.7	1.5 U	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/16/2012	1.0 U	58	2.6	2.5	1.0 U	1.0 U	6.6	24.5	2.73	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	3/15/2012	1.0 U	19	1.1	1.0 U	1.0 U	1.0 U	7.5	16.7	1.9	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	4/17/2012	1.0 U	7.3	1.0 U	1.0 U	1.0 U	1.0 U	5.2	13.8	1.5 U	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	6/12/2012	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	6.8	14.2	1.5 U	0.7 U	1.2 U	1.1 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	9/18/2012	0.5 U	9.7	0.5	0.3	0.2	0.2 U	6.6	13.6	1.2	15 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	11/14/2012	0.5 U	5.3	0.2 U	0.2 U	0.2 U	0.2 U	6.3	12.2	1.0 U	6.4	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/6/2013	0.5 U	21	1.2	0.9	0.4 J	0.2 U	5.9	11.5	1.0 U	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	5/6/2013	0.5 U	14	0.8	0.6	0.2	0.2 U	6.0	11.8	1.0 U	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/22/2013	0.5 U	3.4	0.2 U	0.2 U	0.2 U	0.2 U	5.7	11.5	1.0 U	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	11/7/2013	0.5 U	2.4	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/14/2014	0.5 U	2.2	0.2 U	0.2 U	0.2 U	0.2 U	4.6	11.6	1.5	41	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	11/11/2014	0.5 U	2.1	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/6/2015	0.5 U	12	0.4	1.0	0.2	0.2 U	3.6 J	8.9	1.0 U	380	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	5/4/2015	0.5 U	2.0	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/11/2015	0.5 U	2	0.2 U	0.2 U	0.2 U	0.2 U	4.2	10	1.0 U	100	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	11/6/2015	0.5 U	1.9	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/4/2016	0.5 U	1.7	0.2 U	0.2 U	0.2 U	0.2 U	3.3	7.5	1.0 U	360	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	5/6/2016	0.5 U	2.4	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/11/2016	0.5 U	2.6	0.2 U	0.2 U	0.2 U	0.2 U	3.3	9.1	1.0 U	6.9	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	11/16/2016	0.5 U	10	0.5	4.5	0.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/13/2017	0.5 U	2.7	0.2 U	0.2 U	0.2 U	0.2 U	2.7	9.4	1.0 U	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	5/12/2017	0.5 U	3.2	0.3	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/10/2017	0.5 U	3.3	0.2	0.2 U	0.2 U	0.2 U	2.1	8.9	1.0 U	5.0 U	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/7/2018	0.5 U	8.6	0.4	13	1	0.7	1.3	5.6	2.0	55	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/8/2018	0.5 U	3.0	0.2	0.2 U	0.2 U	0.2 U	3.0	9.4	2.2	52	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/14/2019	0.5 U	5.6	0.2	14	0.9	0.2	0.54	3.2	2.0	760	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/15/2019	0.5 U	3.3	0.2	7.7	0.4	0.2 UJ	1.7	8.2	1.9	56	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	2/10/2020	0.50 U	3.8	0.20 U	16.0	0.70	0.20 U	0.14	2.2	3.2	0.19	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)	8/13/2020	0.50 U	2.3	0.20 U	7.2	0.35	0.20 U	0.79	7.4	1.5	0.13	0.50 U	0.50 U
Former Vapor Degreaser Source Area Wells	BOP-83(i)-55.5	11/21/2011	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)-61.5	11/21/2011	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-83(i)-67.5	11/21/2011	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)-73.5	11/21/2011	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-83(i)-79.5	11/21/2011	1.0 U	31	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	9/19/2012	1.0 U	4.1	0.4 U	69	0.8	2.9	0.1 U	1.0 U	2620	14000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/6/2013	0.5 U	0.4	0.2 U	0.5	0.2 U	1.6	0.1 U	1.0 U	102	21000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-84(i)	8/7/2013	0.5 U	2.2	0.2 U	18	0.2 U	15	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/8/2013	0.5 U	0.7	0.2 U	3.3	0.3	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/7/2014	0.5 U	0.2 U	0.2 U	8.0	0.2 U	2.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/3/2015	0.5 U	0.5	0.2 U	15	0.3	3.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/4/2015	0.5 U	0.3	0.2 U	8.9	0.2 U	3.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/6/2015	0.5 U	0.2 U	0.2 U	2.8	0.2 U	2.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/4/2016	0.5 U	0.2 U	0.2 U	3.4	0.2 U	2.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/5/2016	0.5 U	0.2 U	0.2 U	3.8	0.2 U	2.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	8/8/2016	0.5 U	0.2 U	0.2 U	4.6	0.2 U	1.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/4/2016	0.5 U	0.2 U	0.2 U	4.6	0.2 U	1.5 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/8/2017	0.5 U	0.2	0.2 U	4.0	0.2 U	2.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/16/2017	0.5 U	0.3	0.2 U	4.3	0.2 U	2.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	8/9/2017	0.5 U	0.2	0.2 U	4.1	0.2 U	1.5 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/12/2018	0.5 U	0.2 U	0.2 U	0.9	0.2 U	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/17/2018	0.5 U	0.2	0.2 U	1.9	0.2 U	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	8/2/2018	0.5 U	0.2	0.2 U	1.8	0.2 U	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/8/2019	0.5 U	0.2	0.2 U	1.4	0.2 U	3.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/7/2019	0.5 U	0.2 U	0.2 U	1.3	0.2 U	4.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	8/16/2019	0.5 U	0.2 U	0.2	1.2	0.2 U	1.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/8/2019	0.5 U	0.2 U	0.2 U	0.8	0.2 U	1.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	2/7/2020	0.50 U	0.20 U	0.20 U	0.60	0.20 U	0.90	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	5/7/2020	0.50 U	0.20 U	0.20 U	0.50	0.20 U	0.70	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)	11/3/2020	0.50 U	0.20 U	0.20 U	2.1	0.20 U	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-57	2/8/2012	1.0 U	15	1.0 U	54	1.0 U	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-57	5/4/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	120	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-57	8/9/2012	1.0 U	3.8	1.0 U	3.6	1.0 U	5.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-57	11/8/2012	0.5 U	0.4	0.2 U	9.5	0.2 U	34	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-63.5	2/8/2012	1.0 U	11	1.0 U	58	1.0 U	1.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-63.5	5/4/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	140	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-63.5	11/8/2012	0.5 U	0.4	0.2 U	9.6	0.2 U	35	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-69.5	2/8/2012	1.0 U	9.1	1.0 U	56	1.0 U	1.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-69.5	5/4/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	160	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-69.5	11/8/2012	0.5 U	0.4	0.2 U	10	0.2 U	34	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-75	2/8/2012	1.0 U	7.1	1.0 U	55	1.0 U	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-75	5/4/2012	1.0 U	1.0 U	1.0 U	1.8	1.0 U	150	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-75	6/12/2012	1.0 U	1.0 U	1.0 U	1.2	1.0 U	14	0.1 U	0.1 U	16.7	9820	1.2 U	13.6
Former Vapor Degreaser Source Area Wells	BOP-84(i)-75	11/8/2012	0.5 U	0.5	0.2 U	11	0.2 U	35	0.1 U	1.0 U	276	22000	5.7	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-84(i)-75	2/5/2013	0.5 U	0.5	0.2 U	0.7	0.2 U	2.3	0.1 U	1.0 U	80.5	26000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-84(i)-80.5	2/8/2012	1.0 U	5.6	1.0 U	53	1.0 U	1.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-80.5	5/4/2012	1.0 U	1.0 U	1.0 U	3.0	1.0 U	160	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-80.5	8/9/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	9.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-84(i)-80.5	11/8/2012	0.5 U	1.3	0.2 U	41	0.3	23	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/2/2013	0.5 U	30	1.1	5.8	1.9	0.2 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-85(i)	8/7/2013	0.5 U	1.5	0.5	22	2.2	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/8/2013	0.5 U	0.2	0.2 U	2.4	0.2 U	2.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/5/2014	0.5 U	1.6	0.2 U	3.4	0.2	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/3/2015	0.5 U	1.4	0.2 U	5.2	0.2 U	0.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/4/2015	0.5 U	0.8	0.2 U	5.1	0.2 U	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/6/2015	0.5 U	0.2 U	0.2 U	0.4	0.2 U	0.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/4/2016	0.5 U	0.2 U	0.2 U	0.7	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/5/2016	0.5 U	0.2 U	0.2 U	1	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	8/8/2016	0.5 U	0.3	0.2 U	1.3	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/4/2016	0.5 U	0.3	0.2 U	1.3	0.2 U	0.9 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/8/2017	0.5 U	0.3	0.2 U	1.3	0.2 U	1.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/16/2017	0.5 U	0.3	0.2 U	1.5	0.2 U	1.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	8/9/2017	0.5 U	0.4	0.2 U	1.4	0.2 U	0.9 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/12/2018	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/15/2018	0.5 U	0.2	0.2 U	0.6	0.2 U	0.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	8/2/2018	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/7/2018	0.5 U	0.2	0.2 U	0.8	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/8/2019	0.5 U	0.2	0.2 U	0.9	0.2 U	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/6/2019	0.5 U	0.3	0.2 U	0.9	0.2 U	0.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	8/16/2019	0.5 U	0.3	0.2 U	1.1	0.2 U	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/8/2019	0.5 U	0.4	0.2 U	1.1	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	2/7/2020	0.50 U	0.30	0.20 U	0.90	0.20 U	0.90	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	5/7/2020	0.50 U	0.30	0.20 U	0.90	0.20 U	1.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)	11/3/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-52	2/8/2012	1.0 U	24	1.8	3.8	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-52	5/4/2012	1.0 U	12	1.0 U	2.2	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-52	8/9/2012	1.0 U	34	1.4	5.6	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-52	11/8/2012	0.5 U	15	1.0	1.8	1.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-58	2/8/2012	1.0 U	33	1.6	6.3	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-58	5/4/2012	1.0 U	32	1.0 U	6.4	2.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-58	8/9/2012	1.0 U	34	1.1	6.0	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-58	11/8/2012	0.5 U	22	1.3	4.8	2.1	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-63.5	2/8/2012	1.0 U	34	1.5	6.5	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-63.5	5/4/2012	1.0 U	31	1.0 U	6.2	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-63.5	8/9/2012	1.0 U	31	1.0	5.8	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-63.5	11/8/2012	0.5 U	21	1.3	4.5	2.1	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-68.5	2/8/2012	1.0 U	33	1.6	6.5	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-68.5	5/4/2012	1.0 U	29	1.0 U	6.5	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-68.5	8/9/2012	1.0 U	32	1.2	5.7	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-68.5	11/8/2012	0.5 U	20	0.9	4.3	2.0	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-68.5	2/6/2013	0.5 U	37	0.8	7.0	3.1 J	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-73.5	2/8/2012	1.0 U	20	1.5	4.3	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-73.5	5/4/2012	1.0 U	14	1.0 U	7.8	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-73.5	8/9/2012	1.0 U	3.6	1.0 U	23	1.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-85(i)-73.5	11/8/2012	0.5 U	17	0.5	8.2	1.7	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/2/2013	0.5 U	35	0.7	7.4	2.9	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	8/7/2013	0.5 U	9.1	0.6	15	1.5	1.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/8/2013	0.5 U	1.4	0.2 U	2.0	0.2 U	2.6	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/5/2014	0.5 U	0.6	0.2 U	4.6	0.2 U	3.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/3/2015	0.5 U	0.9	0.2 U	5.5	0.2 U	3.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/4/2015	0.5 U	3.5	0.2 U	5.0	0.2 U	2.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/6/2015	0.5 U	0.3	0.2 U	1.6	0.2 U	2.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/4/2016	0.5 U	0.3	0.2 U	1.9	0.2 U	2.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/5/2016	0.5 U	0.4	0.2 U	2.0	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	8/8/2016	0.5 U	0.6	0.2 U	2.5	0.2 U	1.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/4/2016	0.5 U	0.6	0.2 U	2.3	0.2 U	1.6 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/8/2017	0.5 U	0.6	0.2 U	2.2	0.2 U	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/16/2017	0.5 U	0.7	0.2 U	2.4	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	8/9/2017	0.5 U	0.6	0.2 U	2.0	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/12/2018	0.5 U	0.2 U	0.2 U	0.4	0.2 U	0.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/15/2018	0.5 U	0.5	0.2 U	0.6	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	8/2/2018	0.5 U	1.1	0.2 U	0.4	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/8/2019	0.5 U	2.3	0.2 U	1.0	0.2 U	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/7/2019	0.5 U	2.6	0.2 U	1.1	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	8/16/2019	0.5 U	2.1	0.2 U	0.9	0.2 U	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/8/2019	0.5 U	1.3	0.2 U	0.7	0.2 U	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	2/7/2020	0.50 U	0.70	0.20 U	0.50	0.20 U	0.40	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	5/7/2020	0.50 U	0.60	0.20 U	0.40	0.20 U	0.50	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)	11/3/2020	0.50 U	0.25	0.20 U	0.20 U	0.20 U	0.49	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-52	2/8/2012	1.0 U	26	1.4	7.2	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-52	5/4/2012	1.0 U	28	1.3	4.0	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-52	8/9/2012	1.0 U	42	1.2	6.9	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-52	11/8/2012	0.5 U	16	1.3	3.4	1.7	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-58	2/8/2012	1.0 U	23	1.2	18	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-58	5/4/2012	1.0 U	28	1.0	5.0	2.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-58	8/9/2012	1.0 U	42	1.2	7.5	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-58	11/8/2012	0.5 U	20	1.1	4.0	2.0	0.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-64	2/8/2012	1.0 U	23	1.3	18	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-64	5/4/2012	1.0 U	25	1.0 U	5.0	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-64	8/9/2012	1.0 U	41	1.2	7.4	2.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-64	11/8/2012	0.5 U	20	1.1	3.9	1.9	0.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-69	2/8/2012	1.0 U	21	1.2	17	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-69	5/4/2012	1.0 U	28	1.0 U	5.2	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-69	8/9/2012	1.0 U	39	1.0	7.7	2.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-69	11/8/2012	0.5 U	20	0.9	4.6	1.9	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-69	2/6/2013	0.5 U	31	0.6	6.2	3.2 J	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-74.5	2/8/2012	1.0 U	1.0 U	1.0 U	36	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-74.5	5/4/2012	1.0 U	17	1.0 U	8.4	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-74.5	8/9/2012	1.0 U	27	1.0 U	12	2.0	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-86(i)-74.5	11/8/2012	0.5 U	24	0.5	10	2.0	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/2/2013	0.5 U	7.1	0.2	1.2	0.9	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	8/7/2013	0.5 U	21	0.7	6.3	2.0	0.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/8/2013	0.5 U	0.6	0.2 U	6.2	0.2 U	0.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/5/2014	0.5 U	0.6	0.2 U	1.5	0.2 U	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/3/2015	0.5 U	2.1	0.2 U	2.2	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/4/2015	0.5 U	1.4	0.2 U	2.8	0.2 U	0.7	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
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Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/6/2015	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/4/2016	0.5 U	0.2 U	0.2 U	0.5	0.2 U	0.6	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/5/2016	0.5 U	0.2	0.2 U	0.6	0.2 U	1.0	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	8/8/2016	0.5 U	0.3	0.2 U	0.9	0.2 U	0.8	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/4/2016	0.5 U	0.3	0.2 U	1.0	0.2 U	0.8 J	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/8/2017	0.5 U	0.4	0.2 U	1.3	0.2 U	1.1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/16/2017	0.5 U	0.5	0.2 U	1.9	0.2 U	1	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	8/9/2017	0.5 U	0.4	0.2 U	1.6	0.2 U	0.9	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/12/2018	0.5 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/15/2018	0.5 U	0.2 U	0.2 U	1.1	0.2 U	0.5	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	8/2/2018	0.5 U	0.2 U	0.2 U	0.8	0.2 U	4.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/7/2018	0.5 U	0.2	0.2 U	0.6	0.2 U	3.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/8/2019	0.5 U	0.3	0.2 U	0.9	0.2 U	30	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/7/2019	0.5 U	0.5	0.2 U	1.2	0.2	68	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	8/16/2019	0.5 U	0.3	0.2 U	1.8	0.3	65	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/8/2019	0.5 U	0.4	0.2 U	2.1	0.4	86	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	2/27/2020	0.50 U	0.20 U	0.20 U	3.7	0.20	62	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	5/7/2020	0.50 U	0.50	0.20 U	5.3	0.30	82	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)	11/3/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	19	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-52	2/8/2012	1.0 U	14	1.3	1.8	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-52	5/4/2012	1.0 U	24	1.0 U	1.4	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-52	8/9/2012	1.0	52	2.2	2.6	1.0 U	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-52	11/8/2012	0.5 U	9.7	1.2	1.6	1.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-52	2/6/2013	0.5 U	8.5	0.4	1.2	1.0 J	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-58	2/8/2012	1.0 U	26	1.1	5.4	2.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-58	5/4/2012	1.0 U	13	1.0 U	1.7	1.1	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-58	8/9/2012	1.0 U	33	1.1	4.2	1.9	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-58	11/8/2012	0.5 U	9.2	1.2	1.6	1.5	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-63.5	2/8/2012	1.0 U	24	1.2	5.1	2.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-63.5	5/4/2012	1.0 U	12	1.0 U	1.8	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-63.5	8/9/2012	1.0 U	32	1.0 U	4.1	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-63.5	11/8/2012	0.5 U	9.1	1.0	1.8	1.5	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-68.5	2/8/2012	1.0 U	22	1.1	4.7	2.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-68.5	5/4/2012	1.0 U	12	1.0 U	2.0	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-68.5	8/9/2012	1.0 U	31	1.0 U	4.2	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-68.5	11/8/2012	0.5 U	6.6	0.5	4.4	1.6	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-73.5	2/8/2012	1.0 U	9.6	1.0 U	10	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-73.5	5/4/2012	1.0 U	14	1.0 U	2.9	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-73.5	8/9/2012	1.0 U	26	1.0 U	4.1	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-87(i)-73.5	11/8/2012	0.5 U	9.9	1.2	1.3	1.5	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/2/2013	0.5 U	14	0.6	2.2	1.2	1.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)	6/17/2013	0.5 U	24	0.6	5.4	1.6	5.7	3.3	11.5	1.5	93	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-88(i)	8/7/2013	0.5 U	7.8	0.8	11	1.4	0.2	0.1 U	1.0 U	294	1900	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/11/2013	0.5 U	0.2	0.2 U	85	0.3	4.1	0.1 U	1.0 U	458	17000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/11/2014	0.5 U	1.9	0.2 U	30	0.2	4.2	1.0 U	276	3150	13000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/9/2015	0.5 U	12	0.3	90	0.2	4.0	1.0 U	243	3990	12000	5.0 U	5.0 U
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/6/2015	0.5 U	28	1.0	150	0.4	8.5	1.0 UJ	138	3370	16000	5.0 U	7.4
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/4/2015	0.5 U	0.8	0.2 U	8.7	0.2 U	2.4	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
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Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/4/2016	0.5 U	1.6	0.2 U	24	0.2 U	4.1	1.0 U	2270	8570	11000	5.0 U	7.2 J
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/5/2016	0.5 U	3.3	0.2 U	65	0.2 U	6.8	1.0 U	2370	8780	15000	5.0 U	7.9 J
Former Vapor Degreaser Source Area Wells	BOP-88(i)	8/9/2016	0.5 U	8.9	0.2 U	100	0.2	7.0	4.8	2330	10000	14000	5.0 U	9.3 J
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/8/2016	1.0 UJ	6.2 J	0.4 UJ	110 J	0.4 UJ	7.4 J	1.1	2620	9830	12000	5.0 U	11
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/8/2017	0.5 U	11	0.3	120	0.2	8.9	1.0 U	2510	9030	13000	5.0 U	14
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/17/2017	1.0 UJ	6.3 J	0.4 UJ	120 J	0.4 UJ	6.1 J	0.99 J	2600	9290	13000	5.0 U	11
Former Vapor Degreaser Source Area Wells	BOP-88(i)	8/9/2017	1.0 UJ	2.1 J	0.4 UJ	41 J	0.4 UJ	4.8 J	1.3 J	2330	8410	18000	5.0 U	18
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/20/2018	1.0 U	3.0	0.4 U	10	0.4 U	0.9	0.50 U	89.5	7760	13000	5.0 U	8.3
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/15/2018	1.0 U	6.8	0.4 U	35	0.4 U	2.9	0.10 U	90.7	3980	14000 J	5.0 U	9.4
Former Vapor Degreaser Source Area Wells	BOP-88(i)	8/9/2018	1.0 U	2.0	0.4 U	12	0.4 U	1.1	1.0 U	239	10900	11000 J	5.0 U	8.8
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/8/2018	1.0 U	3.9	0.4 U	19	0.4 U	2.6	0.50 UJ	207	13600	15000	5.0 U	18
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/14/2019	1.0 U	6.0	0.4 U	36	0.4 U	5.7 J	2.0 U	225	16000	15000	5.0 U	29 J
Former Vapor Degreaser Source Area Wells	BOP-88(i)	5/9/2019	1.0 UJ	8.5 J	0.4 UJ	53 J	0.4 UJ	6.6 J	1.0 U	224	15600	8800	5.0 U	14
Former Vapor Degreaser Source Area Wells	BOP-88(i)	8/14/2019	1.0 U	9.9	0.4 U	72	0.4 U	7.2	2.0 U	9.9	15200	20000	5.0 U	38
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/7/2019	1.0 U	24	0.7	160	0.4 U	22	1.6	286	16100	12000 J	5.0 UJ	48 J
Former Vapor Degreaser Source Area Wells	BOP-88(i)	2/12/2020	0.50 U	24	0.90	140	0.30	23	2.1	290	17000	15	0.50 U	0.49
Former Vapor Degreaser Source Area Wells	BOP-88(i)	11/5/2020	1.0 U	0.93	0.40 U	43.5	0.4 U	3.7	0.89	162	20100	9.6	0.63	0.99
Former Vapor Degreaser Source Area Wells	BOP-88(i)-51	2/8/2012	1.0 U	26	2.0	2.2	1.4	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-51	5/4/2012	1.0 U	19	1.0 U	2.5	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-51	8/9/2012	1.0 U	130	2.8	8.9	1.2	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-51	11/8/2012	0.5 U	11	1.2	1.5	1.5	0.2 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-51	2/6/2013	0.5 U	11	0.9	1.4	1.4 J	0.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-56.5	2/8/2012	1.0 U	22	1.7	4.9	1.8	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-56.5	5/4/2012	1.0 U	13	1.0 U	3.3	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-56.5	8/9/2012	1.0 U	53	1.8	34	1.2	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-56.5	11/8/2012	0.5 U	8.6	1.1	1.8	1.4	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-61.5	2/8/2012	1.0 U	21	1.8	4.4	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-61.5	5/4/2012	1.0 U	13	1.0 U	3.6	1.3	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-61.5	8/9/2012	1.0 U	51	1.7	34	1.2	1.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-61.5	11/8/2012	0.5 U	8.3	1.1	1.8	1.4	0.7	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-66	2/8/2012	1.0 U	20	1.9	4.3	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-66	5/4/2012	1.0 U	14	1.0 U	4.5	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-66	8/9/2012	1.0 U	52	1.6	36	1.2	1.3	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-66	11/8/2012	0.5 U	8.4	1.0	1.8	1.5	0.4	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-70.5	2/8/2012	1.0 U	20	2.3	7.2	1.6	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-70.5	5/4/2012	1.0 U	13	1.0 U	5.1	1.5	1.0 U	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-70.5	8/9/2012	1.0 U	51	1.7	36	1.2	1.2	--	--	--	--	--	--
Former Vapor Degreaser Source Area Wells	BOP-88(i)-70.5	11/8/2012	0.5 U	8.1	1.0	2.0	1.4	0.4	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	3/4/1987	30	830	22	--	6.2	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/20/1987	29	996	23	--	4.3	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/27/1987	20	575	15	--	3.4 J	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/29/1987	7.5	299	3.5	--	0.8 M	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/1/1987	14	471	10	--	23 U	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/3/1987	18	510	11	--	23 U	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/10/1987	15 M	600	9.4 J	--	45 U	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/17/1987	15	470	12	--	2.7 J	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/24/1987	12 M	490	10 J	--	45 U	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/2/1987	12	490	12	--	23 U	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Southwest Corrective Action Area Wells	BOP-9(i)	7/6/1987	18	620	13	--	2.4 M	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/10/1987	17	610	14	--	2.8 M	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	10/15/1987	13	350	10	--	3 M	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	12/9/1987	110	510	13	--	4.4	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/7/1988	130	1300	29	--	5.3	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	1/30/1989	220	1600	60	--	15	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/17/1989	150	800	26	--	11	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/26/1989	89	500	16	--	6.0	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	11/15/1989	210	460	15	160	13	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/15/1990	230	710	32	300	13	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	6/8/1990	270	610	--	130	--	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/7/1990	280	500	15	150	31	--	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	11/6/1990	290	540	15	150	32	30 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/7/1991	310	540	15	170	37	15 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/15/1991	220	300	10	100	29	10 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/8/1991	270	370	11	100	37	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	1/21/1992	160	270	12	110	65	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/15/1992	190	350	7.9 J	100	22	20 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)-Dup	7/15/1992	190	300	9.9	110	32	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/17/1993	160 J	270	9.1 J	110 J	31 J	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	7/27/1993	120	250	8.1	82	19	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	3/2/1994	150 J	270 J	8.7 J	94 J	24 J	2.0 UJ	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/24/1994	130	220	7.3	78	24	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/23/1994	92	200	6.6	60	18	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/23/1995	100	170	5.1	44	20	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	9/1/1995	81	190	5.5	49	16	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/21/1996	53	160	4.7	48	12	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/16/1996	41	120	3.6	32	9.2	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/18/1997	27	89	2.8	31	6.8	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/21/1997	25	82	2.7	26	6.7	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/26/1998	13	77	2.0	35	4.0	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/25/1998	9.6	68	1.7	30	3.6	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/17/1999	5.6	61	1.6	26	2.5	2.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/21/1999	5.2	46	1.4	21	2.4	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/18/2000	4.3	44	1.6	22	1.8	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/30/2000	2.5	24	1.0 U	6.9	1.2	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/21/2001	2.9	26 J	1.0 U	8.5	1.4	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/16/2001	2.2	22	1.0 U	7.3	1.4	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/24/2002	1.9	20	1.0 U	6.0	1.3	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/16/2002	1.0 U	12	1.0 U	3.2	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/13/2003	1.2	14	1.0 U	3.9	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/13/2003	1.0 U	13	1.0 U	3.3	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/24/2004	1.0 U	13	1.0 U	3.4	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/12/2004	1.0 U	12	1.0 U	3.1	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/9/2005	1.0 U	12	1.0 U	2.9	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/9/2005	1.0 U	8.1	1.0 U	2.2	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/8/2006	1.0 U	8.3	1.0 U	1.7	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/10/2006	1.0 U	4.4	1.0 U	1.1	1.0 U	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Southwest Corrective Action Area Wells	BOP-9(i)	2/8/2007	0.3	7.3	0.4	1.4	0.4	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/8/2007	0.3	5.7	0.3	1.1	0.4	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/19/2008	0.3	5.2	0.3	1.1	0.4	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/11/2008	1.0 U	3.4	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/9/2009	1.0 U	11	1.5	2.8 J	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/18/2009	1.0 U	14	3.1	3.7	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/3/2010	1.0 U	15	4.7	4.0	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/11/2010	1.0 U	15	4.2	4.2	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/7/2011	1.0 U	18	5.3	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/3/2011	1.0 U	16	5.5	4.9	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/2/2012	1.0 U	17	4.4	5.6	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/14/2012	1.0 U	15	4.7	4.4	1.0 U	1.0 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/4/2013	0.7	33	3.0	10	1.8	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/21/2013	0.8	62	3.9	16	2.1	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/5/2014	0.6	50	3.8	13	1.8	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/3/2015	0.6	33	3.3	11	1.5	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/5/2015	0.5 U	40	2.9	12	1.5	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/1/2016	0.5 U	30	2.6	8.8	1.2	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/8/2016	0.5 U	35	3.5	11	1.5	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	2/8/2017	0.5 U	62	3.8	17	1.9	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	8/3/2017	0.5 U	4.9	0.2 U	1.8	0.7	0.2 U	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	9/19/2017	--	--	--	--	--	--	2.2	5.2	1.0 U	5.0 U	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	2/16/2018	0.5 U	2.4	0.6	5.7	0.2	0.2 U	--	18.8	1390	410	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	5/16/2018	0.5 U	6.7	0.9	3.2	0.7	0.2 U	--	56.0	3730	17000 J	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	8/7/2018	0.5 U	7.3	1	5.4	0.5	1.0	--	58.2	3680	21000 J	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	11/8/2018	0.5 U	5.5	0.9	3.4	0.3	1.0	--	28.3	2560	34000	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	2/15/2019	0.5 U	4.0	0.7	2.0	0.2 U	2.0 J	--	50.0 U	1510	37000	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)-Dup	2/15/2019	0.5 U	3.3	0.6	1.8	0.2 U	1.4 J	--	--	--	--	--	--
Southwest Corrective Action Area Wells	BOP-9(i)	5/7/2019	0.5 U	3.4	0.4	1.6	0.2 U	2.3	--	5.0 U	803	37000 J	5.0 U	5.0 U
Southwest Corrective Action Area Wells	BOP-9(i)	8/9/2019	0.5 UJ	2.1 J	0.2 J	5.2 J	0.2 UJ	1.2 J	--	2.2	591	38000 J	5.0 UJ	6.2 J
Southwest Corrective Action Area Wells	BOP-9(i)	11/7/2019	0.5 U	1.8	0.2	2.1	0.2 U	0.7	--	1.0 U	690	22000 J	5.0 UJ	5.0 UJ
Southwest Corrective Action Area Wells	BOP-9(i)	2/10/2020	0.50 U	0.90	0.20 U	1.1	0.20 U	0.50	--	6.2	586	36	0.50 U	0.50 U
Southwest Corrective Action Area Wells	BOP-9(i)	5/11/2020	0.50 U	0.60	0.20 U	1.1	0.20 U	1.0	--	2.4	150	3.0	0.50 U	0.50 U
Southwest Corrective Action Area Wells	BOP-9(i)	8/10/2020	1.0 U	0.50	0.40 U	0.93	0.4 U	0.96	--	5.0 U	123	25	0.50 U	0.50 U
Southwest Corrective Action Area Wells	BOP-9(i)	11/6/2020	1.0 U	0.40 U	0.40 U	0.90	0.4 U	1.0 J	--	2.5	50	27	0.50 U	0.50 U
West Corrective Action Area Wells	BOP-16(i)	4/16/1987	670	1100	45	--	47	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	5/22/1987	174	274	9.4	--	7.5	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	6/10/1987	540	1000	38	--	28 J	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	6/24/1987	490	1000	37	--	23 J	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	7/8/1987	450	1200	42	--	34	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	7/10/1987	520	1200	40	--	29 J	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	9/9/1987	400	890	33	--	34 J	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	10/14/1987	420	870	31	--	31	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	12/2/1987	480	1000	39	--	38	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	7/8/1988	790	1200	36	--	24	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/1/1989	420	630	32	--	53	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/4/1989	840	770	30	--	51	--	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/9/1990	330	850	23	--	53	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	BOP-16(i)	11/5/1990	280	690	22	140	48	3.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/12/1991	360	850	22	240	71	15 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	2/12/1991	260	730	19	130	44	15 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/13/1991	180	400	11	100	35	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	1/22/1992	170	440	7.3	98	20	15 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	1/22/1992	160	450	6.3 J	100	14	30 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	7/16/1992	130	340	7.9 J	84	21	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	7/16/1992	120	310	8.6	81	23	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/17/1993	110 J	230	7.8 J	86 J	22 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	7/26/1993	92	210	7.8	60	15	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/17/1994	82	170	6.2	64	13	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/9/1994	62	160	5.1	48	12	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	10/24/1994	98	410	12	42	26	4.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/8/1995	74	160	4.4	43	14	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/28/1995	71	170	5.0	44	16	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/19/1996	56	160	4.5	42	14	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/16/1996	54	150	4.8	37	14	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	8/16/1996	53	150	4.8	38	13	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/18/1997	42	130	4.1	43	11	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/20/1997	41	120	4.0	38	13	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	8/20/1997	43	120	4.3	41	13	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/26/1998	32	110	2.9	35	9.7	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	2/26/1998	31	100	2.9	33	9.3	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/25/1998	31 J	110 J	3.8 J	39 J	12 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)-Dup	8/25/1998	20 J	84 J	2.4 J	28 J	8.8 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/17/1999	15	69	2.0	23	5.5	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/21/1999	11	51	1.8	18	4.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/18/2000	9.4	48	1.7	17	4.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/27/2000	5.1	27	1.0	9.8	3.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/21/2001	6.5	34 J	1.3	12	3.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/17/2001	4.3	25	1.0 U	7.8	2.3	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/24/2002	3.1	20	1.0 U	6.4	1.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/16/2002	1.9	18	1.0 U	5.1	1.9	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/17/2003	2.3	15	1.0 U	4.5	1.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/13/2003	2.6	16	1.0 U	5.1	1.7	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/24/2004	2.2	15	1.0 U	3.9	1.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/12/2004	1.0 U	13	1.0 U	3.7	1.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/9/2005	1.3	11	1.0 U	2.9	1.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/9/2005	1.4	9.6	1.0 U	2.7	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/9/2006	1.4	8.7	1.0 U	2.0	1.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/10/2006	1.1	10	1.0 U	2.5	1.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/8/2007	1.2	13	0.5	3.0	1.8	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/8/2007	1.0	9.6	0.4	2.1	1.4	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/21/2008	1.3	9.8	0.4	2.1	1.8	0.2 U	3.0	10.3	1.5 U	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/11/2008	1.0 U	6.2	1.0 U	1.6	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/11/2009	1.0 U	2.7	1.0 U	1.2	1.0 U	1.0 U	0.1 U	0.1 U	358	--	--	--
West Corrective Action Area Wells	BOP-16(i)	5/12/2009	1.0 U	1.0 U	1.0 U	11	1.0	1.0 U	1.0 U	7.4	142	20700	1.2 U	1.1 U
West Corrective Action Area Wells	BOP-16(i)	8/19/2009	1.0 U	1.0 U	1.0 U	14	1.2	1.0 U	0.1 U	0.1 U	38.6	23400	1.2 U	1.1 U

