The Boeing Company
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DAT-2021-010

Mr. Paul Bianco
Senior Remediation Engineer
Washington State Department of Ecology, Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Subject: The Boeing Company's Comments on Public Comment Draft Documents – Boeing Everett Facility

Dear Mr. Bianco:

I am writing to provide comments from The Boeing Company's (Boeing) regarding the Uplands/Powder Mill Gulch (PMG) Draft Cleanup Action Plan, Draft Agreed Order for the Bomarc Property, and the Draft Enforcement Order. Boeing's comments are provided pursuant to the current public comment period for these documents. Boeing appreciates the opportunity to provide the attached comments.

Boeing is pleased that the Everett cleanup is moving forward, and the draft documents reflect significant steps in the cleanup of the facility. Boeing appreciates the agreement that it and Ecology reached on the cleanup remedies for the facility, and Boeing stands ready to implement those actions. Boeing also appreciates Ecology's flexibility in developing a separate Agreed Order for the Bomarc Property. We provide the attached comments to address some remaining factual inaccuracies in the draft documents. We understand the Enforcement Order is not a negotiated document but provide comments for Ecology's consideration that will make the Enforcement Order more accurate.

In addition to the attached comments, Boeing also wishes to clarify the statements on Ecology's web page regarding the use of an Enforcement Order to implement the Uplands Cleanup Action Plan for the Boeing Everett Facility. The web page states that Boeing asked Ecology to use an Enforcement Order. In fact, after Ecology made a final decision to apply Surface Water Quality Standards (SWQS) as the cleanup level for groundwater at the Facility, Boeing informed Ecology that Boeing could *not* agree to that decision and, therefore, could not enter into an Agreed Order containing that requirement. Ecology then issued an Enforcement Order. As we indicated throughout the process, Boeing strongly disagrees with, and objects to, the use of SWQS as cleanup levels for groundwater. Boeing continues to disagree with the agency's decision and reserves all of the company's rights associated with that decision.

Finally, Boeing notes that the scope of the Enforcement Order is limited to the implementation of the Uplands/PMG Cleanup Action Plan. As Ecology is aware, Boeing has submitted a Feasibility Study for sediments at the Site for Ecology review and will ultimately develop a Cleanup Action Plan for sediments. In the near future, the parties should discuss the appropriate administrative mechanism for the sediment work.

Please contact me if you have any questions.

Sincerely,

Deborah Taege
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The Boeing Company
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Attachments:

Attachment 1: Boeing Comments on the Uplands Draft Cleanup Action Plan, Enforcement Order, and Bomarc Property Agreed Order

CC (electronic copy):

Christa Colouzis, Raman Iyer, Ivy Anderson, Department of Ecology
Katie Moxley, David Cohen, The Boeing Company
Michael Dunning, Perkins Coie LLP

Ecology Draft Cleanup Action Plan

The following provides comments related to the Washington State Department of Ecology's (Ecology's) Draft Cleanup Action Plan (DCAP) dated January 15, 2021. Specifically, these comments provide corrections or modifications to the DCAP for factual accuracy or clarification, or otherwise provide important information or context to the plan.

General – Description of Cleanup Actions

1. *Multiple Sections.* Throughout the dCAP, Ecology is inconsistent with remedial alternative naming schemes. The naming scheme is outlined in Section 4.1; however, it is not followed throughout the document. The changes throughout the document are especially confusing for the reader where multiple alternatives are discussed within one section. These comments are outlined in *The Boeing Company's Comments on Ecology's August 28, 2020 Draft Cleanup Action Plan – Boeing Everett Facility* dated November 16, 2020, in Uplands Comments #54, #55, #75, #76, #77, #78, and #88. Sections that do not follow the naming scheme as outlined in Section 4.1 include Sections 5.1, 5.3, 5.4, 5.5, and 5.7.

