Confederated Tribes and Bands
of the Yakama Nation ERWM

Established by the
Treaty of June 9, 1855

1217605

October 18, 2012

Mr. Ron Skinnarland
Washington Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99354

RE: Comments on Draft Hanford Facility Dangerous Waste Permit (Site-Wide Permit), WA 7890008967

Dear Mr. Skinnarland:

The Yakama Nation ER/WM Program appreciates the opportunity to review and provide comments on the Draft Hanford Facility Dangerous Waste Permit (Site-Wide Permit), Revision 9 – WA 7890008967.

The Confederated Tribes and Bands of the Yakama Nation is a federally recognized sovereign pursuant to the Treaty of June 9, 1855, made with the United States of America (12 Stat. 951). The U.S. Department of Energy's Hanford site was developed on land ceded by the Yakama Nation under the 1855 Treaty. The Yakama Nation retains reserved rights to this land under the Treaty.

There is no issue of greater importance to the Yakama Nation than protection of, and respect for the treaty-reserved rights. Within this ceded area, the Yakama Nation retains the rights to natural and cultural resources including but not limited to areas of ancestral use, archaeological sites and burial grounds. These resources are sacred and sensitive to the Yakama Nation, and must be managed to preserve, protect and perpetuate the resources that are inseparable from our way of life.

Attached are our general and specific comments and requests for changes to the draft Hanford Facility Dangerous Waste Permit. We are attaching our comments on Ecology's State Environmental Policy Act (SEPA) determinations.

General Over-arching SEPA determination comments: Associated with the Permit are SEPA determinations for the specific units and an over-arching determination. Comments on these are attached and/or included in our comments on the draft Hanford Facility permit.

SEPA determinations:

1. Ecology has also chosen to implement a "Phase Review" despite the fact that SEPA checklists were or should have been submitted with the Part B Applications. If they were not then Ecology is not in compliance with WAC 173-303 in accepting the Application as complete. The SEPA regulations at WAC 197-11-060 specifically say that phased review can't be used if it would split up units and allow an agency to ignore the cumulative impacts of the units.

2. Ecology made an over-arching determination of non-significance (DNS). Ecology has no authority to make a DNS until it is known what all the Hanford Site mitigation plans will be.

3. At the very *minimum*, a determination of mitigated significance (MDNS) should have been the over-arching SEPA determination for the Hanford Facility based on the unit-specific SEPA determinations which indicated impacts or the need to mitigate impacts. Given these facts, even a MDNS has several concerns:

    a. This determination assumes units, such as the SST unit, can be completely mitigated so there is no environmental impact during the closure process, but the permit applicants have provided no such evidence.
    b. Any mitigation plans would have no EIS to confirm the extent or nature of the damage they claim to address without defensible justification.
    c. A mitigated determination can be slightly deceptive: it assumes that once a permit is in place, there is no environmental impact, while at the same time it does not require mitigation plans be implemented.
    d. Necessary mitigations within the unit-specific Permits should be included as required compliance conditions (Note: these mitigations are not evident in most permits).
    e. Permit condition requirements for cultural and biological reports are not SEPA compliant. When the SEPA checklists were submitted with the permit applications, this *already* should have been a part of the information provided. If not, Ecology should have indicated so in their decision and issued a MDNS. Ecology should delete these permit conditions and revise its SEPA determination.

General Over-arching Permit comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. *PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984*, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued. The draft permit does not comply with this EPA directive.

    Furthermore, there is a general lack of clarity, rationale and logic presented in the document(s). No rationale or logic presented in either the overarching or unit-specific Fact Sheets or the unit-specific Permits to support Ecology's decision-making process. (e.g., Modified/Partial closure of an individual unit is not authorized under WAC 173-303-regulations [*see* 1325-N]. More examples: Introduction page 6; Reorganization of tank farms reorganized into 7 WMAs is not clear.)

2. Use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303-610]. The unit descriptions imply closure actions to be done under a CERCLA work plan authority rather than the RCRA permit. Workplans do not fall under the WAC 173-303-830/840 modification/review process. Corrective Action decisions (should this approach continue) have their own comment periods and are outside the

Dangerous Waste regulatory process. Additionally, Tribal or public comment or right of challenge are not subject to the same rights as under the Dangerous Waste process. See YN ERWM comment letter on the II.Y condition and changes to the TPA (2010).

3. Use of *past-practice authority* has not proven to be the most efficient way to remediate groundwater plumes of mixed waste from a combination of past-practice treatment, storage, and disposal units. Ecology's earlier "coordination" of corrective action at 300 APT with CERCLA remedial actions has not resulted in compliance with Dangerous Waste regulations –WAC 173-303-283, -610, -or -645 requirements to protect human health or the environment. More stringent facility cleanup standards should be applied. Ecology should implement groundwater monitoring plans compliant with WAC 173-303.