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Boeing of Portland
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Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	BOP-16(i)	11/11/2009	1.0 U	1.0 U	1.0 U	8.1	1.0 U	5.3 J	0.1 U	0.2 U	41.6	--	--	--
West Corrective Action Area Wells	BOP-16(i)	2/9/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	14	0.1 U	0.1 U	4.74	--	--	--
West Corrective Action Area Wells	BOP-16(i)	5/5/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	15	0.1 U	0.1	3.11	--	--	--
West Corrective Action Area Wells	BOP-16(i)	8/11/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	16	0.1 U	0.6	1.67	23200	1.2 U	1.1 U
West Corrective Action Area Wells	BOP-16(i)	11/15/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	13	0.1 U	0.9	--	--	--	--
West Corrective Action Area Wells	BOP-16(i)	1/31/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	8.1	0.1 U	0.8	1.73	19200	1.2 U	1.1 U
West Corrective Action Area Wells	BOP-16(i)	5/4/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.2	0.1 U	1.5	1.8	24000	1.2 U	2.3
West Corrective Action Area Wells	BOP-16(i)	8/3/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.1	0.1 U	0.9	1.53	9670	1.2 U	1.6
West Corrective Action Area Wells	BOP-16(i)	11/2/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	0.1 U	0.5	1.55	12700	1.2 U	2.6
West Corrective Action Area Wells	BOP-16(i)	2/7/2012	1.0 U	1.6	1.0 U	1.0 U	1.0 U	3.6	0.1 U	1.9	1.94	10200	1.2 U	1.7
West Corrective Action Area Wells	BOP-16(i)	5/3/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	0.1 U	0.1 U	1.73	17100	1.2 U	3.4
West Corrective Action Area Wells	BOP-16(i)	8/7/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0	0.1 U	0.5	3.57	13400	1.2 U	3.7
West Corrective Action Area Wells	BOP-16(i)	11/9/2012	0.5 U	0.3	0.2 U	0.2 U	0.2 U	2.2	2.3	7.7	1.0 U	11000	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/5/2013	0.5 U	1.5	0.2 U	0.3	0.2 U	5.0	0.1 U	3.0	1.0 U	6100	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	5/6/2013	0.5 U	0.8	0.2 U	0.2 U	0.2 U	2.6	0.1 U	2.3	1.0 U	8400	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/21/2013	0.5 U	1.2	0.2 U	0.3	0.2 U	4.5	0.1 U	3.6	1.2	3200	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	11/11/2013	0.5 U	0.9	0.2 U	0.2	0.2 U	4.8	0.1 U	4.4	1.0 U	2700	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/12/2014	0.5 U	6.2	0.2 U	1.6	0.5	3.7	0.10 U	7.2 J	1.0	2700	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	11/11/2014	0.5 U	6.3	0.2 U	1.4	0.4	2.4	0.10 U	7.8	1.0 U	2200	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/9/2015	0.5 U	8.3	0.3	1.6	0.5	3.0	0.10 U	7.4	1.0 U	2600	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	5/7/2015	0.5 U	4.6	0.2 U	0.9	0.2	2.2	0.10 U	6.3	1.0 U	7700	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/11/2015	0.5 U	9.2	0.6	1.8	0.6	1.1	0.38	7.5	1.0 U	1900	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	11/6/2015	0.5 U	5.8	0.5	1.4	0.4	2.8	0.29	7.9	1.0 U	1000	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/4/2016	0.5 U	3.5	0.2 U	0.2	0.2 U	0.3	0.1 U	5.8	1 U	4600	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	5/5/2016	0.5 U	1.8	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	6.8	1.0 U	1800	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/11/2016	0.5 U	5.0	0.2 U	3.3	0.6	1.9	0.14	7.7	1.0 U	1400	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	11/8/2016	0.5 U	8.7	0.8	3.0	0.9	0.8	0.57	8.2	1.0 U	190	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/13/2017	0.5 U	3.6	0.2 U	0.6	0.2 U	0.2	0.10 U	4.5	1.0 U	1200	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	5/15/2017	0.5 U	2.1	0.2 U	0.3	0.2 U	0.2 U	0.10 UJ	9.4	1.0 U	1700	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/8/2017	0.5 U	7.7	0.7	2.9	0.8	0.3	0.65	8.1	1.0 U	1200	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/20/2018	0.5 U	0.4	0.2 U	4.7	0.8	4.4	0.10 U	1.1	79.2	9400	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/13/2018	0.5 U	0.2 U	0.2 U	0.7	0.2 U	1.4	0.10 U	1.0 U	5.1	11000 J	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/19/2019	0.5 U	0.4	0.2 U	0.9	0.2 U	1.6 J	0.10 U	1.0 U	4.5	12000	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	8/15/2019	0.5 U	0.3	0.2 U	0.8	0.2 U	2.7 J	0.50 U	1.0 U	3.2	4200	5.0 U	5.0 U
West Corrective Action Area Wells	BOP-16(i)	2/7/2020	0.50 U	0.30	0.20 U	0.80	0.20 U	1.1	0.10 U	2.2	2.4	3.6	0.50 U	0.50 U
West Corrective Action Area Wells	BOP-16(i)	8/10/2020	0.50 U	0.37	0.20 U	0.77	0.20 U	2.2	0.50 U	5.0 U	1.7	2.5	0.50 U	0.50 U
West Corrective Action Area Wells	BOP-57(ia)	8/1/1994	5500	1400	32	81	600	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	10/26/1994	410	300	10	65	65	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/7/1995	550	800	36	300	98	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	5/22/1995	830	930	24	300	150	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/24/1995	1900	880	21	140	260	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/9/1996	980	430	12	25	190	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/16/1996	520	570	16	180	110	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/20/1997	580	740	22	170	130	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/21/1997	460	700	22	270	120	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	3/2/1998	180	380	9.6	110	27	6.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/26/1998	120	350	13	190	40	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/16/1999	230	540	11	120	66	2.0 U	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
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Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	BOP-57(ia)	8/24/1999	130	170	6.5	38	31	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/23/2000	76	190	6.9	1.0 U	26	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/31/2000	32	140	5.8	60	13	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/26/2001	21	130	7.0	67	5.1	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/21/2001	13	110	5.7	55	5.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	3/10/2002	9.7	72	4.5	34	4.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/20/2002	4.4	56	4.3	27	3.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/25/2003	3.8	34	2.8	15	2.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/15/2003	4.0	46	3.9	22	1.9	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/27/2004	4.3	44	3.7	15	2.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/20/2004	1.8	46	3.9	18	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/15/2005	2.5	36	3.1	12	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/9/2005	1.2	31	3.1	12	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/9/2006	1.1	17	1.4	5.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/10/2006	1.0 U	15	1.0 U	4.8	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/9/2007	1.0	13	1.3	4.2	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/14/2007	0.8	15	2.3	4.6	0.4	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/19/2008	0.9	18	2.3	4.1	0.8	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/15/2008	1.0 U	12	1.6	2.6	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/11/2009	1.0 U	7.4	1.6	4.9	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/21/2009	1.0 U	13	3.8	3.4	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/3/2010	1.0 U	13	3.5	2.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/15/2010	1.0 U	13	5.5	3.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/7/2011	1.0 U	19	2.2	1.8	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/11/2011	1.0 U	11	5.1	2.7	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/2/2012	1.3	18	2.9	7.5	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/9/2012	1.0 U	13	1.0 U	15	5.3	3.5	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/4/2013	1.1	15	0.8	3.0	0.5	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/5/2013	0.5 U	13	2.2	2.8	0.4	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/5/2014	0.6	18	1.9	3.8	1.7	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/3/2015	0.5 U	1.7	0.2 U	0.3	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/4/2015	0.5 U	3.4	0.2 U	0.8	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/1/2016	0.5 U	2.4	0.2	0.4	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/3/2016	0.5 U	11	1.7	2.2	0.3	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/10/2017	0.5 U	3.3	1.4	0.5	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/3/2017	0.5 U	17	1.6	2.6	1.3	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/6/2018	0.5 U	0.5	0.2 U	12	0.3	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/14/2018	0.5 U	0.4	0.2 U	0.4	0.2 U	7.0	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/8/2019	0.5 U	20	1.7	3.0	1.5	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	6/3/2019	0.5 UJ	9.0	0.7 J	1.8	0.6 J	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/5/2019	0.5 U	18	1.6	3.4	1	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	2/6/2020	0.50 U	13	1.9	2.6	0.70	0.80	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ia)	8/7/2020	0.50 U	7.5	0.36	3.6	0.53	1.4	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ib)	8/5/2019	13	47	0.8	7.6	49	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	BOP-57(ib)	8/7/2020	12	43	1.0	6.0	46	0.20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/27/1991	1600	1600	66	540	170	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/28/1991	1300	1900	80	490	190	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	4/2/1991	830	2300	87	440	150	40 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-11	4/17/1991	820	2100	86	380	140	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/7/1991	730	1600	67	320	140	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/21/1991	910	1400	64	370	120	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/3/1991	920	1600	58	330	150	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/17/1991	960	1500	62	350	160	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	7/1/1991	1100	1400	58	310	180	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	7/15/1991	1200	1700	69	400	210	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/5/1991	1400	1400	60	330	220	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/19/1991	1200	1400	52	300	210	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	9/3/1991	1600	1700	60	330	210	60 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	9/16/1991	1500	1000	48	280	160	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	10/2/1991	1800	1300	54	290	150	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	10/16/1991	2100	1400	62	350	190	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/4/1991	1900	1300	52	300	160	30 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	12/4/1991	2200	1200	50	250	250	30 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	1/6/1992	2200	1300	58	270	230	30 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	4/6/1992	2600	1200	71	320	340	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/4/1992	1800	960	34	240	250	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/2/1992	1600	790	39	240	170	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	7/6/1992	3100	1100	44	250	520	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/10/1992	3300	1400	65	320	350	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	9/1/1992	2600	1300	54	300	260	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	10/1/1992	3900	1500	69	310	420	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/2/1992	2600	1200	41	350	300	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	12/1/1992	5700	1900	140	290	730	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	1/1/1993	1800	880	40	220	230	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/1/1993	2300	1100	45	250	270	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/3/1993	5000	1700	86	340	690	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/29/1993	2700	1000	39 M	240	330	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	4/28/1993	2800	950	50 U	210	320	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/25/1993	3500	1500	84	280	570	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/23/1993	2800	1300	73	200	290	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	7/30/1993	1800	950	63	160	270	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/25/1993	1800	1100	59	230	270	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	9/29/1993	1400	690	27	190	190	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	10/27/1993	1800	860	37	200	240	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/22/1993	1300	850	38	200	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	12/27/1993	1400	900	33	210	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	1/26/1994	1200	720	29	160	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/23/1994	1200	780	33	190	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	4/4/1994	1400	770	27	190	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	4/26/1994	1400 J	830	35	190	220	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/29/1994	1200	790	38	190	180	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	10/26/1994	280	470	19	160	58	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	12/21/1994	850	720	36	210	180	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/3/1995	760 J	630	28	180	140	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	6/1/1995	730	600	25 U	150	130	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/29/1995	1200	830	32	220	200	20 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-11	11/9/1995	1200	690	30	160	200	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/4/1996	630	580	25	140	140	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/31/1996	600	630	25	170	130	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/26/1996	500	540	20	170	110	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/20/1996	550	620	20	170	140	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	3/6/1997	390	510	21	150	130	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/27/1997	610	540	23	140	160	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	9/2/1997	400	490	19	160	110	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/3/1997	430	590	24	180	120	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/24/1998	410	430	16	130	99	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/5/1998	520 J	610	30	150	150	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/3/1998	440	480	24	140	110	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/2/1998	310	480	18	120	73	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/1/1999	220 J	370 J	22 J	130 J	88 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/3/1999	150	490	15	140	47	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/2/1999	94	260	13	110	31	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/1/1999	90	220	10	80	32	5.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/4/2000	120	300	14	76	42	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/1/2000	120	160	12	65	38	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/2/2000	88	170	8.6	45	31	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/1/2000	98	200	9.3	48	30	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/1/2001	82	180	9.7	50	29	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/1/2001	74	180	9.0	54	30	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/6/2001	48	140	7.3	40	7.0	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/1/2001	55	170	7.4	46	21	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/2/2002	41	130	6.4	36	16	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/8/2002	30	110	5.6	29	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/1/2002	36	120	7.0	31	17	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/4/2002	54	140	8.1	43	27	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/4/2003	42	110	6.8	32	18	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/7/2003	45	110	6.9	31	21	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/6/2003	41	99	6.4	26	16	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/5/2003	39	110	5.4	29	18	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/3/2004	25	100	6.0	26	16	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/6/2004	26	90	4.6	24	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/3/2004	30	95	5.1	23	12	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/1/2004	20	89	4.8	23	12	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/3/2005	25	80	5.0	16	11	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/3/2005	20	70	4.0	17	7.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/2/2005	19	60	4.4	15	11	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	12/16/2005	18	50	3.6	12	8.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/6/2006	21	62	4.0	13	10	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/9/2006	8.2	38	2.4	8.6	5.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/8/2006	9.8	47	1.8	10	5.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/9/2006	11	48	2.8	10	6.4	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/6/2007	9.8	43	3.1	9.0	2.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/10/2007	9.0	40	2.5	8.6	4.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/8/2007	7.4	33	2.2	7.0	4.5	1.0 U	--	--	--	--	--	--