   Example: Section 5.4.1 Description of the Cleanup Action

   Page 5-12, First Paragraph, First and Second Bullet. These sentences should be changed as follows to be consistent with the FS for less confusion (changes in red text):

   "Near-Term Excavation with Dewatering and followed by Additional Excavation (Modified FS Alternative 4) to meet cleanup standards for SWMU/AOC Nos. 055 and 168, Building 40-24" and "Maintain Containment ~~of Contaminated Soils followed by~~ with Future Excavation for:"

Section 2.1.2 Powder Mill Gulch (part of the Upland Area and PMG portion of the Site)

2. *Page 2-3, Second Complete Paragraph*. This paragraph should be changed as follows to be factually complete and accurate (changes in red text):

   "No indications of vadose zone soil CVOC contamination above cleanup levels were identified at the PMG SWMU during the RI. No indication of soil gas CVOC concentrations above screening levels was identified during supplemental investigation activities on the PMBC property and Seaway Center property."

Section 2.1.2.1 Groundwater Conditions and Interim Actions

3. *Page 2-4, Last Paragraph (continuing onto Page 2-5) and Footnote 3*. This paragraph should be changed and the associated footnote deleted as follows to be factually accurate and provide more current and up-to-date information, and update figure number references (changes in red text and strikeout):

   "As a result of implementation of the Source Area IA and Downgradient Plume IAs, TCE concentrations have decreased throughout much of the plume. However, groundwater chemical data indicates that the TCE groundwater plume is still (to a lesser extent) migrating across Seaway Blvd onto City of Everett (Lot #9), PMBC and Seaway Center properties. Figures 2-~~1~~12 and 2-~~2~~23 show, respectively, TCE iso-concentration contours from 2012 prior to the implementation of any IAs, and recent data from October 2020~~19~~. As indicated by the data represented in Figure 2-~~2~~23, as a result of the source area IA, source area TCE concentrations

have been reduced from over 2,500 µg/L at multiple wells (with a measured maximum concentration of 31,000 µg/L in 2005) to a maximum concentration of ~~330~~ 180 µg/L as of ~~April~~ October 2020. TCE concentrations in the downgradient plume have also substantially declined as a result of the source area and Downgradient Plume IAs, from a high concentration of 1,900 µg/L to a maximum concentration of ~~480~~ 270 µg/L as of ~~February~~ October 2020. ~~However, TCE concentrations have increased on the western boundary[3] of the downgradient plume on the PMBC and Seaway Center properties (up to 300 µg/L recently). These elevated concentrations have been routinely observed in groundwater monitoring wells EGW171R2 and EGW174 for several years and these groundwater chemical data are accurate and represent TCE concentrations on the western boundary of the downgradient plume and not anomalous.~~"

Footnote 3: "[3] ~~As seen at EGW174 (15-20 µg/L TCE) and EGW171R2 TCE (150-210 µg/L) over the last four sampling quarters.~~"

To clarify the need for these changes, note that the TCE concentrations in the wells identified by Ecology (EGW171R2 and EGW174) in this paragraph/footnote have exhibited precisely the opposite trend of what Ecology indicated in the original text above (i.e., TCE concentrations have generally been declining versus increasing as suggested by Ecology) as demonstrated by the following data:

- TCE concentrations at EGW171R2 over the last 8 quarters of monitoring are listed below (clearly showing a declining trend):
  - Jan 2019 = 300 µg/L
  - April 2019 = 260 µg/L
  - July 2019 = 190 µg/L
  - October 2019 = 200 µg/L
  - January 2020 = 210 µg/L
  - April 2020 = 150 µg/L
  - July 2020 = 160 µg/L
  - October 2020 = 110 µg/L
- TCE concentrations at EGW174 over the last 8 quarters of monitoring are listed below (clearly showing a declining trend):
  - January 2019 = 22 µg/L
  - April 2019 = 17 µg/L
  - July 2019 = 20 µg/L
  - October 2019 = 19 µg/L
  - January 2020 = 18 µg/L
  - April 2020 = 15 µg/L
  - July 2020 = 16 µg/L
  - October 2020 = 14 µg/L

