



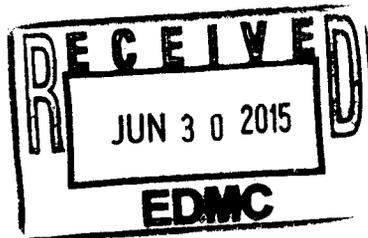
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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June 25, 2015

15-NWP-116

Mr. Michael W. Cline, Federal Project Director
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: A5-11
Richland, Washington 99352



Re: Department of Ecology's (Ecology) Response to the *Groundwater Sampling and Analysis Plan for the 200-BP-5 Groundwater Operable Unit*, Draft A, DOE/RL-2014-33, Received May 11, 2015, for the initial 45-day Review Comment Record (RCR) Period

Dear Mr. Cline:

In accordance with the *Tri-Party Agreement*, Section 9.2.1, Ecology reviewed the referenced document and determined that several concerns warrant specific consideration.

- The *Groundwater Sampling and Analysis Plan (SAP) for the 200-BP-5 Groundwater Operable Unit (OU)*, Draft A, DOE/RL-2014-33, eliminated Contaminants of Potential Concerns that Ecology considers necessary for inclusion. The enclosed RCR details Ecology's concerns regarding contaminant elimination (SAP Items 12, 13, and 19).
- Ecology received the *Groundwater Sampling and Analysis Plan for the 200-PO-1 Groundwater Operable Unit*, Revision 0, DOE/RL-2014-33, on April 30, 2015. Since the 200-BP-5 OU and 200-PO-1 OU will merge during the Comprehensive Environmental Response, Compensation, and Liability Act Feasibility Study, we compared the two associated SAPs for similar approach and language. Both SAPs have insufficient language supporting monitoring, plume trending, and data analysis. Our comments are included to address inconsistencies between the two SAPs (SAP Items 1, 5, and 18).
- The United States Department of Energy should add language addressing radionuclide and non-radionuclide groundwater clean up levels protective of surface water for human health and ecological receptors within the SAP. If acceptable language is not provided in the SAP, Ecology will not approve this document until after the review of the anticipated 200-BP-5 Remedial Investigation (SAP Item 15).
- The final *Tank Closure & Waste Management Environmental Impact Statement*, DOE/EIS-0391, and the 200 Area Composite Analysis contains potential contaminant summaries and additional documents containing data of impacts to this Operable Unit should be considered within this SAP (SAP Item 8).

1229690, 200-BP-5, 200-PO-1, 100-HR-3



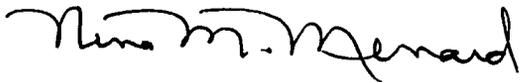
Mr. Michael W. Cline
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Enclosed is the RCR with Ecology's comments. Ecology is submitting a copy of the RCR to the Administrative Record in accordance with the *Tri-Party Agreement*, Section 9.4.

If you have any questions, please contact me at nina.menard@ecy.wa.gov or (509) 372-7941, or Kim Welsch, Environmental Specialist, at kim.welsch@ecy.wa.gov or (509) 372-7882.

Sincerely,



Nina M. Menard
Environmental Restoration Project Manager
Nuclear Waste Program

kw/aa
Enclosure

cc electronic w/enc:

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Rod Lobos, EPA
Jim Hansen, USDOE
John Morse, USDOE
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Hanford Facility Operating Record
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NWP Central File

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NWP Reader File

Review Comment Record

Washington State Department of Ecology
Nuclear Waste Program
Cleanup Section/ER Project

Date June 24, 2015

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Document Title(s)/Number(s):
Groundwater Sampling and Analysis Plan for the 200-BP-5 Groundwater Operable Unit (DOE/RL-2014-33, Draft A)

