



Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

16-AMRP-0293

OCT 18 2016

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Smith:

REMEDIAL INVESTIGATION/FEASIBILITY STUDY AND RCRA FACILITY
INVESTIGATION/CORRECTIVE MEASURES STUDY WORK PLAN FOR THE 200-DV-1
OPERABLE UNIT, DOE/RL-2011-102, REVISION 0

This letter transmits the approved Remedial Investigation/Feasibility Study and RCRA Facility Investigation/Corrective Measures Study Work Plan for the 200-DV-1 Operable Unit, DOE/RL-2011-102, Revision 0 to the Washington State Department of Ecology.

Also attached is a copy of the Review Comment Record.

If you have any questions, please contact me, or your staff may contact, Mike Cline, of my staff, on (509) 376-6070.

Sincerely,

A handwritten signature in black ink, appearing to read "Ray J. Corey".

Ray J. Corey, Assistant Manager
for the River and Plateau

AMRP:JPH

Attachments

cc: See page 2

Ms. Alexandra K. Smith
16-AMRP-0293

-2-

OCT 18 2016

cc w/attachs:

G. Bohnee, NPT
R. Buck, Wanapum
D. A. Faulk, EPA
D. Goswami, Ecology
S. Hudson, HAB
Z. Jackson-Maine, Ecology
R. Jim, YN
E. Laija, EPA
N. M. Menard, Ecology
K. Niles, ODOE
J. B. Price, Ecology
B. Rochette, Ecology
D. Rowland, YN
R. Skeen, CTUIR
R. E. Varljen, Ecology
C. L. Whalen, Ecology
J. W. Yokel, Ecology
Administrative Record (200-DV-1)
Environmental Portal

cc w/o attachs:

J. V. Borghese, CHPRC
P. A. Burke, CHPRC
R. E. Day, CHPRC
M. H. Doornbos, CHPRC
W. R. Faught, CHPRC
C. P. Noonan, MSA
R. E. Piippo, MSA
M. J. Turner, MSA

REVIEW COMMENT RECORD (RCR)

