UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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Seattle, Washington 98101-3140

DEC 2 0 2012

OFFICE OF
COMPLIANCE AND ENFORCEMENT

Reply to: OCE-184

Michael L. Verhaar
Environmental Affairs Manager
737 Airplane Program
M/C 63-74
P.O. Box 3703
Seattle, Washington 98124-2207

Re: Risk-based Disposal Approval for the Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project Boeing Plant 2, Seattle, Washington, TSCA ID No. WAD 00925 6819

Dear Mr. Verhaar:

This letter constitutes approval under the authority of 40 Code of Federal Regulations (C.F.R.) § 761.61(c) for the cleanup and associated verification sampling and analysis of certain polychlorinated biphenyl (PCB) remediation waste at The Boeing Company (Boeing) Plant 2 facility in Seattle, Washington. More specifically, this approval authorizes Boeing, with respect to the requirements for cleanup and disposal of PCB remediation waste at 40 C.F.R. § 761.61(c), to cleanup approximately 260,000 cubic yards of sediments, soils, debris, and structures from the waterway and adjacent shoreline in front of Plant 2, and to perform verification sampling, backfilling and post-backfilling monitoring following removal of contaminated material. This letter also documents EPA's evaluation of those project elements which will be conducted under requirements of 40 C.F.R. § 761.61 other than § 761.61(c). This approval and EPA's evaluation of the project under the Toxic Substance Control Act (TSCA) is wholly contingent upon EPA written approval of all phases and aspects of the project pursuant to the Resource Conservation and Recovery Act (RCRA) corrective action Administrative Order on Consent, EPA Docket No. 1092-01-22-3008(h) (Boeing Order).

This approval is issued to Boeing, the owner and operator of the Plant 2 facility, who has overall responsibility for implementation of this authorized work. This project will involve transloading of contaminated sediments from barges to rail cars or trucks, and off-site disposal at facilities other than those owned or operated by Boeing. Although this approval is not issued to any of the owners or operators of these off-site facilities, it does include consideration of how PCB remediation waste subject to this approval will be processed for disposal, transported, and disposed of to ensure that work subject to this approval satisfies the standard of no unreasonable risk of injury to health or the environment at 40 C.F.R. § 761.61(c)(2).

This written decision for a risk-based method for storage of PCB remediation waste is based on Boeing's application for a risk-based disposal approval (RBDA) consisting of the documentation identified in Enclosure 1. All sections of the RBDA application, including those referenced in this approval, are incorporated by reference. In granting this approval, EPA finds that the

proposed cleanup and verification of PCB remediation waste, subject to the conditions below, will not pose an unreasonable risk of injury to health or the environment. Boeing shall ensure that activities conducted pursuant to this approval are in full compliance with conditions of the approval. The conditions of this approval are enforceable under TSCA and implementing regulations at 40 C.F.R. § 761.61(c). Any actions by Boeing which violate the terms and conditions of this approval may result in administrative, civil judicial, or criminal enforcement by EPA in accordance with Section 16 of TSCA, 15 USC § 2615.

Conditions

1. Boeing is authorized to perform cleanup of PCB remediation waste, associated verification sampling, backfilling and post-backfilling monitoring as documented in Boeing's RBDA application (Reference 2[1]) pursuant to the specific provisions of 40 C.F.R. § 761.61 documented in Enclosure 2 to this approval, and as approved by EPA under the Boeing Order (Reference 3) (Boeing Order) that are scheduled for the December 2012-February 2013 construction season (See Sheet C-12 in Reference 6, Appendix A).

2. At least 60 days prior to the start of the 2013/2014 and 2014/2015 construction season, or at such other time as agreed to by EPA, Boeing will provide EPA with a summary report of activities completed during the prior (2012/2013) construction season, issues or problems that were encountered, documentation of any changes or updates to plans for the respective construction season activities. This report will contain a request for modification of this approval pursuant to Condition 16 to include authorization for construction activities planned for the 2013/2014 and 2014/2015 construction seasons, and to make such other changes as necessary or appropriate.

3. This approval will remain in effect for the duration of the Boeing Order (Reference 3) with respect to work requirements subject to the requirements of 40 C.F.R. § 761.61. Following completion of such work under the Boeing Order, including post-backfilling monitoring, Boeing may provide a written request to EPA to terminate this approval.

4. Boeing will ensure that all trucks or rail cars used to transport PCB remediation waste under this approval or as otherwise authorized pursuant to 40 C.F.R. § 761.61 will have adequate liners, or are otherwise sufficiently watertight, to prevent any incidental liquids from leaking from the boxes or containers during transport.

5. Boeing will ensure that best management practices are used for gravity dewatering of dredged sediments within sediment barges as described in Appendix C of Reference 6 for purposes of minimizing the quantity of residual liquids remaining in sediments when transferred to the transloading facility, consistent with project schedules, equipment limitations, and properties of the dredged sediments.

6. Boeing is authorized to add absorbents (e.g., cement kiln dust) to dredged sediments within the Transload facility for purposes of absorbing residual free liquids remaining in dredged

[1] All references are to those in Enclosure 1.

sediments. Sufficient absorbent material will be added and appropriately mixed to eliminate visible free liquids before removal from the vault. Boeing is not authorized to add absorbents to any other aqueous PCB remediation waste at the Transload facility, such as truck/rail car wash water, storm water collected from areas outside of the containment vault which may have been in contact with contaminated sediments, or final decontamination water from the Transload facility generated pursuant to Condition 7 of this Approval. All aqueous PCB remediation waste generated as part of this project at the Transload facility other than residual free liquids in dredged sediments must be managed according to one of the following options:

- Collected on-site and shipped via Department of Transportation-compliant containers or tank trucks to an off-site facility for decontamination as required and discharge pursuant to 40 C.F.R. § 761.79(b)(1)(ii) or (iii);
- Collected, and decontaminated (pre-treated) on-site as required and discharged pursuant to 40 C.F.R. § 761.79(b)(1)(ii) or (iii) to the King County Publically Owned Treatment Works. If this option is selected, Boeing must provide EPA with a copy of King County's pretreatment permit that demonstrates the permit contains an enforceable limit for PCBs, prior to any discharge to the King County POTW;
- Collected on-site, decontaminated on-site and sampled as necessary to demonstrate compliance with the decontamination standard at 40 C.F.R. § 761.79(b)(1)(iii), and added to sediments for stabilization in the containment vault as "clean" water authorized for unrestricted use;
- Collected on-site, decontaminate on-site and sample as necessary to demonstrate compliance with the decontamination standard at 40 C.F.R. § 761.79(b)(1)(iii), and shipped to the Columbia Ridge landfill f for use as "clean" water for dust control as permitted by the Oregon Department of Environmental Quality.

Boeing will ensure that any decontamination of aqueous PCB remediation waste on-site at the Transload facility will be conducted in compliance with the requirements of 40 C.F.R. 761.79(e)-(g).

Any sampling and analysis pursuant to this condition that is not otherwise subject to a written sampling and analysis plan approved by EPA under the Boeing Order must be conducted under a written sampling and analysis plan, and a project-specific quality assurance project plan that data will be of acceptable quantity and quality for their intended decision-making uses. Boeing will make such plans available to EPA upon request.

Any aqueous PCB Remediation Waste which Boeing voluntarily elects to remove from the containment vault may be managed according to any of the above options.

7. All equipment and structures that have been in contact with liquid or non-liquid PCB remediation waste subject to this approval must be disposed of or decontaminated following completion of work under this approval. All disposable equipment or materials must be disposed of in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40

C.F.R. §§ 257.5 through 257.30, as applicable. Non-disposable equipment and structures must be decontaminated using mechanical means or pressure washing to achieve a "clean debris surface" as defined in 40 C.F.R. § 268.45, Table 1, footnote 3. Water generated from decontamination of the Transload facility must be managed according to one of the options enumerated in Condition 6 above. This latter requirement supersedes text in the last paragraph of Section 4.2 of Boeing's RBDA application to EPA (Reference 2). Boeing will ensure that any decontamination conducted pursuant to this condition will be conducted in compliance with the requirements of 40 C.F.R. 761.79(e)-(g).