Note: Boeing has attached the most current TCE concentration contour map for October 2020 to replace DCAP Figure 2-3. Also, the list of figures for Section 2 (i.e., Figures 2-1 through 2-4) are out of order in the Table of Contents. Therefore, the DCAP table of contents should be change for these figures as follows to reflect these updates and proper order:

2-1 Sitewide Conceptual Site Model

2-2 Baseline TCE Concentrations – PMG (Pre-Interim Action Groundwater Conditions – October 2012

2-3 TCE Concentrations – PMG (Post-Interim Action Groundwater Conditions October ~~2019~~2020)

2-4 Groundwater Contours Elevation Map Upland Esperance Sand – October 2018

Section 4.4 Updates to FS Evaluation Since FS Report Submittal

4. *Pages 4-12 and 4-13, Sub-header Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/091, and Fourth Paragraph in this Section.* The sub-header and forth paragraph should be changed as follows to be factually accurate (changes in red text):

   "*Further Requirements for Confirmatory Indoor Air Sampling at 40-56 Building, SWMUs 086/089/0914*"

   "Or Boeing may instead collect routine indoor air samples (similar to the other 11 SWMUs) for SWMUs 086/089/0914.

Section 5.2 Exposure Pathway Model B (BTEX/Perched GW)

5. *Page 5-5, Second Paragraph.* This paragraph should be changed as follows to be factually accurate because soil concentrations do not exceed direct contact (changes in red text):

   "Potential future exposures could include workers performing excavations into contaminated ~~soil or~~ perched groundwater at the site or future site building users if the building configuration changes in a way that exposes contaminated perched groundwater ~~soil~~ (new sumps, pits, floor removal/modification) or otherwise…"

Section 5.3.6 Institutional/Engineering Controls

6. *Page 5-10, Third Paragraph, First Sentence, Item 1.* This Item should be changed as follows to be factually accurate because soil does not exceed Method B protection of groundwater cleanup levels (changes in red text):

   "(1) Annual monitoring/inspection/reporting of the land use and concrete/pavement integrity will be performed, and maintenance of the concrete/pavement will be completed when necessary to prevent infiltration of rainwater and exacerbation of ~~soil and~~ perched groundwater contamination migration to the Esperance Sand Aquifer, until ~~soil and~~ groundwater concentrations are below cleanup levels."

7. *Page 5-11, Last Paragraph, Third Sentence.* This sentence should be changed as follows to be factually accurate with the model results (changes in red text):

   "Under gravity driven vertical infiltration only, vadose zone modeling predicts subsurface contamination may reach the potable groundwater above cleanup levels within 100 years due to rainwater infiltrating ~~the~~without pavement and recharging the perched aquifer."

Section 5.7.2 Cleanup Levels

8. *Page 5-25, Third Bullet.* The bullet should be changed as follows to be factually accurate because MEK is not a contaminant of concern for indoor air for SWMUs 93 and 67/71 (changes in red text):

   "Indoor Air – MTCA Method C for BTEX ~~and MEK~~"

Section 5.9 Exposure Pathway Model K (Powder Mill Gulch)

9. *Page 5-29, Second Paragraph, Fifth Bullet*. The fifth bullet of this paragraph should be changed as follows to be factually accurate (changes in red text and strikeout):

   - "No current TCE soil gas to indoor air exposure pathway at the PMBC property or Seaway Center property based on soil gas samples collected from three paired (deep/shallow) soil gas probes on these PMBC propert~~y~~ies."

10. *Page 5-30, First (Partial) Paragraph, Last Sentence.* This sentence should be changed as follows to be technically accurate (changes in red text):

    "TCE contamination in PMC is diluted by the increasing stream flow and decreased by volatilization until TCE is no longer detected in water samples more than 3,600 feet north of the detention basin."