Document Lead:		Project Manager: Dib Goswami / 50-372-7902 / dgos461@ecy.wa.gov			Initials:			
Tracking ID	Comment	Modification	Chapter	Disposition	Response to Comment	Regulator Concurrence	Note	
200-DV-01	modify the text to: Exposure pathways for chemicals include soil ingestion, inhalation of dust and volatiles, dermal contact with soil, and ingestion of groundwater at down-gradient locations (outside of the Inner Area).	Provide full history of the sites activities	ES	Accept	A summary of previous history was added to the Executive Summary. The full history of other OU assignments for these waste sites and the work completed before 2011 are described in detail within the work plan (for example, sections 1.4.3, 3.2.3, 3.3.3, 3.4.3).	Closed - 9/1/15		
200-DV-02	Provide references to the content of the table.	Include the reference(s)	1	No Change Needed	The text introducing Table 1-1 states: "The framework document (DOE/RL-2009-10) defines the overarching goals for cleanup, as shown in Table 1-1"	Closed - 9/1/15		
200-DV-03	This section lists the inner area principles. Regulators (both EPA and Ecology) have a number of unresolved issues which would require changes to this chapter based on the final outcome/agreements by the three parties.	Update the changes.	1	Accept	No changes made; the TPA managers need to meet and resolve these issues.	Closed - 9/1/15		
200-DV-04	Although this is identified as agreed principles, the common understanding is the reduction of the "foot print" at any time when opportunity is there.	Reflect the concept in the text	1	No Change Needed	This reduction of the "foot print" is not applicable to the 200-DV-1 OU waste sites, which are typically adjacent to tank farms and are interior to the Inner Area.	Closed - 9/1/15		
200-DV-05	Tribal nation scenario should be considered.	Include the scenario in your analysis	1	Accept	DOE has agreed to evaluate tribal scenarios	Closed - 9/1/15		
200-DV-06	The text says that "Cumulative impacts from waste sites, tank farms, and other sources within the Central Plateau will be assessed and documented in a single primary Tri-Party Agreement (Ecology et al., 1989a) document. This document will be prepared following the approval of the first work plan and prior to completion of the first RI/FS (and RI/CMS, as applicable) for the source OUs within the Hanford Site Central Plateau." I think it's very important for Ecology to formalize what will that document be before Ecology approves the 200-DV-1 work plan. 200-DV-1 is one of the most important studies to evaluate those cumulative impacts	Address the comment	3	Accept	DOE will produce the cumulative impacts evaluation as an Appendix to the 200-DV-1 RI/FS, 200-WA-1 RI/FS, or any other source OU RI/FS that is first in line. Future RI/FS documents will include updates of this analysis as necessary. The work plan needs to include the modeling approach and parameters to evaluate cumulative impacts. DOE agrees that the Tri-Party agencies need to resolve and formalize the methods and parameters to include in the work plans so that for DV-1, Ecology can formally approve the methods and parameters in the DV-1 work plan and the cumulative impacts analysis can proceed with a solid foundation.	Closed - 9/1/15		
200-DV-07	The text states "Human health and ecological BRAs will not evaluate direct contact risk below the standard point of compliance (0 to 4.6 m.). However, a conditional point of compliance may be proposed for soil depth to evaluate direct contact for human and ecological receptors." The human health direct contact point of compliance is fixed at 15 ft below ground surface (WAC 173-340-740(6)(d)). The second sentence quoted above needs to be changed to: However, a conditional point of compliance may be proposed for soil depth to evaluate direct contact for human and ecological receptors.		3	Accept with Modification	The revised point of compliance language was agreed to through the dispute process for the 200-SW-2 OU work plan. The text was revised in Section 1.3.2.5, Section 3.8.1, and Section 3.10.1.1.	Closed - 9/13/16		
200-DV-08	The text stated "These methods and parameters also are consistent with baseline risk assessments previously conducted at the Hanford Site that have been reviewed and approved by EPA and Ecology." Ecology has not approved any baseline risk assessments at Hanford. The River Corridor Baseline Risk Assessment was not approved by Ecology. Please delete the quoted text.		3	Not Accepted	This paragraph has been moved to introduce the human health and ecological risk assessments (introductory text in Section 3.10). Ecology accepted the human health and ecological risk assessment for the 100-DH area (DOE-RL-2010-95, Rev 0; Record Accession #: 0083383H), which included source waste sites and groundwater. Ecology has also approved the BRA for 200-PO-1, a groundwater unit (DOE-RL-2009-85, Rev 01; Record Accession #: 0091415). Another risk assessment approved by Ecology is the Columbia River Component of the River Corridor Baseline Risk Assessment (DOE-RL-2010-117, Vols I and II, Rev 0; Record Accession #: 0090730 and 0090731). For the 200-DV-1, the most applicable Ecology-approved BRA is for the 100-DH area.	Closed - 3/31/16		
200-DV-09	Modify the text to: Exposure pathways for chemicals include soil ingestion, inhalation of dust and volatiles, dermal contact with soil, and ingestion of groundwater at down-gradient locations (outside of the Inner Area).		3	Accept with Modification	Direct exposure evaluation doesn't include these additional pathways both for the MTCA Methods (B and C) and EPA guidance for a residential or worker scenarios. The following text is added to the bullet in question: "(groundwater protection is also evaluated as detailed in section 3.10.3 of this WP)" NOTE: Ecology comment cited Section 3.10.11. The text being commented on is in Section 3.10.1.1.	Closed - 3/31/16		

REVIEW COMMENT RECORD (RCR)