8. Boeing is authorized to dispose of bulk PCB remediation waste with PCB concentrations < 50 ppm in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable.

9. Boeing is authorized to dispose of bulk PCB remediation waste with PCB concentrations ≥ 50 ppm in a hazardous waste landfill permitted by a State authorized under § 3006 of RCRA.

10. Prior to rail or truck shipment of any PCB remediation waste subject to this approval to the Columbia Ridge landfill for disposal as alternate daily cover, Boeing will provide to EPA a copy of the approval provided to the Columbia Ridge Landfill by the Oregon Department of Environmental Quality (ODEQ) authorizing acceptance and disposal of PCB remediation waste as alternate daily cover. If the ODEQ approval establishes a demonstration or evaluation period, Boeing will provide a copy of any communication related to this approval to EPA pursuant to Condition 16 during the demonstration period, as well as any ODEQ evaluation of the demonstration period or ODEQ disposition (e.g., termination or extension of the demonstration approval, or issuance of any final approval for acceptance of PCB remediation waste for disposal as alternate daily cover).

    If bulk PCB remediation waste subject to this approval that is scheduled for disposal as alternate daily cover will be comingled with any other materials prior to acceptance at the Columbia Ridge landfill, Boeing must ensure that this comingling is in full compliance with the ODEQ authorization. Boeing shall ensure that all PCB remediation waste to be transported to the Columbia Ridge landfill, including PCB remediation waste to be disposed of as alternate daily cover, is in full compliance with any requirements which may be established by ODEQ for receipt of such materials prior to transport.

    If alternate daily cover is reasonably expected to remain stockpiled at the Columbia Ridge Landfill for more than 30 days, Boeing will provide written documentation to EPA that appropriate controls are in place to address potential wind dispersal of stockpiled alternate daily cover, and that appropriate run-off controls are in place.

11. Boeing is authorized to transport PCB remediation waste associated with this project that have, based on existing site characterization data, an average PCB concentration not to exceed 2 ppm, with a maximum concentration of 10 ppm, from the Transload facility to a separate transfer facility. Within fourteen (14) calendar days following the effective date of

this approval, Boeing will provide documentation to EPA pursuant to Condition 16 of this transfer facility. This documentation will include the following:

- A description of the transfer facility, including schematic-level drawings of the overall facility and areas where PCB remediation waste from this project will be managed;
- A description of operational practices at the transfer facility;
- A description of all containment structures which will be used to ensure that dispersal or trackout of PCB remediation waste is prevented or controlled;
- A description of all structures and procedures used for collection, any decontamination, any sampling and analysis, and methods for discharge or disposal associated with or applicable to liquids separated from PCB remediation waste and any decontamination of structures and equipment which may come in contact with PCB remediation waste associated with this project;
- A description of criteria and decontamination methods applicable to structures and equipment which may come in contact with PCB remediation waste associated with this project.

12. Boeing will ensure that a copy of this approval is provided to members of its field engineering team (AMEC Environment and Infrastructure, Inc. and its subconsultants, Envirocon, Inc., and Waste Management, Inc.) (Field Team) responsible for conducting work subject to requirements of the approval. Boeing will ensure that any contracts it issues to members of the Field Team and any associated contract directions are consistent with the requirements of this approval. Boeing is responsible for ensuring compliance with this TSCA Risk Based Disposal Approval.

13. Boeing will ensure that all field work associated with this project conducted by Boeing or its Field Team is conducted under written site-specific health and safety plans. Boeing will ensure that these plans document appropriate training and personal protective equipment required for all personnel that may be exposed to PCBs during work associated with this project. Boeing will make available copies of such plans to EPA upon request.

14. Nothing in this approval relieves Boeing of any obligation to comply with the Boeing Order, any other EPA or Ecology administrative action, or any statutory requirements, or rules or regulations applicable to the activities subject to this approval.

15. If at any time before, during, or after conduct of activities subject to this approval, Boeing possesses or is otherwise made aware of any data or information (including but not limited to site conditions that differ from those presented in the application) that activities approved herein may pose an unreasonable risk of injury to health or the environment, Boeing must report such data or information via facsimile or e-mail to EPA within five working days, and in writing to the Regional Administrator within 30 calendar days of first possessing or becoming aware of such data or information. Boeing shall also report in the same manner, new or different information related to a condition or any element of the approved storage activities if the information is relevant to this approval. EPA may direct Boeing to take such

actions it finds necessary to ensure the approved storage activities do not pose an unreasonable risk of injury to health or the environment. Boeing shall follow such direction until written approval is obtained from the EPA finding finds the condition(s) requiring such direction no longer poses an unreasonable risk of injury to health or the environment.

16. EPA reserves the right to modify or revoke this approval based on information provided pursuant to Condition 15, or any other information available to EPA that provides a basis to conclude that activities covered by this approval pose an unreasonable risk of injury to health or the environment. Boeing may request modification of this approval by providing a written request to EPA. If the EPA agrees with a request for modification, the EPA will provide written approval to Boeing. Prior to obtaining written approval of a modification request, Boeing shall comply with the existing approval conditions.

17. Submissions required by this approval shall be provided to EPA as follows:

EPA:

Edward J. Kowalski, Director
Office of Compliance and Enforcement
EPA Region 10
1200 6th Avenue Suite 900, MS OCE-184
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E-mail: Kowalski.edward@epa.gov
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w/copies to

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Should you have any questions or comments, please contact Dave Bartus at (206) 553-2804, or Bartus.dave@epa.gov.

Sincerely,

Edward J. Kowalski
Director

Enclosures
1. References
2. Statement of Basis

cc: Will Ernst, Boeing
Andrew Smith, Ecology Northwest Regional Office
Jim Sifford, King County Industrial Waste Program
Peggy Rice, King County Industrial Waste Program
Heather Trim, People for Puget Sound
Allison O'Sullivan, Suquamish Tribe
Denise Taylor, Suquamish Tribe
Glen St. Amant, Muckleshoot Tribe
John Wakeman, U.S. Army Corps of Engineers
Olivia Romano, U.S. Army Corps of Engineers
David Templeton, AnchorQEA, LLC
Amy Essig Desai, Farallon Consulting
Jessica Winter, National Oceanic and Atmospheric Administration
Douglas Welch, ODEQ

Enclosure 1
References

1) E-mail, "Draft TSCA Risk-based Approval Request for the RCRA Corrective Measures at Plant 2," Edward Abramowski, The Boeing Company to Dave Bartus, EPA, dated August 2, 2012.
2) Cover letter and Work Plan, "TSCA Risk-Based Disposal Application, Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, WA" November, 16, 2012.
3) Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent, EPA Docket No. 1092-01-22-3008(h).
4) Final Decision and Response to Comments for Boeing Plant 2 Sediments, Duwamish Sediment Other Area and Southwest Bank, Boeing Plant 2, Seattle/Tukwila, Washington, transmitted from U.S. EPA Region 10 to Mr. William Ernst and Mr. Michael Gleason, Resource Conservation and Recovery Act (RCRA) Docket No. 1092-01-22-3008(h) EPA ID No. WAD 00925 6819.
5) Work Plan, "Final Design Report, Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington," AMEC Environmental & Infrastructure, Inc., Dalton, Olmstead & Fuglevand, & Floyd|Snyder, November, 2012.
6) Work Plan, "Final Construction Statement of Work, Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington," AMEC Environmental & Infrastructure, Inc., Dalton, Olmstead & Fuglevand, & Floyd|Snyder, December, 2012.
7) Work Plan, "Transload, Transport, and Disposal (TTD) Contractors Work Plan," Waste Management, Inc., December, 2012.
8) Department of the Army, Corps of Engineer Permit NWS-2011-0384, dated December 2012.