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Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-11	11/7/2007	8.4	38	2.9	8.7	6.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	2/12/2008	8.3	34	2.6	7.1	5.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/12/2008	7.8	35	2.8	7.0	5.7	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	8/8/2008	8.9	34	2.5	6.8	6.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	11/5/2008	4.8	24	1.8	5.9	3.8	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/7/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.9	940	742	4.7	3.1
West Corrective Action Area Wells	E-11	8/18/2009	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	864	16300	1.2 U	1.1 U
West Corrective Action Area Wells	E-11	11/5/2009	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U	100 UJ	100 U	316	--	--	--
West Corrective Action Area Wells	E-11	2/2/2010	1.0 U	2.1	1.0 U	31	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/5/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	282	15600	16.3	1.1 U
West Corrective Action Area Wells	E-11	8/9/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.3	382	16200	11.6	2.0
West Corrective Action Area Wells	E-11	11/15/2010	1.0 U	1.0 U	1.0 U	5.5	1.0 U	1.0 U	0.1 U	0.3	66	--	--	--
West Corrective Action Area Wells	E-11	2/3/2011	1.0 U	1.0 U	1.0 U	4.1	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-11	5/2/2011	1.0 U	1.0 U	1.0 U	3.3	1.0 U	1.0 U	0.1 U	0.1 U	43.6	23900	1.2 U	1.1 U
West Corrective Action Area Wells	E-11	8/2/2011	1.0 U	1.0 U	1.0 U	6.6	1.0 U	1.0 U	0.1 U	0.1 U	28.9	22100	1.2 U	1.1 U
West Corrective Action Area Wells	E-11	10/31/2011	1.0 U	1.0 U	1.0 U	6.1	1.0 U	1.0 U	0.1 U	0.3	28.2	20600	1.2 U	1.1 U
West Corrective Action Area Wells	E-11	2/7/2012	1.0 U	1.0 U	1.0 U	7.8	1.0 U	1.0 U	0.1 U	0.3	30	56300 E	2.4	1.1 U
West Corrective Action Area Wells	E-11	5/7/2012	1.0 U	1.0 U	1.0 U	9.6	1.0 U	1.0 U	0.1 U	0.4	29.8	24200	1.3	1.1 U
West Corrective Action Area Wells	E-11	8/8/2012	1.0 U	1.0 U	1.0 U	13	1.0 U	1.0 U	0.1 U	1.1	28.4	34900	1.4	1.1 U
West Corrective Action Area Wells	E-11	11/9/2012	0.5 U	0.2 U	0.2 U	12	0.2	0.2	0.1 U	1.0 U	25.9	34000	11	5.0 U
West Corrective Action Area Wells	E-11	2/4/2013	0.5 U	0.2 U	0.2 U	8.9	0.2 U	0.2 U	0.1 U	1.0 U	24.3	33000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	5/7/2013	0.5 U	0.3	0.2 U	7.8	0.2 U	0.2 U	0.1 U	1.0 U	22.8	26000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	8/2/2013	0.5 U	0.2 U	0.2 U	5.9	0.2 U	0.2 U	0.1 U	1.0 U	23.3	27000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	11/12/2013	0.5 U	0.2 U	0.2 U	6.0	0.2 U	0.2 U	0.1 U	1.0 U	27.5	36000	5.9	5.0 U
West Corrective Action Area Wells	E-11	8/12/2014	0.5 U	0.2	0.2 U	7.6	0.3	0.2 U	0.10 U	1.0 U	25	21000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	11/5/2014	0.5 U	0.2 U	0.2 U	3.0	0.2 U	0.2 U	0.10 U	1.0 U	24	17000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	2/4/2015	0.5 U	0.2 U	0.2 U	1.9	0.2 U	0.2 U	0.10 U	1.0 U	27.4	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	8/5/2015	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.10 U	1.0 U	259	36000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	8/22/2016	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	45.4	23000	5.1	5.0 U
West Corrective Action Area Wells	E-11	8/14/2017	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	30.7	15000 J	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	8/13/2018	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	1.0 U	31.6	10000	5.0 U	5.0 U
West Corrective Action Area Wells	E-11	2/13/2019	0.5 U	0.2 U	0.2 U	0.5	0.2 U	0.2 U	0.50 U	5.0 U	153	33000 J	5.0 UJ	5.0 UJ
West Corrective Action Area Wells	E-11	8/6/2019	0.5 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.50 UJ	1.0 U	90.9	14000 J	5.0 J	5.0 J
West Corrective Action Area Wells	E-11	2/27/2020	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.16	1.0 U	143	19	0.50 U	0.50 U
West Corrective Action Area Wells	E-11	8/12/2020	0.50 U	0.20 U	0.20 U	0.36	0.20 U	0.20 U	0.10 U	1.0 U	108	8.8	0.50 U	0.50 U
West Corrective Action Area Wells	E-15	1/20/1999	340	740	24	92	160	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/1/1999	280 J	690 J	31 J	93 J	160 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	3/2/1999	210	540	21	61	160	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/3/1999	390	990	30	130	180	23 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/2/1999	71	160	8.2	31	45	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/1/1999	32	96	4.7	37	39	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/4/2000	52	130	5.9	29	32	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/1/2000	71	160	6.3	34	52	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/1/2000	110	260	8.8	42	62	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/1/2000	140	290	10	56	78	5.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/1/2001	29	100 J	4.2	27	21	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/1/2001	31	100	4.2	30	26	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/6/2001	49	130	5.0	29	33	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-15	11/1/2001	17	63	2.6	20	15	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/2/2002	82	190	6.0	29	54	5.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/8/2002	92	180	7.4	38	52	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/1/2002	71	160	7.1	30	22	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/4/2002	84	170	7.8	31	47	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/4/2003	46	97	5.5	18	29	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/7/2003	49	100	4.7	20	31	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/6/2003	50	110	6.2	20	28	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/5/2003	21	80	3.2	19	19	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/3/2004	8.4	55	3.7	14	9.3	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/6/2004	45	100	4.7	18	29	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/3/2004	25	80	3.6	15	20	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/1/2004	30	72	3.6	14	31	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/3/2005	22	60	2.7	12	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/3/2005	47	77	4.5	15	27	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/2/2005	20	55	3.2	11	18	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	12/16/2005	26	61	3.3	11	23	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/6/2006	22	53	2.9	8.2	18	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/9/2006	14	40	2.4	7.1	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/8/2006	14	45	2.1	7.5	12	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/9/2006	16	43	3.4	8.4	16	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/6/2007	14	41	2.7	7.3	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/10/2007	17	47	2.8	8.2	19	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/8/2007	12	38	2.4	6.0	13	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/7/2007	16	41	3.0	7.4	19	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	2/14/2008	9.7	32	2.7	5.6	12	1.0 U	2.04	6.2	1.5 U	--	--	--
West Corrective Action Area Wells	E-15	5/12/2008	8.1	30	3.0	4.7	9.9	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	8/8/2008	8.7	33	2.7	5.3	9.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	11/5/2008	11	34	3.7	6.1	12	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-15	5/7/2009	1.0 U	4.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	45.4	540	103	4.0	8.8
West Corrective Action Area Wells	E-15	8/18/2009	1.0 U	8.8	1.0 U	1.1	1.3	1.0 U	1.0 U	1.0 U	381	19900	1.2 U	8.8
West Corrective Action Area Wells	E-15	11/5/2009	1.0 U	1.0 U	1.0 U	5.7	1.0 U	1.0 U	100 UJ	100 U	386	--	--	--
West Corrective Action Area Wells	E-15	2/2/2010	1.0 U	1.4	1.0 U	7.8	1.0 U	1.0 U	5.1	5.0 U	344	--	--	--
West Corrective Action Area Wells	E-15	5/5/2010	1.0 U	1.6	1.0 U	6.0	1.0 U	1.0 U	1.0 U	1.0 U	124	19500	1.2 U	1.1 U
West Corrective Action Area Wells	E-15	8/9/2010	1.0 U	1.0 U	1.0 U	1.3	1.0 U	8.5	0.1 U	0.1	24.2	22200	1.2 U	1.1 U
West Corrective Action Area Wells	E-15	11/15/2010	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.9	0.1 U	1.4	12.6	--	--	--
West Corrective Action Area Wells	E-15	1/31/2011	5.0 U	22	5.0 U	66	5.0 U	5.8	0.1 U	6.8	2.19	1.8	1.2 U	1.1 U
West Corrective Action Area Wells	E-15	5/2/2011	1.0 U	1.0 U	1.0 U	1.6	1.0 U	5.5	0.1 U	0.1 U	5.54	21600	1.7	1.5
West Corrective Action Area Wells	E-15	8/2/2011	1.0 U	16	1.8	67	1.0 U	1.0 U	0.1 U	0.4	2.98	3860	1.2 U	1.1 U
West Corrective Action Area Wells	E-15	10/31/2011	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.2	0.1 U	1.1	5.77	20500	3.4	1.1 U
West Corrective Action Area Wells	E-15	2/7/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1	0.6	10.2	34600	4.3	1.1 U
West Corrective Action Area Wells	E-15	5/7/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.2	8.12	39700	3.3	1.1 U
West Corrective Action Area Wells	E-15	8/8/2012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1	0.7	8.52	37900	7.2	1.1 U
West Corrective Action Area Wells	E-15	11/7/2012	0.5 U	0.3	0.2 U	1.0	0.2 U	3.6	0.1 U	1.0 U	2.9	8100	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/12/2013	0.5 U	11	0.4	24	2.4 J	2.9	0.1 U	3.3	21.8	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	5/6/2013	0.5 U	1.7	0.2 U	5.0	1.3	1.8	0.1 U	1.0 U	2.9	2400	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/2/2013	0.5 U	0.5	0.2 U	3.4	0.5	5.1	0.1 U	1.0 U	3.6	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/12/2013	0.5 U	0.4	0.2 U	1.7	0.3	2.4	0.1 U	1.1	2.2	9700	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-15	8/13/2014	0.5 U	0.5	0.2 U	2.4	0.2	2.5	0.10 U	2.0 J	155	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/5/2014	0.5 U	0.2 U	0.2 U	1.7	0.3	5.4	0.10 U	1.6	2.2	20000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/4/2015	0.5 U	0.8	0.2 U	3.3	0.6	1.8	0.10 U	3.2	2	9900	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	5/7/2015	0.5 U	3.1	0.2 U	7.6	1.6	5.6	0.10 U	2.4	1.7	15000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/5/2015	0.5 U	4.6	0.2 U	7.9	1.8	5.6	0.10 U	2.1	41.9	15000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/6/2015	0.5 U	0.9	0.2 U	7.3	1.4	5.2	0.10 U	2.9	1.0 U	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/5/2016	0.5 U	3.0	0.2 U	8.3	2.2	5.6	0.1 U	2.6	1.3	15000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	5/5/2016	0.5 U	0.4	0.2 U	5.2	0.9	5.5	0.10 U	2.2	1.0 U	15000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/10/2016	0.5 U	0.2	0.2 U	1.3	0.2	1.3	0.10 U	1.3	1.7	10000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/7/2016	0.5 U	0.2 U	0.2 U	0.6	0.2 U	0.9	0.10 U	1.1	3.3	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/10/2017	0.5 U	0.2 U	0.2 U	0.4	0.2 U	0.9	0.10 U	1.0	2.7	11000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	5/9/2017	0.5 U	0.2 U	0.2 U	0.3	0.2 U	0.4	0.10 U	1.0 U	2.4	10000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/11/2017	0.5 U	1.8	0.2 U	3.4	1.1	2.3	0.10 U	1.9	1.5	12000 J	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/2/2017	0.5 U	1	0.2 U	2.5	0.6	2.3	0.10 U	1.7	1.5	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/7/2018	0.5 U	0.3	0.2 U	1.4	0.2 U	1.6	0.10 U	1.0 U	139	12000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	5/11/2018	0.5 U	1.8	0.2 U	6.9	1.7	3.6	0.10 U	1.9	1.9	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/14/2018	0.5 U	1.1	0.2 U	5.9	1.3	3.6	0.10 U	1.7	1.8	12000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/13/2019	0.5 U	0.5	0.2 U	2.0	0.3	1.9	0.50 U	1.4 J	3.9	11000 J	5.0 UJ	5.0 UJ
West Corrective Action Area Wells	E-15	5/6/2019	0.5 U	0.8	0.2 U	4.4	0.8	2.9	0.10 UJ	1.7	2.0	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	8/6/2019	0.5 U	0.9	0.2 U	5.0	0.9	3.0	0.50 UJ	3.2	2.6	10000 J	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	11/12/2019	0.5 U	0.3	0.2 U	2.8	0.3	2.0	0.50 UJ	5.0 U	1.4	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-15	2/6/2020	0.50 U	0.40	0.20 U	4.9	0.70	3.6	0.10 U	1.0 U	2.5	12	0.50 U	0.50 U
West Corrective Action Area Wells	E-15	5/5/2020	0.50 U	0.70	0.20 U	5.1	0.90	3.1	0.50 U	2.4	1.7	11	0.50 U	0.50 U
West Corrective Action Area Wells	E-15	8/12/2020	0.50 U	0.52	0.20 U	3.1	0.28	2.1	0.50 U	5.0 U	167	9.9	0.50 U	0.50 U
West Corrective Action Area Wells	E-15	11/4/2020	0.50 U	1.1	0.20 U	6.3	1.33	4.7	0.10 UJ	1.0 U	4.0	17.4	0.50 U	0.50 U
West Corrective Action Area Wells	E-16	1/20/1999	340	620	19	130	95	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/1/1999	290 J	430 J	22 J	100 J	120 J	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	3/2/1999	360	390	16	75	90	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/3/1999	170	320	12	98	32	3.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/2/1999	49	140	5.5	42	14	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/1/1999	150	160	7.8	45	26	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/4/2000	33	120	4.4	14	9.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/1/2000	38	97	5.1	34	11	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/1/2000	14	59	2.7	28	4.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/1/2000	8.2	41	2.3	28	2.9	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/1/2001	38	120	7.2	53	12	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/1/2001	40	120	6.8	46	13	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/6/2001	40	100	6.9	46	11	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/1/2001	36	110	6.0	39	11	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/2/2002	20	77	5.2	28	7.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/8/2002	15	57	3.4	23	5.7	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/1/2002	17	64	4.8	24	5.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/4/2002	5.8	66	4.9	35	3.3	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/4/2003	2.0	17	1.4	6.8	1.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/7/2003	1.6	17	1.1	6.5	1.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/6/2003	2.2	39	3.2	16	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/5/2003	3.4	51	3.7	22	2.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/3/2004	4.8	38	3.7	13	3.1	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-16	5/6/2004	1.0 U	38	2.9	16	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/3/2004	1.0 U	44	3.6	18	1.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/1/2004	7.6	39	3.3	11	4.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/3/2005	2.0	29	2.7	9.6	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/3/2005	4.2	28	3.0	11	1.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/2/2005	4.3	32	3.3	11	2.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	12/16/2005	1.7	21	1.7	6.4	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/6/2006	3.0	20	1.8	5.3	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/9/2006	5.4	18	1.6	4.4	2.4	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/8/2006	3.4	18	1.5	4.7	1.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/9/2006	1.1	24	2.6	5.9	0.8	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/6/2007	4.4	24	2.2	6.2	2.5	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/10/2007	3.6	20	1.8	4.5	2.4	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/8/2007	4.6	20	2.0	4.6	2.6	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/7/2007	2.4	22	3.5	5.9	1.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/12/2008	3.8	18	2.5	3.9	2.3	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/12/2008	1.0 U	6.2	1.0 U	1.5	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	8/8/2008	1.5	13	1.8	3.1	1.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	11/5/2008	5.6	21	2.6	3.9	3.4	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	2/3/2009	1.0 U	8.8	1.0 U	1.0 U	2.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/7/2009	1.0 U	1.7	1.0 U	6.0	1.0 U	1.0 U	1.0 U	2.0	41.2	12200	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	8/18/2009	1.0 U	1.0 U	1.0 U	2.2	1.0 U	1.0 U	0.1 U	0.5	63.7	21900	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	11/5/2009	1.0 U	1.0 U	1.0 U	3.1	1.0 U	1.0 U	100 UJ	100 U	57.6	--	--	--
West Corrective Action Area Wells	E-16	2/2/2010	1.0 U	1.0 U	1.0 U	4.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-16	5/5/2010	1.0 U	1.0 U	1.0 U	3.0	1.0 U	1.0 U	0.2	0.3	26.9	19400	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	8/9/2010	1.0 U	2.8	1.0 U	6.8	1.0 U	1.0 U	0.1 U	0.6	3.74	21900	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	11/15/2010	1.0 U	1.0 U	1.0 U	3.6	1.0 U	1.0 U	0.1	0.5	3.37	--	--	--
West Corrective Action Area Wells	E-16	1/31/2011	1.0 U	1.0 U	1.0 U	4.8	1.0 U	1.0 U	0.1 U	0.3	2.28	5080	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	5/2/2011	1.0 U	1.5	1.0 U	5.7	1.0 U	1.0 U	0.1	0.2	1.87	13100	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	8/2/2011	1.0 U	1.5	1.0 U	3.7	1.0 U	1.0 U	0.1 U	0.2	1.65	3080	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	10/31/2011	1.0 U	5.0	2.2	6.9	1.0 U	1.0 U	0.1 U	3.5	2.24	3680	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	2/7/2012	1.0 U	1.9	1.0 U	4.0	1.0 U	1.0 U	0.1	0.9	1.94	3980	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	5/7/2012	1.0 U	1.2	1.0 U	8.6	1.0 U	1.0 U	0.1 U	1.2	1.55	5740	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	8/8/2012	1.0 U	4.2	2.3	4.3	1.0 U	1.7	0.2	5.5	4.24	3280	1.2 U	1.1 U
West Corrective Action Area Wells	E-16	11/7/2012	0.5 U	8.1	5.3	15	0.2 U	2.5	0.1 U	1.9	1.0 U	1700	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/12/2013	0.6	8.2	1.0	1.9	0.3 J	0.3	0.76	6.6	1.0 U	1300	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	5/7/2013	1.0	9.3	2.5	1.8	0.9	0.2 U	2.5	6.7	1.0 U	110	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/2/2013	0.6	12	2.6	1.5	0.4	0.2 U	2.0	6.6	1.1	5.0 U	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	11/12/2013	0.5 U	13	2.8	2.0	0.5	0.2 U	2.9	7.2	1.0 U	8.3	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/13/2014	0.5 U	13	3.0	2.4	0.6	0.2 U	2.8	7.9	1.7	13	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	11/5/2014	0.5 U	13	2.4	1.7	0.5	0.2 U	2.2	8.4	1.0 U	5.0	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/4/2015	0.5 U	9.8	2.1	1.3	0.2	0.2 U	2.4	7.2	1.0 U	5.0 U	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	5/7/2015	0.5 U	8.5	1.7	1.3	0.2	0.2 U	2.8	6.9	1.0 U	14	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/5/2015	0.5 U	9.6	2.1	1.5	0.2	0.2 U	2.6	7.0	1.0 U	24	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	11/6/2015	0.5 U	0.9	0.2 U	7.2	1.4	5.3	0.10 U	3.1	1.0 U	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/26/2016	0.5 U	6.3	1.5	0.9	0.2	0.2 U	2.1	6.9	1.0 U	460	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	5/5/2016	0.5 U	7.7	2.3	1.2	0.3	0.2 U	3.5	7.0	1.0 U	23	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/10/2016	0.5 U	8.3	2.8	1.4	0.2	0.2 U	3.2	7.3	1.0 U	8.8	5.0 U	5.0 U