4. WAC 173-303-645-(1)(e) requires the director to determine that *it is not necessary to apply the requirements of this section because the alternative requirements will protect human health and the environment.* The required determination has not been made as there are no alternative requirements in place. Furthermore, it is inappropriate to prospectively accept CERCLA work via the II.Y conditions as satisfying the Dangerous Waste WAC 173-303-645/646 corrective action permit while the remedy selected remains an unproven technology.[1] Ecology should include WAC 173-303-610 and -645 requirements for soils and groundwater cleanup.

5. Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.

6. Permits use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610(3) requirements; this approach is the prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements as these CERCLA documents don't yet exist. Ecology should include WAC 173-303-610(3) requirements.

7. No Performance Standards are included in the permit as required by WAC 173-303-283. Ecology should revise Part II conditions and unit-specific permit condition(s) to include the following: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric

[1] The preferred remedial alternative for the protection of groundwater relies on the application of polyphosphate solution to deeper zones of uranium contamination. Polyphosphate remediation has been previously attempted in the 300 Area and has proven to be both problematic and ineffective. In the event that the polyphosphate application does not reduce the mobility of uranium in the deep subsurface, the proposed alternative specifies that no additional treatment will be applied.

cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land). However, use of Methods A and C to meet cleanup standards is in violation of previous commitments by DOE to unrestricted residential use along the River Corridor. Additionally the Hanford site does not meet the criteria for application of Method A; it has too complex waste streams to qualify.

Ecology should include the following closure performance standards for contaminated soils to ensure compliance with the Dangerous Waste Regulations:

- Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
  - Direct contact consistent with WAC 173-340-900 (Table 745-1),
  - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
  - Protection of ecological receptors achieved through one of the following methods:
    a. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
    b. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
    c. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

8. Permits lack conditions identifying required clean closure of, or excavation of near-surface soil and removal of any associated pipelines or structures (ancillary equipment) per WAC 173-303-283 performance standard requirements. Ecology should include requirements for RTD under WAC 173-303-630(10), -640(8), and -650(6).

9. The permits do not utilize the Closure Plans submitted in the Part B applications (2004). Ecology should utilize these closure plans and write appropriate Closure Permit conditions to rectify any non-compliance with unit specific closure requirements under WAC 173-303, and include these Closure Plans and/or Permit Conditions within the Permit(s) to ensure compliance with WAC 173-303-610. Ecology should ensure closure plans are consistent with unit-specific Dangerous Waste Regulations (e.g., WAC 173-303-650 Surface Impoundment regulations) as well as the rest of WAC 173-303.

10. All Addenda identified as "reserved" must include the WAC 173-303 required information in order to be in compliance with the regulations and be included in their respective unit permit (e.g., Sampling and Analysis Plans). Ecology should include required information.

11. All Addenda included in the permit should include the unit specific information, not merely reference a document (e.g., Training Plans are located in the unit-specific file rather than the permit, possibly confusing to the permittee. Definitely confusing to the public). Ecology should include these types of documents as attachments to their respective Permit Addendum.

12. Permits do not include Ecology approved and Dangerous Waste WAC 173-303 compliant RCRA Groundwater Monitoring Plans as attachments to unit specific Permits within their Closure Plan Addenda. Groundwater monitoring plans are not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). The permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing. Ecology should

include these requirements to ensure compliance with Dangerous Waste regulations – WAC 173-303.

13. Some Permit conditions include incorrect use of waivers [variances] to closure regulations (WAC 173-303-610(4)(b). Ecology should delete this waiver language.

14. Modified/Partial closure of an individual unit is not authorized under WAC 173-303 regulations and is included as an option in permit closure [*see* 1325-N). Ecology should delete this language and update the Permit to reflect compliance with WAC 173-303-610(3) and other WAC 173-303 requirements.

15. All unit-specific groundwater monitoring plans should be consistent with Ecology Publication # 04-03-030, *Guidelines for Preparing Quality Assurance Plans for Environmental Studies*. Ecology should include this as a requirement in all Permits.

16. Permits' Contaminant of Concern (COC) lists do not encompass the full range of contaminants. Ecology should include, in each unit-specific Permit, the full list of COCs as noted or identified in associated draft RI/FS documents previously submitted to Ecology (e.g., Part V Permit unit-specific permits do not include COCs from earlier submitted RI/FS done to support submittal of Closure Plans: *see* DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7).

17. Permit conditions do not require use of a methods-based approach in the unit-specific Sampling and Analysis Plans. Nor is use of non-filtered sampling in the Sampling and Analysis Plans required. Ecology should include requirements for these in unit-specific Permit conditions (or include a Part II condition applicable to all units) to ensure compliance with WAC 173-303 regulations.