Enclosure 2
Statement of Basis

Introduction

Boeing Plant 2 is located at 7755 East Marginal Way South in Seattle, Washington, with portions of the facility extending into Tukwila, Washington. The 107 acre site is bounded by the Duwamish Waterway to the west; Webster Street, Slip 4, and property owned by Crowley Marine Corporation to the north (excluding public streets and ways); the AIRGAS NOR PAC plant and East Marginal Way South to the east; and the Jorgensen Forge Company (Jorgensen Forge) to the south.

Beginning in 1936, The Boeing Company (Boeing) has manufactured airplane parts at Plant 2. Manufacturing activities have ceased at the Plant 2 facility, and a number of buildings have been removed. The Plant 2 facility, owned and operated by Boeing, is being cleaned up pursuant to the Administrative Order on Consent (Boeing Order, Reference 3) issued to Boeing in 1994 by the U.S. Environmental Protection Agency (EPA) under authority of RCRA Section 3008(h), as amended (42 U.S.C. 6928(h)). Certain aspects of the Plant 2 cleanup relating to polychlorinated biphenyls (PCBs) are also subject to the requirements of the Toxic Substance Control Act (TSCA), 15 U.S.C. §2601 et seq. (1976) and implementing regulations at 40 Code of Federal Regulations (C.F.R.) Part 761.

Soils, sediments, debris and structures in the waterway in front of (to the west of) Plant 2, and the adjacent shoreline have been documented to be contaminated with polychlorinated biphenyls (PCBs), as well as other constituents of concern. Under the Boeing Order, Boeing will be conducting corrective measures to remove approximately 260,000 cubic yards (cy) of sediments, soils, debris, and structures from the waterway in front of Plant 2 and the adjacent Plant 2 shoreline. The materials are contaminated with PCBs and other constituents of concern. The Corrective Measures footprint is designed to remove soil, sediments, debris and structures containing PCBs at concentrations greater than 0.130 milligrams per kilogram (mg/kg) or parts per million (ppm). Three localized areas offshore of the SW Bank contain PCBs at concentrations greater than 50 ppm; they represent a total of approximately 260 cy (or less than 0.1 percent) of soil/sediment. The remaining volume of soil/sediment contains PCBs at concentrations less than 50 ppm, with an average concentration of less than 1 ppm.

Boeing's initial submittal of an application for a risk-based disposal approval was provided to EPA via e-mail (Reference 1). After responding to informal comments from EPA, Boeing submitted the final application on November 16, 2012 (Reference 2). The remainder of this Statement of Basis documents EPA's review of Boeing's RBDA application and EPA's basis for issuing this risk-based disposal approval.

EPA's Evaluation of Boeings Risk-Based Disposal Approval Application

In evaluating Boeing's request for a risk-based disposal approval, EPA has considered the following issues:

- Relationship among project approvals
- Scope of the requested approval
- Specific elements of the cleanup project

Relationship between RCRA, Rivers and Harbors Act/ Federal Water Pollution Control Act (Clean Water Act), and TSCA requirements and project approvals

The soil and sediment cleanup associated with this project is subject to multiple authorities and permits[2]. Those that most directly relate to the requirements applicable to cleanup of PCB remediation waste as part of this project include the Resource Conservation and Recovery Act (RCRA), the Rivers and Harbors/Clean Water Act, and the Toxic Substances Control Act (TSCA) and the permits or approvals associated with each.

A brief summary of each of these key sets of requirements is presented in the following paragraphs, along with a discussion of how each relates to EPA's basis for establishing the requirements of this risk-based disposal approval.

Summary of RCRA Requirements

As noted in the Introduction section, all aspects of cleanup at the Boeing Plant 2 facility are being managed as corrective action under the Resource Conservation and Recovery Act (RCRA) through the Boeing Order. Through this authority, EPA has performed site characterization as necessary to document the nature and extent of contamination in the project area, selected the final remedy and established sediment cleanup standards (Reference 4), and has approved the work plan for the various elements of the final remedy (References 5 and 6), including post-cleanup monitoring. Corrective action under the Boeing Order addresses any hazardous waste as defined in Section 1004(5) of RCRA, which include PCBs.

Summary of Rivers and Harbors/Clean Water Act Requirements

The Rivers and Harbors Act of 1899 (33 C.F.R. §§ 321-329) gives the United Stated Army Corps of Engineers (USACE) regulatory authority over construction activities in all navigable waters of the United States. Section 10 of the act is intended to protect these waters for purposes of navigation and general public benefit. This regulation is administered through the Section 10 Permit application process. Section 404 of the Clean Water Act (33 U.S.C. § 1344) prescribes procedures to be followed before dredged or fill materials can be discharged into national water resources (including wetlands) and, as such, provides regulatory guidelines and permit requirements for dredging and filling activities. Administration of the requirements of Section 404 is vested in the USACE and is handled in conjunction with the Section 10 Permit process.

When both a Section 10 Permit and a Section 404 (of the Clean Water Act) Permit are required, as is the case for the Project, they are typically considered and administered together by the

[2] An enumeration of the various permits and approvals applicable to this project is presented in Table 1 of the Final Design Report (Reference 4).

USACE as a Section 10/404 Permit (Reference 8). Excavated materials within the Project area regardless of construction sequencing (either dredged from barges in the Waterway or excavated with equipment from the shoreline) will be governed by the requirements of the Section 10/404 permit and will be managed as "dredged material" per the provisions of the Section 10/404 permit.

EPA notes that the scope of the USACE Section 10/404 permit only applies to dredging and filling activities within, or activities that have discharges to waters of the United States. Waters of the United States includes navigable waters, non-navigable waters, and wetlands. The USACE permit does not extend to off-site disposal of contaminated sediments, soils, structures or debris where disposal is not in waters of the U.S. or there are no discharges to waters of the United States. Therefore, off-site disposal of contaminated soils, sediments, structures or debris which are dredged or excavated under the USACE 10/404 permit will be disposed of under TSCA requirements as established in this risk-based disposal approval.

Boeing has included language in Section 1.3.1 of the "Final Design Report Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington" (Reference 5) stating that:

> "The dredging, excavation, transportation, and management of PCB remediation waste with concentrations of PCBs less than 50 ppm will be performed in accordance with a permit issued by the USACE (Section 10/404), thus meeting the requirements in 40 CFR 761.61(b)(3) under the performance based exemption."

EPA agrees with this statement to the extent that project activities are in fact covered by the USACE Section 10/404 permit, and are therefore authorized under TSCA pursuant to 40 C.F.R. § 761.61(b)(3). Activities covered by the USACE Section 10/404 permit include all in-water dredging and barge transportation of sediments and debris containing 50 ppm total PCBs, excavation of shoreline sediments, soils, structures and debris, and on-site stockpiling of these materials containing <50 ppm total PCBs, and treatment of return flow water from dredged sediments and shoreline sediments containing <50 ppm total PCBs. These activities do not, however, include any subsequent management (storage, processing for disposal, or transportation) or final off-site disposal of <50 ppm sediments, soils, structures and debris, or any activities related to cleanup, processing for disposal, transportation or off-site disposal of sediments containing ≥ 50 ppm total PCBs. These activities subsequent to those covered by the USACE Section 10/404 permit are subject to requirements of this approval, not the self-implementing authorization of 40 C.F.R. § 761.61(b)(3). A further discussion of the requirements of 40 C.F.R. § 761.61(b)(3) is provided in the "Summary of TSCA requirements" in the following section.

