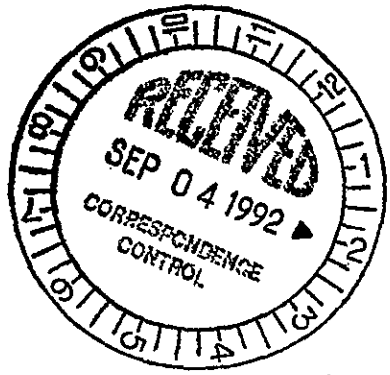
START

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

0023163
9205962

92-ERB-132

AUG 14 1992



Mr. Paul T. Day
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. David B. Jansen, P.E.
Hanford Project Manager
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Day and Jansen:

RESPONSE TO THE STATE OF WASHINGTON DEPARTMENT OF ECOLOGY'S (ECOLOGY) REVIEW OF THE PUREX SOURCE AGGREGATE AREA MANAGEMENT STUDY REPORT (AAMSR) DRAFT A

This letter transmits the responses to comments received from Ecology and the U.S. Environmental Protection Agency on Draft A of the PUREX AAMSR.

If you have any questions, please contact Mr. P. M. Pak at (509) 376-4798.

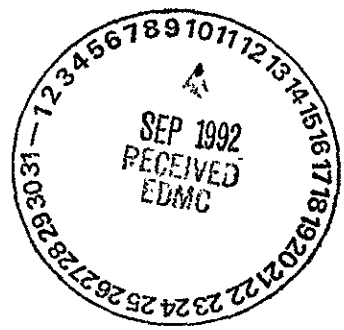
Sincerely,

Steven H. Wisness
Hanford Project Manager

Enclosure

cc w/encl:
C. Cline, Ecology
D. Lacombe, PRC
W. Staubitz, USGS
D. Teel, Ecology (2)

cc w/o encl:
M. K. Harmon, EM-442
R. E. Lerch, WHC
T. B. Veneziano, WHC
D. B. Erb, WHC



9210170

ENVIRONMENTAL ENGINEERING AND GEOTECHNOLOGY
COMMENT RECORD FORM

1. Date

2. Page 1 of 74

3. Document Title/Number PUREX Plant Source AAMS, DOE/RL-92-04, Draft A

4. Lead Engineer/Scientist Dave Erb

5. Organization 200/300 Environmental Engineering

6. Location/Phone/MSIN 450 Hills/6-1402/H4-55

7. Reviewer Ecology/EPA; letter N. Uziemblo to P.M. Pak
Sign and Print Name Date

8. Organization

9. Location/Phone/MSIN 450 Hills/2-1402/H4-55

10. The document was reviewed, and the reviewer had no comments.

Reviewer _____ 11. Date _____

12. I have reviewed the disposition of comments with the Lead Engineer/Scientist.

Reviewer _____ 13. Date _____

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
1.	This document contains extensive sections of incorrect generic text. This suggests that comments submitted and accepted in previously reviewed Management Study Reports have not been incorporated into this document. In addition, there are numerous typographical errors, format inconsistencies, and unit labels missing. This report should be reexamined by an editor and the spelling checked. These findings suggest that the report submitted for milestone M-27-06 is a draft report still under internal review. Multiple drafts and prolonged delays in approving the final document are likely to result due to asking the regulators to review incomplete reports. All future Management Study Reports must be complete, reasonably accurate, and satisfy the intent of the milestone before being submitted to the regulators for review.	Accept. These comment dispositions and the production of the Draft B document will clarify the discrepancies and will allow presentation of a complete AAMSR.

9212291171

ENVIRONMENTAL ENGINEERING AND GEOTECHNOLOGY COMMENT RECORD FORM (cont.)		
Reviewer	Ecology/EPA; letter; N. Uziemblo to P.M. Pak	Page 2 of 74

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
2.	Since this report is a guide for preparing a work plan for the Purex source, it should contain as much information as possible from available reference sources instead of merely citing statements from the sources. The type of wastes received by each of the waste management units (WMU) is stated, but the origin of the waste generated and the suspected or known constituents in each waste type are not clearly discussed. One example is laboratory cell drainage from the 202-A building and the 291-A-1 stack drainage; the nature and composition of these wastes are not described.	Accept. Information regarding origin of wastes will be included if it is available. (Ecology: T-Plant comment#3.)
3.	Although facility, process, and operational history descriptions are thoroughly presented, some information is missing for certain facilities addressed in the specific comments sections. When discussing the known and suspected extent of contamination, the contaminants of concern at each WMU should be provided. Dry well logs and monitoring data for radiation monitoring wells for each WMU should also be included in an Appendix. Lists of chemicals discharged to each WMU should be tabulated and referenced in the text.	Accept. References of the extensive lists of WMU contaminants are included; geophysical data is included in an appendix and lists of contaminants of concern are listed in the text. (Ecology: T-Plant comment #4.)

ENVIRONMENTAL ENGINEERING AND GEOTECHNOLOGY COMMENT RECORD FORM (cont.)	
Reviewer Ecology/EPA; letter; N. Uziemblo to P.M. Pak	Page 3 of 74