18. Permit conditions do not require repairs and replacement of wells per WAC 173-160. Ecology should include Permit condition(s) to require compliance with these requirements.

19. Permit conditions do not require coordination and incorporation of RCRA inspection requirements for the unit-specific permits with those for the associated CERCLA groundwater operable unit's. Inspection should at a minimum, be on a semi-annual basis. Ecology should include permit conditions to require coordination of inspections for unit-specific permits with those for the associated CERCLA groundwater operable unit's requirement.

20. Permit conditions do not ensure that <u>all</u> unit-specific Closure Schedules are compliant with the Dangerous Waste WAC 173-303-610 requirements or 173-303-815(3)(b). Ecology should require this.

21. Statements are made in several permit conditions to the effect that the Permittee has made the determination that the unit cannot meet clean closure standards. This text should be deleted and rewritten to reflect that Ecology makes permitting decisions in accordance with WAC 173-303.

22. The Permit does not include a list of other applicable laws or required permits, nor are there conditions which reflect how compliance of these will be achieved. Ecology should identify these in each permit.

23. Ecology should evaluate and confirm that all information on these Part A forms is consistent with Washington State Dangerous Waste Permit Application; Part A Form and Instruction publication ECY 303-31 (6-2003) requirements as well as information presented in the SEPA checklists submitted with the Part B Permit application, the unit(s) specific draft Permit Conditions, and the draft factsheet(s) (e.g., the LLBG Part A form and the permit indicates in-trench treatment or placement of liquids within landfill; this is not allowed by the landfill regulations).

24. Ecology should review and revise Part V (Closing) Permits to ensure compliance with Land Disposal Restrictions (LDRs) – WAC 173-303-140.

25. Ecology should review and revise Part V (Closing) Permits to ensure that non-existent Part II conditions are not cited (e.g.1301-N).

26. Radionuclides are not regulated under Dangerous Waste Regulations at WAC 173-303. Instead they are regulated under CERCLA regulations at 40 CFR 300. However, Ecology should ensure that anticipated remedial actions for radioactive constituents shall be consistent with the closure activities required under WAC 173-303 by ncluding language as such in all Permit conditions.

27. The basis for permit conditions is incorrectly stated as coming from CERCLA & TPA Milestone requirements rather than first identified as requirements under the Dangerous Waste regulations. It is very difficult to track permitting actions in referenced rather than attached/included documents. A matrix approach whereby the applicable sections of the CERCLA documents are directly included in the permit, rather than referenced, is more transparent and publicly accessible. Concerns regarding "double jeopardy" could be eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA Dangerous Waste WAC 173-303 permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary. Ecology should develop this matrix approach.

28. Permit lacks a Part II condition of the definition of the term "Critical Systems." Ecology should include following definition: "Critical Systems, as applied to determining whether a Permit modification is required, means those specific portions of an operating unit group's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, or systems which include processes which treat, transfer, store, or dispose of regulated wastes." Changes to specific portions of a dangerous waste management TSD identified as a critical system are subject to the permit modification requirements of WAC 173-303-830.

29. The permit lacks a Part II condition of the definition of the term "Ancillary Equipment." Ecology should include following definition: "The term 'ancillary equipment' means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter or control the flow of dangerous waste from its point of generation to a storage or treatment tank(s), between dangerous waste storage and treatment tank(s) to a point of disposal on-site, or to a point of shipment for disposal off-site."

30. Ecology should include the 324 Building in the Permit. Due to the B-Cell leak which requires extensive cleanup, this unit should be included in the Permit at the very least as a Part IV Corrective Action Unit. See attached comment file for the 324-Building.

31. Ecology should include the U.S. Ecology Low-level Radioactive Waste (LLRW) landfill in the Permit. As the landowner the Permittee is an "owner" of the landfill and as such is ultimately responsible for its operation, which includes management of dangerous waste in both its past practice and TSD inventory.

32. Off-site wastes should not be permitted to be buried on the Hanford site until a cumulative Risk Assessment indicates there will be no exceedances of groundwater cleanup standards. Ecology should include Permit conditions indicating as such to ensure large volumes of waste do not come to Hanford for disposal.