Summary of TSCA requirements

As discussed in the section "Scope of the Requested Approval," soils, sediments, structures and debris within the project area are generally considered to meet the definition of PCB remediation waste, and are subject to the requirements for cleanup and disposal of PCB remediation waste at

40 C.F.R. § 761.61[3]. Under 40 C.F.R. § 761.61 rules, spills or releases of PCBs may be cleaned up using the self-implementing procedures of 40 C.F.R. § 761.61(a), PCB remediation waste may be disposed of (or in some cases, managed) under the performance-based standards of 40 C.F.R. § 761.61(b), or the sampling, cleanup, storage and disposal of PCB remediation waste may be conducted under a risk-based disposal approval issued by EPA pursuant to 40 C.F.R. § 761.61(c). According to 40 C.F.R. § 761.61(a)(1)(i)(A), the self-implementing procedures of 40 C.F.R. 761.61(a) may not applied to cleanup of PCBs in sediments[4] in marine and freshwater ecosystems. In some instances, decontamination of PCB remediation waste may be accomplished according to decontamination standards and authorization at 40 C.F.R. § 761.79.

Boeing is requesting that TSCA provide a written risk-based determination approval to document that the overall action will also meet TSCA requirements, including processing for disposal and disposal requirements. As further explained in the following section, EPA is evaluating the risks of PCBs on a cradle-to-grave approach, including transloading and transportation, and final land disposal, as part of its evaluation of whether or not the proposed work satisfies the TSCA standard of no unreasonable risk of injury to health or the environment. EPA is basing this evaluation on application of a combination of performance-based requirements pursuant to 40 C.F.R. § 761.61(b)(3), and on an application of the risk-based disposal approval authority of 40 C.F.R. § 761.61(c).

Scope of the requested approval

Under TSCA, sediments within the project scope that have been impacted by PCBs satisfy the definition of "PCB Remediation Waste" at 40 C.F.R. § 761.3. This definition includes the following elements:

- Materials disposed of prior to April 18, 1978 that are currently at concentrations ≥ 50 ppm PCBs, regardless of the concentration;
- Materials which are currently at any volume or concentration where the original source was ≥ 500 ppm PCBs beginning on April 18, 1978, or ≥ 50 ppm PCBs beginning on July 2, 1979; and
- Materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under [40 C.F.R Part 761].

The TSCA regulations include a provision at 40 C.F.R. 761.50(b)(3)(iii) that states:

> "The owner or operator of a site containing PCB remediation waste has the burden of proving the date that the waste was placed in a land disposal facility, spilled, or otherwise released into the environment, and the concentration of the original spill."

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[3] One exception is soils associated with the North Shoreline area adjacent to Slip 4 and Building 2-122. See the discussion of these soils in the section of this approval entitled "**Scope of the requested approval.**"

[4] While the cited prohibition is specific to cleanup of sediments contaminated with PCBs, EPA interprets this prohibition to extend to soils, structures and debris within this project area, since they are essentially co-located with sediments and pose essentially the same health and environmental risks as do contaminated sediments.

Boeing's RBDA application does not provide documentation of either the source concentration or the date(s) of spills or releases that have impacted the DSOA project area. In these circumstances, EPA conservatively assumes that all media/materials affected by a spill or release meet the definition of PCB remediation waste, and must be cleaned up and disposed of according to the requirements of 40 C.F.R. § 761.61. On this basis, EPA considers all sediment, soils and debris subject to cleanup under the Boeing Order to meet the definition of PCB remediation waste, and subject to requirements of this approval with the exception of soils associated with the North Shoreline area adjacent to Slip 4 and Building 2-122. This exception is discussed in the following paragraph.

Section 1.2.2 of Boeing's RBDA application provides a brief description work to be conducted in the North Shoreline area adjacent to Slip 4 and Building 2-122 (see Figure 2 in Boeing's RBDA application, Reference 2). There is no documentation of any spill or release of PCBs, or any PCB-related activity which would suggest that any cleanup is necessary, or that any soils, debris or other material in this area meets the definition of PCB remediation waste. Material will be excavated from this area to create an embayment to serve as off-channel and riparian habitat. Although this work is not subject to the requirements of 40 C.F.R. § 761.61, the description of work in this area has been included in Boeing's application to provide a comprehensive discussion of the overall Project.

The document "Final Construction Statement of Work" (Reference 6) indicates that the overall project will be conducted over the course of three construction seasons, the first of which is expected to begin in late 2012. Figures C-12 through C-14 in Appendix A of Reference 6 document specific elements of the project that will be completed in each of the three construction seasons. Given the complex nature of this project, it is likely that revisions to the work scheduled for the second and third construction seasons may occur. Also, EPA has requested clarification of several details related to management of sediments, debris and structures[5] containing PCBs at concentrations $\geq$ 50 ppm documented in Section 3.0 of the Boeing's RBDA application (Reference 2), work that is expected to occur during the second construction season. Rather than delay approval of work scheduled during the first construction season, and in recognition of possible other changes in the project following experience gained during the first

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[5] This approval, and EPA's evaluation of the project, encompasses all sediments, soils, structures and debris subject to cleanup under the Boeing Order. The characterization of the nature and extent of PCBs within the project area provided by Boeing as part of the RBDA application indicates that the only areas with total PCBs at as-found concentrations $\geq$ 50 ppm are within sediments, not soils. For this reason, EPA's consideration of cleanup of PCBs with as-found concentrations $\geq$ 50 ppm is documented here as applying to sediments, structures and debris, but not soils. Should soils with total PCB concentrations $\geq$ 50 ppm be encountered during the course of this project, such event will be considered new information, triggering a requirement for Boeing to provide notice to EPA under Condition 14. Based on this notice, Boeing may request, or EPA may make, appropriate changes to this approval to ensure that such soils are appropriately cleaned up and disposed of.

EPA notes that Boeing's RBDA application does not explicitly document any expectation of structures or debris being associated with sediments containing total PCBs at concentrations $\geq$ 50 ppm. Since either debris or structures could be encountered, however, during cleanup of sediments containing total PCBs at concentrations $\geq$ 50 ppm, EPA is including both structures and debris in its consideration and approval of cleanup and disposal of sediments containing total PCBs at concentrations $\geq$ 50 ppm.

construction season, EPA is electing to provide authorization only for those project elements scheduled for the first construction season, as documented in Figure C-12 of Reference 6.

Project activities subject to the requirements of 40 C.F.R. § 761.61 can be generally divided into the following categories:

- Characterization for purposes of defining the nature and extent of contamination;
- Developing, assessing, and selecting among remedial alternatives;
- Dredging and excavation of contaminated sediments, soils, structures, and debris contaminated with PCBs at concentrations < 50 ppm, including dewatering;
- Dredging and excavation of contaminated sediments, structures and debris contaminated with PCBs at concentrations ≥ 50 ppm, including dewatering;
- Conducting sampling to verify completion of excavation/dredging activities, and to perform environmental monitoring during cleanup activities;
- Backfilling and post-backfilling monitoring;
- Treatment and discharge of return water from < 50 ppm sediments, soils, structures and debris;
- Treatment and discharge of return water from ≥ 50 ppm sediments, structures and debris;
- Transloading activities, including absorption/stabilization of residual liquids for sediments, soils, structures and debris contaminated with PCBs <50 ppm;
- Final disposal of soils, sediments, structures and debris contaminated with PCBs at concentrations < 50 ppm, including use of sediments as alternate daily cover[6];
- Final disposal of sediments, structures and debris contaminated with PCBs at concentrations ≥ 50 ppm;
- Decontamination of structures and equipment in contact with PCB remediation waste during cleanup activities.