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-16	11/7/2016	0.5 U	8.8	2.3	1.2	0.3	0.2 U	2.9	7.0	1.3	11	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/10/2017	0.5 U	6.8	1.8	0.7	0.3	0.2 U	2.5	7.1	1.0 U	5.5	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	5/9/2017	0.5 U	0.2	0.2 U	0.3	0.2 U	0.4	0.10 U	1.0 U	2.2	11000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/10/2017	0.7	11	3.1	1.4	1.7	0.2 U	3.0	7.4	1.0 U	54 J	5.0 UJ	5.0 UJ
West Corrective Action Area Wells	E-16	11/2/2017	0.5 U	6.9	2.3	0.8	0.2 U	0.2 U	0.10 U	6.8	1.0 U	5.0 U	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/7/2018	0.5 U	0.3	0.2 U	8.7	0.2 U	0.5	0.10 U	1.0 U	53.5	14000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	5/17/2018	0.5 U	0.2 U	0.2 U	2.1	0.2 U	5.2	0.10 U	1.0 U	92.6	37000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/14/2018	0.5 UJ	0.2 UJ	0.2 UJ	1.5 J	0.2 UJ	4.4 J	0.10 U	1.0 U	183	26000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	11/9/2018	0.5 U	0.2 U	0.2 U	0.8	0.2 U	4.1	0.10 U	1.0 U	79.0	31000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/13/2019	0.5	3.9	0.3	2.4	2.1	5.0 J	0.50 U	1.4	14.1	20000 J	5.0 UJ	5.0 UJ
West Corrective Action Area Wells	E-16	5/6/2019	0.5 U	2.5	0.2 U	1.8	1.2	3.4	0.10 UJ	1.3	9.1	19000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	8/6/2019	0.5 U	2.2	0.2 U	1.4	1.0	2.9	0.50 UJ	1.2	8.1	16000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	11/12/2019	0.5 U	1.6	0.2 U	1.2	0.8	1.9	0.50 UJ	1.2	7.0	13000	5.0 U	5.0 U
West Corrective Action Area Wells	E-16	2/6/2020	0.50 U	1.6	0.20 U	1.2	0.70	1.8	0.10 U	1.5	6.7	11	0.50 U	0.50 U
West Corrective Action Area Wells	E-16	5/5/2020	0.50 U	1.5	0.20 U	1.4	0.70	1.5	0.50 U	2.4	5.0	9.0	0.50 U	0.50 U
West Corrective Action Area Wells	E-16	8/12/2020	0.50 U	1.1	0.20 U	0.86	0.51	0.83	0.50 U	5.0 U	5.5	5.5	0.50 U	0.50 U
West Corrective Action Area Wells	E-16	11/4/2020	0.50 U	1.4	0.20 U	1.3	0.64	1.3	0.10 UJ	29	5.3	6.3	0.50 U	0.50 U
West Corrective Action Area Wells	E-5	3/28/1989	8300	2300	98	160	320	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/6/1989	11000	2200	92	170	450	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/12/1989	18000	1900	--	--	590	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/18/1989	14000	2100	--	--	540	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/25/1989	11000	1900	--	--	--	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/2/1989	13000	2200	--	--	570	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/9/1989	19000	1700	--	--	730	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/16/1989	22000	1700	--	--	1000	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/23/1989	27000	1600	--	--	1100	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/30/1989	21000	1200	--	--	680	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/7/1989	24000	1500	500 U	--	500 U	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/13/1989	34000	1500	150 J	110 M	1200	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/20/1989	39000	1500	110 J	130 J	1400	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/27/1989	29000	1400	90	87 J	980	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/5/1989	26000	1400	110 M	130 J	820	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/11/1989	23000	1500	120	170	720	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/18/1989	18000	1600	150	170 J	630	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/25/1989	21000	1500	110 J	140 J	710	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/1/1989	22000	1700	170	170 J	830	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/8/1989	28000	1600	130 M	290	980	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/15/1989	27000	1900	200	320	940	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/22/1989	27000	1700	200	300	980	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/29/1989	31000	2200	220	350	1100	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/5/1989	300	2100	140	380	990	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/15/1989	17000	2200	130 J	280	860	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/21/1989	37000	2500	150	310	1700	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/28/1989	38000	2500	170 J	260	1800	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/5/1989	19000	2300	160 J	270	930	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/12/1989	14000	2100	130	210	610	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/19/1989	15000	2300	140 J	220	560	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/4/1990	26000	2700	140 J	300	1300	--	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-5	1/17/1990	14000	2500	150 J	250	670	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/31/1990	13000	2300	98 J	220	550	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/14/1990	13000	2200	--	190 J	430	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/28/1990	13000	2000	99 M	150 J	290	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/14/1990	9500	2400	--	--	460	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/28/1990	4500	2200	120	180	290	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/11/1990	7200	2600	170	190	500	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/25/1990	3400	1800	100	150	230	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/8/1990	17000	3000	120 J	250	1200	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/22/1990	22000	2800	--	210	1700	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/6/1990	21000	3300	--	160 J	1500	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/19/1990	17000	2700	--	140 J	1000	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/3/1990	17000	2500	110 J	150 J	950	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/17/1990	16000	3400	120 J	440	1200	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/31/1990	14000	2600	--	150 J	1100	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/14/1990	14000	3600 B	120	230	790 JB	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/28/1990	6500	2200	110 M	180	520	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/10/1990	4200	1600	97 M	160	320	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/27/1990	4400	1800	120	190	390	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	10/9/1990	4600	2200	130	230	480	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	10/29/1990	7700	2000	120	180	650	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/14/1990	8200	2000	98	150	650	--	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/28/1990	10000	2200	100	170	790	150 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/11/1990	12000	1900	--	120	810	300 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/2/1991	12000	2100	85 M	140	960	300 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/15/1991	16000	1800	69 J	120	1000	300 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/5/1991	15000	1500	64 M	110	990	300 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/5/1991	9900	1100	51 M	55 M	580	300 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/2/1991	5500	970	100 U	65 J	330	200 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/7/1991	9500	1400	100 U	100 U	700	200 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/3/1991	13000	1300	100 U	54 J	720	200 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/1/1991	19000	2100	56 M	58 M	1200	200 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/5/1991	6000	1100	100 U	53 J	500	200 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/3/1991	2800	1200	48	58	290	60 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	10/2/1991	2100	860	51	56	150	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/4/1991	1200	740	54	64	110	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/4/1991	8900	1300	49	70	570	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/6/1992	3500	970	37	49	290	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/4/1992	7100	1200	37	52	1000	4.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/3/1992	7700	770	26 J	31 J	580	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/6/1992	7800	850	37 J	40 J	600	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/4/1992	5200	950	28 M	36 J	510	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/2/1992	7800	760	29 M	34 J	670	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/6/1992	5200	600	21 M	32 M	660	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/10/1992	1300	490	32	35	140	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/1/1992	4000	710	37	46	420	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	10/1/1992	750	440	26	26	93	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/2/1992	530	350	23	29	79	20 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-5	12/1/1992	510	450	41	40	83	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/1/1993	3300	660	26	34	250	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/1/1993	5400	990	28	35	370	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/3/1993	5600	1130	50 U	49 J	560	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/29/1993	3800	770	50 U	50 U	310	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/28/1993	4300	1200	30 M	32 M	390	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/25/1993	4800	1000	27 J	36 J	510	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/23/1993	3200	990	50 U	50 U	260	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	7/30/1993	3800	910	50 U	50 U	360	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/25/1993	5800	1800	56	46 J	580	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/29/1993	1700	770	33 J	50 U	200	100 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	10/27/1993	1400	840	27	25	140	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/22/1993	840	580	22	24	100	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/27/1993	2000	970	25	38	160	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	1/26/1994	2600	1100	28	41	250	20 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/23/1994	2500	1400	39	52	270	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/4/1994	3400	960	24	30	230	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	4/26/1994	3800 J	910	20	28	300	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/29/1994	2200	530	20 U	20 U	140	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/21/1994	1300	630	25	43	200	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/3/1995	2500 J	640 J	21	25	250	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	6/1/1995	2700	760	24	26	260	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/29/1995	2200	740	45 U	45 U	300	90 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/9/1995	600	320	25 U	25 U	110	50 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	3/4/1996	670	170	20 U	20 U	89	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/31/1996	650	180	5.8	9.6	88	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/26/1996	720	350	20 U	22	130	40 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/20/1996	270	350	8.9	29	65	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/27/1997	260	310	9.2	24	70	10 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	9/2/1997	290	330	14	25	100	6.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/3/1997	160	280	13	24	54	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/24/1998	53	140	4.9	14	12	6.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/5/1998	110 J	290	12	22	40	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/3/1998	100	170	8.3	14	35	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/2/1998	23	160	14	14	14	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/1/1999	24	140	5.8	10	6.9	2.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/3/1999	160	240	10	16	23	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/2/1999	12	150	9.1	11	5.5	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/1/1999	4.8	140	8.8	10	4.7	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/4/2000	45	99	5.6	7.2	4.9	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/1/2000	6.4	110	5.5	7.8	3.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/2/2000	5.4	83	4.9	7.5	3.1	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/1/2000	3.6	90	6.5	8.9	2.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/1/2001	3.4	86	5.7	8.8	2.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/1/2001	1.8	91	5.4	8.8	2.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/6/2001	1.0 U	88	5.7	10	2.2	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/1/2001	1.1	98	5.8	9.6	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/2/2002	1.3	58	3.2	4.5	1.4	1.0 U	--	--	--	--	--	--