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
4.	There is no indication of a scheduled time-frame to submit the report on the limited amount of field characterization work that is performed in parallel with preparation of the AAMS report (Section 1.4) to meet the objective to "conduct limited new site characterization work if data or interpretation uncertainty could be reduced by the work" (Section 1.3, page 1-9). For example, some of the unplanned releases and WMUs (Table 5-1) are evaluated as low priority sites on the basis of hazard ranking system (HRS) scores and radiation monitoring data. Limited field characterization data gathered from samples collected at these unplanned releases and WMUs may indicate current risk to human health and environment and may support decisions for expedited, interim, limited, or no action. Although some of the WMUs (examples: 216-A-37-2 crib, 207-A retention basins, and 216-A-42 Retention Basin) are potential sources for contaminant migration to groundwater and environmental threats, these WMUs are dispositioned for investigation to an unknown later date. An expedited response action (ERA) is warranted if further degradation of the medium occurs.	Accept. The report will be submitted following completion of the AAMS. Limited Field Investigations are being conducted in support of the AAMS including spectral borehole and groundwater monitoring. Spectral borehole logging results will not be available to support source AAMSR but will be reported in separate topical reports and will be used to support future work plans. Preliminary groundwater data will be used to support GW AAMSR and final results will be reported in a topical report. No characterization work was conducted to evaluate data uncertainties since no data were found that could be enhanced by additional field investigations within a time frame to support the AAMS. (Ecology: U-Plant comment G-1; S-Plant comments G-1 and G-3.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
5.	The discussion on preliminary development of alternatives is too general. EPA (1988) recommends that once the existing site information has been analyzed and a conceptual understanding of the site is obtained, a preliminary range of remedial action alternatives and associated technologies should be clearly identified for each contaminated medium. The identification of potential technologies at this stage will help ensure that the data needed to evaluate them (e.g., solvent selection for chemical extraction, particle size classification for physical separation, selection of reagent mixtures for fixation/solidification/stabilization, literature data on existing and innovative technologies, performance and cost information for commercial technologies from vendors and landfill capacities) can be collected as early as possible. In addition, the early identification of technologies will allow timely determinations as to the need for treatability studies. To the extent practicable, a preliminary list of broadly defined alternatives should be developed in the work plan that reflects the goal of presenting a range of distinct, viable options to the decisions maker. In this way, the preliminary identification of remedial actions will allow an initial identification of ARARs and will help focus subsequent data gathering effects.	Reject. The preliminary development of alternatives is intended to be general because of the number of waste management units. The complexity of the sites, and the limited amount of WMU-specific information. A more specific development will be presented in future feasibility studies.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
6.	Although the various criteria are used to evaluate the sites for an expedited response actions (ERA), the sites are selected finally on the basis of surface contamination using the 1990 radiological survey data for an ERA. This approach may be inappropriate due to the following reasons: • The base line values used to determine the sites having surface contamination that exceeded the baseline values for an ERA on the basis of measured surface radiation levels in units of counts/minute, disintegration/minute and mrem/hour are not provided. • A rationale for only using the 1990 data for surface contamination is not provided. Some of the WMUs are eliminated from consideration for an ERA because the 1990 radiological survey did not identify any area of contamination. This assumption is not correct. For example, the 1988 survey did not identify any surface contamination at 216-A-28 French Drain (Section 4.1.2.3.37). But even after the center of the unit was excavated and backfilled to grade in 1981, during the 1990 radiological survey direct readings of 10,000 dis/min (beta-gamma) and 2,300 dis/min (alpha) were identified.	Reject. As stated, the most recent (1990) survey would be preferable to prior surveys, as current conditions of surface radiation are critical to the site evaluation.
7.	The logic used to select representative WMWs for limited field investigations (LFI) is not clearly justified.	Accept. Further justification will be included.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
8.	The rationale provided for investigation of groundwater as a single 200 East Area wide groundwater operable unit (GOU), rather than in individual source operable units is not adequate. Unless data gathering events for groundwater investigations for the single 200 East Area wide GOU are planned efficiently for representative data, delays in obtaining data for risk characterization and remedial actions is anticipated. This may not serve the purpose of implementing the three paths (ERA, IRM, and LFI) for decision making (Section 1.1.2). Groundwater investigations in individual source operable units may be more appropriate for interim decision making if any threat is identified to human health and the environment.	Reject. Groundwater study in the area in question must, by nature of the media, utilize a larger scale than the associated source operable units. (Ecology: S-Plant comment #G-10.)
9.	Table of Contents The executive summary is not listed in the table of contents. The titles for Appendices A and D are not consistent with the appendices title pages. These discrepancies should be resolved.	Accept. The table of contents and appendices titles will be corrected.
10.	Executive Summary Page ES-5, lines 17-25 The text states that health and environmental concerns are presented in Section 5.0. The text continues with a discussion of potential human health concerns, but does not include a discussion of ecological concerns. The text should include a discussion of potential ecological concerns.	Accept. Ecological concerns will be discussed. (Ecology: T-Plant comment #G-5.)
	CHAPTER 1	
11.	Section 1.1.2, Page 1-3, lines 30-35 A Focused Feasibility Study must be prepared discussing remedial alternatives for each type of waste unit. For each waste unit, a proposed plan followed by an Interim Record of Decision will be required.	Reject. The Hanford Site Past-Practice Strategy provides for remedy selection without a focused feasibility study. Interim Records of Decision will be made on a unit or group of units included in an action. (Ecology: S-Plant comment #2.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
12.	Section 1.1.1, Page 1-4, lines 18-21 Figures 1-3 and 1-4 are referred to as showing the eight source aggregate areas in the aggregate area management study (AAMS) program. The eight source aggregate areas include the source operable unit 200-NO-1, which is located in the 200 North aggregate area (Table 1-1). The cited figures (Figures 1-3 and 1-4) show only the 200 East and West aggregate areas. A separate figure for the 200 North aggregate areas, showing the 200-NO-1 source operable unit, should be included and referenced in the text.	Accept. Reference to Figures 1-3 through 1-5 will be made on lines 19-20, however, no new Figure will be added. (Ecology: S-Plant comment #3.)
13.	Section 1.2.2, Page 1-5, lines 28-32 The text states that a separate report for step 3 (conduct limited field characterization activities) will be prepared. Since step 3 is included in the scope of the AAMS and is a parallel effort in the AAMS, the completion date for step 3 should be indicated in this report.	Reject. The report will be issued after completion of the AAMSR. (Ecology: S-Plant comment #5.)
14.	Section 1.2.2, Page 1-6, line 3 The word physiography is obsolescent and it's meaning has changed in the U.S. A more descriptive word describing the configuration of the earth's surface is geomorphology. (reference: Dictionary of Geological Terms, Bates and Jackson, 1984).	Reject. The word physiography is used conventionally in Hanford Site literature to refer to geomorphic and broader scale descriptive aspects of the site. (Ecology: S-Plant comment #6.)
15.	Section 1.2.2, Page 1-7, lines 25-38 A reference document for regulatory agency approval for expanded groundwater monitoring programs and in situ assaying of gamma-emitting radionuclides as part of the AAMS process should be cited. The date for submission of field characterization results topical reports for each AAMS should be presented.	Reject. The Hanford Site Past-Practice Strategy document has been referenced and provides a basis for regulatory agency approval. See comment 13 for response to submission date of field characterization results. (Ecology: S-Plant comment #8.)
16.	Section 1.2.2, Page 1-8, line 18 The word "retain" should be "remain".	Accept. Change "retain" to "remain". (Ecology: S-Plant comment #9.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
17.	Section 1.3, Page 1-9, lines 27-28 Since field screening activities are a part of the AAMS process (page 1-7, line 25), deliverables for an AAMS should also include topical reports for field characterization results.	Reject. See comment 13. (Ecology: S-Plant comment #10.)
18.	Section 1.4, Page 1-11, first paragraph This section should reference where in this report information concerning ongoing field characterization is discussed. The text on quality assurance should also reference standard EPA documents e.g., Contract Laboratory Program Statement of Work for Organic analysis (EPA August 1991), and the Quality Assurance Project Plan (EPA, QAMS-005/80) being written for 100 Area work plans.	Accept. Section 1.2.2 indicates that this information will be discussed in a separate report. EPA Guidance documents will be referenced as appropriate. (Ecology: U-Plant comment #2 and S-Plant comment #11.)
19.	Section 1.5, Page 1-12, line 27 The actual title of Appendix D is Information Management Overview.	Accept. Change Line 27 to "Appendix D: Information Management Overview". (Ecology: Z-Plant comment #1 and U-Plant comment #3.)
20.	Figure 1-5, Page 1F-5 The 200-NO-1 source operable unit is incorrectly identified as an isolated operable unit. This discrepancy should be corrected.	Accept. Modify figure to correctly identify 200-NO-1. (Ecology: S-Plant comment #12.)
	CHAPTER 2	
21.	Figure 1-3 (200 East Aggregate Areas) should be referenced in the text when there is discussion on the 200 East area, not Figure 1-4 (200 West Aggregate Areas). This occurs predominantly in Chapter 2.	Accept. Figure 1-3 will be referenced where necessary.
22.	Section 2.1, Page 2-1, lines 30-33 Text discusses the operable units and aggregate areas in the 200 East Area; however, the referenced figure, Figure 1-4, shows 200 West Aggregate Areas. Figure 1-3, 200 East Aggregate Areas, should be appropriately referenced.	Accept. Figure 1-3 will be referenced.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
23.	Section 2.2, Pages 2-1, 2-2, lines 42, 1 Names of all the reactors need to be provided. This will help in tracking the history of the Hanford Site.	Accept. The names of the reactors will be included. (Ecology: S-Plant comment #14.)
24.	Section 2.2, Page 2-3, lines 11-12 Explain if the ..."detailed description of the initial stabilization process ... discussed in Section 2.3.2" applies to all tanks or only tanks in the 241-C Tank Farm. This sentence only appears in the general discussion for the 241-C Tank Farm.	Reject. This is beyond the scope of AAMS reports.
25.	Section 2.3, Page 2-7, lines 27-29 Explain if the 242-A Evaporator Process Condensate will be re-sampled for volatile organic identification.	Reject. There is currently no schedule for resampling. Such activity is an operational responsibility and beyond the scope of this AAMSR.
26.	Section 2.3.1, Page 2-9, lines 11-25 Provide a schedule for discussion of closure process for buildings and structures located within the aggregate area but not addressed in this document.	Reject. The process and schedule for structure closure is an operational responsibility and beyond the scope of this AAMSR.
27.	Section 2.3.1.1, Page 2-11, lines 8-10 The text states, "When the PUREX Plant resumed operations in 1983, another facility (the PUREX plant) was added that produced plutonium oxide from the plutonium nitrate." This sentence is confusing. The text should be clarified.	Reject. This text is part of a quote and "(the PUREX Plant)" was added in response to comments requesting clarification.
28.	Section 2.3.1.2.3, Pages 2-12 to 2-13 Provide dates of proposed grout campaigns.	Accept. There are no proposed dates for the grout campaign. The Part B Permit is still awaiting approval.
29.	Section 2.3.2, Page 2-15, lines 13-14 Explain how the tanks will be determined to be classified with > or < 99% confidence so that the tank is sound.	Accept. Changes to this section will discuss or reference this material.
30.	Section 2.3.2, Page 2-15, lines 24-26 Define "partial interim isolation". Explain if partial interim isolation will be changed to interim isolation or has removal ceased.	Accept. Changes to this section will include tank status definitions or references to this information.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
31.	Section 2.3.2.1.2, Page 2-17, line 14 As discussed here and throughout Chapter 2, define "sound".	Accept. Changes to this section will include tank status definitions or references to this information.
32.	Section 2.3.2.1.5, Page 2-18, lines 18-19 Heat load is supplied for the 241-A-105 Single-Shell tank. Provide heat load for all other tanks.	Accept. Changes to this section will provide tank information or appropriate reference.
33.	Section 2.3.22, Page 2-19, line 5 Supply number of airlift circulator assemblies installed in tanks other than 241-AN-107 and working order status.	Accept. Changes to this section will provide tank information or appropriate reference.
34.	Section 2.3.2.2, Page 2-19, lines 37-39 This list of 241-AN Tank Farm wastes does not include the 100/300 Area customer waste (Page 2-20, line 18) and 1-N Area waste (Page 2-21, line 29) for the 241-AN-101 and -106 tanks, respectively. Supply complete listing of waste in the 241-AN Tank Farm in Section 2.3.2.2.	Accept. Changes to this section will provide tank information or appropriate reference.
35.	Section 2.3.2.2, Page 2-20, lines 4-7 Locate and quantify "Several dry wells within the tank farm ..." and ..."groundwater monitoring well around the ... Tank Farms." This appears several times throughout the rest of the document.	Accept. Changes to this section will provide tank information or appropriate reference.
36.	Section 2.3.2.3.2, Page 2-23, line 30 Describe plan after initial waste transfer to this unit.	Accept. Changes to this section will provide tank information or appropriate reference.
37.	Section 2.3.2.7.1, Page 2-33, lines 28-30 The listed contents of the 241-AZ-101 tank (3,651,480 L supernatant liquid and 132,300 L of sludge) exceeds the stated capacity for this tank (3,704,000 L [Section 2.3.2, Page 2-14, lines 18-19]).	Accept. The waste volume will be corrected to levels listed in the most current Tank Farm surveillance reports in Table 2-1.
38.	Section 2.3.2.8, Page 2-34, line 20 Clearly state capacity for 241-C tanks as number, not "over" value.	Accept. Tank capacity will be stated precisely in Table 2-1.
39.	Section 2.3.2.8, Page 2-34, line 33 Tanks 201-204 are cascaded in a group of four. Change line 33 to read "groups of three or four".	Accept. Changes to this section will provide tank information or appropriate references.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
40.	Section 2.3.2.8, Page 2-34, lines 33-40 Text implies that after the first tank, waste cascaded to fill remaining two or three tanks. The discussion on each tank suggests that each tank was individually filled as well as received "cascaded" waste from other tanks. Explain.	Accept. Changes to this section will include tank farm information or appropriate references.
41.	Section 2.3.2.8, Page 2-35, lines 30-31 Detail results of ammonia and organic vapor sampling.	Accept. Changes to this section will include tank farm information or appropriate references.
42.	Section 2.3.2.8.2, Page 2-36, lines 13-14 Describe why none of the radiation monitoring wells are active around 241-C-102 tank.	Accept. Changes to this section will include tank farm information or appropriate references.
43.	Section 2.3.2.8.13, Page 2-41, lines 12-13 Describe why none of the radiation monitoring wells are active around 241-C-201 tank, especially since this tank is "an 'assumed leaker'" (line 22).	Accept. Changes to this section will include tank farm information or appropriate references.
44.	Section 2.3.2.8.14, Page 2-41, lines 27-28 Describe why none of the radiation monitoring wells are active around 241-C-202 tank, especially since this tank is "an 'assumed leaker'" (line 38).	Accept. Changes to this section will include tank farm information or appropriate references.
45.	Section 2.3.2.8.15, Page 2-42, lines 1-2 Describe why none of the radiation monitoring wells are active around 241-C-203 tank, especially since this tank is "an 'assumed leaker'" (line 10).	Accept. Changes to this section will include tank farm information or appropriate references.
46.	Section 2.3.2.8.15, Page 2-41, line 6 and Section 2.3.2.8.16 Page 2-42, line 20. The text states that tanks 241-C-203 and 204 received PUREX high-level waste. Explain if this was the only waste in the tanks or did these tanks also receive cascaded waste from tanks 201 and 202.	Accept. Changes to this section will include tank farm information or appropriate references.
47.	Section 2.3.2.11, Page 2-43, lines 7-10 Identify the current contents of 241-A-350 Catch Tank.	Accept. Reference to contents will be made in Table 2-3.
48.	Section 2.3.2.16, Page 2-44 Provide volume of 244-AR Vault.	Accept. Volume will be provided in Table 2-3.
49.	Section 2.3.2.16, Page 2-44 Provide discussion of UPR-200-E-70.	Accept. Discussion of UPR-200-E-70 will be provided.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
50.	Section 2.3.2.17, Page 2-44 Provide volume of 244-CR Vault.	Accept. Volume of 244-CR Vault will be provided in Table 2-5.
51.	Section 2.3.3, Page 2-45, lines 13-31 Referenced figures do not match figures provided. Change text to state Figure 2-8 instead of 2-6, 2-9 instead of 2-7, and 2-10 instead of 2-8.	Accept. Changes will be made to correct referencing.
52.	Section 2.3.3, Page 2-45, line 17 Move definition of sisalkraft paper liner from page 2-46, line 5 to page 2-45, line 17.	Accept. The definition will be moved.
53.	Section 2.3.3.1, Page 2-45, lines 39-41 The text describes 216-A-1 crib with a 1:1.5 slope from the surface to 2 m and a 1:2 slope from 2.1 m to 5 m. Figure 2-9 illustrates a typical crib with a surface to first level slope equal to 2:1 and second level slope of 1.5:1. Explain why 216-A-1 crib may not be designed as a typical crib. Review all other crib descriptions for accuracy.	Reject. Figure 2-9 is a schematic of a typical crib and not intended to be an exact representation of any specific crib.
54.	Section 2.3.3.1, Page 2-46, line 4 Provide thickness of "two layers of sisalkraft paper".	Reject. This level of detail exceeds section requirements.
55.	Section 2.3.3.1, Page 2-46, line 11 Explain how specific retention capacity is determined.	Accept. Specific retention capacity will be explained.
56.	Section 2.3.3.3, Page 2-47 Describe how 216-A-3 Crib is marked. Other crib descriptions are missing details of area markings for crib delineation.	Reject. Reference to marking posts is not essential information. This material and other similar material will be deleted.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
57.	Section 2.3.3.3, Page 2-47, line 2 Text states that "...Between 1967 and 1970, the unit discontinued receiving discharge from silica-gel regeneration wastes. However, page 2-46, lines 38-40, it is stated that ..."From the beginning of operation until November 1967, the waste management unit received wastes from the silica-gel regeneration in the 203-A Building,...". Does this imply that the unit received silica-gel regeneration wastes till 1970? Please clarify.	Accept. Line 2 will be clarified.
58.	Section 2.3.3.5, Page 2-48, line 1 Detail over what years the crib received waste.	Accept. Change "over the years" to "while active".
59.	Section 2.3.3.6, Page 2-48, line 17 Define SCD. Add to acronyms list.	Accept. Delete "SCD" and insert "Steam condensate".
60.	Section 2.3.3.7, Page 2-49, line 10 Provide date of deactivation of 216-A-7 Crib.	Accept. Date of deactivation will be provided.
61.	Section 2.3.3.3, Page 2-49, line 36 Define radionuclide capacity and how it is determined.	Accept. Radionuclide capacity will be defined.
62.	Section 2.3.3.8, Page 2-50, line 2 Remove "take".	Accept. Delete "take".
63.	Section 2.3.3.10, Page 2-51 State when 216-A-10 Crib was closed.	Accept. Add "in March 1986".
64.	Section 2.3.3.12, Page 2-52, line 6 Define neutral/basic.	Accept. Neutral/basic will be defined.
65.	Section 2.3.3.12, Page 2-52, line 9 Describe how 216-A-24 Crib was stabilized.	Accept. Stabilization will be described.
66.	Section 2.3.3.12, Page 2-52, line 10 Describe how the concrete marking posts are marking the unit.	Reject. Reference to marking posts is not essential information. This material and other similar material will be deleted.
67.	Section 2.3.3.16, Page 2-54, line 6 Provide reference source for activity expectation.	Accept. Reference source will be added.
68.	Section 2.3.3.17, Page 2-54, line 24 Define "too radioactively contaminated".	Reject. This is a quote.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
69.	Section 2.3.5 and subsequent sections Figures referenced in the text do not correspond to figures provided at end of chapter.	Accept. Figure references will be corrected.