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Tracking ID	Comment	Modification	Chapter	Disposition	Response to Comment	Regulator Concurrence	Note
200-DV-10	Add a column for WAC 173-340 values. For direct contact, if the values derived using the parameters specified for EPA calculations are less stringent than those derived using WAC 173-340 equations 745-1 and 745-2, use WAC 173-340 equations 745-4 and 745-5 to account for dermal absorption (see WAC 173-340-745(c)(iii)).		3	Not Accepted	The title of the table was changed to list "Outdoor Worker Scenario" instead of "Industrial Scenario". The following text is added at the end of Section 3.10.1.1: "(The MTCA Method C is described in Section 3.10.1.8 of this WP)". Consistent with the Inner Area Principles as discussed with the Tri-Party managers, basis for action will be based on the EPA Outdoor Worker Scenario. The MTCA method C will be used to determine cleanup levels for chemicals. To explain the differences between the EPA RSL values and MTCA Method C cleanup levels, the following text has been added: "Using the EPA regional screening levels to establish the basis for action for chemicals will typically result in a more conservative cumulative cancer risk and non-cancer hazard index than the MTCA Method C (WAC 173-340-708(5)) because the RSL concentrations are lower than the MTCA Method C direct contact cleanup levels for most chemicals. The only exception to this is the MTCA Method C inhalation cleanup levels for volatile organic compounds are generally lower than their corresponding RSL concentrations. However, VOCs are no longer present in the shallow vadose zone of the Central Plateau; disposal occurred several decades ago and complete volatilization has occurred."	Closed - 5/11/16	
200-DV-11	The text states "Depths in soil will be identified for grouping samples based on the characterization strategy (up to a depth of 4.6 m [15 ft])... Soil samples obtained from soil borings will include only those sample intervals up to a depth of 4.6 m (15 ft)." It is not clear from this statement what "up to a depth of 4.6 m" means. Does this refer to depths above 4.6 m, or does it refer to those below 4.6 m? Human health protection pertains to all depths, because soils can leach contaminants can reach to groundwater, which humans can ingest. Please clarify which pathways and depths are being protected.		3	Accept	The text has been modified to remove depth intervals and to explain the role of the DQO process: "During the Data Quality Objectives (DQO) process, spatial exposure areas will be defined, and sampling and analytical data will be grouped for calculating EPCs, taking into consideration factors such as the nature and extent of contamination and process knowledge. Depths in soil will be identified for grouping samples based on the characterization strategy."	Closed - 3/31/16	
200-DV-12	The text states "if all recommended methods to calculate the UCL provide a value that exceeds the maximum concentration, then the maximum concentration in the exposure area will be used as the EPC." Ecology has always opposed this and cannot defend the use of a maximum in lieu of a valid ProUCL 95% UCL. ProUCL (EPA, 2013) states "It is recommended not to use the maximum observed value to estimate the EPC term representing the average exposure contracted by an individual over an EA. For the sake of interested users, ProUCL displays a warning message when the recommended 95% UCL (e.g., Hall's bootstrap UCL) of the mean exceeds the observed maximum concentration. For such scenarios (when a 95% UCL does exceed the maximum observed value), an alternative 95% UCL computation method based upon Chebyshev inequality is recommended by the ProUCL software." ProUCL (EPA, 2013) also states "In order to be able to compute defensible estimates, it is always desirable to collect more samples." This issue requires resolution.		3	Justification Added	This issue has been discussed between the Tri Parties and DOE has shown that we are following EPA guidance. The text has been modified to read: "The EPA software, ProUCL version 5.1 or later, shall be used to calculate EPCs. The highest "suggested UCL to use" provided in the ProUCL output file shall be used as the EPC unless the software provides a warning indicating that the "recommended UCL exceeds maximum observation". When this warning is provided, or when ProUCL cannot calculate a UCL value or does not provide a "suggested UCL to use", the maximum observed concentration will be used as the EPC."	Closed - 9/13/16	
200-DV-13	The document refers to CHPRC-00651 regarding biointrusion. Ecology had a number of unresolved comments about this document following our past (2010) review of it. The biointrusion document should be revised if it is to be used for DV-1 or other OUs.		3	Accept	The document will be revised and submitted for Ecology review.	Closed - 9/1/15	
200-DV-14	The document cites DOE/RL-2011-50 for the graded approach for ecological receptors. This is not the correct reference. Instead use DOE STD-1153-2002 for ecological receptors.		3	Accept	Change made.	Closed - 9/1/15	