Section 5.9.5 Compliance Monitoring

11. *Page 5-40, First Paragraph (First Complete Bullet on Page), Second Sentence.* This sentence should be changed as follows to be complete and consistent with Section 4.4 (changes in red text):

    - "Consistent with Section 4.4, Boeing shall perform soil gas monitoring during protection and performance monitoring of the final remedy in the downgradient plume. Seasonal soil gas sampling events (summer and winter) shall be conducted at the five existing soil gas monitoring well locations at PMG over 1 year to evaluate if soil gas concentrations remain below Ecology screening levels under varying seasonal conditions."

Enforcement Order

This following provides comments related to Ecology's draft Enforcement Order (EO) for the Boeing Everett Facility:

Section I

Page 1. The draft EO states "The objective of the State of Washington, Department of Ecology (Ecology) under this Enforcement Order (Order) is to require remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances. Ecology believes the actions required by this Order are in the public interest." Boeing requests the completion of the following modification, for the purpose of clarity (changes in red text):

"The objective of the State of Washington, Department of Ecology (Ecology) under this Enforcement Order (Order) is to require remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the Boeing Company (Boeing) to implement a cleanup action plan at a portion of a Facility where there has been a release or threatened release of hazardous substances, with the exception of the BOMARC Property, Wetland 3A, Former Gun Club Areas B and C, Boeing Lake, Japanese Gulch, and Powder Mill Gulch sediments. Ecology believes the actions required by this Order are in the public interest."

Section IV.I

1. *Page 4.* The draft EO states "Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett Plant (BCAG – Everett Plant) DWMU controlled by Boeing, located at 3003 West Casino Road Everett, Washington; all property contiguous to the DWMU also controlled by Boeing; and all property, regardless of control, affected by release(s) or threatened release(s) of hazardous substances, including dangerous wastes and dangerous constituents, at and from these areas. "Facility" also includes the definition found in RCW 70A.305.020(8). Based on factors currently known to Ecology, the Remedial Action Location Diagram (Exhibit A) shows where Boeing will implement the remedial action. The Facility description and remedial action are more fully described in the Cleanup Action Plan (Exhibit B)." Boeing requests the completion of the following modification, for the purpose of clarity (changes in red text):

   "Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett Plant (BCAG – Everett Plant) DWMU controlled by Boeing, located at 3003 West Casino Road Everett, Washington; all property contiguous to the DWMU also controlled by Boeing excluding the BOMARC Property, located at 2600 94th Street Southwest in Everett, Washington; and all property, regardless of control, affected by release(s) or threatened release(s) of hazardous substances, including dangerous wastes and dangerous constituents, at and from these areas with the exception of the BOMARC Property, Wetland 3A, Former Gun Club Areas B and C, Boeing Lake, Alpha Pond, Japanese Gulch, and Powder Mill Gulch sediments. "Facility" also includes the definition found in RCW 70A.305.020(8). Based on factors currently known to Ecology, the Remedial Action Location Diagram (Exhibit A) shows where Boeing will implement the remedial action. The Facility description and remedial action are more fully

described in the Cleanup Action Plan (Exhibit B)."

Section V between 14 and 15 new section

2. *Page 9.* The draft EO excluded discussion of the sediment FS. Boeing requests that a new section be included to encompass the sediment FS as follows (changes in red):

   "Boeing completed a separate FS for the sediments at the Facility (Boeing Lake, Powder Mill Gulch, and Japanese Gulch), dated August 18, 2016."