70.	Section 2.3.8.2, Page 2-77, line 38 The section describes an unplanned release of beta/gamma contamination associated with the 216-A-42 retention basin. This section should discuss whether any actions taken to determine the extent of this release or any corrective measures taken to remediate the location of the release.	Reject. The text notes that the ground was wet down and the basin was flushed on line 41.
71.	Section 2.3.9, Page 2-78, lines 6 and 26 This section discusses unplanned releases UN-200-E-62 and UPR-200-E-106. Line 6 refers to the UPR-200-E-62 release. The correct release identifier is UN-200-E-62. Line 26 refers to UPR-200-E-100 release. The correct release identifier is UPR-200-E-106. The correct identifiers should be used throughout the text.	Accept. Identifiers will be corrected.
72.	Figure 2-8 Page 2F-8 Add street names to figure since they are referenced in the text.	Reject. Street names are provided in Plate 1.
	CHAPTER 3	
73.	Section 3.2.1, Pages 3-2 and 3-3 The description should include information concerning seasonal storm events. This would lead into more detailed discussions in sections 3.5.1 and 3.5.2 concerning potential impact of storm water runoff on recharge and the spread of contamination.	Accept. Seasonal storm event information will be added. (Ecology: U-Plant comment #19, S-Plant comment #95.)
74.	Section 3.3.1, Page 3-3 It is noted that surface drainage from the Horse Heaven Basin enters the Pasco Basin. As shown in the Figure 3-7, the Horse Heaven Basin does not drain into the Pasco Basin. Clarify.	Accept. Reference to Horse Heaven Basin will be deleted. (Ecology: Z-Plant comment #31, S-Plant comment #96, T-Plant comment #39.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
75.	Section 3.3.3, Page 3-5, last paragraph Identify if any well-defined drainage channels exist in the Purex Source Aggregate Area. It was mentioned in 2nd paragraph, page 3-5 that approximately one-third of the Hanford site is drained by the Yakima River system. Provide information on whether or not the Purex Source Aggregate Area belongs to the Yakima River system.	Reject. Drainage channels in Purex Aggregate Area are identified. (Ecology: S-Plant comment #97.)
76.	Section 3.4.1.1, Page 3-7, line 10 This sentence refers to "... Neogene- to Quaternary- age sediments." Paleogene and Neogene, and Tertiary and Quaternary are two different sets of nomenclature for the periods within Cenozoic Era. It would be more correct to use one nomenclature or the other and not mix the two.	Accept. "Neogene" will be changed to "Tertiary". (Ecology: S-Plant comment #99.)
77.	Section 3.4.2.3, Pages 3-11 and 3-12 The text describes five separate intervals identified as A, B, C, D, and E within the lower half of the Ringold Formation. Lindsey and Gaylord (1990) and Lindsey (1991a and b) also have recognized five separate sand and gravel fluvial sequences in the Lower Ringold, which are designated as FSA, FSB, FSC, FSD1, and FSE. Explain if these two classifications correlate. Revision of the stratigraphy of the Ringold Formation should be made in context with the recent publications wherever applicable.	Reject. These two sequences are one and the same. The text used and referenced in PUREX AAMS Draft A was from Lindsey's latest publication (1992). (Ecology: S-Plant comment #100.)
78.	Section 3.4.3.3, Pages 3-15 to 3-17 See comment #77.	Reject. See comment #77.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
79.	Section 3.4.2.6, Page 3-11 and Section 3.4.3.4, Page 3-15 As mentioned in the text, Figures 3-11 and 3-12 do not indicate Early "Palouse" Soil. The Figure 3-12 must show the stratigraphic position of the Early "Palouse" Soil. Some of your previous reports (eg. S-plant Aggregate Area Report) describe the unit as a part of the Hanford Formation. This discrepancy must be solved and reported with a reference. Provide a reference for the information found in Figure 3-12, page 3F-12.	Reject. Figure 3-12 is taken directly from Lindsey (1992) and is correct as presented. (Ecology: S-Plant comment #101.)
80.	Section 3.4.2.7.1, Page 3-13 As per the stratigraphic Figure 3-12, the gravel dominated facies is the Pasco Gravel. The Pasco Gravel has been identified in the stratigraphy and the words "Gravel Dominated Facies" should be replaced by Pasco Gravel.	Reject. The subsection on pages 3-13 and 3-14 discusses the facies associations of the Hanford formation. The informal name of the gravel facies is the "Pasco Gravel." The stratigraphic column (Figure 3-12) presents the names of the unit and not their facies associations. (Ecology: S-Plant comment #102.)
81.	Section 3.4.2.7.2 and 3.4.2.7.3, Pages 3-13 to 3-14 As per the stratigraphic figure 3-12, the Touchol bed seems to correspond to the sand dominated facies and slack water facies. These need to be checked with the latest publication(s) and if so, appropriate changes are to be made, i.e., instead of calling them sand dominated facies, etc., it should be named "Touchol beds".	Reject. See comment #80. (Ecology: S-Plant comment #103.)
82.	Section 3.4.2.8, Page 3-13 and Section 3.4.3.6 Remove the word Holocene from "Holocene Surficial Deposits".	Accept. "Holocene" will be deleted. (Ecology: S-Plant comment #104.)
83.	Section 3.5.2.1, Page 3-23, 3rd paragraph References to UNSAT-H and PORFLO-3 are missing in the text.	Reject. The text is discussing the cited authors study (Smoot et al. 1989) who used the two models to perform the work. The models themselves are not being discussed in the text. (Ecology: S-Plant comment #109.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
84.	Section 3.5.2.1.2, Page 3-24, lines 28-29 The water table is defined as the zone where the fluid pressure in the pores of the porous medium is exactly atmospheric. The pressure head at the water table is equal to zero. It would be more correct to say that "... capillary pressure within the horizon may exceed atmospheric, i.e., saturated conditions may develop."	Accept. Add "i.e., saturated conditions may develop" to lines 28-29. (Ecology: S-Plant comment #110.)
85.	Section 3.5.2.1.3, Page 3-22, lines 20-25 The term "confined" is not appropriate since there is evidence of direct communication of Unit A with Unit E. The term "semi-confined" seems to be the most appropriate name for the Unit A aquifer. Also when we use any of these terms, it should end with the term "aquifer" not by "groundwater" as used in the text (e.g., semi-confined groundwater in line 24, p 3-25, should be semi-confined aquifer).	Reject: First Part. Based on conventional usage, and as defined by Freeze and Cherry (1979), confined aquifers occur between aquitards - two less permeable stratigraphic units. Aquitards "may be permeable enough to transmit groundwater in quantities that are significant to the study of regional groundwater flow" (Freeze and Cherry 1979). Inter-communication of different aquifer units may therefore be expected to be inhibited, but not prevented by the presence of an intervening aquitard. This condition is expected to occur in the 200 West Area where the Ringold lower mud sequence aquitard separates aquifers within the Ringold Unit A and Unit E gravels. The lower Ringold Unit A gravels would occur as a confined or semi-confined aquifer between the overlying Ringold lower mud sequence and the underlying Elephant Mountain member of the Saddle Mountains Basalt. Accept: Second Part. Sentences on lines 21 through 24 will be revised to eliminate the term "groundwater." (Ecology: S-Plant comment #112, Z-Plant comment #B32, and T-Plant comment #42.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
86.	Section 3.5.2.2, Page 3-22 This section should be titled as "Natural Groundwater Recharge and Discharge" and should identify if there is any discharge of groundwater. For example, shallow groundwater discharges to the Columbia River along the northern margin of the 100 area have been documented by many investigators. This needs to be investigated for Purex Source Aggregate Area and mentioned.	Reject. Title is consistent with all previous AAMS that have been submitted and will remain unchanged. (Ecology: S-Plant comment #113.)
87.	Section 3.5.3.2, Page 3-30 See comment #86.	Reject. See comment #86.
88.	Section 3.5.2.2, Page 3-26, 3rd paragraph onward The conclusion that less than 25% of the precipitation falling on typical Hanford site soil actually infiltrates to any depth (page 3-23, lines 28-30) is contrary to the previous conclusion made in Section 3.5.1, page 3-20. Clarify.	Reject. As the text states on Page 3-20, line 25, the results of infiltration studies vary. The discussion on Page 3-20 cites only two of the studies. Additional studies cited on Page 3-26 to 3-28 give additional ranges in infiltration rates. (Ecology: S-Plant comment #114.)
89.	Section 3.5.2.2, Pages 3-27 and 28 Examples of precipitation recharge studies showing different recharge rates need more explanation on evapotranspiration. Some of the results seemed to be the opposite of what Gee (1987) and Rouston and Johnson (1990) have found. Explain.	Reject. Existing text provides sufficient information on the differences in the studies that account for the opposite results. References are provided as a source of additional detail. (Ecology: S-Plant comment #115.)
90.	Sections 3.5.3.1.1, Page 3-30, 1st paragraph Moisture content is described in terms of volume in the text in Section 3.5.2.1.1 and in Figures 3-33 and 3-34, but as moisture content by weight percent in the text on page 3-30. Units should be consistent in the report for comparison. Convert the moisture contents listed by weight percent on page 3-30 to a volume percent if the data is available to support this conversion.	Accept. Conversion will be completed if the data is available. (Ecology: S-Plant comment #120, Z-Plant comment #34, and T-Plant comment #45.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
91.	Section 3.5.3.2, Page 3-30 Higher infiltration rates would also be expected in areas where the topography is flatter. Add this information.	Accept. Information will be added. (Ecology: S-Plant comment #121.)
92.	Section 3.6, Pages 3-31 to 3-36 There is a great deal of information in this section. Unfortunately, there are no references provided to simplify additional data collection. For example, it would be helpful for planning field work to know the location of sensitive or threatened flora. Reference is made to badgers (section 3.6.3.1) and harvester ants (section 3.6.1.3.4), and data indicating these fauna can spread contamination. A key data objective for this and subsequent studies is to quantify environmental pathways; this report should consistently support satisfying this objective. The text notes that there are no "domestic" groundwater supply wells within the aggregate area. State if there any public groundwater supply wells. The text should explain where on-site workers derive their potable water. The text also notes that the nearest domestic well is over 20 miles distant from the study area. Wells 699-24-94 and 66-52-C are located approximately 5 miles WSW of the 200 West Area. The text should be modified.	a) Reject. This is original research performed by WHC. b) Reject. The text states that there are no domestic supply wells and infers that there are no public supply wells (since public supply wells are part of domestic use designation). c) Accept. Information regarding wells 699-24-94 and 66-52-C will be added. (Ecology: U-Plant comment #22 and S-Plant comment #122.)
93.	Sections 3.6.1.1 to 3.6.1.4, Pages 3-32 to 3-36 Several scientific names within the text are misspelled or archaic. The text should be revised to include current scientific names with accurate spelling.	Accept. The names will be corrected and updated as necessary. (Ecology: Z-Plant comments #35 and #37.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
94.	Section 3.6.1.1, Page 3-32, first paragraph, line 7 The text includes the statement, "The vegetation of the 200 Areas Plateau is characterized by native shrub steppe interspersed with large areas of disturbed ground with a dominant annual grass component." The word steppe should be removed, as it is indicative of a biome not a vegetative type.	Accept. "Steppe" will be deleted. (Ecology: Z-Plant comment #36 and T-Plant comment #47.)
95.	Section 3.6.1.2, Pages 3-33 and 3-34 Scientific names of all species should be included in this section.	Accept. The scientific names will be included. (Ecology: T-Plant comment #48.)
96.	Section 3.6.2, Page 3-36 Access to the entire Hanford site is administratively controlled and is expected to remain this way for the foreseeable future to ensure public health and safety and for reasons of national security. This information needs to be incorporated in the text.	Accept. Page 3-36, Section 3.6.2 will be appended with "Access to the Hanford Site is administratively controlled and is expected to remain this way for the foreseeable future to ensure public health and safety and for reasons of national security". (Ecology: S-Plant comment #123.)
97.	Section 3.7.2, Page 3-33 The text needs details in regards to references, especially on publications by Rice, 1980, and Chatter, 1989. Chatters, J., 1989, *Hanford Cultural Resources Management Plan*, PNL-6942, Pacific Northwest Laboratory, Richland, Washington. Rice, D.G., 1980, *Cultural Resources Assessment of the Hanford Reach of the Columbia River, State of Washington*, U.S. Army Corps of Engineers, Seattle District, Seattle, Washington.	Accept. The proper reference will be cited. (Ecology: S-Plant comment #124.)
98.	Figure 3-8, Page 3F-8 The figure does not show the "Structural Provinces of the Columbia Plateau" as the title indicates, but rather shows the "Columbia Plateau and Surrounding Structural Provinces". Consider changing the title.	Accept. The title of the figure will be changed to "Columbia Plateau and Surrounding Structural Provinces". (Ecology: T-Plant comment #49.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
99.	Figure 3-16, Page 3F-16 "Hun" is identified in this figure but not in the explanation on page 3F-15. Is this a typographical error for "Hug"? Figure 3-14, page 3F-14-I is identified as the north end here, but shown as the south end in Figure 3-16. This should be consistent.	Accept. "Hun" will be defined as the gravel sequence that has not been differentiated due to the lack of the sand facies. Figures 3-14 and 3-16 will be made consistent.
	CHAPTER 4	
100.	Section 4.1.1.1, Page 4-4, line 1 The text should explain why four of the seventeen air sampling stations are removed from service in 1989.	Accept. The air station removal will be explained.
101.	Section 4.1.1.2.1, Page 4-4, lines 31-32 It is not clear why it is "nearly impossible" to convert gross gamma counts to a meaningful exposure rate due to "complex distribution of radionuclides on the site". It would be better to attempt to make sense of what the data does indicate, with limitations, rather than explaining what it does not tell us.	Accept. Section will be clarified regarding the usefulness of this data. The text will indicate that the radiological survey technique provides an indication of both surface and subsurface contamination. Without direct sampling data to determine the location and speciation of contaminants, exposure calculations would be based on supposition. The data does however provide an indication of where additional sampling might be done to provide data required to calculate exposure rates. (Ecology: Z-Plant comment #39, S-Plant comment #129.)
102.	Section 4.1.1.2.2, Page 4-6, 2nd paragraph The text mentions the twenty-five new dosimeter sites installed in 1990. State what happened to the forty old sites. State if these sites are totally abandoned at those locations. Explain if any information is being obtained from these old sites.	Accept. The site changes will be explained.
103.	Section 4.1.1.2.2, Page 4-6, line 36 This section discusses soil samples, analytical results, and counting errors associated with the samples. This section should include information on how these counting errors are determined.	Reject. The information summarized in this section is taken from the annual surveillance report and is presented as it appears. This section is not intended to be a data evaluation discussion.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
104.	Section 4.1.1.2.2, Page 4-6, Table 4-7 The relationship of the Total to maximum and minimum values shown in Table 4-7 should be clarified.	Accept. The value presentation will be clarified.
105.	Section 4.1.1.2.3, Page 4-7, 2nd paragraph The plate 3 depicts only 17 locations instead of 18 as mentioned in the text. This discrepancy must be corrected.	Accept. The discrepancy will be corrected.
106.	Section 4.1.1.5, Page 4-8, lines 10-13 According to the text, gross gamma-ray logs were used to evaluate radionuclide migration in the vadose zone beneath the selected waste management units. However, the text does not mention anything on the results of these evaluation of migration of radionuclides. A brief description of the result of the evaluation is necessary and should be provided.	Reject. Page 4-8, lines 20-21 state that logs are discussed in detail in Appendix A.
107.	Section 4.1.1.5, Page 4-8, Table 4-13 The rationale used for the interpretation of potential migration to unconfined aquifer as shown in Table 4-13 must be given in the text.	Reject. The rationale is discussed on page 4-8, lines 29-41.
108.	Section 4.1.2.1, Page 4-9 The text refers to Table 4-7 and states that the external radiation monitoring TLDs averaged 95 and 107 mrem/yr for 1990. Table 4-7 presents minimum, maximum, and total external radiation monitoring TLDs for various sites. The two locations for TLD sampling at the Grout Treatment Facility are not presented in the table. These discrepancies should be clarified.	Accept. The Grout Treatment Facility TLD locations will be added.
109.	Section 4.1.2.2.1.4, Page 4-12 The text should mention that geophysical logging showed new tank leaks and migration of contamination to the soil.	Reject. The text is intended to be a general review of the data.
110.	Section 4.1.2.2.1.5, Page 4-13, line 5 This section refers to Table 4-24 for information on the vertical and lateral distribution of tank leaks. This table should provide the actual measurement of the distribution.	Reject. Provision of the actual measurements is beyond the intent of this section.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
111.	Section 4.1.2.2.2, Page 4-13 This section states that there is no volume, chemical, or radiological data available for vaults. Conversely, the information on waste currently stored in the 244-A Receiving Vault and the radiological contamination from unplanned releases associated with 244-AR vault are presented in Sections 2.3.2.15 and 2.3.2.16. This discrepancy should be clarified.	Accept. Text will be revised to acknowledge that there is some, albeit little, information available.
112.	Section 4.1.2.2.2.1, Page 4-13 The text in this section states that the 241-A-302A catch tank is an active waste management unit (WMU) when it is not (Section 2.3.2.9). This inconsistency should be addressed and the text changed where appropriate. This comment is applicable to 241-C-301 catch tank.	Accept. The text will be changed to indicate that it is active (Section 2.3.2.9).
113.	Section 4.1.2.5.1, Page 4-25 The text states in the first paragraph that it is "inactive", but then notes in the third paragraph, under the DOE/RL "plan" (undefined) general steps, "discontinue discharges of hazardous materials to the facility." Describe the plan and if it is active or not.	Accept. The plan will be described and the unit is correctly identified as inactive as several steps in the process have been completed.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
114.	Section 4.1.2.7, Page 4-27 Only unplanned release at the 241-CR-151 Diversion Box is stated here. Other unplanned releases associated with the Diversion Boxes are not reported. Examples include: • Several unplanned releases associated with the 241-A-151 Diversion Box (Section 2.3.7.3) • A release associated with the deactivated 241-C-151 Diversion Box (Section 2.3.7.22). The release, estimated at less than 500 millicuries of ^{90}Sr spread detectable contamination over approximately a 2 mi^2 (square miles) area. • A release associated with 241-C-152 Diversion Box This inconsistency should be addressed and the text changed where appropriate.	Accept. The text will be revised to include a discussion of the diversion boxes and the associated unplanned releases.
115.	Section 4.1.2.8.2, Page 4-28 The unplanned release associated with the 216-A-42 retention basin should be discussed here or a reference section (Section 2.3.8.2) should be cited.	Accept. The text will be revised to include a discussion of the unplanned releases.
116.	Section 4.2, Page 4-30 The text should acknowledge increased risk to on-site workers during investigative and remedial activities.	Accept. The text will be revised to acknowledge the increased risk to on-site workers.
117.	Section 4.2.2, Page 4-33 This section discusses transport pathways and lists examples of such pathways. This section should also include ingestion of soil as a transport pathway.	Reject. Ingestion of soil is not a transport pathway, it is an exposure pathway. (Ecology: Z-Plant comment #46 and U-Plant comment #34.)
118.	Section 4.2.2.1.4, Page 4-36, lines 10-12 A reference is not, but should be given for the information presented on the leaching of americium.	Accept. Reference will be added.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
119.	Section 4.2.2.3, Page 4-37, lines 29-33 The text states that surface water is only available at the 216-A-29 Ditch and the 207-A Retention Basins. The text discusses the ditch, but not the retention basins. A discussion of the retention basins should be included.	Accept. The text will be revised to include a discussion of the retention basins.
120.	Section 4.2.3, Page 4-38, line 1; Figures 4-3 The conceptual model figures depict arrows in both directions between humans and biota through the ingestion exposure route. The arrow should only indicate a transfer from biota to humans.	Accept. The figure will be corrected to indicate transfer from biota to humans only. (Ecology: S-Plant comment #145.)
121.	Section 4.2.3, Page 4-39, lines 10-11 The text states that only some of the unplanned releases are indicated on Figure 4-3. The rationale for not indicating all unplanned releases on Figure 4-3 should be provided.	Reject. The text states that some of the unplanned releases are associated with known waste management units and these are indicated on Figure 4-3 with a "U". Other unplanned releases are shown on the figure and are labelled as "Unplanned Releases".