Appendix B-1
Cumulative Water Quality Data Through December 2020
Boeing of Portland
Gresham, Oregon

Area	Location	Sample Sample Date	1,1,1TCA (µg/L)	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
West Corrective Action Area Wells	E-5	5/8/2002	1.0 U	64	3.5	5.3	1.6	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/1/2002	1.0 U	76	4.9	12	1.8	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/4/2002	1.0 U	67	5.2	11	2.0	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/4/2002	1.0 U	49	3.7	9.9	1.3	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/4/2003	1.0 U	28	2.6	4.3	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/7/2003	2.6	28	2.6	4.6	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/6/2003	2.5	27	2.7	4.6	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/5/2003	1.0 U	35	2.7	5.3	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/3/2004	1.0 U	22	2.3	3.8	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/6/2004	1.0 U	29	2.2	4.5	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/3/2004	1.0 U	36	2.9	5.7	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/1/2004	1.0 U	29	2.5	4.3	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/3/2005	1.0 U	19	2.0	3.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/3/2005	1.0 U	21	2.1	3.1	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/2/2005	1.0 U	19	2.0	3.2	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	12/16/2005	0.2	24	2.3	3.3	0.4	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/6/2006	1.0 U	21	1.9	2.4	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/9/2006	1.0 U	20	1.6	2.8	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/8/2006	1.0 U	9.9	1.0 U	1.2	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/29/2006	0.2 U	17	1.9	1.6	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/6/2007	0.2 U	20	2.1	2.6	0.3	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/10/2007	2.2	27	2.4	6.1	3.5	0.4 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/8/2007	0.2 U	18	2.2	2.7	0.9	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/8/2007	1.0 U	14	1.8	1.8	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/12/2008	1.0 U	14	2.4	2.4	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	5/12/2008	1.0 U	7.2	1.3	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/8/2008	1.0 U	7.5	1.6	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	11/5/2008	0.6 U	34	3.4	3.4	0.6 U	0.6 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	2/3/2009	1.0 U	15	4.4	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/6/2009	1.0 U	15	1.4	2.0	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/6/2010	1.0 U	5.2	1.4	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/3/2011	1.0 U	6.8	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/8/2012	1.0 U	4.3	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/2/2013	0.5 U	1.8	0.6	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/12/2014	0.5 U	5.2	0.4	0.9	0.5	0.4	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/13/2015	0.5 U	1.3	0.2 U	0.3	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/15/2016	0.5 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/11/2017	0.5 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/14/2018	0.5 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--
West Corrective Action Area Wells	E-5	8/9/2019	0.5 U	0.9	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--

Notes:

U = Indicates the compound was not detected at the reported concentration.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.

B = Possible/probable method blank contamination.

E = Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

M = Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match.

Abbreviations and Acronyms:

µg/L = micrograms per liter

1,1-DCE = 1,1-dichloroethene

1,1,1TCA = 1,1,1-trichloroethane

cis-1,2-DCE = cis-1,2-dichloroethene

mg/L = milligrams per liter

PCE = tetrachloroethene

TCE = trichloroethene

TOC = total organic carbon

VC = vinyl chloride

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatiles (µg/m^3; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-1 (SG-44)	05/23/2011	29 U	44 U	61 U	44 U	15,000	NA	45 U
	5/8/2013	3.0 U	4.7 U	6.5 U	4.7 U	49	64	--
	8/8/2013	3.0 U	4.7 U	6.4 U	4.7 U	6.3 U	48	--
	11/8/2013	2.8 U	4.3 U	5.9 U	4 U	5.8 U	66	--
	2/6/2014	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	8.2	--
	5/9/2014	3.0 U	4.7 U	6.5 U	4.7 U	6.4 U	57	--
	8/5/2014	2.9 U	4.4 U	6.9	4.4 U	250	89	--
	11/4/2014	15 U	24 U	33 U	24 U	9,000	270	--
	2/13/2015	3.0 U	4.7 U	6.5 U	4.7 U	330	80	--
	5/5/2015	3.1 U	4.9 U	6.7 U	4.9 U	13	81	--
	8/7/2015	2.5 UJ	3.9 UJ	5.4 UJ	3.9 U	8.4 J	42 J	--
	11/3/2015	3.1 U	4.8 U	6.6 U	4.8 U	70	61	--
	2/2/2016	3.0 U	4.6 U	7.3	4.6 U	1,600	99	--
	5/3/2016	2.7 U	4.2 U	5.8 U	4.2 U	14	18	--
	8/5/2016	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	39	--
	11/9/2016	3.0 U	4.7 U	6.5 U	4.7 U	6.4 U	18	--
	2/3/2017	2.9 U	4.6 U	6.3 U	4.6 U	6.2 U	17	--
	5/12/2017	2.8 U	4.3 U	6.0 U	4.3 U	5.9 U	17	--
	8/4/2017	3.0 U	4.6 U	6.4 U	4.6 U	6.3 U	120	--
	11/1/2017	1.2 U	1.8 U	2.5 U	1.8 U	2.4 U	64	--
	2/9/2018	2.7 U	4.2 U	7.5	4.2 U	990	68	--
	5/14/2018	17 U	26 U	36 U	26 U	12,000	240	--
	8/10/2018	63 U	97 U	130 U	97 U	33,000	980	--
	8/19/2019	3.0 U	4.6 U	6.4 U	4.6 U	14	120	--
	2/14/2020	3.1 U	3.9 U	6.6 U	4.8 U	7 U	46	--
	8/21/2020	3.0 U	4.7 U	6.5 U	4.7 U	6.9	29	--
VP-2 (SG-34)	01/06/2011	200 U	310 U	NA	1,100	280,000	NA	310 U
	5/8/2013	3.0 U	4.6 U	6.4 U	4.6 U	64	29	--
	8/8/2013	3.0 U	4.7 U	6.4 U	4.7 U	110	74	--
	11/8/2013	3.1 U	4.8 U	6.6 U	4.8 U	19	30	--
	2/6/2014	3.2 U	4.9 U	6.7 U	4.9 U	6.6	8.4	--
	5/9/2014	3.1 U	4.8 U	6.6 U	4.8 U	7.5	46	--
	8/5/2014	30 U	46 U	63 U	55	19,000	200	--
	11/4/2014	160 U	250 U	340 U	580	180,000	2,700	--
	2/13/2015	6.1 U	9.4 U	13 U	9.4 U	2900	92	--
	5/5/2015	2.9 U	4.5 U	6.2 U	4.5 U	58	73	--
	8/7/2015	3.0 U	4.7 U	6.5 U	4.7 U	36	67	--
	11/3/2015	32 U	49 U	67 U	52	21,000	220	--
	2/2/2016	420 U	650 U	890 U	650 U	150,000	2,300	--
	5/3/2016	3.3 U	5.1 U	7.1 U	5.1 U	220	25	--
	8/5/2016	3.0 U	4.7 U	6.5 U	4.7 U	64	35	--
	11/9/2016	2.8 U	4.4 U	6.0 U	4.4 U	20	17	--
	2/3/2017	2.7 U	4.3 U	5.9 U	4.3 U	5.8 U	15	--
	5/12/2017	3.0 U	4.7 U	6.4 U	4.7 U	6.3 U	23	--
	8/4/2017	3.1 U	4.8 U	6.6 U	4.8 U	18	160	--
	11/1/2017	1.2 U	1.8 U	2.5 U	1.8 U	2.4 U	110	--
	2/9/2018	69 U	110 U	150 U	230	230,000	2400	--