Document Lead/Phone #/email: Kim Welsch 372-7882 kiwe461@ecy.wa.gov

Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
Item 1 General	Comment: There is a lack of evidence of how the trending was performed in a defensible manner. Basis/Justification: Statistical methods for compliance monitoring /173-340-720 WAC	Include a section on analysis of monitoring and trending data.			
Item 2 General	Comment: The SAP doesn't state how the information collected is reported to Ecology. Basis/Justification: The data collected as required by this SAP needs to be tracked by Ecology to determine that the SAP does not need revision based on the flow of the identified plumes. Please add how this information will be reported to Ecology.	Add to appropriate section how the gathered information will be reported to Ecology.			
Item 3 P: 1-1 S: 1 L/¶: 8-10	Comment: The last sentence in this first paragraph is not entirely accurate. Basis/Justification: Completeness and clarity.	Change the sentence to read as follows: "The monitoring program defined in this plan supports the post-RI monitoring and sampling period and will be used to direct CERCLA routine groundwater monitoring activities until a remedial action decision through a corresponding Record of Decision (ROD) is made for the OU.			
Item 4 P: 1-1 S: 1 L/¶: 11-12	General Comment: The language of this sentence is not totally accurate. Basis/Justification: Completeness and clarity.	Change the sentence to read as follows: "This SAP supersedes the previous CERCLA groundwater SAP contained in Appendix A of the Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit (DOE/RL-2007-18, Rev. 1)."			
Item 5 P: 1-3 S: 1.1 L: 5-6	Comment: Trending from the time period 2007 to 2013 needs to be explained. Basis/Justification: Statistical methods for compliance monitoring /173-340-720 WAC	Provide text explaining the referenced time period in context of this SAP.			
Item 6 P:1-3 S: 1.1 L: 42-44	Comment: Water level monitoring is essential for tracking the flow of groundwater and the path of the plumes. The SGW documents listed are not enforceable and the SAP for GW Surveillance Monitoring only monitors 14 of the approximately 150 wells is not sufficient. Basis/Justification: The water level monitoring provides good data and can be easily accomplished when the sampling is occurring at the well for very little additional cost.	Change document to require water level monitoring whenever a well is being sampled.			

O/C = open or closed

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Nuclear Waste Program
Cleanup Section/ER Project**

Date **June 24, 2015**

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Document Lead/Phone #/email: Kim Welsch 372-7882 kiwe461@ecy.wa.gov

Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
Item 7 P: 1-4 S: 1.1 L: 8-20	<p>Comment: As commented on in the 200-PO-1 SAP, not including wells for monitoring in this SAP because they are also monitored as part of the RCRA TSD Sites is not acceptable.</p> <p>Basis/Justification: The SAP is to justify and describe the sampling that will occur to monitor changing conditions. While it is ok to combine sampling for different purposes, it does not preclude adding these wells to this SAP and justifying the monitoring of these wells for the purpose of tracking the contaminate plumes</p>	<p>Add all the necessary wells to this SAP and state that one sample will fulfill this SAP requirements and the RCRA SAP requirements</p>			
Item 8 P: 1-6 S: 1.2.3 L:	<p>Comment: The bulleted list is not complete, and should since there are other documents available containing GW data.</p> <p>Basis/Justification: Completeness and clarity.</p>	<p>At the least, include the following reports/data that provide documentation of waste site data that have/are affecting GW quality in the 200-BP-5 OU: the final <i>Tank Closure & Waste Management EIS</i> (DOE/EIS-0391), the 200 Area Composite Analysis, <i>200-CW-1 OU Remedial Investigation (RI) Report</i> (DOE/RL-2000-35), <i>RI Report for the 200-CW-5 U Pond/Z Ditches Cooling Water Group, the 200-CW-2 S Pond and Ditches Cooling Water Group, the 200-CW-4 T Pond Ditches Cooling Water Group, and the 200-SC-1 Steam Condensate Group OU</i> (DOE/RL-2003-11), <i>RI Activities at Model Group 5 Large Area Ponds Waste Sites Located within the 200-CW-1 OU</i> (DOE/RL-2006-57), and any other GW data sources available to support this SAP.</p>			
Item 9 P: 1-6 S: 1.2.3 L:	<p>Comment: There is not discussion or listing for West Lake and its contribution to the contamination the 200-BP-5 OU.</p> <p>Basis/Justification: West Lake had some significant discharges on contamination that contributed to the plumes identified in the 200-BP-5 Groundwater.</p>	<p>Add a description/history on West Lake to the SAP.</p>			
Item 10 P: 1-11 & 6-4 S: 1.2.3 & 6 L: 8-9 & 32-36	<p>Comment: Referenced RPP-26744, <i>Hanford Soil Inventory Model</i> needs to be made available in the Administrative Record (AR) and/or available to Ecology personnel.</p> <p>Basis/Justification: Completeness and clarity.</p>	<p>Make RPP-26744 available in the AR.</p>			

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Document Lead/Phone #/email: Kim Welsch 372-7882 kiwe461@ecy.wa.gov

Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
Item 11 P: 1-12 to 1-13 Table 1-1	<p>Comment: Table 1-1 lists derived activities, concentrations, and volumes of contaminants. Please give more details on how these quantities were derived (presumably from the Hanford Soil Inventory Model, see Item #10 above). Also, clarify if this table is intended to include all waste sites affecting 200-BP-5 groundwater.</p> <p>Basis: Data derivation methods should be provided.</p>	<p>Please explain how contaminant activities/concentrations and waste volumes in Table 1-1 were derived (presumably with the Hanford Soil Inventory Model) and how complete this table is in terms of waste sites affecting 200-BP-5 groundwater.</p>			
Item 12 P: 1-15 & 1-19 & A-2-A-3 S: 1.2.4 & 1.4 & A1.5 L/¶: Table 1-3, and Table A-1	<p>Comment: The contaminant list in this SAP is too short. A number of contaminants that exceed levels of concern have been eliminated from the COPC list, and some wells with contaminants that exceed levels of concern are not going to be monitored. This SAP cannot reduce the COPCs list from the <i>Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit</i> (DOE/RL-2007-18, Rev. 1). Only <u>after</u> reviewing and approving the language and logic provided in the 200-BP-5 RI may COPCs be reduced from those listed in the WP.</p> <p>Basis/Justification: CERCLA process and clarity. Example wells that this SAP describes will not be monitored are 299-E33-57A, -205, -265, -266, -334, -343, -4; 699-62-43F, and 699-70-68.</p>	<p>Include all of the COPCs listed in the <i>Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit</i> (DOE/RL-2007-18, Rev. 1). Before eliminating contaminants from monitoring, evaluate risk and hazard on a well-by-well basis, and retain contaminants that contribute greater than 1% to risk and/or hazard, and those that exceed action levels. Monitor the associated contaminants and wells, in addition to those already identified by using action levels.</p>			
Item 13 P: 1-19 S: Table 1-3; Appendix A, General	<p>Comment: Monitoring of BP-5 wells should include all of the contaminants in Table 1-3 of this document plus those in Table 6-14 of the BP-5 RI, and those listed below. The contaminants that should be monitored are ICP-metals, VOCs (which would include TCE, PCE, and carbon tetrachloride), hexavalent chromium, and selected radionuclides.</p> <p>Basis/Justification: Ecology has examined the data set provided for BP-5, covering well sampling results from 2008-2013, and has determined a number of wells and associated contaminants that need additional consideration and further monitoring. These wells and contaminants include:</p> <p><u>Well 299-E27-14</u> Associated Unit: WMA C Carcinogens: Arsenic, I-129, Tc-99, tritium Hazards: Arsenic, cobalt, copper, cyanide, nitrate (N), uranium, vanadium</p> <p><u>Well 299-E27-15</u> Associated Unit: WMA C (just outside) Carcinogens: Arsenic, I-129, Tc-99, tritium, methylene chloride</p>	<p>Monitor for ICP-metals, VOCs, and hexavalent chromium in the areas where they have been observed in the past, and include them in risk calculations.</p>			

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Date June 24, 2015

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Document Title(s)/Number(s):
Groundwater Sampling and Analysis Plan for the 200-BP-5 Groundwater Operable Unit (DOE/RL-2014-33, Draft A)

Document Lead/Phone #/email: Kim Welsch 372-7882 kiwe461@ecy.wa.gov

Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	<p>Hazards: Arsenic, antimony, selenium, nitrate (N), vanadium, uranium, nickel, methylene chloride</p> <p><u>Well 299-E27-155</u> Associated Unit: WMA C (just outside) Carcinogens: I-129, Pu-239/240, Tc-99, tritium Hazards: Cyanide, hexavalent chromium, nitrate (N), selenium, vanadium</p> <p><u>Well 299-E27-7</u> Associated Unit: WMA C (just outside) Carcinogens: I-129, Tc-99, tritium Hazards: Cyanide, nitrate (N), vanadium</p> <p><u>Well 299-E28-23 and E28-25</u> Associated Unit: 216-B-5 Reverse Well and upgradient (?) from 216-B-59B Carcinogens: Am-241, Cs-137, I-129, Pu-239/240, Pu-238, Sr-90, uranium isotopes, tritium Hazards: Nitrate (N), uranium</p> <p><u>Well 299-E28-24</u> Associated Unit: 216-B-5 Reverse Well and upgradient (?) from 216-B-59B Carcinogens: Cs-137, I-129, Pu-239/240, Sr-90, uranium isotopes, tritium Hazards: Fluoride, nitrate (N), uranium</p> <p><u>Well 299-E28-28</u> Associated Unit: 218-E-10 Carcinogens: Tc-99, tritium Hazards: Cyanide, tetrachlorodibenzo-p-dioxins, nitrate (N)</p> <p><u>Well 299-E33-15</u> Associated Unit: B-BX-BY Carcinogens: Tc-99, tritium, I-129, Co-60 Hazards: Antimony, cyanide, chromium, hexavalent chromium, nitrate (N), strontium, uranium, vanadium</p> <p><u>Well 299-E33-16, E33-17, E33-18, E33-1A</u> Associated Unit: B-BX-BY Carcinogens: Arsenic (E33-16), Co-60, I-129, Tc-99, tritium</p>				