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
122.	Section 4.2.4, Page 4-40 The rationale or reference for using the second criterion is not presented, and contaminants appear to be inappropriately eliminated by the use of the third screening criteria. The second criterion indicates that buildup of short lived radionuclide daughter activity to a level of 1 percent or greater of the parent radionuclide activity causes the daughter to be included on the contaminant-of-concern list. However, the rationale or reference for this criterion is not included, and should be. If the parent activity is extremely high, 1 percent may not be a conservative screening level. The third criterion indicates that contaminants were placed on the contaminant-of-concern list if they are known or suspected carcinogens or have an EPA noncarcinogenic toxicity factor. It appears that contaminants not meeting such criteria are eliminated from the contaminant list. This screening fails to follow the contaminant screening process outlined in DOE (1991) methodology. This criterion should be deleted.	Reject. The criteria provided are more conservative than those presented in DOE, (1991). However, the text will be clarified to present rationale for selection. (Ecology: Z-Plant comment #48, U-Plant comment #37, and S-Plant comment #146.)
123.	Section 4.2.4, Page 4-40, third bullet The screening criteria used for selecting contaminants of concern should not be limited to only those contaminants that are known or suspected carcinogens, or that have an EPA noncarcinogenic toxicity factor. Toxic, noncarcinogenic contaminants do exist; an example is lead. The screening criteria should follow EPA Region 10 guidance (EPA 1991).	Reject. The criteria provided are more conservative than those presented in EPA (1991). However, the text will be clarified. (Ecology: T-Plant comment #88.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
124.	Section 4.2.4.3, Page 4-42, line 32 The text discusses the mobility of contaminants listed in Table 4-27. However, mobility is a discussion item listed for Table 4-31 (see page 4-41, lines 1 and 2). The text should be changed to reflect Table 4-31.	Accept. The text will be revised to indicate Table 4-31.
125.	Section 4.2.4.5.1, Page 4-46, lines 1-5 The text states that genetic and teratogenic effects occur at higher exposure levels than those required to cause cancer. A reference and dose levels should be provided.	Accept. Reference will be added. (Ecology: Z-Plant comment #49 and U-Plant comment #39.)
126.	Section 4.2.4.5.1, Page 4-46, line 23 The reference listed for excess cancer risks is "EPA 1991." This reference is for the 1991 Integrated Risk Information System (see page 10-4, line 43). However, the information provided in this paragraph is found in the 1991 Health Effects Summary Assessment Tables (HEAST). The text should be corrected in both this section and in Section 10.0 References to reflect the appropriate resource.	Accept. The reference will be corrected to be EPA (1992) and included in Section 10.
127.	Section 4.2.4.5.1, Page 4-46, lines 25-29 The text discusses the method to use for determining risks for radionuclides that do not have EPA slope factors. However, the 1992 HEAST contains slope factors for all radionuclides. This paragraph should be deleted.	Accept. The text will be deleted.
128.	Section 4.2.4.5.2, Page 4-47, lines 11-12 The text discusses the carcinogenic and noncarcinogenic health effects associated with chemicals anticipated at the aggregate area. The text should indicate that these health effects, which are presented in Table 4-38, may be associated with either human or animal data.	Accept. The text will be revised as indicated. (Ecology: T-Plant comment #92.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
129.	Section 4.2.4.5.2, Page 4-47, lines 15-16 This paragraph states that many chemicals lacking toxicity criteria have ".... negligible toxicity or are necessary nutrients in human diet." There is no citation provided for this assertion, and it is of questionable validity. Many trace metals are necessary in the human diet, and most are highly toxic, some acutely so, in sufficient levels. Clarify the point of this statement.	Accept. Text will be clarified. (Ecology: U-Plant comment #43 and S-Plant comment #150.)
130.	Figure 4-1, Page 4F-1 "the results are displayed as relative levels of man-made radionuclide activity." Does this mean that background was subtracted? If so, how and where was background measured?	Accept. Background was subtracted and text discussing background measurement will be added. (Ecology: S-Plant comment #151.)
131.	Figure 4-3, Page 4F-3 The arrow leading from human to biota for ingestion should be reversed because it is generally assumed that humans ingest biota more than biota ingest humans.	Accept. The figure will be revised as indicated. (Ecology: U-Plant comment #45, S-Plant comment #145, and T-Plant comment #93.)
132.	Table 4-5, Pages 4T-5a through 4T-5i This table is unclear. For example: 1) Why is there a column for both counts-per-minute and disintegration-per-minute? 2) There are many places where the radiation type is unknown. The type of instrument used for the survey will usually tell you the type of radiation that is being measured.	Reject. All information available was provided. Different instruments provided readings in different units which cannot be converted. Type of instruments used in the survey were not found. (Ecology: S-Plant comment #153.)
133.	Table 4-33, Page 4T-33a The acronym "MEPAS" should be defined. The pH should be given in the columns headings for the second and third columns which present soil-water distribution coefficients.	Accept. The table will be revised as indicated. (Ecology: T-Plant comment #96.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	CHAPTER 5	
134.	Section 5.0, Page 5-1, line 15 The text indicates that candidate contaminants of potential concern are presented in Table 4-26. However, the information is presented in Table 4-30. The text should be corrected.	Accept. The text will reference the correct table.
135.	Section 5.1, Page 5-2, second paragraph The text states that the occupational exposure scenario is the most appropriate for identifying health hazards associated with the PUREX Plant Aggregate Area. The text should indicate that the occupational exposure scenarios is the most appropriate for identifying current health hazards.	Accept. The text will be revised as indicated. (Ecology: Z-Plant comment #49 and T-Plant comment #97.)
136.	Section 5.2.1, Page 5-4, line 26; The current absence of radiological survey data should not imply the absence of contamination levels or dose rates requiring access control. Explain association other than as a data gap.	Accept. The association will be clarified.
137.	Section 5.2.2, Page 5-5 This section should include a discussion on wind erosion as a fugitive dust contributor. Ecological migration of contaminants should be discussed.	Accept. Text will be added to discuss wind erosion and ecological migration.
138.	Section 5.3, Page 5-6 The first paragraph in this section states that criteria used for setting priorities for waste management units and unplanned releases include the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Hazard Ranking System (HRS), and the system used by the Westinghouse Hanford Environmental Protection Group. This section discusses the HRS, but does not discuss the Westinghouse system. A discussion of the Westinghouse system should be included.	Accept. Text will be added discussing the WHC system.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
139.	Section 5.3, Page 5-6 The reference in the first paragraph of Section 5.3 to the Site Characterization Plan does not seem to be correct. Provide the volume and page number of the reference.	Accept. The reference will be changed to the Preliminary Assessment/Site Inspection Activities on Inactive Waste Sites at Hanford.
140.	Section 5.3, Page 5-6, line 6 The text refers to criteria used in the HRS scoring. Certain criteria have changed since the finalization of the HRS on December 14, 1990, and the text should note scoring was done using the old system.	Accept. Text will be revised as indicated. (Ecology: Z-Plant comment #56, T-Plant comment #98.)
141.	Section 5.3, Page 5-6, second paragraph, lines 13 to 17 The text states the following: The HRS ranking system evaluates sites based on their relative risk, taking into account the population at risk, the hazard potential of the substance at the facility, the potential for contamination of the environment, the potential risk of fire and explosion, and the potential for injury associated with humans or animals that come into contact with the waste management unit inventory. The term "hazard potential" should be more accurately described as "hazardous waste constituent toxicity and quantity." The phrase "potential for injury" should be more accurately stated as "potential for exposure."	Accept. The terms will be clarified. (Ecology: Z-Plant comment #57, T-Plant comment #99.)
142.	Section 5.3, Page 5-6, fourth paragraph, lines 27-28 The text states that, "the mHRS takes into account concentration, half-life, and other chemical specific parameters that are not considered by the HRS." The present HRS does take these factors into account. The text should clarify that the previous HRS did not consider those factors.	Accept. The text will be clarified. (Ecology: Z-Plant comment #58, T-Plant comment #100.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
143.	Section 5.3, fifth paragraph It is not specified who assigned the scores in Table 5-1. Table 5-1 does not indicate which of the rankings were derived from an authoritative reference, and which were assigned based on similarity. The table should clarify these points, and specify which ranked unit was used as the analog.	Accept. The table will be revised as indicated.
144.	Section 5.3, sixth paragraph The discharge volume used for assigning a qualitative indicator of migration potential is not quantitatively specified. Provide this value. An additional criteria of radioactive inventory should be added to determine priority of sites.	Reject. The text will be revised to indicate the sites which received a qualitative "high" score, based on large discharge volumes and will specify the quantities. Radioactive inventory will be added as a criteria.
145.	Section 5.3, Page 5-7, lines 16 and 34 Only three units appear to have WEPG scores of seven or greater. Clarify where seven units were counted.	Accept. The text will be revised to indicate only 3 sites.
146.	Section 5.4, Page 5-7, lines 24 and 26 Only 25 total sites on Table 5-1 are designated as high priority. Explain if the total sites with high priority were counted using Table 5-1, under Priority column (where yes=high and no=low).	Accept. The text will be revised to indicate that 26 sites are designated as high priority. Additionally, Table 5-1 will be clarified to indicate that the entries under the "priority" column are defined as "no"=low and "yes"=high.
147.	Table 5-1, Page 5T-1a The year in which data were collected for determining the HRS score should be provided. Ecology personnel will conduct a site-by-site review of Table 5-1 when all above points are clarified.	Reject. This level of information is not critical to the table or the section. (Ecology: S-Plant comment #158.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	CHAPTER 6 -	
148.	Sections 6.2, 6.3, & 6.4: These sections do not adequately represent the proposed ARAR's for the PUREX Plant aggregate area. All laws, regulations, and guidance documents are potential ARAR's until they are finalized in the Record of Decision (ROD). Incorporate the following list of Hanford Site-applicable ARARs: **STATE ARAR's** **1. CHEMICAL SPECIFIC** WAC 173-303 Dangerous Waste Regulations **APPLICABLE** Chapter 173-303 WAC establishes procedures for characterizing hazardous waste as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW). Additional distinction is based on Persistence, carcinogenicity, mutagenicity, tetratogenicity, concentration of certain compounds, and toxicity as defined by WAC 173-303-070 to 110. Wastes excavated on sites which upon testing designates as DW or EHW must be handled under this regulation. Other sections not identified here should be considered relevant and appropriate.	Accept. Except where indicated, the following laws and regulations are highlighted in the PUREX AAMS - the specific citation will be added as appropriate. (Ecology: S-Plant comment #159.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-340 MTCA Cleanup Regulations **APPLICABLE** Chapter 173-340 WAC defines specific cleanup levels for numerous contaminants and point of compliance. WAC 173-400 General Regulations for Air Pollution Sources **APPLICABLE** Chapter 173-400 WAC establishes standards that are technically feasible and reasonably attainable for air pollution sources. WAC 173-460 Controls for New Sources of Toxic Air Pollutants **RELEVANT AND APPROPRIATE** Chapter 173-460 WAC establishes the systematic control of new sources emitting toxic air pollutants. WAC 173-475 Ambient Air Quality Standards for Carbon Monoxide, Ozone, and Nitrogen Dioxide **APPLICABLE** Chapter 173-475 WAC defines state wide air quality standards for carbon monoxide, ozone, and nitrogen dioxide.	