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatiles (µg/m^3; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-2 (SG-34) contd.	5/14/2018	310	230 U	310 U	1500	420,000	9500	--
	8/10/2018	140 U	230 U	310 U	630	510,000	13,000	--
	9/17/2018	3.1 U	4.8 U	6.5 U	4.8 U	8.8	190	--
	8/19/2019	3 U	4.6 U	6.4 U	4.6 U	6.3 U	56	--
	2/14/2020	2.9 U	4.5 U	6.2 U	4.5 U	6.2 U	54	--
	8/21/2020	3.0 U	4.6 U	6.4 U	4.6 U	6.3 U	36	--
VP-3 (SG-42)	05/23/2011	14 U	90	4,700	27	7,400	NA	240
	5/8/2013	2.8 U	4.3 U	22	4.3 U	11	26	--
	8/8/2013	3.0 U	4.6 U	27	4.6 U	19	110	--
	11/8/2013	2.8 U	4.3 U	22	4.3 U	10	26	--
	2/6/2014	3.0 U	4.7 U	6.5	4.7 U	6.4	8.1	--
	5/9/2014	3.0 U	4.6 U	19	4.6 U	7.7	42	--
	8/5/2014	3.0 U	4.6 U	510	4.6 U	230	83	--
	11/4/2014	3.0 U	4.6 U	890	4.6 U	240	84	--
	2/13/2015	3.0 U	4.6 U	100	4.6 U	39	65	--
	5/5/2015	3.0 U	4.6 U	21	4.6 U	9.0	75	--
	8/7/2015	3.0 U	4.6 U	26	4.6 U	10	56	--
	11/3/2015	3.3 U	5.1 U	220	5.1 U	81	58	--
	2/2/2016	2.9 U	4.5 U	420	4.5 U	100	130	--
	5/3/2016	3.2 U	5.0 U	22	15	11	35	--
	8/5/2016	3.0 U	4.6 U	18	4.6 U	7.5	49	--
	11/9/2016	2.6 U	4.1 U	11	4.1 U	6.2	26	--
	2/3/2017	3.0 U	4.6 U	11	4.6 U	6.4	53	--
	5/12/2017	3.1 U	4.8 U	9.1	4.8 U	6.6 U	42	--
	8/4/2017	2.9 U	4.4 U	14	4.4 U	8.1	160	--
	11/1/2017	1.1 U	1.8 U	8.6	1.8 U	2.4 U	87	--
	2/9/2018	2.9 U	4.5 U	620	4.5 U	400	96	--
	5/14/2018	3.0 U	4.6 U	1,400	4.6 U	400	180	--
	8/10/2018	3.0 U	4.7 U	2000	4.7 U	280	280	--
	8/19/2019	3.3 U	5.1 U	12	5.1 U	6.9 U	63	--
	2/14/2020	2.9 U	4.5 U	6.2 U	4.5 U	6.2 U	48	--
	8/21/2020	2.7 U	4.2 U	9.5	4.2 U	5.7 U	24	--
VP-4 (SG-45)	05/23/2011	290 U	440 U	610 U	660	170,000	NA	450 U
	5/8/2013	2.9 U	4.6 U	6.3 U	4.6 U	52	70	--
	8/8/2013	2.9 U	4.5 U	6.2 U	4.5 U	50	140	--
	11/8/2013	3.0 U	4.7 U	6.5 U	4.7 U	25	90	--
	2/6/2014	3.1 U	4.8 U	6.6 U	4.8 U	6.5	8.2	--
	5/9/2014	2.9 U	4.4 U	6.1 U	4.4 U	12	70	--
	8/5/2014	3.0 U	4.7 U	8.9	4.7 U	130	180	--
	11/4/2014	3.2 U	4.9 U	10	4.9 U	280	140	--
	2/13/2015	3.0 U	4.7 U	6.5 U	4.7 U	95	110	--
	5/5/2015	3.1 U	4.9 U	6.7 U	5 U	34	100	--
	8/7/2015	2.9 U	4.6 U	6.3 U	4.6 U	46	70	--
	11/3/2015	3.3 U	5.1 U	7.0 U	5.1 U	82	74	--
	2/2/2016	3.0 U	4.6 U	16	4.6 U	150	100	--
	5/3/2016	2.6 U	4.1 U	5.6 U	4.1 U	43	37	--
	8/5/2016	7.7 U	12 U	16 U	12 U	31	45	--
	11/9/2016	2.6 U	4.1 U	5.7 U	4.1 U	19	18	--
	2/3/2017	2.6 U	4.0 U	5.5 U	4.0 U	16	14	--

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatiles (µg/m^3; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-4 (SG-45) contd.	5/12/2017	2.8 U	4.4 U	6.0 U	4.4 U	16	17	--
	8/4/2017	3.1 U	4.8 U	6.5 U	4.8 U	31	170	--
	11/1/2017	1.2 U	1.9 U	2.6 U	1.9 U	22	52	--
	2/9/2018	2.6 U	4.0 U	12	4.0 U	82	70	--
	5/14/2018	2.9 U	4.5 U	58	4.5 U	56	120	--
	8/10/2018	3.0 U	4.6 U	74	4.6 U	410	200	--
	8/19/2019	2.9 U	4.5 U	6.2 U	4.5 U	34	280	--
	2/14/2020	3 U	4.6 U	6.4 U	4.6 U	13	44	--
	8/21/2020	2.9 U	4.5 U	6.2 U	4.5 U	33	60	--
VP-5 (SG-46)	05/23/2011	1,100	1,700	2,400	3,800	850,000	NA	1,800 U
	5/8/2013	3.0 U	4.6 U	6.4 U	4.6 U	110	52	--
	8/8/2013	3.1 U	4.8 U	6.6 U	4.8 U	69	120	--
	11/8/2013	3.0 U	4.6 U	6.3 U	4.6 U	26	66	--
	2/6/2014	3.1 U	4.8 U	6.6 U	4.8 U	6.5	8.2	--
	5/9/2014	3.0 U	4.6 U	6.4 U	4.6 U	10	66	--
	8/5/2014	12 U	18 U	99	18 U	7400	150	--
	11/4/2014	310 U	480 U	660 U	570	260,000	4300	--
	2/13/2015	3.9 U	6.0 U	8.3 U	6.0 U	1300	69	--
	5/5/2015	3.1 U	4.9 U	6.7 U	4.9 U	43	54	--
	8/7/2015	2.8 U	4.4 U	6.1 U	4.4 U	19	32	--
	11/3/2015	5.1 U	7.8 U	50	7.8 U	2,600	74	--
	2/2/2016	250 U	390 U	2,500	390 U	93,000	1700	--
	5/3/2016	2.6 U	4.1 U	5.6 U	4.1 U	200	20	--
	8/5/2016	3.3 U	5.1 U	7.0 U	5.1 U	31	30	--
	11/9/2016	3.0 U	4.6 U	6.3 U	4.6 U	12	18	--
	2/3/2017	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	30	--
	5/12/2017	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	19	--
	8/4/2017	3.1 U	4.8 U	6.6 U	4.8 U	8.9	100	--
	11/1/2017	1.3 U	2 U	2.7 U	2 U	2.7 U	48	--
	2/9/2018	29 U	45 U	140	56	78,000	740	--
	5/14/2018	18 U	28 U	420	210	12,000	150	--
	8/10/2018	61 U	94 U	600	170	230,000	7,600	--
	9/17/2018	3.0 U	4.6 U	6.3 U	4.6 U	86	150	--
	8/19/2019	3.1 U	4.8 U	6.5 U	4.8 U	64	170	--
	2/14/2020	2.8 U	4.4 U	6 U	4.4 U	21	60	--
	8/21/2020	3.1 U	4.8 U	6.6 U	4.8 U	52	59	--
VP-6 (SG-1)	12/17/2009	13 U	59	7,600	160	3,200	NA	440
	5/8/2013	3.0 U	4.6 U	20	4.6 U	22	53	--
	8/8/2013	3.2 U	4.9 U	28	4.9 U	30	180	--
	11/8/2013	3.2 U	4.9 U	13	4.9 U	10	150	--
	2/6/2014	3.2 U	4.9 U	6.7	4.9 U	6.6 U	8.4	--
	5/9/2014	3.1 U	4.8 U	9.8	4.8 U	8.0	100	--
	8/5/2014	3.0 U	6.0	470	10	290	210	--
	11/4/2014	3.1 U	4.8 U	830	15	1,200	170	--
	2/13/2015	2.9 U	4.6 U	99	4.6 U	160	110	--
	5/5/2015	3.0 U	4.6 U	120	16	40	150	--
	8/7/2015	2.9 U	4.5 U	31	4.6	19	94	--
	11/3/2015	3.2 U	4.9 U	180	6.2	100	120	--
	2/2/2016	3.0 U	4.6 U	490	15	500	190	--

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatiles (µg/m^3; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-6 (SG-1) contd.	5/3/2016	2.8 U	4.3 U	38	4.5	30	49	--
	8/5/2016	2.8 U	4.4 U	29	4.4 U	10	68	--
	11/9/2016	2.9 U	4.5 U	7.6	4.5 U	6.1 U	54	--
	2/2/2017	2.7 U	4.2 U	5.8 U	4.2 U	5.7 U	35	--
	5/12/2017	2.8 U	4.3 U	8.6	4.3 U	8.0	54	--
	8/4/2017	3.0 U	4.6 U	16	4.6 U	13.0	400	--
	11/1/2017	1.2 U	1.9 U	8.6	1.9 U	14	160	--
	2/9/2018	2.6 U	7.1	370	11	310	220	--
	5/14/2018	2.9 U	6.4	420	8.6	50	11	--
	8/10/2018	3.3 U	14	1,300	28	1,700	620	--
	8/19/2019	3 U	52	1,200	4.6 U	210	140	--
	2/14/2020	5.9 U	53	3,000	9.2 U	530	120	--
	8/21/2020	29.0 U	54	4,000	45 U	690	87	--
VP-7 (SG-28B)	01/06/2011	30 U	3200	NA	1,900	5,200	NA	4,900
	5/8/2013	2.9 U	56	1,600	59	130	56	--
	8/8/2013	3.1 U	47	1,600	56	120	82	--
	11/8/2013	3.1 U	43	1,100	40	92	42	--
	2/6/2014	3.1 U	4.8	6.6	4.8	6.5	8.2	--
	5/9/2014	3.0 U	41	1,100	29	77	61	--
	8/5/2014	10 U	190	7,200	160	500	170	--
	11/4/2014	6.0 U	100	3,600	95	260	100	--
	2/13/2015	3.0 U	69	2,200	66	180	130	--
	5/5/2015	3.0 U	31	930	39	90	77	--
	8/7/2015	3.0 U	33	870	32	86	60	--
	11/3/2015	6.1 U	110	3,500	120	310	88	--
	2/2/2016	7.1 U	120	4,600	120	400	150	--
	5/3/2016	3.3 U	30	1000	36	110	78	--
	8/5/2016	2.8 U	25	820	20	78	92	--
	11/9/2016	3.0 U	20	600	18	51	64	--
	2/3/2017	2.7 U	15	530	16	49	100	--
	5/12/2017	2.9 U	13	520	13	52	110	--
	8/4/2017	3.1 U	20	720	18	78	190	--
	11/1/2017	1.1 U	12	540	12	57	150	--
	2/9/2018	4.3 U	50	2,700	61	280	150	--
	5/14/2018	8.6 U	70	4,100	75	370	220	--
	8/10/2018	8.5 U	98	4900	83	500	300	--
	11/14/2018	3.1 U	4.8 U	83	4.8 U	9.2	72	--
	2/7/2019	2.9 U	11	420	12	44	72	--
	8/19/2019	3.2 U	10	340	8.7	38	19	--
	2/14/2020	3 U	13	250	6.9	21	25	--
	8/21/2020	3.2 U	6.9	240	6.6	26	34	--
VP-8 (SG-11)	2/17/2010	100 U	14,273	190,975	7,414	20,743	NA	22,099
	5/8/2013	13 U	380	7,600	120	300	100	--
	8/8/2013	5.7 U	190	4,500	83	180	150	--
	11/8/2013	7.3 U	200	3,800	43	150	110	--
	2/6/2014	5.2 U	8.0	11	8.0	11	14	--
	5/9/2014	3.0 U	99	2,500	17	98	110	--
	8/5/2014	40 U	780	30,000	310	2,200	340	--
	11/4/2014	40 U	1000	26,000	450	1,600	290	--

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Volatiles (µg/m³; EPA TO-15)						
		Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
Screening Level (a)		2,800	880,000	22,000,000	N/A	2,900	47,000	N/A
VP-8 (SG-11) contd.	2/13/2015	6.3 U	230	4,800	110	260	140	--
	5/5/2015	3.0 U	100	2,400	39	110	140	--
	8/7/2015	6.0 U	140	2,800	41	140	91	--
	11/3/2015	21 U	530	14,000	230	630	150	--
	2/2/2016	20 U	460	14,000	260	790	180	--
	5/3/2016	3.1 U	100	2,200	36	100	75	--
	8/5/2016	7.6 U	110	2,800	30	130	100	--
	11/15/2016	3.3 U	20	530	43	47	36	--
	2/3/2017	2.8 U	55	1,900	37	76	120	--
	5/12/2017	3.0 U	36	1,800	29	73	61	--
	8/4/2017	6.0 U	25	2,000	20	92	300	--
	11/1/2017	1.2 U	17	1,200	17	58	160	--
	2/9/2018	5.3 U	86	3,400	45	240	100	--
	5/14/2018	15 U	170	7,600	80	510	190	--
	8/10/2018	7.9 U	150	5,200	87	410	240	--
	11/14/2018	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	200	--
	2/7/2019	2.9 U	20	820	21	44	160	--
	8/19/2019	3 U	17	950	28	62	94	--
	2/14/2020	3.2 U	19	730	30	55	45	--
	8/21/2020	15.0 U	33	1900	61	130	80	--
VP-9 (SG-24)	2/18/2010	100 U	103 U	186	103 U	8,007	NA	101 U
	5/8/2013	3.1 U	4.8 U	17	4.8 U	340	390	--
	8/8/2013	3.0 U	4.6 U	39	4.6 U	570	360	--
	11/8/2013	3.0 U	4.6 U	9.5	4.6 U	160	170	--
	2/6/2014	3.2 U	4.9 U	6.7 U	4.9 U	6.6	8.4	--
	5/9/2014	3.0 U	4.6 U	6.5	4.6 U	72	100	--
	8/5/2014	2.9 U	4.5 U	58	4.5 U	440	210	--
	11/4/2014	2.9 U	4.6 U	41	4.6 U	250	120	--
	2/13/2015	2.9 U	4.5 U	38	4.5 U	300	160	--
	5/5/2015	3.1 U	4.8 U	18	4.8 U	220	140	--
	8/7/2015	3.0 U	4.6 U	10	4.6 U	97	90	--
	11/3/2015	3.0 U	4.6 U	28	4.6 U	220	120	--
	2/2/2016	3.1 U	4.8 U	52	4.8 U	270	130	--
	5/3/2016	2.9 U	4.5 U	14	4.5 U	130	74	--
	8/5/2016	3.0 U	4.6 U	8.6	4.6 U	76	58	--
	11/9/2016	2.9 U	4.5 U	6.2 U	4.5 U	36	28	--
	2/3/2017	2.8 U	4.4 U	6.1 U	4.4 U	40	33	--
	5/12/2017	2.9 U	4.5 U	6.2 U	4.5 U	33	24	--
	8/4/2017	3.1 U	4.8 U	6.7 U	4.8 U	57	210	--
	11/1/2017	1.2 U	1.9 U	2.6 U	1.9 U	34	94	--
	2/9/2018	2.9 U	4.5 U	25	4.5 U	150	82	--
	5/14/2018	3.0 U	4.6 U	65	4.6 U	280	150	--
	8/10/2018	3.2 U	5.2	120	4.9 U	640	300	--
	11/14/2018	2.8 U	4.4 U	12	4.4 U	68	110	--
	8/19/2019	3.1 U	4.8 U	6.7 U	4.8 U	88	280	--
	2/14/2020	3 U	4.7 U	6.5 U	4.7 U	16	40	--
	8/21/2020	2.8 U	4.3 U	5.9 U	4.3 U	74	47	--

Appendix B-2
Historical Subslab Vapor Well Analytical Results
Former Vapor Degreaser Source Area
Boeing Portland
Gresham, Oregon

Notes:

Green shading indicates baseline samples collected during pilot tests.

Yellow shaded results are greater than the screening level.

(a) Risk-Based Concentration screening levels with 1,000 attenuation factor for vapor intrusion through building slab (ODEQ 6/7/2012).