The following section provides an overview of which of the key regulatory authorities/permits that apply to each of the above categories, the specific TSCA regulatory authority that authorizes work within each category, and for work subject to this risk-based disposal approval, the principle source of requirements used by EPA to establish specific requirements under the risk-based disposal approval. In presenting this overview, EPA notes that all regulatory requirements identified in the table are in addition to requirements of the Boeing Order.

Specific elements of the cleanup project

Characterization for purposes of defining the nature and extent of contamination

Characterization of the nature and extent of PCB contamination for purposes of evaluating, selecting, and verifying completion of the sediment and soils remedy has been completed as part of the RCRA corrective action process under the Boeing Order. EPA accepts the results of this

[6] Use of structures or debris generated as part of cleanup evaluated under this approval would not be suitable for alternate daily cover. Therefore, EPA is explicitly excluding structures and debris from the materials conditionally authorized for disposal as alternate daily cover by this approval.

work as meeting the no unreasonable risk standard for cleanup of PCB remediation waste under 40 C.F.R. § 761.61(c).

Developing, assessing, and selecting among remedial alternatives

The development and assessment of remedial alternatives, and selection of the final corrective action remedy, has been completed as part of the RCRA corrective action process under the Boeing Order. The final remedy selection was documented in Reference 4. EPA accepts the results of this work as meeting the no unreasonable risk standard for cleanup of PCB remediation waste under 40 C.F.R. § 761.61(c).

Dredging and excavation of contaminated sediments, soils, structures and debris contaminated with PCBs at concentrations < 50 ppm, including dewatering

40 C.F.R. § 761.61(b)(3) provides that:

> Any person may manage or dispose of material containing <50 ppm PCBs that has been dredged or excavated from waters of the United States:
>
> (i) In accordance with a permit that has been issued under section 404 of the Clean Water Act, or the equivalent of such a permit as provided for in regulations of the U.S. Army Corps of Engineers at 33 CFR Part 320.

Since requirements for dredging of sediments, and excavation of soils, containing PCBs with total PCBs <50 ppm are included in the USACE Section 10/404 permit issued for this project (Reference 8), these same dredging and excavation activities also are authorized under TSCA pursuant to 40 C.F.R. § 761.61(b)(3). This approach to identifying appropriate TSCA authorization for these project elements is consistent with language in Boeing's RBDA application, Reference 2. EPA notes that requirements for these project elements, as well as all project elements, are also included under the Boeing Order

Dredging and excavation of contaminated sediments, structures and debris contaminated with PCBs at concentrations ≥ 50 ppm, including dewatering

Although dredging and excavation of contaminated sediments, structures and debris with total PCBs at concentrations ≥ 50 ppm are subject to the USACE 10/404 permit (Reference 8), such activities are not within the scope of the performance-based authorization at 40 C.F.R. § 761.61(b)(3). EPA nevertheless finds that the work requirements do not pose an unreasonable risk of injury to health or the environment. EPA therefore is providing authorization for this element of the project through the RBDA pursuant to 40 C.F.R. § 761.61(c).

Conducting sampling to verify completion of excavation/dredging activities, and to perform environmental monitoring during cleanup activities

The development and assessment of remedial alternatives, and selection of the final corrective action remedy, has been completed as part of the RCRA corrective action process under the Boeing Order. The final remedy selection was documented in Reference 4. EPA accepts the

results of this work as meeting the no unreasonable risk standard for cleanup of PCB remediation waste under 40 C.F.R. § 761.61(c).

Backfilling and post-backfilling monitoring

The development and assessment of remedial alternatives, and selection of the final corrective action remedy, has been completed as part of the RCRA corrective action process under the Boeing Order. The final remedy selection was documented in Reference 4. EPA accepts the results of this work as meeting the no unreasonable risk standard for cleanup of PCB remediation waste under 40 C.F.R. § 761.61(c).

Treatment and discharge of return water from < 50 ppm sediments, soils, structures and debris

The definition of PCB remediation waste at 40 C.F.R. § 761.3 addresses the regulatory classification of water associated with dredged sediments. More specifically, the definition of PCB remediation waste includes, but is not limited to:

> Environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.

Therefore, all water separated from dredged sediments subject to this approval is considered PCB remediation waste and is subject to either the applicable decontamination standards of 40 C.F.R. § 761.79, or the disposal requirements of 40 C.F.R. § 761.60(a) (See 40 C.F.R. § 761.61(b)(1)). However, EPA has provided special consideration for management of "materials" subject to a permit issued under the Clean Water Act Section 404, such as the USACE 10/404 permit. EPA considers the treatment and discharge to the Lower Duwamish Waterway of return water from < 50 ppm soils and sediments to be "management" in the context of the provisions of 40 C.F.R. § 761.61(b)(3), cited above. Since requirements for the treatment and subsequent discharge of return water associated with <50 ppm sediments are included in the USACE Section 10/404 permit, they also are authorized under TSCA pursuant to 40 C.F.R. § 761.61(b)(3).

Since soils, structures and debris are expected to be co-generated with sediments, and they are subject to the same Boeing Order and 10/404 Permit requirements as dredged sediments, EPA is considering return water from soils, structures and debris to be indistinguishable from return water from sediments. Therefore, the same TSCA authorization applies to all return water from source materials with total PCB concentration < 50 ppm, regardless of whether the source material is sediment, soil, a structure or debris.

The specific technical requirements applicable to treatment and discharge of return water from <50 ppm soils and sediments are documented in the final design report (Reference 4) and Reference 3.

Treatment and discharge of return water from ≥ 50 ppm sediments, structures and debris

Water separated from dredged sediments with total PCB concentrations ≥ 50 ppm are not eligible to be "managed" under the provision of 40 C.F.R. § 761.61(b)(3). However, EPA has evaluated the specific technical requirements for treatment and discharge of this water documented in the final design report (Reference 4) and Reference 3, and finds that they can be considered to be within the scope of decontamination activities authorized by 40 C.F.R. § 761.79(b). Although dredging of ≥ 50 ppm sediments will not occur until the second year of the project and EPA will update this RBDA accordingly before the start of the second construction season, EPA expects that the treatment and discharge of this water will continue to be authorized by 40 C.F.R. § 761.79(b).

Transloading activities, including absorption/stabilization of residual liquids for sediments, soils, structures and debris contaminated with PCBs <50 ppm

Since all of the sediments, soils, structures and debris that will be managed at the Transload facility will have PCB concentrations at less than 50 ppm, the storage for disposal requirements of 40 C.F.R. § 761.65 do not apply. However, given the large volume of materials to be managed through the Transload facility, and the proximity of these activities to the Duwamish waterway, EPA believes that it is appropriate to review the proposed activities as necessary to make a determination that they do not pose an unreasonable risk of injury to health or the environment as part of its overall evaluation of the project. EPA has reviewed the proposed management of sediments, soils, structures and debris at the Transload facility documented in Section 4.0 of Boeing's RBDA application (Reference 2), and in Appendix C of Reference 6. Based on its review, EPA identified two issues in Boeing's proposal that warrant specific consideration. These include addition of absorbents to sediments, soils, structures and debris prior to transfer to rail cars or trucks for off-site disposal, and management of decontamination liquids during final cleanup of the Transload facility.

TSCA requires that liquids in contact with non-liquid PCBs be managed at the concentration of the PCBs in the phase with the highest PCB concentration, or separated and decontaminated or disposed of accordingly. Further, 40 C.F.R. § 761.50(a)(2) prohibits processing of liquid PCBs into non-liquid forms to circumvent the high-temperature incineration requirements of 40 C.F.R. § 761.50(a)(2).