Section V.15

3. *Page 9.* The draft EO states "Ecology selected the final upland site cleanup actions, based on its letters dated August 18, 2016 and July 20, 2017, as modified by Ecology letters dated September 5, 2019, May 2, 2019." Boeing requests that this section be revised for sentence structure as well as discussion of the sediment FS as follows (changes in red):

   "Ecology selected the final upland site cleanup actions, based on its letters dated August 18, 2016 and July 20, 2017, as modified by Ecology letters dated May 2, 2019 and September 5, 2019~~, May 2, 2019~~. The sediment FS is still under review by Ecology and selection of cleanup actions for sediment SWMUs will be provided under a separate CAP at a later date. The sediment CAP will additionally include Wetland 3A (part of the BOMARC FS dated March 31, 2014) and the Former Gun Club Area B and C (part of the Uplands FS dated November 16, 2015)."

Section V.23

4. *Page 11.* The draft EO states "In October 2020, Boeing indicated to Ecology that it would not sign an Agreed Order for implementing a cleanup action plan at the upland portion of the Facility seen in the Remedial Action Location Diagram (Exhibit A)." Boeing requests that this statement be clarified as follows (changes in red text):

   "In October 2020, Boeing indicated to Ecology that, because of disagreements on the application of surface water standards as groundwater cleanup levels and the placement of a conditional point of compliance, it would not sign an Agreed Order for implementing a cleanup action plan at the upland portion of the Facility seen in the Remedial Action Location Diagram (Exhibit A)."

Section V.24

5. *Page 11.* The draft EO states "Ecology and Boeing anticipate entering into an Agreed Order in Spring 2021 for a cleanup action plan at the BOMARC Property, located at 2600 94th Street Southwest in Everett, Washington that is located within the Facility." Boeing requests the statement be clarified for consistency with Section VII, second paragraph, and include the following additions to this section (changes in red text):

   "Ecology and Boeing ~~anticipate entering~~have entered into an Agreed Order in Spring 2021 for a cleanup action plan at the BOMARC Property, located at 2600 94th Street Southwest in Everett, Washington that is located within the Facility. Therefore, the BOMARC Property is not held to any provisions within this Enforcement Order."

Section VII.

6. *Page 12 and 13, Second Paragraph, Second and Third Sentence.* The draft EO states "Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the

remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.11.1, 5.11.5, and 5.11.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property." The following sentences should be changed for accuracy to reflect the CAP revisions (changes in red text):

"Boeing agreed to perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (Exhibit B), Sections 5.~~11~~10.1, 5.~~11~~10.5, and 5.~~11~~10.6 describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the cleanup action plan, Sections 5.~~11~~10.2 through 5.~~11~~10.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements that apply to the BOMARC Property."

Section VII.D

7. *Page 13.* The draft EO states "Boeing shall submit to Ecology written Progress Reports every two months that describe the actions taken during the previous two months to implement the requirements of this Order." Boeing requests that the frequency of progress reports be adjusted to quarterly to be consistent with the progress reporting schedules indicated in Boeing's Agreed Order with Ecology for the Boeing Auburn site, the draft Agreed Order for the BOMARC facility, and the Powder Mill Gulch interim action reporting schedule under the current Agreed Order. Suggested changes to this statement are as follows (changes in red text):

   "Boeing shall submit to Ecology written Progress Reports every ~~two~~three months that describe the actions taken during the previous ~~two~~three months to implement the requirements of this Order."

Section VII.F.3

8. *Page 13.* The draft EO states:

   > "As detailed in the cleanup action plan, as part of the remedial action for the Facility, institutional controls are required on properties not owned by Boeing. Boeing will ensure that the owner of each affected property records an Ecology-approved Environmental (Restrictive) Covenant as detailed in the cleanup action plan (Exhibit B). Upon a showing that Boeing has made a good faith effort to *secure* an Environmental (Restrictive) Covenant for an affected property and failed to do so, Ecology may provide assistance to Boeing. Unless Ecology determines otherwise, affected properties include Seaway Center, Powder Mill Business Center (PMBC), and City of Everett (City) Lot 9."