-- = not analyzed

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Abbreviations and Acronyms:

µg/m^3 = micrograms per cubic meter

1,1-DCA = 1,1-dichloroethane

1,1-DCE = 1,1-dichloroethene

1,1,1-TCA = 1,1,1-trichloroethane

cDCE = cis-1,2-dichloroethene

EPA = US Environmental Protection Agency

N/A = not applicable

ODEQ = Oregon Department of Environmental Quality

PCE = tetrachloroethene

TCE = trichloroethene

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Cumulative days since startup	VOLATILES (µg/m3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
		Screening Level (a)	2,800	880,000	22,000,000		2,900	47,000	
VOW-16	9/10/2012		4.8 U	7.4 U	190	7.4 U	2,500	480	--
VOW-16	11/6/2012	50	3.2 U	4.9 U	6.7 U	4.9 U	52	97	--
VOW-16	2/6/2013	142	2.9 U	4.4 U	20	4.4 U	120	50	--
VOW-16	5/8/2013	233	3.0 U	4.7 U	6.5 U	4.7 U	16	14	--
VOW-16	8/8/2013	325	3.1 U	4.8 U	6.6 U	4.8 U	**16**	44	--
VOW-16	11/8/2013	417	3.0 U	4.6 U	6.4 U	4.6 U	9.6	22	--
VOW-16	2/6/2014	507	3.1 U	4.8	6.6	4.8 U	6.5	8.2	--
VOW-16	5/9/2014	599	3.0 U	4.6 U	6.4 U	4.6 U	26	33	--
VOW-16	8/5/2014	687	3.0 U	4.7 U	37	4.7 U	340	41	--
VOW-16	11/4/2014	778	3.0 U	4.6 U	27	4.6 U	250	56	--
VOW-16	2/13/2015	879	2.9 U	4.5 U	6.2 U	4.5 U	49	27	--
VOW-16	5/5/2015	960	3.0 U	4.6 U	6.4 U	4.6 U	6.2 J	20	--
VOW-16	8/7/2015	1054	3.1 U	4.8 U	19	4.8 U	23	86	--
VOW-16	11/3/2015	1142	2.7 U	4.1 U	14	4.1 U	34	28	--
VOW-16	2/2/2016	1233	3.0 U	4.7 U	22	4.7 U	130	160	--
VOW-16	5/3/2016	1324	2.9 U	4.5 U	6.1 U	4.5 U	6.0 U	67	--
VOW-16	8/5/2016	1418	2.9 U	4.5 U	6.2 U	4.5 U	6.6	120	--
VOW-16	11/9/2016	1514	3.2 U	5.0 U	6.8 U	5.0 U	6.7 U	64	--
VOW-16	2/3/2017	1600	2.8 U	4.4 U	69	4.4 U	170	110	--
VOW-16	5/12/2017	1698	2.9 U	4.6 U	6.3 U	4.6 U	6.2 U	56	--
VOW-16	8/4/2017	1782	3.1 U	4.8 U	6.6 U	4.8 U	8.6	230	--
VOW-16	2/9/2018	1972	66	6.5	40	7.8	680	160	--
VOW-16	8/10/2018	2153	240	11	23	63	1500	220	--
VOW-16	2/7/2019	2335	2.8 U	4.4 U	14	4.4 U	78	120	--
VOW-16	8/19/2019	2528	3.2 U	5.0 U	6.8 U	5.0 U	22	43	--
VOW-16	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	14	45	--
VOW-16	8/21/2020	2896	3.1 U	4.8 U	7.2	4.8 U	6.5 U	43	--
VOW-17	9/10/2012		13 U	20 U	87	20 U	8,300	1,800	--
VOW-17	11/6/2012	50	3.0 U	4.6 U	6.4 U	4.6 U	6.3 U	84	--
VOW-17	2/6/2013	142	120	8.0	25	56	200	62	--
VOW-17	5/8/2013	233	2.9 U	4.5 U	6.2 U	4.5 U	28	96	--
VOW-17	8/8/2013	325	2.9 U	4.5 U	6.2 U	4.5 U	11	120	--
VOW-17	11/8/2013	417	2.9 U	4.4 U	6.1 U	4.4 U	15	96	--
VOW-17	2/6/2014	507	3.1 U	4.8 U	6.6	4.8 U	6.5	8.2	--
VOW-17	5/9/2014	599	3.1 U	4.8 U	6.6 U	4.8 U	12	59	--
VOW-17	8/5/2014	687	3.0 U	4.6 U	11	4.6 U	300	100	--
VOW-17	11/4/2014	778	3.0 U	4.7 U	10	4.7 U	980	220	--
VOW-17	2/13/2015	879	3.0 U	4.7 U	6.5 U	4.7 U	110	110	--
VOW-17	5/5/2015	960	3.2 U	5.0 U	6.9 U	5.0 U	24	120	--
VOW-17	8/7/2015	1054	3.1 U	4.8 U	16	4.8 U	35	120	--
VOW-17	11/3/2015	1142	3.1 U	4.8 U	8.2	4.8 U	13	55	--
VOW-17	2/2/2016	1233	54	11	19	160	2,600	210	--
VOW-17	5/3/2016	1324	3.2 U	5.0 U	6.9 U	5.0 U	29	20	--
VOW-17	8/5/2016	1418	2.8 U	4.3 U	6.0 U	4.3 U	7.8	50	--
VOW-17	11/9/2016	1514	3.1 U	4.8 U	6.5 U	4.8 U	17	22	--
VOW-17	2/3/2017	1600	47	4.5 U	23	6.2	74	41	--
VOW-17	5/12/2017	1698	2.8 U	4.3 U	5.9 U	4.3 U	5.8 U	29	--
VOW-17	8/4/2017	1782	3.0 U	4.6 U	6.4 U	4.6 U	14	280	--
VOW-17	2/9/2018	1971	120	14	20	64	3,600	240	--
VOW-17	8/10/2018	2153	170	49 U	67 U	180	16,000	970	--
VOW-17	2/7/2019	2335	3.0 U	4.6 U	6.4 U	4.6 U	27	320	--
VOW-17	8/19/2019	2528	3.1 U	4.8 U	6.6 U	4.8 U	18	310	--
VOW-17	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	52	--
VOW-17	8/21/2020	2896	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	23	--
VOW-18	9/10/2012		62 U	450	7,900	740	31,000	8,800	--
VOW-18	11/6/2012	50	3.3 U	5.1 U	7.0 U	5.1 U	80	110	--
VOW-18	2/6/2013	142	3.2 U	5.0 U	6.9 U	5.0 U	43	61	--
VOW-18	5/8/2013	233	2.9 U	4.4 U	6.1 U	4.4 U	22	66	--
VOW-18	8/8/2013	325	3.0 U	4.7 U	6.4 U	4.7 U	17	130	--
VOW-18	11/8/2013	417	3.0 U	4.7 U	6.5 U	4.7 U	9.9	81	--
VOW-18	2/6/2014	507	3.2 U	5.0 U	6.9 U	5.0 U	6.8 U	8.5	--
VOW-18	5/9/2014	599	3.0 U	4.6 U	6.4 U	4.6 U	18	140	--
VOW-18	8/5/2014	687	3.0 U	4.6 U	77	9.5	360	200	--
VOW-18	11/4/2014	778	3.0 U	4.7 U	100	11	440	230	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