EPA recognizes that generation of water in contact with PCB remediation waste is inherent in sediment dredging projects such as this. Further, EPA recognizes that given the large volume of sediments to be managed, there are practical limitations in the degree to which entrained water can be separated from dredged sediments. In light of these practical constraints while still ensuring full compliance with the stated TSCA requirements, EPA is authorizing the addition of absorbent materials (e.g., cement kiln dust) to PCB remediation waste at the Transload facility provided that entrained water is drained from the dredged sediments to the extent practicable via ordinary means (gravity draining) while on the sediment barges. These same considerations apply to debris and structures that may be co-generated with contaminated sediments.

EPA is not expecting that excess water will be associated with uplands materials (soils, structures or debris) generated as part of this project. Should excess water be encountered during cleanup of uplands areas of the project, for example, due to heavy precipitation, EPA expects

that entrained water be drained from uplands soil, structures and debris to the extent reasonably practicable via gravity separation. Following this, absorbents may be added as necessary to facilitate transport and disposal.

Boeing's RBDA application (Reference 2) and Appendix A of the Final Construction Statement of Work (Reference 5) state that wash water, such as from rail car washing and final cleanup of the Transload facility, will be placed in the containment vault at the Transload facility for mixing with sediments followed by offsite disposal. See, for example, Sections 6.2 and 8 of Appendix C of Reference 6, and the last paragraph of Section 4.2 of the RBDA application (Reference 2). EPA does not believe that the TSCA regulations provide authorization to process such liquids into a non-liquid form for disposal, at least without prior sampling and analysis to verify that the liquids have been decontaminated to a 0.5 µg/l level, or contain PCBs less than this decontamination standard without decontamination. Therefore, EPA is requiring that these liquids be disposed of according to 40 C.F.R. § 761.60(a), or decontaminated to the standards at 40 C.F.R. § 761.79(b)(1) and disposed of accordingly.

Subject to the limitations noted above, EPA finds that the proposed Transloading activities, including absorption/stabilization of residual liquids for sediments contaminated with PCBs <50 ppm, do not pose an unreasonable risk of injury to health or the environment.

Final disposal of soils, sediments structures and debris contaminated with PCBs at concentrations < 50 ppm, including use of sediments as alternate daily cover

The self-implementing cleanup requirements of 40 C.F.R. § 761.61(a) provide authorization to dispose of bulk PCB remediation waste with PCB concentrations < 50 ppm in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable. Since this cleanup is not being conducted as a self-implementing cleanup, the provisions of 40 C.F.R. § 761.61(a) do not apply. However, disposal of < 50 ppm bulk PCB remediation waste is nevertheless appropriate for this project, so EPA is providing the same authorization through this risk-based disposal approval under the authority of 40 C.F.R. § 761.61(c).

The TSCA regulations do not speak directly to disposal of bulk PCB remediation waste as alternate daily cover that is otherwise eligible for disposal in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable. Since by definition, materials disposed of as alternate daily cover are not covered by a daily cover, it is possible that PCB remediation waste disposed of as alternate daily cover could pose an unreasonable risk of injury to health or the environment. For example, if such wastes were to remain exposed to the elements in the arid Eastern Oregon climate, exposed to high temperatures or high winds, they could become desiccated and therefore dispersible. Boeing's risk-based disposal approval application presents a defensible case that, despite these potential concerns, disposal of PCB bulk product waste from this project with PCB concentrations < 50 ppm is both desirable and appropriate. EPA therefore is providing authorization to dispose of PCB remediation waste as alternate daily cover. EPA is, however, requiring that Boeing provide

written documentation from the state oversight agency (in this case, the Oregon Department of Environmental Quality) that this practice is acceptable with respect to applicable solid waste landfill criteria.

As noted above, structures or debris which may be generated as part of this project are not suitable for disposal as alternate daily cover. Therefore, structures and debris are explicitly excluded from this authorization to dispose of bulk PCB remediation waste with PCB concentrations <50 ppm as alternate daily cover. Structures or debris must be directly disposed of as authorized by Condition 8, and not stockpiled or disposed of as alternate daily cover.

Final disposal of sediments, structures and debris contaminated with PCBs at concentrations ≥ 50 ppm

The self-implementing cleanup requirements of 40 C.F.R. § 761.61(a) provide authorization to dispose of bulk PCB remediation waste with PCB concentrations ≥ 50 ppm in a facility permitted by a State authorized under Section 3006 of RCRA. Since this cleanup is not being conducted as a self-implementing cleanup, the provisions of 40 C.F.R. § 761.61(a) do not apply. However, disposal of ≥ 50 ppm bulk PCB remediation waste is nevertheless appropriate for this project, so EPA is providing the same authorization through this risk-based disposal approval under the authority of 40 C.F.R. § 761.61(c).

Decontamination of structures and equipment in contact with PCB remediation waste during cleanup activities

Although PCB remediation waste with PCB concentrations <50 ppm expected to be managed during the first construction season of this project are not subject to the storage for disposal requirements of 40 C.F.R. § 761.65 or the corresponding closure requirements, appropriate cleanup or decontamination of structures and equipment that may come in contact with PCB remediation is necessary to ensure that the overall project does not pose an unreasonable risk of injury to health or the environment. EPA is establishing a "clean debris surface" as the performance standard for decontamination of equipment and structures in contact with PCB remediation waste, "borrowing" this standard from the alternate treatment standards for hazardous debris under the RCRA Land Disposal Restriction program. EPA is establishing this standard under the TSCA authority of 40 C.F.R. § 761.61(c), and in doing so, is not making any assertion that PCB remediation waste, or equipment or structures in contact with it, under this approval is subject to RCRA land disposal restriction treatment standards.

EPA notes that Appendix C of Reference 6 includes a proposal to manage decontamination water, both from rail car cleaning and final cleanup at the Transload facility, in the Transload facility containment vault for final disposal with contaminated sediments. As noted above, EPA does not consider this an acceptable practice, and is requiring that decontamination water from the Transload facility be separately managed through decontamination and appropriate discharge.

Discussion of Conditions

1. Boeing is authorized to perform cleanup of PCB remediation waste, associated verification sampling, backfilling and post-backfilling monitoring as documented in Boeing's RBDA application (Reference 2) pursuant to the specific provisions of 40 C.F.R. § 761.61 documented in Enclosure 2 to this approval, and as approved by EPA under the Boeing Order (Reference 3) (Boeing Order) that are scheduled for the December 2012-February 2013 construction season (See Sheet C-12 in Reference 6, Appendix A).

This condition provides overall authorization under TSCA for the project for the first planned construction season. As discussed above, some of the work activities subject to TSCA requirements are authorized through this approval under the risk-based disposal approval of 40 C.F.R. § 761.61(c), with the remainder subject to authorization under other provisions of 40 C.F.R. § 761.61 as enumerated in Table 1. All work associated with this project, including but not limited to work subject to TSCA requirements, is subject to the Boeing Order.

2. At least 60 days prior to the start of the 2013/2014 and 2014/2015 construction season, or at such other time as agreed to by EPA, Boeing will provide EPA with a summary report of activities completed during the prior (2012/2013) construction season, issues or problems that were encountered, documentation of any changes or updates to plans for the respective construction season activities. This report will contain a request for modification of this approval pursuant to Condition 16 to include authorization for construction activities planned for the 2013/2014 and 2014/2015 construction seasons, and to make such other changes as necessary or appropriate.

This condition establishes a mechanism to review experiences gained and "lessons learned" during the first construction season, to make appropriate adjustments to plans and schedules for subsequent construction seasons, and to update or modify this approval accordingly.

3. This approval will remain in effect for the duration of the Boeing Order (Reference 3) with respect to work requirements subject to the requirements of 40 C.F.R. § 761.61. Following completion of such work under the Boeing Order, including post-backfilling monitoring, Boeing may provide a written request to EPA to terminate this approval.