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	<p>Hazards: Antimony (E33-16, -17), arsenic (E33-16), chromium, cyanide, hexavalent chromium, nitrate (N), strontium, uranium, zinc (E33-17, -1A), selenium (E33-18), cobalt (E33-1A)</p> <p><u>Well 299-E33-20</u> Associated Unit: B-BX-BY Carcinogens: Co-60, I-129, Tc-99, tritium Hazards: Chromium, cobalt, cyanide, hexavalent chromium, manganese, nitrate (N), strontium, uranium, zinc</p> <p><u>Well 299-E33-205</u> Associated Unit: B-BX-BY Carcinogens: Am-241, C-14, Tc-99, tritium Hazards: Cyanide, hexavalent chromium, nitrate, uranium</p> <p><u>Well 299-E33-265, E33-266</u> Associated Unit: 216-E-10 (?) Carcinogens: I-129, Tc-99, tritium Hazards: Cyanide, nitrate (N), tetrachlorodibenzo-p-dioxins, vanadium, uranium</p> <p><u>Well 299-E33-33</u> Associated Unit: B-BX-BY Carcinogens: Arsenic, I-129, Tc-99 Hazards: Arsenic, cyanide, nitrate (N), vanadium</p> <p><u>Well 299-E33-334</u> Associated Unit: B-BX-BY Carcinogens: N-nitrosodi-n-dipropylamine Tc-99, tritium, I-129 Hazards: Cobalt, cyanide, nitrate (N), uranium</p> <p><u>Well 299-E33-337, E33-338, E33-339</u> Associated Unit: B-BX-BY Carcinogens: Tc-99, tritium, uranium (high – convert to isotopes) Hazards: Chromium, cobalt, copper, cyanide, hexavalent chromium, manganese, nickel, nitrate (N), uranium, vanadium</p> <p><u>Well 299-E33-34</u> Associated Unit: B-BX-BY, 200-E-21 Carcinogens: Co-60, I-129, Tc-99, tritium</p>				

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	<p>Hazards: Cyanide, hexavalent chromium, nitrate (N), strontium, uranium, vanadium</p> <p><u>Well 299-E33-341</u> Associated Unit: B-BX-BY Carcinogens: Am-241, C-14, Co-60, I-129, Pu-239/240, Tc-99, Sr-90, tritium Hazards: Chromium, cyanide, hexavalent chromium, mercury, nitrate (N), uranium</p> <p><u>Well 299-E33-342</u> Associated Unit: B-BX-BY Carcinogens: Am-241, C-14, Co-60, I-129, Pu-239/240, Tc-99, Sr-90, tritium Hazards: Antimony, carbon tetrachloride, cyanide, hexavalent chromium, nitrate (N), uranium</p> <p><u>Well 299-E33-343</u> Associated Unit: B-BX-BY Carcinogens: Am-241, C-14, I-129, Np-237, Tc-99, Sr-90, Th-230, tritium, U isotopes Hazards: Methylene chloride, carbon tetrachloride, cyanide, hexavalent chromium, nitrate (N), uranium</p> <p><u>Well 299-E33-345</u> Associated Unit: B-BX-BY Carcinogens: Am-241, Sb-125, C-14, I-129, Pu-239/240, Sr-90, Tc-99, Th-230, tritium, uranium (high – convert to isotopes) Hazards: Chromium, hexavalent chromium, nickel, nitrate (N), uranium</p> <p><u>Well 299-E33-38</u> Associated Unit: B-BX-BY Carcinogens: Arsenic, I-129, Tc-99, tritium, uranium (high – convert to isotopes) Hazards: Antimony, arsenic, chromium, cobalt, cyanide, hexavalent chromium, mercury, nitrate, selenium, uranium</p> <p><u>Well 299-E33-4</u> Associated Unit: B-BX-BY Carcinogens: Co-60, Tc-99, tritium Hazards: Barium, cobalt, cyanide, manganese, nitrate (N), strontium</p> <p><u>Well 299-E33-42</u> Associated Unit: B-BX-BY Carcinogens: I-129, Tc-99, tritium</p>				