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-480 Ambient Air Quality Standards and Emission Limits for Radionuclides **APPLICABLE** Chapter 173-480 WAC defines maximum allowable levels for radionuclides in the ambient air. WAC 173-490 Emission Standards and Controls for Sources Emitting Volatile Organic Compounds (VOC) **APPLICABLE** Chapter 173-490 WAC establishes technically feasible and reasonable attainable standards for sources emitting VOC's. Soil Cleanup/Remediation at Hanford February 1992 **To Be Considered** The Department of Ecology, Nuclear and Mixed Waste Management Program's Soil Cleanup Policy became effective February 5, 1992. The purpose of this policy is to provide a basis for consistent cleanups, remediations, and closures at the Hanford Site.	Does note appear in PUREX AAMS. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	2. ACTION SPECIFIC RCW 18.104 Water Well Construction **RELEVANT AND APPROPRIATE** This regulation establishes authority for Ecology to require the licensing of water well contractors and operators and for the regulation of water well construction. RCW 70.94 Washington Clean Air Act **APPLICABLE** Chapter 70.94 RCW directs the state to secure and maintain levels of air quality that will protect human health and prevent injury to plant and animal life. RCW 70.95 Solid Waste Management **RELEVANT AND APPROPRIATE** Chapter 70.95 RCW establishes a state wide program for solid waste handling, and solid waste recovery and/or recycling which will prevent land, air, and water pollution and conserve the natural, economic, and energy resource of this state. RCW 70.98 Nuclear Energy and Radiation **RELEVANT AND APPROPRIATE** Chapter 70.98 RCW establishes a program to establish procedures for assumption and performance of certain regulatory responsibilities with respect to byproduct, source, and special nuclear materials.	All laws, regulations, and policy relating to groundwater were purposefully left out of the report, as they are addressed in the appropriate groundwater AAMS. They can be added as appropriate. Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	RCW 70.105 Hazardous Waste Management **APPLICABLE** The purpose of Chapter 70.105 RCW is to establish a comprehensive state-wide framework for planning, regulation, control, and management of hazardous waste which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of the state. RCW 70.105D Hazardous Waste Cleanup, Model Toxics Control Act (MTCA) **APPLICABLE** Chapter 70.105D RCW provides Ecology with the authority to investigate and conduct remedial actions upon releases of hazardous substances. RCW 90.44 Regulation of Public Ground Water **RELEVANT AND APPROPRIATE** This chapter gives Ecology the authority to regulate and control ground water of the state. RCW 90.48 Water Pollution Control **APPLICABLE** Chapter 90.48 RCW provides authority to regulate discharges of any pollutant to waters of the state (including surface and ground water, direct and indirect discharges). RCW 90.52 Pollution Disclosure Act **RELEVANT AND APPROPRIATE** Chapter 90.52 RCW describes the authority of the state to regulate reports for any commercial or industrial discharge, other than sanitary sewage, into waters of the state.	See RCW 19.104 comment. Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	RCW 90.54 Water Resources Act **RELEVANT AND APPROPRIATE** Chapter 90.54 RCW gives the state authority to implement water related resources programs.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 173-160 Minimum Standards for Construction and Maintenance of Wells **RELEVANT AND APPROPRIATE** Well construction regulations establish minimum standards for water well construction and require the preparation of construction reports.	See RCW 18.104 comment.
	WAC 173-162 Rules and Regulations Governing the Licensing of Well Contractors and Operators **RELEVANT AND APPROPRIATE** Chapter 173-162 WAC establishes requirements for licensing of well drillers.	See RCW 18.104 comment.
	WAC 173-216 State Waste Discharge Permit Program **APPLICABLE** Chapter 173-216 WAC establishes a permit system for discharges of waste water to groundwater and surface water via municipal sewage systems.	
	WAC 173-218 Underground Injection Control Program **APPLICABLE** Chapter 173-218 WAC pertains to the injection of wastes into aquifers that are used for drinking water.	Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-303-670 Incinerators **RELEVANT AND APPROPRIATE** If incinerators are used as a remedial technology this regulation would be applicable. WAC 173-304 Minimum Functional Standards for Solid Waste Handling **RELEVANT AND APPROPRIATE** Chapter 173-304 WAC establishes minimum functional performance standards for the proper handling of all solid waste materials. WAC 173-403 Implementation of Regulations for Air Contaminant Sources **RELEVANT AND APPROPRIATE** Chapter 173-403 WAC establishes procedures for the implementation of regulations and rules generally applicable to control and/or prevent the emission of air contaminants.	