This condition ensures that this approval remains in place and effective for the full duration of the project as established by the Boeing Order and this approval.

4. Boeing will ensure that all trucks or rail cars used to transport PCB remediation waste under this approval or as otherwise authorized pursuant to 40 C.F.R. § 761.61 will have adequate liners, or are otherwise sufficiently watertight, to prevent any incidental liquids from leaking from the boxes or containers during transport.

Even though Condition 6 below provides authorization to add absorbents to dredged sediments at the Transload facility, and establishes the performance standard of no visible free liquids, it is possible that load separation may occur during transport. Similar concerns exist for transport of

soils. EPA is establishing this condition to ensure that unintended release of separated liquid PCB remediation waste does not occur during transport for final disposal of PCB remediation waste associated with this project.

5. Boeing will ensure that best management practices are used for gravity dewatering of dredged sediments within sediment barges as described in Appendix C of Reference 6 for purposes of minimizing the quantity of residual liquids remaining in sediments when transferred to the transloading facility, consistent with project schedules, equipment limitations, and properties of the dredged sediments.

This condition establishes performance requirements for dewatering dredged sediments that minimizes the quantity of liquids PCB remediation waste to which absorbents will be added consistent with practical limitations of effectively dewatering bulk quantities of dredged sediments.

6. Boeing is authorized to add absorbents (e.g. cement kiln dust) to dredged sediments within the Transload facility for purposes of absorbing residual free liquids remaining in dredged sediments. Sufficient absorbent material will be added and appropriately mixed to eliminate visible free liquids before removal from the vault. Boeing is not authorized to add absorbents to any other aqueous PCB remediation waste at the Transload facility, such as truck/rail car wash water, storm water collected from areas outside of the containment vault which may have been in contact with contaminated sediments, or final decontamination water from the Transload facility generated pursuant to Condition 7 of this Approval. All aqueous PCB remediation waste generated as part of this project at the Transload facility other than residual free liquids in dredged sediments must be managed according to one of the following options:

    - Collect on-site and ship via Department of Transportation-compliant containers or tank trucks to an off-site facility for decontamination as required and discharge pursuant to 40 C.F.R. § 761.79(b)(1)(ii) or (iii);
    - Collected, and decontaminated (pre-treated) on-site as required and discharge pursuant to 40 C.F.R. § 761.79(b)(1)(ii) or (iii) to the King County Publically Owned Treatment Works. If this option is selected, Boeing must provide EPA with a copy of King County's pretreatment permit that demonstrates the permit contains an enforceable limit for PCBs, prior to any discharge to the King County POTW;
    - Collected on-site, decontaminate on-site and sample as necessary to demonstrate compliance with the decontamination standard at 40 C.F.R. § 761.79(b)(1)(iii), and add to sediments for stabilization in the containment vault as "clean" water authorized for unrestricted use;
    - Collected on-site, decontaminate on-site and sample as necessary to demonstrate compliance with the decontamination standard at 40 C.F.R. § 761.79(b)(1)(iii), and ship to the Columbia Ridge landfill for use as "clean" water for dust control as permitted by the Oregon Department of Environmental Quality.

Boeing will ensure that any decontamination of aqueous PCB remediation waste on-site at the Transload facility will be conducted in compliance with the requirements of 40 C.F.R. 761.79(e)-(g).

Any sampling and analysis pursuant to this condition that is not otherwise subject to written sampling and analysis and quality assurance project plans approved by EPA under the Boeing Order must be conducted under a written sampling and analysis plan, and a project-specific quality assurance project plan that ensures data will be of acceptable quantity and quality for their intended decision-making uses. Boeing will make such plans available to EPA upon request.

Any aqueous PCB Remediation Waste which Boeing or its Field Team voluntarily elects to remove from the containment vault may be managed according to any of the above options.

As discussed above, EPA disagrees with Boeing's proposal in the RBDA application to manage aqueous PCB remediation waste other than residual liquids in sediments via addition of absorbents. EPA is establishing several options which ensure compliance with applicable provisions of 40 C.F.R. § 761.61, but which do not involve impermissible conversion of liquid PCB remediation waste to a non-liquid form to avoid otherwise applicable disposal requirements. The first two of these options involve decontamination, either off-site or on-site, and appropriate discharge, such as to a publically-owned treatment works. Such decontamination may be conducted on a self-implementing basis using one or more of the procedures enumerated at 40 C.F.R. § 761.79(b). EPA is requiring that Boeing provide written documentation that appropriate pre-treatment requirements are in place prior to discharge to the King County POTW from the Transload facility, since Boeings RBDA application did not indicate whether or not appropriate pre-treatment is in place to ensure compliance with 40 C.F.R. § 761.79(b)(1)(ii).

The third and fourth of these options involve decontamination to a 0.5 µg/L standard, which allows unrestricted use ("clean" water). If PCB remediation waste is decontaminated to this standard, it may be managed via addition of absorbents without any issue that doing so would be impermissible processing of liquid PCB remediation waste to a non-liquid form to circumvent otherwise applicable disposal requirements.

EPA is including a requirement that any sampling and analysis associated with this condition is conducted under a written sampling and analysis plan and a quality assurance project plan. These plans can either be existing plans approved by EPA under the Boeing Order, or separate plans specific to this activity.

7. All equipment and structures that have been in contact with liquid or non-liquid PCB remediation waste subject to this approval must be disposed of or decontaminated following completion of work under this approval. All disposable equipment or materials must be disposed of in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable. Non-disposable equipment and structures must be decontaminated using mechanical means or pressure washing to achieve a "clean

debris surface" as defined in 40 C.F.R. § 268.45, Table 1, footnote 3. Water generated from decontamination of the Transload facility must be managed according to one of the options enumerated in Condition 6 above. This latter requirement supersedes text in the last paragraph of Section 4.2 of Boeing's RBDA application to EPA (Reference 2). Boeing will ensure that any decontamination conducted pursuant to this condition will be conducted in compliance with the requirements of 40 C.F.R. 761.79(e)-(g).

This condition establishes disposal and decontamination requirements for all equipment and structures that may have been in contact with, or contaminated with, PCB remediation waste during project activities. EPA is establishing this condition to ensure that residual PCBs which may remain following project completion are disposed of, or equipment/structures are sufficiently decontaminated, to ensure that there is no unreasonable risk of injury to health or the environment.

8. Boeing is authorized to dispose of bulk PCB remediation waste with PCB concentrations < 50 ppm in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable.

9. Boeing is authorized to dispose of bulk PCB remediation waste with PCB concentrations ≥ 50 ppm in a hazardous waste landfill permitted by a State authorized under § 3006 of RCRA.

Although 40 C.F.R. § 761.61(a) provides similar authorizations for bulk PCB remediation generated from self-implementing cleanups, this project is not being conducted under the authority of 40 C.F.R. § 761.61(a). Nevertheless, these methods of final disposal are appropriate to PCB remediation waste to be generated by this project, so EPA is establishing these disposal authorizations under the risk-based disposal approval authority of 40 C.F.R. § 761.61(c).

10. Prior to rail or truck shipment of any PCB remediation waste subject to this approval to the Columbia Ridge landfill for disposal as alternate daily cover, Boeing will provide to EPA a copy of the approval provided to the Columbia Ridge Landfill by the Oregon Department of Environmental Quality (ODEQ) authorizing acceptance and disposal of PCB remediation waste as alternate daily cover. If the ODEQ approval establishes a demonstration or evaluation period, Boeing will provide a copy of any communication related to this approval to EPA pursuant to Condition16 during the demonstration period, as well as any ODEQ evaluation of the demonstration period or ODEQ disposition (e.g., termination or extension of the demonstration approval, or issuance of any final approval for acceptance of PCB remediation waste for disposal as alternate daily cover).