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	<p>Hazards: Cyanide, hexavalent chromium, nitrate (N), n-nitrosodi-n-dipropylamine, selenium, silver, uranium</p> <p><u>Well 299-E33-44</u> Associated Unit: B-BX-BY Carcinogens: Arsenic, bis(2-ethylhexyl)phthalate, Co-60, I-129, Tc-99, tritium, uranium (high – convert to isotopes) Hazards: Arsenic, bis(2-ethylhexyl)phthalate, chromate, cyanide, hexavalent chromium, molybdenum, nitrate (N), selenium, uranium</p> <p><u>Well 299-E33-47</u> Associated Unit: B-BX-BY Carcinogens: Arsenic, Co-60, I-129, Tc-99, tritium, uranium Hazards: Arsenic, barium, chromium, cyanide, hexavalent chromium, mercury, nitrate (N), selenium, strontium</p> <p><u>Well 299-E33-48</u> Associated Unit: B-BX-BY Carcinogens: I-129, Tc-99, tritium Hazards: Chromium, cyanide, nickel, nitrate (N), silver, uranium, vanadium</p> <p><u>Well 699-49-57A</u> Associated Unit: BY Cribs and B-BX-BY Carcinogens: Co-60, I-129, Tc-99, tritium, Sr-90 Hazards: Cyanide, nitrate (N), uranium, vanadium</p> <p><u>Well 699-50-56</u> Associated Unit: North of 200-East Carcinogens: Arsenic, Pu-239/240, Tc-99, Sr-90, tritium Hazards: Arsenic, cyanide, hexavalent chromium, nitrate (N), vanadium</p> <p><u>Well 699-50-59</u> Associated Unit: Northwest of 200-East Carcinogens: I-129, Tc-99, tritium Hazards: Cyanide, nitrate (N), uranium, vanadium</p> <p><u>Well 699-52-55</u> Associated Unit: West of Gable Mountain Pond Carcinogens: Am-241, carbon tetrachloride, Np-237, Tc-99, thorium isotopes, tritium</p>				

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	<p>Hazards: Cadmium, chromium, cobalt, copper, cyanide, iron, manganese, zinc</p> <p><u>Well 699-53-55B, C</u> Associated Unit: West of Gable Mountain Pond Carcinogens: Co-60, Tc-99, tritium Hazards: Cyanide, nitrate (N), vanadium</p> <p><u>Well 699-54-45A</u> Associated Unit: Gable Mountain Pond Carcinogens: Carbon tetrachloride Hazards: Acrolein, cobalt, iron, zinc</p> <p><u>Well 699-55-57</u> Associated Unit: West of Gable Mountain Pond Carcinogens: Tc-99, tritium Hazards: Cyanide</p> <p><u>Well 699-62-43F</u> Associated Unit: North of Gable Mountain Carcinogens: Arsenic, I-129, Tc-99, tritium Hazards: Arsenic, hexavalent chromium, nitrate (N)</p> <p><u>Well 699-65-50</u> Associated Unit: North of Gable Mountain, near dunes Carcinogens: Am-241, arsenic, I-129, Tc-99, tritium Hazards: Arsenic, hexavalent chromium, nitrate (N)</p> <p><u>Well 699-70-68</u> Associated Unit: South of 100-K Carcinogens: Am-241, trichloroethylene, Tc-99, tritium Hazards: Nitrate (N)</p>				
Item 14 P: 2-13 Table 2-3	<p>Comment: Similar to comment(s) made for the 200-PO-1 OU SAP, Rev 0; Re uranium (U) in Table 2-3, the MTCA Method B CUL for groundwater would default to Hanford groundwater background (9.9 µg/L=90th percentile value, DOE/RL-96-61, Rev 0), because the MCL (30 µg/L) needs to be adjusted downward to HQ=1 (9.6 µg/L) per WAC 173-340-720[7][b]. This will alter the required quantitation limit too.</p>	<p>Please note that the MCL for U in Table 2-3 (30 µg/L) exceeds the MTCA Method B groundwater CUL for Hanford (9.6 µg/L) which, in turn, would default to Hanford background (9.9 µg/L).</p>			