   Boeing understands that under Washington Administrative Code (WAC) 173-340-440(4), Ecology has some discretion as to when and where institutional controls, including restrictive environmental covenants, must be applied. However, it is not clear to Boeing that these are necessary for the non-Boeing properties, because the goal of the cleanup is to restore groundwater (and surface water for Lot 9) to applicable cleanup levels making the need for institutional controls unnecessary. Additionally, because this EO is being issued to only Boeing, and Boeing has no authority to place restrictive covenants on property it does not

own, the EO appears to be an inappropriate place to include these requirements for those properties (i.e., Ecology cannot enforce this provision of the EO through Boeing). Therefore, Boeing suggests that this paragraph be struck from the EO.

Exhibit A

9. *Exhibit A.* The remedial action location diagram should not include the BOMARC Property as it is under the provisions of a separate Agreed Order.

Agreed Order

The following provides comments related to Ecology's draft Agreed Order for the Boeing Everett Facility – BOMARC Property:

Section IV.G

1. *Page 4.* The draft AO states "Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility (Exhibit A), control by Boeing located at 3003 West Casino Road Everett, Washington; all property …" The following section should be changed for accuracy because there is not an Exhibit for the Boeing Everett facility (changes in red text):

   "Facility or Site: Refers to the Boeing Commercial Airplane Group – Everett facility ~~(Exhibit A)~~, controlled by Boeing located at 3003 West Casino Road Everett, Washington; all property …"

Section IV.H

2. *Page 4.* The draft AO states "BOMARC Property: Refers to the property located at 2600 94th Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit B to this Agreed Order." The following section should be changed for accuracy because Exhibit A is the BOMARC Property diagram in the table of contents (changes in red text)

   "BOMARC Property: Refers to the property located at 2600 94th Street Southwest in Everett, Washington that is located within the Facility and is the subject of this Agreed Order. The BOMARC Property is depicted in Exhibit ~~B~~ A to this Agreed Order."