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200-DV-15	The document states that the native land cover scenario assumes that revegetation with native plants will result in mature vegetation in 30 years. It is not clear what types of surfaces are to be revegetated (barriers, remediated waste sites?). The soil type will influence the succession of plants, including succession after fire. Also, succession after fires and failed revegetation efforts often result in stands of cheat grass that can halt the maturation of shrubs (Norton, JB, TA Monaco, JM Norton, DA Johnson, TA Jones. 2004. Soil morphology and organic matter dynamics under cheatgrass and sagebrush-steppe plant communities. J. of Arid Environments 57:445-466). The native land cover scenario should be replaced with a scenario that considers cheat grass as an endpoint.		3	Not Accepted	An extensive body of information has been developed for revegetation on the Hanford Site as part of the River Corridor cleanup. Available information clearly demonstrates that a robust vegetative land cover can develop over a time period that is significantly shorter than 10 years (five years would be a reasonably conservative assumption). Revegetation of waste sites following remediation is assumed in this scenario, consistent with revegetation that has been well established in the 100 Areas in accordance with the Hanford Biological Resources Management Plan (DOE/RL-96-32 Rev. 1). Revegetation has been successfully conducted in the 100 Area following other remediation activities (for example, refer to annual issues of the River Corridor Closure Contractor Revegetation and Mitigation Monitoring Report, including WCH-299 (2008), WCH-362 (2009), WCH-428 (2010), WCH-512 (2011), and WCH-554 (2012). DOE is proposing 30 years because this is the value presented and explained in the Graded Approach Document (DOE/RL-2011-50), which has been approved by Ecology. The long-term infiltration rate has been agreed to by Ecology for the Tank Closure and Waste Management EIS (DOE, 0391). One of the guiding principles stated in the Graded Approach Document (DOE/RL-2011-50) is that the parameters agreed to by DOE and Ecology through the Technical Guidance Document (TGD) for the TC&WM EIS should be used. The native land cover scenario is the only scenario listed in the TGD and evaluated in the EIS (in addition to reduced infiltration rates used for evaluation of evapotranspiration barriers).	Closed - 3/31/16		
200-DV-16	Please revise the bullet to: MTCA Method B cleanup level for groundwater based on carcinogenic effects calculated at target risk level of 1×10^{-6} , as applicable, and total site risk of less than 1×10^{-5} .		3	Accept	Text changed to: "• MTCA Method B cleanup level for groundwater based on carcinogenic effects calculated at target risk level of 1×10^{-6} , as applicable, with downward adjustment to maintain cumulative risk below 1×10^{-5} for multiple contaminants in accordance with WAC 173-340-708(5) and (6)"	Closed - 3/31/16		
200-DV-17	Please revise the bullet to: MTCA Method B cleanup level for groundwater based on noncarcinogenic effects calculated at a hazard quotient of 1, as applicable, and a site hazard index of 1.		3	Accept	Text changed to: "• MTCA Method B cleanup level for groundwater based on noncarcinogenic effects calculated at a hazard quotient value of 1, as applicable, with downward adjustment to maintain a total hazard index of 1 for multiple contaminants in accordance with WAC 173-340-708(5) and (6)"	Closed - 3/31/16		
200-DV-18	Ecology is requesting in advance the final data (e.g. soil, borehole, perched water, groundwater) that will be used in the RI and FS risk assessments, once the data are available.		5	Accept	Data will be provided	Closed - 9/1/15		
200-DV-19	Email from Dib Goswami to Mark Byrnes and James Hanson on 6-9-16 at 12:49 pm: Jim and Mark: Please see the attached description and schedules that need to be incorporated in Chapter 6 and the associated Gantt Chart. A great input with details that Ecology (John and me) discussed with USDOE during negotiation, etc. that includes correct terminology from the TPA-Table 9-2. If you have any question, please let me know. Thanks, Dib	Email provided 1. The Gantt chart titled "Central Plateau Decisions - Change Notice" dated 9-24-15 and marked "Predecisional DRAFT - Do Not Copy or Distribute". 2. DV-1 schedule from work plan with Task Name "Possible Treatability Testing" crossed out and the following in hand writing: Submit Treatability Investigation Work Plan to Ecology - 9/30/17 Initiate Treatability Test field work - 4/02/18 Submit Treatability Investigation Evaluation Report to Ecology - 9/30/22	6	Accept	The 200-DV-1 Operable Unit schedule in Chapter 6 was revised to replace "Possible Treatability Testing" with two new activities: (1) "Evaluate Need for Potential Additional Treatability Test" and (2) "Perform Additional Treatability Testing" with a footnote indicating that DOE may elect (with agency approval) to not implement additional treatability studies if the evaluation based on other pertinent Central Plateau treatability studies demonstrates that they are not necessary. The second new activity includes supporting activities similar to the handwritten activities provided in Ecology's comment. Other pertinent Central Plateau treatability studies are provided below the 200-DV-1 OU Work Plan schedule for information.	Closed - 9/13/16		
200-DV-20	Page D-2 - "Hazardous Waste Cleanup - Model Toxics Control Act" (RCW 70.105D, as amended); WAC 173-340, "Model Toxics Control Act—Cleanup": Is this a mistaken heading?		Appx D	Accept	The heading was deleted.	Closed - 9/13/16		