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	Basis: The MTCA Method B noncancer CUL for U in groundwater (9.6 µg/L, corresponding to HQ=1) is derived with an oral RfD=6E-4 mg/kg-d (EPA, Office of Groundwater and Drinking Water) per USEPA memo from Marc Stifelman (dated 8/7/2008).				
Item 15 P: 2-13 Table 2-3	Comment: Similar to comment(s) made for the 200-PO-1 OU SAP, Rev 0; Re Table 2-3, in addition to MCLs, other regulatory criteria (both human and eco) apply, because groundwater ultimately discharges into surface water (Columbia River). For human health, MTCA Method B surface water CULs (WAC 173-340-720[4][b][ii], -720[8][d], and -730[6][b]) should be met, along with criteria specified in the Clean Water Act and National Toxics Rule (WAC 173-340-730[3][b]) for nonrads. For ecological receptors, state surface water quality standards (WAC 173-201A) and criteria specified in the Clean Water Act and National Toxics Rule (WAC 173-340-730[3][b]) for nonrads apply, along with USDOE biota concentration guides (BCGs) for rads in water and sediment (DOE-STD-1153-2002). Basis: Regulatory criteria for surface water and sediment may apply, because groundwater discharges into surface water.	Re Table 2-3, include surface water and sediment criteria for human health and eco receptors (for rads and nonrads), because groundwater discharges into the Columbia River.			
Item 16 P: 2-18 to 2-19 Table 2-6	Comment: Re "Holding Time" for rads in Table 2-6, footnote "c" and "NA" appear to be in conflict. Basis: Tables should be internally consistent.	Re "Holding Time" for rads in Table 2-6, clarify a potential conflict between footnote "c" and "NA."			
Item 17 P: 3-2 S: 3.2.1 L: 1	Comment: "Appendix A Tables A3-1 through A3-14...." should read "Appendix A Tables A-3 through A-15...."	"Appendix A Tables A3-1 through A3-14...." should read "Appendix A Tables A-3 through A-15...."			
Item 18 P: A-1 S: A1.2 L:	Comment: All assumptions for analyzing the data associate with this SAP should be clearly stated. Basis/Justification: Statistical methods for compliance monitoring /173-340-720 WAC	State all applicable assumptions for analyzing the mentioned data.			
Item 19 P: A-1 S: A1.2 L/¶: 34-35	Comment: The document states "Groundwater well results with elevated metals (chromium, cobalt, iron, manganese, nickel, and zinc) are considered associated with well screen corrosion and are not monitored by this SAP." This assumption may not be true.	Elevated metals should be evaluated as groundwater COPCs. Continue to monitor for metals (including those listed in the quoted text) at wells where they have been detected. If well screens are corroding that badly they should be replaced.			

Review Comment Record

**Washington State Department of Ecology
Nuclear Waste Program
Cleanup Section/ER Project**

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**Document Title(s)/Number(s):
Groundwater Sampling and Analysis Plan for the 200-BP-5 Groundwater Operable Unit (DOE/RL-2014-33, Draft A)**

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Item Page (P) Section (S) Line (L)	Comment and Basis/Justification	Modification Needed	DOE Response	Ecology Response	O/C
	Basis/Justification: Assumptions should not exclude contaminants without supporting data. There are many wells with these constituents that were used in Hanford processes. It is DOE's responsibility to keep well conditions within acceptable standards. RCRA wells are to be maintained per 8C RCRA permit condition II.F.3. Other wells must be maintained per WAC 173-160-430 which states in part, "The casing may not affect or interfere with the chemical, physical, radiological, or biological constituents of interest."	Further, this SAP is not the place to justify possible dropping of COPCs. Acceptable evidence to explain the rationale for eliminating these metals/COPCs must be made in the 200-BP-5 RI, not in this SAP.			
Item 20 P: A-3 Table A-1	Comment: The WAC (MTCA Method B) CUL for U would default to Hanford background (9.9 µg/L). Basis: Assumptions should not exclude contaminants without supporting data.	The WAC (MTCA Method B) CUL for U would default to Hanford background (9.9 µg/L).			
Item 21 P: A-5 S: A2.3.2 L/¶: 31-32 and 39-41	Comment: The text states "Analyses showing sharply increasing concentrations for previous measurements would initiate a change from biennial sampling to a shorter frequency..." A definition is needed for 'sharply increasing.' Basis/Justification: The criteria for use of a shorter frequency appears to be undefined.	Include a definition for 'sharply increasing,' and what that means in the context of this SAP. If there is a 'rule-of-thumb' logic and/or assumptions associated with this language, it should clearly be stated in the text.			