			VOLATILES (µg/m3; EPA TO-15)						
Location	Date Collected	Cumulative days since startup	Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
VOW-18	2/13/2015	879	3.0 U	4.6 U	21	4.6 U	49	180	--
VOW-18	5/5/2015	960	3.0 U	4.6 U	6.4 U	4.6 U	14	230	--
VOW-18	8/7/2015	1054	3.0 U	4.6 U	6.3 U	4.6 U	14	160	--
VOW-18	11/3/2015	1142	3.2 U	5.0 U	42	10 J	300	300	--
VOW-18	2/2/2016	1233	3.0 U	4.7 U	200	15	340	360	--
VOW-18	5/3/2016	1324	2.9 U	4.6 U	6.3 U	4.6 U	8.6	75	--
VOW-18	8/5/2016	1418	3.1 U	4.8 U	6.6 U	4.8 U	10	120	--
VOW-18	11/9/2016	1514	3.0 U	4.7 U	6.4 U	4.7 U	6.3 U	82	--
VOW-18	2/3/2017	1600	2.8 U	4.4 U	6.0 U	4.4 U	5.9 U	130	--
VOW-18	5/12/2017	1698	2.9 U	4.6 U	6.2 U	4.5 U	6.1 U	130	--
VOW-18	8/4/2017	1782	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	890	--
VOW-18	2/9/2018	1971	2.9 U	4.6 U	130	15	820	430	--
VOW-18	8/10/2018	2153	6.1 U	9.4 U	39	9.4 U	650	1,000	--
VOW-18	2/7/2019	2335	3.0 U	4.6 U	6.4 U	4.6 U	11	460	--
VOW-18	8/19/2019	2528	3.1 U	4.8 U	6.7 U	4.8 U	7.5	370	--
VOW-18	2/14/2020	2707	2.8 U	4.4 U	6.1 U	4.4 U	6.0 U	88	--
VOW-18	8/21/2020	2896	3.1 U	4.8 U	6.6 U	4.8 U	6.5 U	61	--
BOP-78(i)	12/28/2009		110 U	410	360	420	88,000	NA	170 U
BOP-78(i)	10/11/2012	24	6.2	4.4 U	20	15	850	62	--
BOP-78(i)	11/6/2012	50	3.0 U	4.7 U	14	15	480	240	--
BOP-78(i)	2/6/2013	142	2.8 U	4.3 U	6.9	4.3 U	96	51	--
BOP-78(i)	5/8/2013	233	2.9 U	4.5 U	6.2 U	4.5 U	21	24	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-78(i)	8/8/2013	325	2.8 U	4.3 U	5.9 U	4.3 U	45	56	--
BOP-78(i)	11/8/2013	417	3.1 U	4.8 U	6.6 U	4.8 U	64	25	--
BOP-78(i)	2/6/2014	507	3.2 U	4.9 U	6.7	4.9 U	6.6	8.4	--
BOP-78(i)	5/9/2014	599	3.2 U	4.9 U	6.7 U	4.9 U	88	37	--
SVE System Shutdown 7/2/14									
BOP-78(i)	8/5/2014	687	3.1 U	4.8 U	6.6 U	4.8 U	48	40	--
BOP-78(i)	11/4/2014	778	3.0 U	4.6 U	30	4.6 U	81	40	--
SVE System Restart 1/29/15									
BOP-78(i)	2/13/2015	879	3.0 U	4.7 U	15	4.7 U	380	82	--
BOP-78(i)	5/5/2015	960	3.1 U	4.8 U	6.7 U	4.8 U	59	30	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-78(i)	8/7/2015	1054	3.0 U	4.7 U	14	4.7 U	100	87	--
SVE System Shutdown 10/9/15									
BOP-78(i)	11/3/2015	1142	3.2 U	5.0 U	26	5.0 U	63	82	--
BOP-78(i)	2/2/2016	1233	44	11	40	110	620	200	--
SVE System Restart 4/7/16									
BOP-78(i)	5/3/2016	1324	2.9 U	4.5 U	6.2 U	4.5 U	45	97	--
BOP-78(i)	8/5/2016	1418	3.1 U	4.8 U	6.6 U	4.8 U	22	140	--
BOP-78(i)	11/9/2016	1514	3.0 U	4.6 U	6.4 U	4.6 U	61	86	--
BOP-78(i)	2/3/2017	1600	2.9 U	4.5 U	18	4.5 U	240	100	--
BOP-78(i)	5/12/2017	1698	3.0 U	4.6 U	6.4 U	4.6 U	80	74	--
BOP-78(i)	8/4/2017	1782	3.0 U	4.6 U	6.4 U	4.6 U	44	270	--
SVE System Shutdown 10/31/17									
BOP-78(i)	2/9/2018	1972	81	15 U	32	15 U	130	190	--
BOP-78(i)	8/10/2018	2153	8,600	130	130 U	6,100	390	220	--
SVE System Restart 8/20/18									
BOP-78(i)	2/7/2019	2335	2.9 U	4.4 U	6.1 U	4.4 U	150	120	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-78(i)	8/19/2019	2528	3.0 U	4.7 U	6.5 U	4.7 U	42	85	--
BOP-78(i)	2/14/2020	2707	3.1 U	4.9 U	6.7 U	4.9 U	18	84	--
BOP-78(i)	8/21/2020	2896	3 U	4.6 U	6.4 U	4.6 U	30	59	--
BOP-79(i)	01/03/2011		3.1 U	90	NA	15	340	NA	10
BOP-79(i)	10/11/2012	24	4.5	4.6 U	6.3 U	7.0	130	30	--
BOP-79(i)	11/6/2012	50	3.0 U	4.6 U	13	14	400	200	--
BOP-79(i)	2/6/2013	142	2.8 U	4.4 U	18	4.4 U	68	56	--
BOP-79(i)	5/8/2013	233	2.8 U	4.3 U	5.9 U	4.3 U	10	14	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-79(i)	8/8/2013	325	3.0 U	4.7 U	6.5 U	4.7 U	32	58	--
BOP-79(i)	11/8/2013	417	3.1 U	4.8 U	6.6 U	4.8 U	32	24	--
BOP-79(i)	2/6/2014	507	3.1	4.8 U	6.6	4.8	6.5	8.2	--
BOP-79(i)	5/9/2014	599	3.0 U	4.7 U	6.5 U	4.7 U	48	26	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Cumulative days since startup	VOLATILES (µg/m3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
SVE System Shutdown 7/2/14									
BOP-79(i)	8/5/2014	687	3.1 U	4.8 U	12	4.8 U	28	23	--
BOP-79(i)	11/4/2014	778	3.0 U	4.6 U	23	4.6 U	63	22	--
SVE System Restart 1/29/15									
BOP-79(i)	2/13/2015	879	15	4.5 U	22	29	250	42	--
BOP-79(i)	5/5/2015	960	2.9 U	4.6 U	6.3 U	4.6 U	11	22	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-79(i)	8/7/2015	1054	5.8 U	8.9 U	12 U	8.9 U	21	58	--
SVE System Shutdown 10/9/15									
BOP-79(i)	11/3/2015	1142	3.3 U	5.1 U	21	5.1 U	57	53	--
BOP-79(i)	2/2/2016	1233	73	46 U	64 U	46 U	170	110	--
SVE System Restart 4/7/16									
BOP-79(i)	5/3/2016	1324	3.4 U	5.4 U	7.4 U	5.4 U	7.2 U	57	--
BOP-79(i)	8/5/2016	1418	2.9 U	4.5 U	6.2 U	4.5 U	6.1 U	89	--
BOP-79(i)	11/9/2016	1514	3.0 U	4.6 U	6.3 U	4.6 U	6.2 U	52	--
BOP-79(i)	2/3/2017	1600	3.1 U	4.8 U	6.6 U	4.8 U	8.1	75	--
BOP-79(i)	5/12/2017	1698	3.0 U	4.7 U	6.5 U	4.7 U	6.4 U	47	--
BOP-79(i)	8/4/2017	1782	3.0 U	4.6 U	6.4 U	4.6 U	6.3 U	220	--
SVE System Shutdown 10/31/17									
BOP-79(i)	2/9/2018	1972	14 U	22 U	30 U	22 U	160	140	--
BOP-79(i)	8/10/2018	2153	790	23	30	90	430	160	--
SVE System Restart 8/20/18									
BOP-79(i)	2/7/2019	2335	2.9 U	4.5 U	6.2 U	4.5 U	40	98	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-79(i)	8/19/2019	2528	3.1 U	4.8 U	6.7 U	4.8 U	9.2	45	--
BOP-79(i)	2/14/2020	2707	3.1 U	4.8 U	8.3	4.8 U	46	78	--
BOP-79(i)	8/21/2020	2896	39 U	60 U	83 U	60 U	82 U	100 U	--
BOP-79(i)	12/30/2009		5.8 U	9.1 U	12 U	9.1 U	2,400	NA	9.3 U
BOP-84(i)	10/11/2012	24	3.1 U	7.7	31	11	350	59	--
BOP-84(i)	11/6/2012	50	3.2 U	4.9 U	13	14	440	240	--
BOP-84(i)	2/6/2013	142	3.1 U	4.8 U	6.6 U	4.8 U	230	65	--
BOP-84(i)	5/8/2013	233	3.0 U	4.7 U	6.5 U	4.7 U	100	70	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-84(i)	8/8/2013	325	2.8 U	4.3 U	5.9 U	4.3 U	610	160	--
BOP-84(i)	11/8/2013	417	3.1 U	4.8 U	6.5 U	4.8 U	380	120	--
BOP-84(i)	2/6/2014	507	3.3 U	5.1 U	7.0	5.1 U	6.9	8.8	--
BOP-84(i)	5/9/2014	599	3.0 U	4.6 U	6.4 U	4.6 U	62	56	--
SVE System Shutdown 7/2/14									
BOP-84(i)	8/5/2014	687	3.0 U	4.6 U	6.4 U	4.6 U	140	86	--
BOP-84(i)	11/4/2014	778	12 U	19 U	26 U	19 U	5,700	280	--
SVE System Restart 1/29/15									
BOP-84(i)	2/13/2015	879	3.1 U	4.8 U	12	4.8 U	1,500	230	--
BOP-84(i)	5/5/2015	960	3.0 U	4.6 U	6.4 U	4.6 U	810	160	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-84(i)	8/7/2015	1054	3.0 U	4.6 U	12	4.6 U	380	120	--
SVE System Shutdown 10/9/15									
BOP-84(i)	11/3/2015	1142	3.1 U	4.8 U	12	4.8 U	120	150	--
BOP-84(i)	2/2/2016	1233	3.2	4.8 U	23	8.1	930	240	--
SVE System Restart 4/7/16									
BOP-84(i)	5/3/2016	1324	3.4 U	5.3 U	7.2 U	5.3 U	90	38	--
BOP-84(i)	8/5/2016	1418	2.7 U	4.3 U	5.9 U	4.3 U	28	54	--
BOP-84(i)	11/9/2016	1514	3.1 U	4.8 U	6.5 U	4.8 U	32	32	--
BOP-84(i)	2/3/2017	1600	2.9 U	4.5 U	24	4.5 U	88	61	--
BOP-84(i)	5/12/2017	1698	2.9 U	4.5 U	6.2 U	4.5 U	50	45	--
BOP-84(i)	8/4/2017	1782	3.1 U	4.8 U	6.6 U	4.8 U	72	330	--
SVE System Shutdown 10/31/17									
BOP-84(i)	2/9/2018	1971	2.5 U	3.9 U	8	7.3	440	150	--
BOP-84(i)	8/10/2018	2153	33	17	22	2,200	2,900	660	--
SVE System Restart 8/20/18									
BOP-84(i)	2/7/2019	2335	2.9 U	4.5 U	6.2 U	4.5 U	32	400	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-84(i)	8/19/2019	2528	3.2 U	5.0 U	6.9 U	5.0 U	12	370	--
BOP-84(i)	2/14/2020	2707	3 U	4.7 U	6.5 U	4.7 U	7.2	83	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Cumulative days since startup	VOLATILES (µg/m3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
BOP-84(i)	8/21/2020	2896	3 U	4.6 U	6.4 U	4.6 U	32	110	--
BOP-85(i)	12/28/2010		37 U	350	NA	400	21,000	NA	72
BOP-85(i)	10/11/2012	24	3.0 U	4.6 U	6.4 U	6.0	360	150	--
BOP-85(i)	11/6/2012	50	3.2 U	4.9 U	6.7 U	4.9 U	150	98	--
BOP-85(i)	2/6/2013	142	3.2 U	4.9 U	8.0	29	85	87	--
BOP-85(i)	5/8/2013	233	3.1 U	4.8 U	6.5 U	4.8 U	15	46	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-85(i)	8/8/2013	325	3.0 U	4.7 U	6.5 U	7.8	47	150	--
BOP-85(i)	11/8/2013	417	3.1 U	4.9 U	6.7 U	4.9 U	9.4	48	--
BOP-85(i)	2/6/2014	507	3.2 U	4.9	6.7	4.9	6.6	8.4	--
BOP-85(i)	5/9/2014	599	3.1 U	4.8 U	6.6 U	4.8 U	32	100	--
SVE System Shutdown 7/2/14									
BOP-85(i)	8/5/2014	687	3.0 U	4.7 U	180	4.7 U	58	140	--
BOP-85(i)	11/4/2014	778	3.0 U	4.6 U	41	4.6 U	20	44	--
SVE System Restart 1/29/15									
BOP-85(i)	2/13/2015	879	3.0 U	4.6 U	23	4.6 U	83	240	--
BOP-85(i)	5/5/2015	960	3.0 U	4.6 U	6.4 U	4.6 U	16	120	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-85(i)	8/7/2015	1054	3.1 U	4.8 U	6.6 U	4.8 U	24	180	--
SVE System Shutdown 10/9/15									
BOP-85(i)	11/3/2015	1142	---	---	---	---	---	---	---
BOP-85(i)	2/2/2016	1233	3.0 U	4.6 U	34	4.6 U	14	330	--
SVE System Restart 4/7/16									
BOP-85(i)	5/3/2016	1324	2.9 U	4.4 U	6.1 U	4.4 U	140	140	--
BOP-85(i)	8/5/2016	1418	2.8 U	4.3 U	5.9 U	4.3 U	5.8 U	190	--
BOP-85(i)	11/9/2016	1514	3.2 U	4.9 U	6.8 U	4.9 U	11	190	--
BOP-85(i)	2/3/2017	1600	3.0 U	4.6 U	6.4 U	4.6 U	31	380	--
BOP-85(i)	5/12/2017	1698	2.9 U	4.5 U	6.2 U	4.5 U	6.2 U	210	--
BOP-85(i)	8/4/2017	1782	3.1 U	4.8 U	6.6 U	4.8 U	24	910	--
SVE System Shutdown 10/31/17									
BOP-85(i)	2/9/2018	1971	2.9 U	4.4 U	8.1	4.4 U	9.6	110	--
BOP-85(i)	8/10/2018	2153	3.1 U	4.8 U	42	4.8 U	85	760	--
SVE System Restart 8/20/18									
BOP-85(i)	2/7/2019	2335	3.0 U	4.7 U	6.5 U	4.7 U	19	360	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-85(i)	8/19/2019	2528	3.0 U	4.6 U	6.4 U	4.6 U	15	400	--
BOP-85(i)	2/14/2020	2706	3.1 U	4.8 U	6.6 U	4.8 U	15	250	--
BOP-85(i)	8/21/2020	2896	3.6 U	5.6 U	7.7 U	5.6 U	7.6 U	82	--
BOP-86(i)	01/02/2010		91 U	510	340	850	52,000	NA	530
BOP-86(i)	10/11/2012	24	32	74	53	310	4,200	310	--
BOP-86(i)	11/6/2012	50	3.1 U	4.8 U	6.6 U	4.8 U	130	88	--
BOP-86(i)	2/6/2013	142	3.0 U	4.7 U	13	4.7 U	78	62	--
BOP-86(i)	5/8/2013	233	3.0 U	4.6 U	6.4 U	4.6 U	30	44	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-86(i)	8/8/2013	325	2.8 U	4.4 U	6.0 U	4.4 U	110	83	--
BOP-86(i)	11/8/2013	417	3.0 U	4.7 U	6.9	4.7 U	63	96	--
BOP-86(i)	2/6/2014	507	3.0 U	4.7 U	6.5 U	4.7 U	6.4	8.1	--
BOP-86(i)	5/9/2014	599	3.0 U	4.7 U	7.2	4.7 U	270	89	--
SVE System Shutdown 7/2/14									
BOP-86(i)	8/5/2014	687	29 U	46 U	63 U	46 U	62 U	78 U	--
BOP-86(i)	11/4/2014	778	2.8 U	4.3 U	18	4.3 U	50	71	--
SVE System Restart 1/29/15									
BOP-86(i)	2/13/2015	879	3.2 U	5.0 U	6.9 U	5.0 U	73	84	--
BOP-86(i)	5/5/2015	960	7.7 U	12 U	16 U	12 U	26	300	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-86(i)	8/7/2015	1054	3.2 U	4.9 U	6.8 U	4.9 U	18	130	--
SVE System Shutdown 10/9/15									
BOP-86(i)	11/3/2015	1142	2.6 U	4.1 U	15	4.1 U	57	220	--
BOP-86(i)	2/2/2016	1233	2.9 U	4.5 U	17	4.5 U	39	300	--
SVE System Restart 4/7/16									
BOP-86(i)	5/3/2016	1324	3.2 U	4.9 U	6.7 U	4.9 U	69	58	--
BOP-86(i)	8/5/2016	1418	2.8 U	4.4 U	6.0 U	4.4 U	38	70	--
BOP-86(i)	11/9/2016	1514	3.2 U	4.9 U	6.8 U	4.9 U	28	100	--
BOP-86(i)	2/3/2017	1600	2.9 U	4.6 U	6.3 U	4.6 U	47	140	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Cumulative days since startup	VOLATILES (µg/m3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
BOP-86(i)	5/12/2017	1698	2.8 U	4.4 U	6.1 U	4.4 U	31	100	--
BOP-86(i)	8/4/2017	1782	3.0 U	4.7 U	6.5 U	4.7 U	940	700	--
SVE System Shutdown 10/31/17									
BOP-86(i)	2/9/2018	1971	2.5 U	3.9 U	75	3.9 U	160	240	--
BOP-86(i)	8/10/2018	2153	3.2 U	5 U	64	5 U	290	650	--
SVE System Restart 8/20/18									
BOP-86(i)	2/7/2019	2335	3.0 U	4.7 U	6.5 U	4.7 U	1,100	480	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-86(i)	8/19/2019	2528	3.0 U	4.7 U	6.5 U	4.7 U	410	450	--
BOP-86(i)	2/14/2020	2707	2.9 U	4.5 U	6.2 U	4.5 U	480	97	--
BOP-86(i)	8/21/2020	2896	41.0 U	64 U	88 U	64 U	350	150	--
BOP-87(i)	10/11/2012	24	2.9 U	4.4 U	24	15	530	55	--
BOP-87(i)	11/6/2012	50	3.0 U	4.6 U	6.4 U	5.3	230	140	--
BOP-87(i)	2/6/2013	142	2.8 U	4.4 U	14	4.4 U	100	58	--
BOP-87(i)	5/8/2013	233	3.1 U	4.8 U	6.6 U	4.8 U	14	38	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-87(i)	8/8/2013	325	3.2 U	4.9 U	11	4.9 U	54	140	--
BOP-87(i)	11/8/2013	417	3.0 U	4.6 U	8.0	4.6 U	54	53	--
BOP-87(i)	2/6/2014	507	2.7 U	4.2 U	5.8 U	4.2 U	5.7	7.2	--
BOP-87(i)	5/9/2014	599	3.0 U	4.7 U	6.5 U	4.7 U	30	71	--
SVE System Shutdown 7/2/14									
BOP-87(i)	8/5/2014	687	62	96	190	96	140	160	--
BOP-87(i)	11/4/2014	778	10 U	15 U	320	15 U	140	62	--
SVE System Restart 1/29/15									
BOP-87(i)	2/13/2015	879	3.0 U	4.6 U	79	4.6 U	360	120	--
BOP-87(i)	5/5/2015	960	3.0 U	4.7 U	12	4.7 U	98	65	--
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-87(i)	8/7/2015	1054	3.1 U	4.8 U	12	4.8 U	170	130	--
SVE System Shutdown 10/9/15									
BOP-87(i)	11/3/2015	1142	3.2 U	5.0 U	68	5.0 U	53	98	--
BOP-87(i)	2/2/2016	1233	3.0 U	5.0	600	7.9	150	230	--
SVE System Restart 4/7/16									
BOP-87(i)	5/3/2016	1324	3.1 U	4.8 U	10	4.8 U	470	100	--
BOP-87(i)	8/5/2016	1418	3.1 U	4.9 U	8.0	4.9 U	340	180	--
BOP-87(i)	11/9/2016	1514	3.0 U	4.6 U	7.2	4.6 U	230	130	--
BOP-87(i)	2/3/2017	1600	3.2 U	4.9 U	8.4	4.9 U	280	190	--
BOP-87(i)	5/12/2017	1698	2.7 U	4.2 U	6.2	4.2 U	420	140	--
BOP-87(i)	8/4/2017	1782	2.9 U	4.6 U	8.1	4.6 U	220	620	--
SVE System Shutdown 10/31/17									
BOP-87(i)	2/9/2018	1971	2.6 U	4.0 U	53	4.0 U	13	280	--
BOP-87(i)	8/10/2018	2153	3.1 U	4.8 U	66	4.8 U	48	500	--
SVE System Restart 8/20/18									
BOP-87(i)	2/7/2019	2335	3.0 U	4.6 U	6.4 U	4.6 U	86	280	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-87(i)	8/19/2019	2528	3.3 U	5.2 U	7.1 U	5.2 U	220	250	--
BOP-87(i)	2/14/2020	2707	3.1 U	4.8 U	6.6 U	4.8 U	75	150	--
BOP-87(i)	8/21/2020	2896	3.6 U	5.5 U	7.6 U	5.5 U	55	120	--
BOP-88(i)	12/30/2010		150 U	450	NA	230 U	230,000	NA	240 U
BOP-88(i)	10/11/2012	24	3.0 U	4.7 U	6.5 U	5.4	220	12	--
BOP-88(i)	11/6/2012	50	22 U	35 U	48 U	35 U	350	190	--
BOP-88(i)	2/6/2013	142	3.1 U	4.8 U	27	4.8 U	200	62	--
BOP-88(i)	5/8/2013	233	3.0 U	4.7 U	15	4.7 U	31	33	--
SVE System Shutdown/Restart 6/21 to 7/22/13									
BOP-88(i)	8/8/2013	325	3.1 U	4.8 U	16	4.8 U	120	100	--
BOP-88(i)	11/8/2013	417	3.0 U	4.7 U	16	4.7 U	68	37	--
BOP-88(i)	2/6/2014	507	3.1	4.8 U	6.6	4.8 U	6.5	8.2	--
BOP-88(i)	5/9/2014	599	2.9 U	4.4 U	12	4.4 U	31	42	--
SVE System Shutdown 7/2/14									
BOP-88(i)	8/5/2014	687	3.1 U	4.8 U	140	4.8 U	30	45	--
BOP-88(i)	11/4/2014	778	2.9 U	4.6 U	190	4.6 U	43	26	--
SVE System Restart 1/29/15									
BOP-88(i)	2/13/2015	879	8.1	4.8 U	66	7.9	760	93	--
BOP-88(i)	5/5/2015	960	3.0 U	4.7 U	25	4.7 U	150	46	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Location	Date Collected	Cumulative days since startup	VOLATILES (µg/m3; EPA TO-15)						
			Vinyl Chloride	1,1-DCE	1,1,1-TCA	cDCE	TCE	PCE	1,1-DCA
SVE System Shutdown/Restart 6/8 to 6/29/15									
BOP-88(i)	8/7/2015	1054	2.9 U	4.5 U	18	4.5 U	120	92	--
SVE System Shutdown 10/9/15									
BOP-88(i)	11/3/2015	1142	3.9 U	6.0 U	160	6.6 J	120	89	--
BOP-88(i)	2/2/2016	1233	2.9 U	6.3	300	4.5 U	80	140	--
SVE System Restart 4/7/16									
BOP-88(i)	5/3/2016	1324	2.8 U	4.3 U	16	4.3 U	190	80	--
BOP-88(i)	8/5/2016	1418	2.9 U	4.5 U	13	4.5 U	59	120	--
BOP-88(i)	11/9/2016	1514	3.3 U	5.2 U	12	5.2 U	65	73	--
BOP-88(i)	2/3/2017	1600	2.8 U	4.4 U	6.0 U	4.4 U	67	56	--
BOP-88(i)	5/12/2017	1698	2.8 U	4.4 U	11	4.4 U	140	76	--
BOP-88(i)	8/4/2017	1782	38	4.6 U	16	4.6 U	59	310	--
SVE System Shutdown 10/31/17									
BOP-88(i)	2/9/2018	1971	2.8 U	4.4 U	70	4.4 U	17	170	--
BOP-88(i)	8/10/2018	2153	3.0 U	4.7 U	21	4.7 U	12	320	--
SVE System Restart 8/20/18									
BOP-88(i)	2/7/2019	2335	2.9 U	4.5 U	8.7	4.5 U	50	210	--
SVE System Shutdown 2/26/19									
SVE System Restart 4/24/19									
BOP-88(i)	8/19/2019	2528	3.1 U	4.9 U	12	4.9 U	32	110	--
BOP-88(i)	2/14/2020	2707	3.1 U	4.8 U	9.3	4.8 U	6.9	99	--
BOP-88(i)	8/21/2020	2896	3.5 U	5.5 U	7.5 U	5.5 U	7.4 U	52	--

Appendix B-3
Historical Vapor Well Analytical Results
Former Vapor Degreaser Source Control Area
Boeing Portland
Gresham, Oregon

Notes:

Green shading indicates baseline samples collected during pilot tests.
Yellow shading indicates results are greater than the screening level.

(a) Soil gas screening levels were developed by ODEQ by multiplying the Risk-Based Concentration for air in an occupational setting by an attenuation factor of 1,000 to account for vapor intrusion through building slab. Screening levels updated June 7, 2012.
(b) Sample BOP-85i-1115 arrived at ambient vacuum, and its valve was slightly open. Analysis was cancelled.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Indicates the compound was undetected at the reported concentration.

SVE Shutdowns:

1. SVE shutdown on 7/2/2014 at 3:00 pm with ODEQ approval. Resumed operation on 1/29/2015.
2. SVE system was shutdown between 6/8 and 6/29, 2015 for bioremediation activities.
3. SVE system was shutdown on 10/9/2015 at 9:00 am with ODEQ approval. Resumed operation on 4/7/2016.
4. SVE system temporarily removed for facility construction project between 10/31/2017 and 8/20/2018.
5. SVE system temporarily removed for facility construction project between 2/26/2019 and 4/24/2019.

Abbreviations and Acronyms:

µg/m3 = micrograms per cubic meter
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
cDCE = cis-1,2-dichloroethene
EPA = US Environmental Protection Agency
ODEQ = Oregon Department of Environmental Quality
PCE = tetrachloroethene
SVE = soil vapor extraction
TCE = trichloroethene