Section VI.A

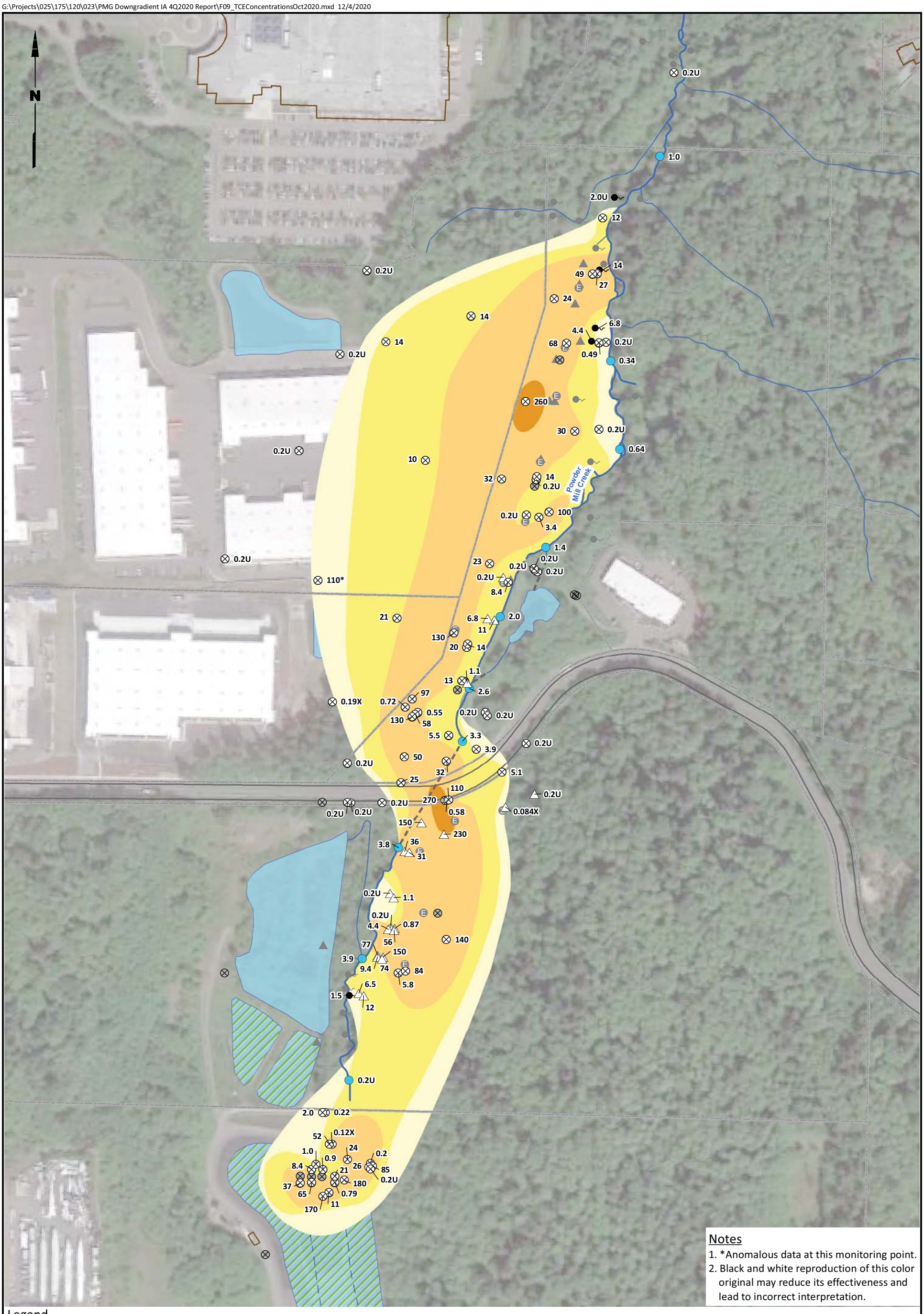
3. *Page 9, First Sentence.* The draft AO states "Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit C." The sentence should be changed for accuracy because Exhibit B is the Cleanup Action Plan in the table of contents (changes in red text):

   "Boeing shall perform a final cleanup action for the BOMARC Property by implementing the remedial actions set forth in the upland cleanup action plan (CAP) and included as Exhibit ~~C~~ B."

4. *Page 9, Item A, Second and Third Sentences.* The draft AO states "Specifically, Sections 5.11.1, 5.11.5, and 5.11.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.11.2 through 5.11.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements." The sentences should be changed for accuracy to reflect the CAP revisions (changes in red text):

   "Specifically, Sections 5.~~11~~10.1, 5.~~11~~10.5, and 5.~~11~~10.6 of the CAP describe the cleanup actions, compliance monitoring, and institutional controls for the BOMARC Property. Additional sections of the CAP, Sections 5.~~11~~10.2 through 5.~~11~~10.4 describe the cleanup standards, points of compliance, restoration timeframes, and applicable, relevant and appropriate state and federal requirements."

G:\Projects\025\175\120\023\PMG Downgradient IA 4Q2020 Report\F09_TCEConcentrationsOct2020.mxd 12/4/2020



Notes

1. *Anomalous data at this monitoring point.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

Samples Collected in October 2020
- Creek
- Monitoring Well
- Piezometer
- Seep

Other Monitoring Locations
- Extraction Well
- Monitoring Well
- Piezometer
- Seep

- 0.3 ≤ TCE <4µg/L
- 4 ≤ TCE <25 µg/L
- 25 ≤ TCE <250 µg/L
- 250 ≤ TCE <500 µg/L

0 250 500

Scale in Feet

Data Sources: Google Earth Pro. Aerial Photo Date: 5/18.

LANDAU ASSOCIATES

Draft Cleanup Action Plan
Boeing Commercial Airplanes
Everett, Washington

Current TCE Concentrations October 2020

Figure 2-3