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200-DV-21	<p>Page D-4 - Clean Air Act of 1977 (42 USC 7401, et seq.); "Standards of Performance for New Stationary Sources"</p> <p>These are part of the following section (NESHAPs)</p> <p>This requirement has a lot of "ifs" in it. It could apply immediately, within a year, or not at all. It is all dependent on circumstances.</p> <p>Regardless it should be left in to ensure compliance when it is needed.</p>	Commenter struck "Standards of Performance for New Stationary Sources"	Appx D	Accept	"Standards of Performance for New Stationary Sources" was deleted.	Closed - 9/13/16		
200-DV-22	<p>Page D-4 - Clean Air Act of 1977; 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants"</p> <p>Asbestos is NESHAP, Subpart M.</p>		Appx D	No Change Needed	Adding "Subpart M" after the citation is inconsistent with the other citations in the table.	Closed - 9/13/16		
200-DV-23	<p>Page D-7 - National Historic Preservation Act of 1966</p> <p>Why not cite the code?</p>		Appx D	Accept	The USC citation was added.	Closed - 9/13/16		
200-DV-24	<p>Page D-7 - National Historic Preservation Act of 1966</p> <p>Same as above, why not cite the code? It is done for most all the others, so this is not consistent.</p>		Appx D	Accept	The USC citation was added.	Closed - 9/13/16		
200-DV-25	<p>Page D-7 - Native American Graves Protection and Repatriation Act of 1990; 43 CFR 10, "Native American Graves Protection and Repatriation Regulations"</p> <p>Why not cite the code?</p>		Appx D	Accept	The USC citation was added.	Closed - 9/13/16		
200-DV-26	<p>Page D-12 - Row for WAC 173-340-7490, "Model Toxics Control Act—Cleanup," "Terrestrial Ecological Evaluation Procedures"; WAC 173-340-7493, "Site-Specific Terrestrial Ecological Evaluation Procedures"; WAC 173-340-7494, "Priority Contaminants of Ecological Concern"</p> <p>Comment refers to "TBC" in the Relevancy column -</p> <p>ARAR. See previous RODs.</p>		Appx D	Not Accepted	Using the CERCLA ARAR guidance, based on the nature of these regulations and how they are written, they should be considered as TBC instead of applicable or relevant and appropriate. Usually, procedures that rely on non-promulgated toxicity levels or reference values are not ARAR. The procedures are identified as TBC and ultimately lead to requirements that are enforceable cleanup levels in the ROD, but not ARAR which would require ARAR waiver if they cannot be obtained within a reasonable timeframe.	Closed - 9/13/16		
200-DV-27	<p>Page D-14 - Row for WAC 173-303-170(3), "Dangerous Waste Regulations," "Requirements for Generators of Dangerous Waste"</p> <p>Comment refers to Citation -</p> <p>Add (1) & (3) or cite "...303-170"</p>		Appx D	Accept	"(1)" was added to citation.	Closed - 9/13/16		
200-DV-28	<p>RCW 70.94, "Washington Clean Air Act;" WAC 173-476, "Ambient Air Quality Standards"</p> <p>These are for use in ambient air for determination of attainment or non-attainment areas.</p> <p>These are not for individual emission points.</p>	Strike text in both rows.	Appx D	Accept	Text was deleted.	Closed - 9/13/16		