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-470 Ambient Air Quality Standards for Particulate Matter **RELEVANT AND APPROPRIATE** Chapter 173-470 WAC establishes concentrations for particle fallout standards for all ares within the State of Washington. WAC 173-480 Ambient Air Quality Standards and Emission Limits for Radionuclides **APPLICABLE** Chapter 173-480 WAC establishes a 25 mrem/y whole body or 75 mrem/y critical organ dose to any member of the public. The point of compliance is all portions of the site. WAC 246-221 Radiation Protection Standards **APPLICABLE** Chapter 246-221 WAC establishes standards for protection against radiation hazards. WAC 246-247 Radiation Protection -- Air Emissions **APPLICABLE** Chapter 246-247 WAC establishes a 25 mrem/y whole body or 75 mrem/y critical organ dose to any member of the public. It also requires registration of the source with Ecology.	

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	3. LOCATION SPECIFIC	
	RCW 90.03 & RCW 90.14 State Water Code and Water Rights **RELEVANT AND APPROPRIATE** Water code and water rights laws specify conditions for extracting surface water or ground water for non-domestic uses. In essence, the laws provide that water extraction must be consistent with beneficial uses of the resource and must not be wasteful.	See RCW 18.104 comment.
	WAC 296-62 Washington Industrial Safety and Health Act Occupational Health Standards--Safety Standards for Carcinogens **RELEVANT AND APPROPRIATE** State health and safety regulations are generally similar to those espoused by the federal regulations (i.e., OSHA), and are applicable to all remedial actions involving potential human exposure to hazardous materials.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 173-154 Protection of Upper Aquifer Zones **RELEVANT AND APPROPRIATE** Chapter 173-154 WAC provides for protection of the upper aquifers and upper aquifer zones to avoid depletions, excessive water level declines, or reductions in water quality. State regulations for upper aquifer zones are applicable to remedial alternatives that involve treating ground water or presenting risks of ground water contamination.	See RCW 18.104 comment.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-201 Water Quality Standards for the State of Washington **APPLICABLE** Ecology classifies surface waters according to their water quality and uses of the water body. The surface waters of the Columbia River are classified as Class A. WAC 173-220 National Pollutant Discharge Elimination System Permit Program **RELEVANT AND APPROPRIATE** The purpose of this chapter is to establish a state permit program, applicable to the discharge of pollutants and other wastes and materials to surface waters of the state. WAC 173-240 Submissions of Plans and Reports for Construction of Waste Water Facilities **RELEVANT AND APPROPRIATE** Chapter 173-240 WAC regulations require that Ecology review and approve plans and for waste water treatment facilities that discharge to ground water. WAC 173-300 Certification of Operators of Solid Waste Incinerator and Landfill Facilities **RELEVANT AND APPROPRIATE** Chapter 173-300 WAC defines when certification of operators is necessary at incinerators and landfills.	See RCW 18.104 comment. Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	WAC 173-304 Minimum Functional Standards for Solid Waste Handling **APPLICABLE** Chapter 173-304 WAC regulations pertain to solid waste handling facilities (e.g., municipal landfills). They contain provisions for facility design, maintenance, and closure.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 173-434 Solid Waste Incinerator Facilities **RELEVANT AND APPROPRIATE** This regulation defines emission standards and design and operation of solid waste incinerator facilities.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 232-12 Wildlife Classification **RELEVANT AND APPROPRIATE** Chapter 232-12 WAC identifies endangered, threatened, and sensitive species of fauna.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 248-54 Public Water Supplies **RELEVANT AND APPROPRIATE** Chapter 248-54 WAC identifies the requirements of public water supply systems.	Does not appear in report. Applicability will be evaluated and added if appropriate.
	WAC 446-50 Transport of Hazardous Materials **APPLICABLE** Chapter 446-50 WAC regulations are generally analogous to the corresponding federal regulations 49 CFR. Transport regulations are applicable to any off-site transportation of hazardous materials.	Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	FEDERAL ARARs **4. CHEMICAL SPECIFIC** 33 U.S.C. 1251 Clean Water Act **APPLICABLE** 40 CFR 131 Water Quality Standards **APPLICABLE** 42 U.S.C. 300 (f), 40 CFR 141 Safe Drinking Water Act **APPLICABLE** 40 CFR 264 Subpart F Concentration Limits **TO BE CONSIDERED** 40 CFR 264.521 Corrective Action at Solid Waste Management Units **TO BE CONSIDERED** 40 C.F.R 141.13 Maximum Contaminant Levels for Turbidity **RELEVANT AND APPROPRIATE** 40 C.F.R 141.3 Secondary Maximum Contaminant Levels for Drinking Water **RELEVANT AND APPROPRIATE** E.P.A Directive 9355-.4-01FS 1990 Guide on Remedial Actions at Superfund Sites with PCB Contamination **TO BE CONSIDERED** Richland City Ordinance 35-84 Public Owned Treatment Works **TO BE CONSIDERED**	Does not appear in report. Applicability will be evaluated and added if appropriate. Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	5. ACTION SPECIFIC 42 U.S.C. 6901 Resource Conservation and Recovery Act **APPLICABLE** 29 CFR 1910 Occupational Safety and Health Act **APPLICABLE** 40 CFR 122 Discharge of Treated Effluent **APPLICABLE** 40 CFR 141.13 Maximum Contaminant Levels for Turbidity **RELEVANT AND APPROPRIATE** 40 CFR 261 Identification and Listing of Hazardous Waste **RELEVANT AND APPROPRIATE** 40 CFR 262 Standards for Generators of Hazardous Waste **APPLICABLE** 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste **RELEVANT AND APPROPRIATE** 40 C.F.R 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities **APPLICABLE** 40 CFR 268.44 Land Disposal Restrictions **APPLICABLE** 40 CFR 761.30 PCBs Storage and Disposal **RELEVANT AND APPROPRIATE** 40 CFR 761.60 Alternative Technology to Incineration **RELEVANT AND APPROPRIATE** 40 CFR 761.70 Chemical Waste Landfill **RELEVANT AND APPROPRIATE** 40 CFR 50 Air Quality Standards **RELEVANT AND APPROPRIATE** 40 CFR 58 Ambient Air Quality	Does not appear in report. (PCBs not cited as contaminant of concern. Does not appear in report. Applicability will be evaluated and added if appropriate. Does not appear in report. Applicability will be evaluated and added if appropriate.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	40 CFR 58 Ambient Air Quality Surveillance **RELEVANT AND APPROPRIATE** 40 CFR 60 New Source Performance Standards **RELEVANT AND APPROPRIATE** 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants **RELEVANT AND APPROPRIATE** 40 CFR 122 NPDES Permit Program **RELEVANT AND APPROPRIATE** **6. LOCATION SPECIFIC** 16 U.S.C 461 Historic Sites, Buildings, and Antiquities Act **RELEVANT AND APPROPRIATE** 16 U.S.C. 742 Fish and Wildlife Improvement Act **RELEVANT AND APPROPRIATE** 16 U.S.C. 2901 Fish and Wildlife Conservation Act **RELEVANT AND APPROPRIATE** 167 U.S.C. 1271 Wild and Scenic Rivers Act **RELEVANT AND APPROPRIATE** 50 CFR 17 Endangered Species Act **RELEVANT AND APPROPRIATE**	
149.	Section 6.2.1.3, Page 6-4, lines 12-13 RCRA is APPLICABLE at PUREX. The text should be rewritten so it does not preclude the permitting requirements on RCRA closures and TSD's as required by Chapter 70.105 RCW and Chapter 173-303 WAC the dangerous waste regulations.	Reject. The text does not preclude the permitting requirements.
150.	Section 6.2.1.3, Page 6-4, lines 15-16 The concept of "Area of Contamination" has not been resolved, and should not appear in this Work Plan.	Reject. Please refer to CERCLA Compliance with Other Laws Manual, pg. 2-15.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
151.	Section 6.2.2.1, Pages 6-5 and 6-6 Hanford is not a routine cleanup site nor are there relatively few contaminants; therefore, Method A cleanup standards should not be applied. Method A tables have been developed for specific purposes. They are intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. The tables may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in these tables should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceeding the values in these tables does not necessarily trigger requirements for cleanup action under this chapter.	Reject. The text does not state which of the three methods will be used. (Ecology: S-Plant comment #160.)
152.	Section 6.2.2.1, Page 6-6 Planning to use Method C cleanup levels is premature and unwarranted. All references to cleanup scenarios under MTCA should be under Method B.	Reject. The text does not state that Method C will be applied.
153.	Section 6.2.2.1, Page 6-6, lines 25-30 The last paragraph "In addition to . . . waste management unit." should be eliminated from this document. This paragraph is stating an opinion that Ecology cannot accept. Remove this information.	Reject. This statement is taken from the MTCA regulations. The citation will be added.
154.	Section 6.2.2.6, Page 6-7, second paragraph; This paragraph should be eliminated from the text. Dilution zones are not automatic. All Known And Reasonable methods of Treatment (AKART) must be applied to the waste stream then water diffusers are designed and approved by Ecology. After all this occurs, dilution zones are then considered.	Accept. The material will be deleted.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
155.	Section 6.4.1.1, Page 6-10, lines 31-35 State standards will apply at Hanford. If there is an existing state law that disallows land disposal of certain chemicals then it applies at Hanford. Include this information in the text.	Reject. State regulations are not automatically applicable to a CERCLA remediation. The CERCLA Compliance with Other Laws Manual outlines a specific procedure for determining eligibility of State ARARs: 1) Determine if requirement is promulgated (i.e., if it is of general applicability and legally enforceable). If it is not generally applicable, an ARAR waiver may be granted. 2) Determine if requirement is more stringent than corresponding Federal requirement. 3) Determine if requirement is applicable, relevant or appropriate.
156.	Section 6.6, Page 6-17, second paragraph; Point of compliance is defined in WAC 173-340-740(6) a-d. For soil cleanup levels based on human exposure via direct contact, the point of compliance shall be established in the soils throughout the site from the ground surface to fifteen feet below the ground surface. This represents a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of site development activities. Add this information to the text.	Reject. This is a state standard for soil and may or may not be applicable. (Ecology: S-Plant comment #161.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	CHAPTER 7	
157.	Section 7.1, Page 7-2 Selection of final remedial action technologies must be screened against standard EPA criteria. This should be discussed in the text. The following is a list of the nine criteria in order of importance. A technology must either pass each level of screening (i.e., threshold criteria, primary balancing criteria, and modifying criteria) or be waived before it can proceed to the next level. Threshold • Overall Protection of Human Health and the Criteria Environment • Compliance with ARARs Primary • Long Term Effectiveness and Permanence Balancing • Reduction in Toxicity, Mobility, or Volume Criteria Through Treatment • Short Term Effectiveness • Implementability • Cost Modifying • State Acceptance Criteria • Community Acceptance	Reject. In accordance with Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA 1988) Section 4.3.2 - Screening evaluation indicates that alternatives are evaluated against the short- and long-term aspects of three broad criteria - effectiveness, implementability, and cost. (Ecology: S-Plant comment #162.)
158.	Section 7.2, Page 7-4 General response actions for Interim Remedial Measures (IRM) actions differ from final remedial actions. Ecology has not agreed to the concept of anything other than removal for IRM actions.	Reject. General response actions are intended to present a wide range of possible solutions applicable to ERAs, IRMs, and remedial action and may differ for the different paths. However, we do not wish to reject general response actions at this stage. No change needed.
159.	Section 7.2, Page 7-4, lines 37-38 The preliminary disposal alternatives for the excavated soil and material on a small-or large-scale basis should be clearly identified and described.	Accept. Text will be revised to discuss the preliminary disposal alternatives for the excavated soil and material on a small- and large-scale basis. (Ecology: Z-Plant comment #66.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
160.	Section 7.2, Page 7-5, lines 16-20 Waste containment should also include vertical and horizontal barriers technologies in addition to capping technology.	Accept. The text will be revised to discuss vertical and horizontal barriers technologies. (Ecology: Z-Plant comment #68.)
161.	Section 7.3, Page 7-7, line 1 This section refers to biota RAOs. It should be noted that biota contamination is a result of soil contamination and soil remediation will automatically provide biota remediation. Listing the RAO for biota is not necessary and should be deleted.	Reject. In some cases, "biota-specific" remedial actions may be required in areas where the soil concentrations do not pose human health risks.
162.	Section 7.4, Page 7-7 This section discusses remedial alternatives for treatment of hazardous chemicals, radionuclides, and volatile organic compounds. It should be noted that semi-volatile organic compounds are also contaminants of concern for the PUREX Plant Aggregate Area (Table 4-30) and the selected remedial alternatives should be applicable for treatment of this contaminant.	Accept. Remedial technologies for semi-volatiles at PUREX WMUs will be identified and discussed.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
163.	Section 7.4.1, Pages 7-7 through 7-9 This section provides a list of remedial action alternatives proposed for the Purex Source Aggregate Area. This section should also consider other remedial action alternatives such as land spread and chemical extractions. Land spreading could be an option for untreated soil with low radioactivity levels. The material could be transported to an appropriately selected and sufficiently large expanse of remote open land and spread to such a degree that the soil radioactively level approaches the natural background radiation level of these materials. This technology is simple and relatively inexpensive. Chemical extraction is another type of remedial alternative. The objective of this technology is to concentrate the radioactive contaminants resulting in smaller volume of soil for disposal. This technology includes the use of salt solutions, mineral acids, and various completing agents to extract the radioactive contaminants from the soil.	Reject. Land spreading is considered a variation of landfilling if one is considering hazardous or radiation wastes. If the materials are clean enough to not be classified as hazardous or low-level radiation, conditions likely needed to allow land spreading, then the materials do not need to be removed. Reject. Chemical extraction is discussed under the term "soil washing" in Alternative 3.
164.	Section 7.4.1, Page 7-7, lines 35-36 Technologies with process options proven effective at industrial waste sites and also pertinent technologies being developed should be specified.	Accept. The text will be revised to indicate which of the technologies have been proven at industrial sites, vs. which technologies are still considered to be under development. (Ecology: Z-Plant comment #71.)
165.	Section 7.4.1, Page 7-8, lines 36-38 A reference for EPA guidance on feasibility studies for uncontrolled waste management units is not listed in Section 10.0 and should be included.	Accept. Reference will be added. (Ecology: Z-Plant comment #72.)
166.	Section 7.4.1, Page 7-8, lines 36-39 The remedial action alternatives summarized in this section should list the process options retained from Table 7-3 for development of alternatives under each alternative.	Accept. Text will be revised to list the process options retained from Table 7-3 for development of alternatives under each alternative. (Ecology: Z-Plant comment #73.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
167.	Section 7.4.2, Page 7-10, lines 8-20 Disadvantages of capping vertical barriers alternative should be included. Capping does not eliminate the source of radioactivity, which further limits use of the site. The cap must be maintained as long as contaminants exist at the site without penetration, indefinitely. If barrier walls are not used, horizontal and vertical migration of contaminants could still occur. Another potential disadvantage is the possible deteriorations of the barrier walls resulting from the chemical contained in the waste, particularly organic chemicals.	Accept. Text will be revised to reflect the comment. (Ecology: Z-Plant comment #74.)
168.	Section 7.4.3, Pages 7-10 and 7-11 The text in this section states that in-situ grouting or stabilization of soil would reduce the leachability of volatile organic compounds. Section 7.4.1 states that volatile organic compounds are not easily treated by in-situ stabilization. Alternative 2 should also provide a combination of immobilization and containment for organic compounds. The text should be consistent with the capability of in-situ grouting or stabilization of soil in treating the volatile organic compounds. Semivolatile organic compounds are also potential contaminants of concern at the waste management units. It is not clear from this section whether Alternative 2 would reduce the leachability of semivolatile organic compounds. This discrepancy should be addressed.	Accept. The text will be clarified for consistency. (Ecology: Z-Plant comment #75.) Accept. The text will be clarified to address the applicability of Alternative 2 to semi-volatile organics.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
169.	Section 7.4.4, Page 7-11, line 15 and Table 7-2, Page 7T-2a The text states that conventional techniques using standard construction equipment will be used for excavation of radioactive and hazardous soil. In section 7.2, macro-engineering, which is based on high volume excavation using conventional surface mining technologies is proposed. The text should clearly explain the type of conventional techniques to be used for excavation and be consistent with other sections of the report.	Reject. This level of detail is considered more appropriate during the feasibility study when details of specific waste management units are available.
170.	Section 7.4.6, Page 7-12 Alternative 5, "Excavation, Above-Ground Treatment, and Geologic Disposal of Soil with Transuranic Radionuclides," considers excavating contaminated soils, separating transuranic from nontransuranic soils, backfilling the excavation with the nontransuranic soils, and treating and disposing transuranic soils. This alternative does not consider treatment of nonradioactive soil. The nonradioactive contaminants can potentially migrate and contaminate the groundwater. These issues should be considered before selection of the final alternative.	Accept. The text will be revised to discuss the objectives and limitations of this alternative. The need for supplemental remedial actions (e.g., capping) will be emphasized. (Ecology: Z-Plant comment #76.)
171.	Section 7.4.6, Page 7-12, line 27 This section discusses treatment of soils containing TRU at concentrations exceeding 100 nci/g. This section should state procedures taken to process soils at concentrations below 100 nci/g.	Accept. The text will be revised to indicate the handling of the indicated soil fractions.
172.	Section 7.4.7, Page 7-13, line 1 The rationale for treating the vented vapors by the catalytic incinerator to at least 95 percent destruction should be provided.	Accept. The potential action-specific ARARs that addresses the required VOC destruction efficiency will be clarified. (Ecology: Z-Plant comment #77.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
173.	Section 7.5, Page 7-13, line 38 The text indicates Alternative 3 (excavation and on-site treatment) may not be applicable to treat volatile organic compounds. However, it is reported in Section 7.4.4 that thermal desorption with off-gas treatment (an on-site treatment option) could be used if organic compounds are present. Many on-site treatment options such as vitrification; thermal desorption; and fixation, solidification, and stabilization retained for development of alternatives (Table 7-3) could potentially be used to treat both volatile and semivolatile compounds. The text should be changed to include volatile organic compounds in Alternative 3.	Accept. Text will be revised to include volatile organic compounds in Alternative 3. (Ecology: Z-Plant comment #78.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
174.	Table 7-1, Page 7T-1 Some information is either presented under inappropriate headings or the information is not consistent with the text in Section 7.0. Examples include with recommendations: • The text in the second and third bullets in the second column for soils and sediments should be moved to the third column. • The general response actions for soils and sediments should be consistent with the text in Section 7.0. • The text in the first and second bullets in the second column for biota should be moved to the third column. • The general response actions for biota should be the same as for soils and sediments as stated in Section 7.3. • The text in the second bullet under the human health column for air should be moved to the third column. The text should explain why treatment is not included in the column for general response actions for biota.	Accept. The table will be revised per the comment. (Ecology: Z-Plant comment #79.)
	Although, soil remediation will eliminate the air contamination source, some kind of remedial action is necessary for air until the source is remediated. Hence, general response action column should include no action/institutional actions and dust control measures for the environmental media "Air".	Reject. Remediation of air releases is covered by the soil remediation technologies. Air releases are a transport route derived from soil contamination.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
175.	Table 7-2, Pages 7T-2a through 7T-2c The text indicates that solvent extraction is applicable only to organics. Solvent extraction is applicable also to metals and radioactive substances. The text in the contaminants treated column should include "M, R" for the solvent extraction process option.	Accept. The text will be revised per the comment. (Ecology: Z-Plant comment #80.)
	The process option for landfill disposal should include on-site landfill and RCRA landfill in place of landfill disposal.	Accept. The text will be revised per the comment.
	The process option for geologic repository is specifically proposed for transuranic contaminants. Hence, the text in the last column should be substituted with "T" (I, M, O, nontransuranic radionuclides if mixed with T) in place of "R" (I, M, O if mixed with R) for the process option geologic repository.	Accept. The text will be revised per the comment.
	Treatment as a general response action, the potentially applicable technology types, process options, and contaminants treated for treatment option should also be included for biota.	Accept. The text will be revised per the comment.
	A footnote reading "T = Transuranic Contaminants Applicability" should be included at the bottom of the table.	Accept. The text will be revised per the comment.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
176.	Table 7-3, Pages 7T-3a through 7T-3k The technology dust and vapor suppression is rejected on the basis of limited duration of integrity and protection. Dust and vapor suppression may be used during remedial activities or before any action being taken place to prevent air pathway. Hence, this technology should be retained for use in conjunction with other process options.	Reject. Dust and vapor suppression are considered subtasks of excavation and are not intended as long term remediation. (Ecology: Z-Plant comment #81.)
	The text "may not be effective for deep contamination" should be included under the column effectiveness for the process option grout curtains.	Reject. The depth of installation should have relatively little influence on the effectiveness of a grout curtain.
	Off-gas treatment may be required for volatile compounds as well as for gaseous radionuclides (e.g., tritium generated during vitrification). Hence, the text under the column effectiveness should include gaseous radionuclides for off-gas treatment for the process-option vitrification.	Accept. Text will be revised per the comment.
	For soil washing process option, the following text should be included: • Effective with sandy soils. The process may work only for low level radiologically contaminated soils, under the column effectiveness. • The process may not work for humus soil. The recycled water must be treated for radioactive and other contaminants.	Accept. Text will be revised per the comment.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	The text is not clear under the column description whether contaminated soil or treated soil will be placed in an existing on-site landfill for the landfill disposal process option (page 7T-3f). The text in Section 7.0 indicates that treated soil will be placed in an on-site landfill. This inconsistency should be addressed and the text changed where appropriate. This comment is also applicable for the geologic repository process option in page 7T-3g.	Accept. Table will be revised to indicate that contaminated soil will be placed in landfills and/or geologic repositories.
	Vapor extraction (page 7T-3h) is also ineffective for semivolatile compounds. Hence, semivolatile compounds should be included before inorganic compounds under the column effectiveness.	Accept. Text will be revised per the comment.
	For the above-ground vitrification, the text in the conclusions column should include metals and inorganics in addition to radionuclides and organics.	Accept. The text will be revised per the comment.
	The rationale provided for the rejection of incineration process option is not correct. Technologies with equipment are readily available to control and treat air emissions and wastewater generation. A single technology may not be sufficient to remediable all contamination at a single site or group of sites or operable unit or aggregate areas. For example, incineration to treat organic contaminants for a group of sites or aggregate areas could precede solidification/stabilization for soils contaminated with volatile and semi-volatile compounds and heavy metals. At this stage, incineration should not be rejected but retained for use in conjunction with other process options.	Reject. Incineration is considered inappropriate for the low levels of organic contamination relative to the amount of release of other contaminants.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	The rationale provided for rejection of solvent extraction process option is not adequate. Physical separation followed by chemical (solvent) extraction is being selected for removal of cesium-137 and cobalt-60 from the excavated soils/sediments (INEL, 1992). Treatability studies are being conducted to identify the preferred chemical option for chemical extraction and to treat the extracted solvent containing the contaminants. Hence, a good rationale should be provided to reject solvent extraction technology. The technology should be rejected either on the basis of not fully demonstrated or on the basis of ineffective for the contaminants of concern.	Accept. Solvent extraction will be included and may be considered one of the treatment technologies included in Alternative 3.
	In-situ soil flushing is rejected because of implementation problem. Soil flushing with chemical additives may have implementation problems. But, soil flushing with treated groundwater may be effective and easily implementable for flushing contaminants at low levels from deep soils. Hence, in-situ soil flushing should be retained for use in conjunction with other process options such as shallow excavation, and pump and treatment of groundwater.	Reject. Although in situ soil flushing may be applicable to specific situations, it is not considered sufficiently effective for a wide range of compounds to be included in this preliminary evaluation.
	A rationale for selecting an off-site landfill for disposal of contaminated biota should be provided. For soils, an existing on-site landfill is considered for disposal (Table 7-3, page 7T-3k).	Accept. On-site landfilling is considered a viable disposal option. Text will be revised to list landfill as an option, rather than off-site landfilling specifically.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	CHAPTER 8	
177.	Section 8.1.2, Page 8-5, line 34 The evaluation of existing data appears to begin here rather than on page 8-9. The appropriate text should be moved.	Accept. Reference to this material will be made in the discussion of representativeness. (Ecology: T-Plant comment #102.)
178.	Section 8.1.3, Page 8-10, line 25 This section states that "the best indication of the validity of the data is the reproducibility of the results, and this indicates that validity (completeness) is one of the less significant problems with the data." This discussion of completeness should be clarified. Reproducibility of results does not "validate" the data, this only indicates that the methodology can be reproduced, whether it is reproduced correctly or not. To truly "validate" data, instrument calibrations, standards, matrix spikes, and other QA/QC protocols should be followed. The existing data gathered in the Purex Plant Aggregate Area may be complete based on the intended level of validation. However, it appears that the data is not complete if the intended use of the data is for risk assessment purposes. For data to be considered complete for risk assessment purposes, it must meet contract laboratory program (CLP) validation protocols. Also, the existing data may not be representative of the contaminant release at the Purex Plant Aggregate Area since "The survey or sampling has been done at a location different from the waste management unit or release . . ." (Section 8.1.2, page 8-6, line 8).	Accept. Statement will be qualified to indicate that completeness is not a major problem to its use for site characterizations, although it would be for use in a formal risk assessment. (Ecology: T-Plant comment #104.)
179.	Section 8.1.3, Page 8-11, line 3. This should read "...possible, where contamination may or may not be present."	Accept. Rewording will be incorporated as suggested.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
180.	Section 8.1.5, Page 8-12, second bullet The text states that the preliminary site conceptual model is discussed in Section 8.1.3. However, the correct section is 8.1.4. The text should be corrected.	Accept. The noted correction will be made. (Ecology: T-Plant comment #105.)
181.	Section 8.1.5, Page 8-12, lines 36 through 39. Data obtained through field investigations should be more fully defined. Clarify if this will be strictly radionuclides, or will there also be chemical field data obtained.	Reject. No distinction has been made elsewhere regarding chemical vs. radionuclide so in the absence of specification, both are intended.
182.	Section 8.2.1, Page 8-14 This section should discuss the data type and data quality level required for each of the categories listed. Table 8-3 provides a definition of the analytical levels but does not refer to the applicability of each level for the intended use of the data.	Reject. The uses of the QC Levels are discussed in Section 8.2.2
183.	Section 8.2.1, Page 8-14, lines 39 and 40 The text refers to Volume 1 of the Superfund Risk Assessment Guidance (EPA 1989a) for discussions on risk assessment data uses and needs. The text should also refer to Volume 2 of the Superfund Risk Assessment Guidance (EPA 1989b) because Volume 1 presents only guidance on human risk assessment, whereas Volume 2 presents guidance on ecological risk assessment.	Accept. Reference will be added, along with citation for Region 10 Guidance on human health risk assessment. (Ecology: Z-Plant comment #87, U-Plant comment #59, and T-Plant comment #106.)
184.	Section 8.2.1, Page 8-15, line 33. A "T" should be added to beginning of the sentence.	Accept. Typo will be corrected.
185.	Section 8.2.1, Page 8-16, line 3. It is stated that unplanned releases in particular are lacking in information for locating the sites. Give more information or references that will address how these will be located and handled.	Accept. Text will be clarified to indicate that the location will be defined through characterization activities. (Ecology: S-Plant comment #174.)
186.	Section 8.2.1, Page 8-16, line 13. This sentence should read "The likely depth of radiation contaminants--this...."	Reject. Assumption is made that many chemical contaminants will behave similarly to gamma-emitting radionuclide contaminants.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
187.	Section 8.2.1, Page 8-16, line 29. A reference is made to table 8-1 for data needs, this reference should be 8-2.	Reject. The data needs are indicated by the gaps in Table 8-1.
188.	Section 8.2.2.1, Page 8-17, line 4. This sentence should read "...not be limited to chemical and radionuclide parameters, but should also include necessary physical parameters ..."	Accept. Text insertion will be made as suggested.
189.	Section 8.2.2.2, Page 8-17, lines 30-32. The text states that "Individual DQO analytical PARCC parameters for Level III or IV analytical data .... are given Table 8-4."; the only methodology called out in Table 8-4 inorganics and organics is Level III methods. Both methodologies should be listed.	Reject. Methodologies for CLP (Level IV) analyses are defined, simply as the CLP SOWs, and are not further differentiated. (Ecology: S-Plant comment #177.)
190.	Section 8.2.2.2, Pages 8-17 and 8-18. This section should also incorporate the concepts and requirements defined in the Quality Assurance Project Plan (QAMS-005). This generic document will be used in 100 Area investigations and should be used in the 200 Areas.	Accept. Text will be modified to indicate the use of this document, as adapted to the 200 Areas. (Ecology: S-Plant comment #176, U-Plant comment #60.)
191.	Section 8.2.2.3, Page 8-19, lines 4 through 6. Any screening investigations should also include screening for chemical (inorganic or organic) contaminants also.	Reject. Items listed are simply examples and do not exclude chemical screenings.
192.	Section 8.2.2.5, Page 8-19 This section should describe quality assurance and quality control samples (for example, field blanks, field duplicate, matrix spike and matrix spike duplicate, etc.) to be collected to measure precision and accuracy.	Reject. This information will be discussed in a field sampling quality assurance plan prepared at a later date. (Ecology: T-Plant comment #108.)
193.	Section 8.2.2.4, Page 8-19, line 25. The reference for CLP is out-of-date, reference the most current SOW's.	Accept. The up-to-date reference will be provided. (Ecology: S-Plant comment #181.)
194.	Section 8.2.2.5, Page 8-19, line 33. The reference should be made to Section 8.1.3 not Section 8.1.2.	Accept. Typo will be corrected.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
195.	Section 8.2.2.5, Page 8-19, lines 39 through 41. The statement that analysis of arsenic to much lower levels is "impossible because of the limitations of analytical methods" should be explained. Most CLP procedures, e.g., Method 200.62-C-CLP, can analyze to 500 ppb. We do agree however, than background levels may make this point moot.	Accept. Explanation will be provided. (Ecology: U-Plant comment #62 and S-Plant comment #182.)
196.	Section 8.3.1, Page 8-22, line 15. The sentence should read "Although existing data are unvalidatable, the data ..."	Reject. Some data may have archived records in sufficient detail to allow validation. Issue is that it is not (and ought not to be) validated.
197.	Section 8.3.2, Page 8-23. The possibility of using a mobile lab for organics and inorganics should also be addressed here.	Accept. Mention of mobile lab use will be made here.
198.	Section 8.3.3.6, Page 8-27, lines 34-38 This section on ecological investigation but should include a brief statement that data collected through the ecological investigation will be used to conduct the ecological risk assessment.	Accept. Statement will be added. (Ecology: Z-Plant comment #89 and S-Plant comment #183.)
199.	Table 8-1, Pages 8T-1a to 8T-1c The indication of the (*) in Table 8-1 should be defined in the footnote section.	Reject. Asterisk is simply a marker, and does not have any special meaning to include in footnotes.
200.	Table 8-4, Pages 8T-4a to 8T-4e The unit for the practical quantitation limit (PRQL) for the water matrix is presented as pCi/g. This unit should be corrected to pCi/L. The source and rationale for the stated PRQLs should be stated. The analytical method listed for kerosene is 8015. Modified method 8015 should be used for this analysis. The organic and inorganic analysis methods should list both SW-846 and CLP methodologies.	Accept. Subheading units will be corrected. (Ecology: T-Plant comment #110.) Accept. Correct methods will be cited. Reject. See response to comment 189.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
	CHAPTER 9	
201.	Section 9.0, Page 9-2, first two paragraphs Provide more information describing the interaction among various RL programs. The integration of RCRA, CERCLA and D&D activities is critical to ensure timely and cost-effective program management. Simple references to remedial activities under RARA, or "other programs" is inadequate. Additional, concise text should describe in specific terms: 1) which other programs are responsible for site remediation, and where; 2) how the Offices of Operation, Waste Management and Environmental Restoration are integrating activities, and 3) how data will be integrated. Cite references or source documents.	Accept. More information regarding program interaction and responsibilities will be included in executive summary. (Ecology: S-Plant comment #186.)
202.	Section 9.1, Page 9-2, first paragraph The criteria for an ERA should include an important additional criterion, which is expediency/cost-savings. Many of the ERA candidate sites (and 618-9) are being considered because: 1) the site is relatively easy to remediate, 2) taking action now will likely result in considerable cost-savings or increased safety for site-workers, or 3) site clean-up will result in some near-term benefit such as increased public use.	Reject. The driving force determination already embodies expediency/cost savings in ERA criteria. Comment components 1) and 2) are IRM criteria.
203.	Section 9.1, Page 9-3 A rationale should be provided for using surface contamination greater than 2 mrem/hr for exposure rate, 100 count/min beta/gamma above background, alpha greater than 20 counts/min, or Environmental Protection Program ranking of greater than 7 to designate a site as an interim remedial measure (IRM) candidate.	Accept. Rationale will be provided. (Ecology: Z-Plant comment #97.)