    If bulk PCB remediation waste subject to this approval that is scheduled for disposal as alternate daily cover will be comingled with any other materials prior to acceptance at the Columbia Ridge landfill, Boeing must ensure that this comingling is in full compliance with the ODEQ authorization. Boeing shall ensure that all PCB remediation waste to be transported to the Columbia Ridge landfill, including PCB remediation waste to be disposed of as alternate daily cover, is in full compliance with any requirements which may be established by ODEQ for receipt of such materials prior to transport.

If alternate daily cover is reasonably expected to remain stockpiled at the Columbia Ridge Landfill for more than 30 days, Boeing will provide written documentation to EPA that appropriate controls are in place to address potential wind dispersal of stockpiled alternate daily cover, and that appropriate run-off controls are in place.

With respect to TSCA requirements, EPA has determined that disposal of PCB remediation waste at the Columbia Ridge landfill does not pose an unreasonable risk of injury to health or the environment, provided that any on-site stockpiling does not occur over an extended period of time and appropriate dispersal controls are in place. EPA is establishing a notification requirement to ensure that EPA's authorization for this method of disposal is authorized by, and does not conflict with any applicable requirements which may be established by the Oregon Department of Environmental Quality.

During information discussions of this project with Boeing on December 15, 2012, Boeing informed EPA that the initial approval expected from ODEQ for acceptance of PCB remediation waste for disposal as alternate daily cover will establish a demonstration period, during which ODEQ will evaluate the performance of such alternate daily cover. EPA is establishing a reporting requirement under this condition to ensure that EPA has access to the results of ODEQ's evaluations during and following the demonstration period.

During the same December 15, 2012 meeting with Boeing, EPA also learned that PCB remediation waste from this project may be co-mingled with other materials at a transfer facility following management at the Transload facility. Boeing did not provide any documentation of this comingling practice in their RBDA application to EPA, or any of the materials provided to EPA pursuant to the Boeing Order. Therefore, EPA does not have any basis to evaluate this practice, or to ensure that the commingled materials remain suitable for disposal as alternate daily cover. EPA is including requirements in this condition to ensure that PCB remediation waste from this project commingled with other materials remains suitable based on the ODEQ approval for the practice.

11. Boeing is authorized to transport PCB remediation waste associated with this project that have, based on existing site characterization data, to have an average PCB concentration not to exceed 2 ppm, with a maximum concentration of 10 ppm, from the Transload facility to a separate transfer facility. Within fourteen (14) calendar days following the effective date of this approval, Boeing will provide documentation to EPA pursuant to Condition 16 of this transfer facility. This documentation will include the following:

    - A description of the transfer facility, including schematic-level drawings of the overall facility and areas where PCB remediation waste from this project will be managed;
    - A description of operational practices at the transfer facility;
    - A description of all containment structures which will be used to ensure that dispersal or trackout of PCB remediation waste is prevented or controlled;
    - A description of all structures and procedures used for collection, any decontamination, any sampling and analysis, and methods for discharge or disposal

associated with or applicable to liquids separated from PCB remediation waste and any decontamination of structures and equipment which may come in contact with PCB remediation waste associated with this project;

- A description of criteria and decontamination methods applicable to structures and equipment which may come in contact with PCB remediation waste associated with this project.

During the December 15, 2012 meeting with Boeing noted in the discussion of Condition 10 above, EPA was informed that PCB remediation waste from this project would be transported from the Transload facility to a transfer facility. At this transfer facility, PCB remediation waste would be unloaded to the transfer facility floor, then re-loaded into other transport vehicles for transport to the Columbia Ridge landfill. Since Boeing did not document this transfer facility or activities that will take place at it in their RBDA application to EPA, or any of the materials provided to EPA pursuant to the Boeing Order, EPA cannot evaluate whether nor not management of PCB remediation waste at the transfer facility poses an unreasonable risk of injury to health or the environment. EPA is establishing this condition to require Boeing to provide information to EPA which will allow EPA to make such an evaluation. In order to not delay the start of project construction activities, EPA is establishing interim authorization to allow management of PCB remediation waste at the transfer facility that will have low PCB concentrations that are unlikely to pose an unreasonable risk of injury to health or the environment at the transfer facility.

12. Boeing will ensure that a copy of this approval is provided to members of its field engineering team (AMEC Environment and Infrastructure, Inc. and its subconsultants, Envirocon, Inc., and Waste Management, Inc.)(Field Team) responsible for conducting work subject to requirements of the approval. Boeing will ensure that any contracts it issues to members of the Field Team and any associated contract directions are consistent with the requirements of this approval. Boeing is responsible for ensuring compliance with this TSCA Risk Based Disposal Approval.

This condition emphasizes Boeing's responsibility for acts or omissions of its contractors.

13. Boeing will ensure that all field work associated with this project conducted by Boeing or its Field Team is conducted under written site-specific health and safety plans. Boeing will ensure that these plans document appropriate training and personal protective equipment required for all personnel that may be exposed to PCBs during work associated with this project. Boeing will make available copies of such plans to EPA upon request.

Boeing's RBDA application does not include a specific health and safety plan, although it does include a statement in Section 1.4 that "The Project will be conducted in accordance with site-specific Health and Safely Plans (HASP)..." Further, Boeing's RBDA does not discuss any training requirements for personnel conducting work under this approval. Both are important to ensure that work is conducted safely and in a manner that does not pose an unreasonable risk of injury to health or the environment. This condition ensures that a health and safety plan is prepared and that it includes elements that the EPA considers necessary. EPA is not including an

explicit requirement for EPA's review and approval, but this condition does ensure that EPA has access to the plan. If EPA should identify deficiencies that require revision, EPA may establish necessary revisions through modification of this approval pursuant to Condition 16.

14. Nothing in this approval relieves Boeing of any obligation to comply with the Boeing Order, any other EPA or Ecology administrative action, or any statutory requirements, or rules and regulations applicable to the activities subject to this approval.

This condition establishes that this approval under TSCA does not relieve Boeing of any other obligation that it may have with respect to the approved activities.

15. If at any time before, during, or after conduct of activities subject to this approval, Boeing possesses or is otherwise made aware of any data or information (including but not limited to site conditions that differ from those presented in the application) that activities approved herein may pose an unreasonable risk of injury to health or the environment, Boeing must report such data or information via facsimile or e-mail to EPA within five working days, and in writing to the Regional Administrator within 30 calendar days of first possessing or being made aware of such data or information. Boeing shall also report in the same manner, new or different information related to a condition or any element of the approved storage activities if the information is relevant to this approval. EPA may direct Boeing to take such actions it finds necessary to ensure the approved storage activities do not pose an unreasonable risk of injury to health or the environment. Boeing shall follow such direction until written approval is obtained from the EPA that finds the condition(s) requiring such direction no longer poses an unreasonable risk of injury to health or the environment.

This condition ensures that if any information not available to EPA at the time this approval is issued becomes known, and it will be made available to the EPA for purposes of ensuring that activities subject to this approval continue to pose no unreasonable risk of injury to health or the environment. This condition also ensures EPA's ability to make changes to the storage activities, including withdrawing approval for storage, as necessary to ensure no unreasonable risk of injury to health or the environment.

16. EPA reserves the right to modify or revoke this approval based on information provided pursuant to Condition 15, or any other information available to EPA that provides a basis to conclude that activities covered by this approval pose an unreasonable risk of injury to health or the environment. Boeing may request modification of this approval by providing written notice to EPA. If the EPA agrees with a request for modification, the EPA will provide written approval to Boeing. Prior to obtaining written approval of a modification request, Boeing shall comply with the existing approval conditions.

This condition establishes a mechanism whereby this approval may be modified by EPA, either independently or upon request to EPA.

Condition 17, not restated here, is self explanatory.