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
204.	Section 9.1.1., Page 9-5, lines 28-41 This section states that if a release is greater than 100 times the CERCLA reportable quantity for any constituent, the release remains in consideration for ERA. The rationale for selecting the 100 times the CERCLA reportable quantity should be stated. The procedures taken for releases under the 100 times should be stated. The text addresses the criteria used to determine unacceptable risks on the basis of the quantity and concentration of the release for an expedited response action (ERA). The application of the criteria to each waste management unit (WMU) should be presented quantitatively in a table or in an appendix to determine whether each WMU passed or failed the criteria.	Accept. The rationale will be clarified. (Ecology: Z-Plant comment #98, U-Plant comment #69, and S-Plant comment #191.) Reject. This section is providing recommendations not response actions. Reject. Table 9-2 indicates whether the WMUs pass or fail the criteria. Quantitative presentation of the criteria application is considered beyond the scope of this section.
205.	Section 9.1.1, Page 9-6, lines 4-8 The text is confusing. The first sentence states that the ERA screening criteria in addition (emphasized) to those presented in the Hanford site past practice strategy were applied to provide a consistent quantitative basis for making recommendations in the AAMS. Then, in the second sentence, the text states that the decision to implement the recommendations developed in the AAMS will be based only (emphasized) on the criteria established in the Hanford site past practice strategy. The text should explain why the decision to implement the recommendations developed in the AAMS will be based only on the criteria established in the Hanford site past practice strategy when the recommendations are developed on the basis of Hanford site past practice strategy and additional ERA screening criteria prescribed in this section.	Accept. Text will be clarified.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
206.	Section 9.1.1, Page 9-6, lines 10-15 This paragraph addresses the criteria on the availability of technology to control the release for a unit or unplanned release to be considered for an ERA. The example provided in this paragraph is for water. The text should discuss the availability/non-availability of technologies for soils if a release to soils is unacceptable with respect to health or environmental risk for an ERA.	Reject. This example was designed to be generic. Any number of examples could be presented, however this example should stand.
207.	Section 9.1.1, Page 9-6, lines 28-30 The text states that active facilities will not be included in past practice investigations unless operation is discontinued prior to initiation of the investigation. The text should explain whether the above decision is made solely by DOE or among DOE, EPA, and Ecology. It should also explain whether or not the above decision is applicable even after a release from an active facility is unacceptable with respect to health or environmental risk.	Reject. The AAMS is presenting recommendations. The decisions will be made by DOE, EPA, and Ecology cooperatively.
208.	Section 9.1.1, Page 9-7, lines 1-3 The purpose of AAMS is to assess each WMU and unplanned release to determine the most expeditious path for remediation by DOE, EPA, and Ecology. The text should explain why a final decision regarding the conduct of ERAs in the aggregate area will be made based, at least in part, instead of fully (emphasized) on the recommendations provided in this section, and results of the final selection process outlined in WHC (1991b). Also, the text should explain why the results of the final selection process outlined in WHC (1991b) are not used for making recommendations in this report.	Reject. The AAMS is presenting recommendations. The decisions will be made by DOE, EPA, and Ecology cooperatively. Reject. This information is included in the Executive Summary.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
209.	Section 9.2.1, Page 9-9 A rationale for using only surface contamination criteria using 1990 radiation survey data to evaluate the sites along the ERA path should be provided. Each site should be evaluated for all of the criteria presented in Section 9.1.1 for an ERA path and ranked with scores for each criteria before recommending for an ERA.	Reject. The most recent data is the most useful in attempting to establish an immediate threat.
210.	Section 9.2.1.1, Page 9-9 If these 15 cribs are ERA candidates, and of 'immediate' concern, state what the RARA program is doing today to address the release of radionuclides to on-site workers and biota? Describe what action is planned, and when.	Reject. The RARA Program generates an annual report and schedule.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
211.	Section 9.2.1.1, Page 9-10 Surface contamination levels up to 5,000 count/min and 20,000 disintegration/min are reported for the 207-A Retention Basins and the 216-A-42 Retention Basin respectively. The reported values are not discussed anywhere in the report (in Sections 2.3.8 and 4.1.2.8). This discrepancy should be addressed. The comment is applicable to the following WMUs: • 216-A-40 Trench • UN-200-E-88 • UN-200-E-100 Also, a rationale for eliminating many sites that may have surface contamination high enough to be of immediate concern for an ERA is not provided. Many sites indicated high level of alpha and beta activities. Example sites include: • 216-A-37-2 crib • 216-A-15 french drain • 216-A-16 french drain • 216-A-17 french drain • 216-A-22 french drain • 216-A-23A french drain • 216-A-23B french drain • Many unplanned releases	Accept. Discussion of the surface contaminant levels will be included.
212.	Section 9.2.1.2, Page 9-11, lines 9-11 The text states that a majority of the unplanned release sites will be addressed by the RARA program. But only two unplanned release sites are considered for RARA (Section 9.2.1.1). Also, the statement that a majority of the unplanned release sites had insufficient quantity and concentration of contamination to qualify as an ERA is general. The statement should be substantiated with data.	Accept. Text will be reviewed and amended if necessary. Generalization will be substantiated, if necessary.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
213.	Section 9.2.2, Page 9-11 The total number of WMUs and unplanned releases and the number of WMUs and unplanned releases identified as high priority units reported in this section do not match with the values in Section 5.0 and Table 5-1. The discrepancy should be corrected and the text changed accordingly.	Accept. The numerical discrepancy will be corrected.
214.	Section 9.2.2., Page 9-11, first paragraph Explain why septic tanks and drain fields were categorically excluded from consideration along the ERA and IRM paths. State if the decision is based on an assumption of relatively innocuous discharges, lack of data, or both.	Reject. Septic tanks and drain fields were not categorically excluded from consideration. Table 9-2 will be clarified to include septic tank and drain field paths.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
215.	Section 9.2.3.1, Page 9-14, lines 1-7 and lines 30-37 A more detailed investigation of one or two of the cribs and a french drain based on similarities of units may provide adequate data only if the WMUs have similar characteristics in terms of waste volume received, waste strength, waste composition, operational period, soil conditions, construction details and other unknown factors. For example, the crib 216-A-6 received the steam condensate, the equipment disposal tunnel floor drainage, the water filled door drainage and the slug storage basin overflow waste from the 202-A Building whereas the 216-A-5 crib received laboratory cell drainage from the 202-A building and the 291-A-1 stack drainage. The operational periods are different for the cribs. The strength and composition of the waste received at these units may be also different. Similarly, the nature of waste received at other cribs is also different. Hence, the data obtained from one or two cribs may fail to provide adequate information on the nature and extent of contamination for other units to determine the health and environmental risks as well as to select the remedial alternatives. Limited field investigation should be conducted at each WMU unless otherwise substantial evidence is provided to support the data collected from one or two of similar WMWs for representativeness.	Accept. Additional discussion regarding analagous units will be provided. Reject. This is contrary to LFI strategy.
216.	Section 9.2.3.1, Page 9-14, lines 9-13 The WMU designation for possible representative cribs cited in the first sentence does not match with the designation cited in the subsequent discussion. This discrepancy should be corrected and the text changed accordingly.	Accept. The discrepancy will be corrected.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
217.	Section 9.2.3.2, Pages 9-15 and 9-16 The 218-E-12A Burial Ground is selected as a possible representative burial ground for the LFI representing 200-E Burning Pit, 218-E-1 Burial Ground, 218-E-8 Burial Ground, and 218-E-13 Burial Ground. The 200-E burning pit is a burning pit and received construction and office waste, paint waste, and chemical solvents. The representative burial ground received dry waste packaged in card board boxes and plastic bags, and acid-soaked material. The wastes received at 218-E-1 and 218-E-8 burial grounds are mixed fission products and transuranic (TRU) dry waste. The 218-E-13 burial ground contains only fission products. It is not clear how the data obtained from the 218-E-12A burial ground will be representative for other burial sites cited above. This discrepancy should be clarified.	Accept. The selection of representative Burial Grounds will be reviewed and any discrepancy clarified.
218.	Section 9.2.3.2., Page 9-16, second paragraph Substitute "burial grounds" for "cribs".	Accept. "burial grounds" will be substituted for "cribs."
219.	Section 9.2.4.1.1, Page 9-17 The discussion on the selection of possible representative cribs and french drains for remedial investigation is not provided for the group containing nine cribs and nine french drains. Please provide. This comment is applicable for sections 9.2.4.1.3 through 9.2.4.1.6.	Accept. The selection discussion will be included.
220.	Section 9.2.4.1.2, Page 9-17 Clarify how Well 299-E24-111 moved from consideration as an ERA to becoming a "low-priority" site to be evaluated along the IRM path. If lack of a driving force is the prime criterion, then additional data should be collected to confirm there is no problem, which should occur during an LFI.	Accept. Clarification will be provided and additional data collection in an LFI will be considered.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
221.	Section 9.2.4.1.5, Page 9-18 Provide information on how, when, or if the RARA program will remediate these basins.	Reject. This level of detail is beyond the intent of this section.
222.	Section 9.2.4.1.6, Page 9-18 Clarify the explanation that the unplanned releases were assessed along the ERA path and the determination that they should be categorized (with two exceptions) as "low priority on the IRM evaluation path". Explain why 216-A-45 is not a candidate. According to Table 2-1, Page 2T-1i, 103,000,000 l of process condensate was released to this crib.	Accept. Clarification of the path assessment will be provided.
223.	Section 9.3.2, Page 9-20 A table should be included clearly indicating the assigned waste management units and unplanned releases in the redefined operable units, including which sites deferred to other aggregate areas or programs.	Accept. A table indicating the assigned waste management units will be provided.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
224.	Section 9.3.2, Page 9-21, lines 1-16 The UPR-200-E-59 unplanned release is reassigned to 200-PO-3 operable unit. The rationale provided for inclusion of this site to 200-PO-3 is not adequate. This unplanned release is associated with the use of contaminated mud and tumbleweeds from the 216-A-40 trench to build nests at the 244-AR vault by swallows (Table 2-5). The nests were removed from the 244-AR vault. The contaminated mud and tumbleweeds were removed from the trench. The sides of the trench were also washed. The only missing information is whether or not the trench is a potential source for further use of contaminated mud and tumbleweeds by birds. The text in Section 2.3.5.6 states that currently, the ditch is filled with several tumbleweeds, indicating a potential source for contaminant migration to other source areas. Hence, this unplanned release should be retained in the originally included operable unit 200-PO-1. The rationale provided to reassign the 216-A-16, 216-A-17, 216-A-23A, and 21-A-23B french drains from the 200-PO-5 operable unit (OU) to the 200-PO-3 operable unit is not justifiable. There is no relationship between the 241-A tank farm (200-PO-3 OU) and these french drains (200-PO-5 OU) in terms of any unplanned release, wastes handled and facility operation. Unless otherwise a good rationale is provided, these french drains should be retained in their original operable unit (200-PO5 OU).	Accept. Discussion of the rationale will be provided and movement of the unit will be considered.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
225.	Section 9.3.3, Page 9-21 A new order of prioritization is recommended with the 200-PO-4 Operable Unit being highest priority of investigation based on the largest quantities of contamination received by the cribs and french drains. But, some of the cribs and french drains that received largest quantities of contamination are included in other operable units. Examples include: • 216-A-2 crib - 200-PO-2 OU • 216-A-5 crib - 200-PO-7 OU • 216-A-7 crib - 200-PO-5 OU • 216-A-8 crib - 200-PO-5 OU • 216-A-9 crib - 200-PO-1 OU • 216-A-10 crib - 200-PO-2 OU • All french drains - 200-PO-1, 200-PO-2, 200-PO-3, and 200-PO-5. Hence, the recommended investigation prioritization is not acceptable and should be revised. The waste management units should be prioritized within each operable unit using numerical scores based on existing waste inventories and facility construction or operational information by professional judgement. Then, the operable units should be ranked from the total score of the WMUs for each operable unit. This will help to prioritize the operable units and the WMUs within the operable units.	Reject. This is beyond the scope of the AAMS.
226.	Section 9.3.4, Page 9-22, first paragraph State that remediation of these cribs under CERCLA can be provided such that remediation occurs no later than it would under the existing RCRA milestones.	Reject. Such assurance is beyond the scope of the AAMS.

14. Item	15. Comment(s) (Provide technical justification for the comment and proposed action to correct or resolve the comment.)	16. Disposition (Provide brief justification if NOT accepted.)
227.	Section 9.5, Page 9-24 The text states that Section 7.3 contains an outline of treatability testing needs, however Section 7.3 contains no such summary. Treatability testing needs should be clearly identified and presented in this section for the technologies retained (Table 7-3) that are applicable to most waste management units. Treatability studies for technologies identified for on-site treatment are not discussed in this section and should be. Treatment technologies for soil-treatment by-products should be identified, and treatability studies should be proposed for these technologies.	Accept. Discussion will be provided. (Ecology: Z-Plant comment #100.)
228.	Table 9-1, Page 9T-1a to 9T-1d The candidate sites recommended for evaluation and implementation under other AAMSs or programs such as RCRA and Hanford Surplus Facilities Program should be listed in this table under a separate column.	Accept. Table 9-1 will be revised to indicate operations program under "remarks" heading. If units do not appear in Table 9-1 they will be included in Table 9-3. (Ecology: Z-Plant comment #102 and U-Plant comment #79.)
	CHAPTER 10	
229.	Section 10.0, Page 10-4 References should be included for EPA 1989 Risk Assessment Guidance for Superfund, Volume 2, Environmental Evaluation Manual. Interim Final. EPA/540/1-89/001. March 1989. U.S. Environmental Protection Agency.	Accept. References will be included.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
S. H. Wisness, RL (D. B. Erb, WHC)	P. T. Day, EPA D. B. Jansen, Ecology	Incoming 9205962 Xref 9256011D

Subject: RESPONSE TO THE STATE OF WASHINGTON DEPARTMENT OF ECOLOGY'S (ECOLOGY) REVIEW OF THE PUREX SOURCE AGGREGATE AREA MANAGEMENT STUDY REPORT (AAMSR) DRAFT A

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	
		M. R. Adams	H4-55	
		L. D. Arnold	B2-35	
		R. A. Carlson	H4-55	
		G. D. Carpenter	B2-16	
		C. K. DiSibio	B3-03	
		D. B. Erb	H4-55	
		R. E. Lerch, Assignee	B2-35	
		P. J. Mackey	B3-15	
		H. E. McGuire, Level 1	B3-63	
		T. B. Veneziano	B2-35	
		T. M. Wintczak	L4-92	
		C. D. Wittreich	H4-55	
		R. D. Wojtasek	L4-92	
		EDMC	H4-22	

The attachment is the same as outgoing letter #9255999D tmp, 6-5211.