33. This is a new permit, not a revision of a permit. It should not be identified as Rev.9.

Over-arching Comments for Part V permit units:

1. Ecology should utilize the Closure Plans submitted in the Part B application and write appropriate Closure Permit conditions to rectify any non-compliance with unit specific closure requirements under WAC 173-303. Closure plans for some units reflect decisions based on the 1990s-era data embedded in the plans that should be viewed with considerable skepticism. As examples:
    - For 1301-N, the closure plan cites a DOE document stating that mercury will not reach groundwater for 1,000 years.
    - Also for 1301-N, the plan cites an assertion from DOE that there is not lateral movement of metals in the vadose zone. This broad assertion for all metals appears to be based on analysis of one metal (mercury) in one borehole.
    - At 1324-N/NA, it is asserted that there is no need for a cap. This conclusion is based on a claim that there is no driver for contaminant movement because precipitation will not reach groundwater for 200 years.

2. The groundwater monitoring plan for 183-H defines a local background concentration for chromium of 122 ug/L. While this might have been the concentration in plumes emanating from 100-D, it is difficult to accept this as a "background" concentration against which treatment effectiveness at the 100-F area can be meaningfully evaluated.

3. Ecology should ensure the approved closure plan is consistent with unit-specific Dangerous Waste Regulations-WAC 173-303 (e.g., Surface Impoundment regulations).

4. Ecology should include approved Closure Plans and/or Permit Conditions within the Permit(s) to ensure compliance with WAC 173-303-610 and unit specific closure requirements, and should not presumptively approve plans that do not yet exist. There is a lack of requirements for submittal of closure plans in the new RCRA Permit. Reference to closure actions under non-existent CERCLA document violates DW closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3).

5. Ecology should include Ecology approved and Dangerous Waste WAC 173-303 compliant RCRA Groundwater Monitoring Plans as attachments to unit specific Permits within their Closure Plan Addendums.

6. All Addendums identified as "reserved" should include the WAC 173-303 required information in order to be in compliance with the regulations.
7. Ecology should require all unit-specific groundwater monitoring plans be consistent with Ecology Publication # 04-03-030, *Guidelines for Preparing Quality Assurance Plans for Environmental Studies*.

8. Ecology should include in each unit-specific Permit the full list of COCs as noted or identified in unit- associated draft RI/FS documents previously submitted to Ecology.

9. Ecology should require use of a methods-based approach in the unit-specific Sampling and Analysis Plans.

10. Ecology should require use of non-filtered sampling in the Sampling and Analysis, and require repairs and replacement of wells per WAC 173-160.

11. Ecology should require the unit-specific training plans are included directly within the Training Addenda.

12. Ecology should coordinate and incorporate RCRA inspection requirements for the unit-specific Permits with those for the associated CERCLA groundwater operable unit's.

13. Ecology should ensure that all unit-specific Closure Schedules are compliant with the Dangerous Waste WAC 173-303-610 requirements or 173-303-815(3)(b).

14. Ecology should review and revise Part V (closing) Permits to ensure compliance with Land Disposal Restrictions (LDRs).

15. Ecology should review and revise Part V (closing) Permits to ensure that non-existent Part II conditions are not cited (e.g.1301-N).

16. All RCRA TSD closure performance standards must use MTCA Method B cleanup levels. Ecology should include Permit conditions to ensure closure of a RCRA TSD facility as described in the Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

    To ensure compliance with the Dangerous Waste Regulations, Ecology should include the following closure performance standards for contaminated soils:

    - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
    - Direct contact consistent with WAC 173-340-900 (Table 745-1),
    - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
    - Protection of ecological receptors achieved through one of the following methods:
        a. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or

b. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
c. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

17. Permit(s) should include compliance schedules in accordance with WAC 173-303-610 closure regulations.

18. Ecology should include a Permit condition requiring submittal of all RD/RA work Plans to Ecology as subject to WAC 173-303-830/840 Permit modification process.

19. Ecology should include permit condition(s) for the contingency for additional cleanup should selected remedies, whether carried out under RCRA or CERCLA, prove to be inadequate (e.g., restoration of groundwater as an example).

The Yakama Nation ERWM Program looks forward to dialog on these concerns and comments. We hope that these comments will be helpful in evaluating the draft Hanford Site-Wide Permit.

If you have any questions, please contact me at (509) 945-6741, or Jean Vanni (509) 945-1100.

Sincerely,

Russell Jim, Manager
Yakama Nation
ER/WM Program

Attachments

cc: Matt McCormick, U.S. Department of Energy, Richland Office
Scott Samuelson, U.S. Department of Energy, Office of River Protection
Dennis Faulk, U.S. Environmental Protection Agency
Jane Hedges, Washington State Department of Ecology
Stuart Harris, Confederated Tribes of the Umatilla Indian Reservation
Russell Jim, Yakama Indian Nation
Gabriel Bohnee, Nez Perce Tribe
Ken Niles, Oregon Department of Energy
Susan Leckband, Hanford Advisory Board
Ken Niles, Oregon Department of Energy
Marlene Shavehead, Yakama Nation ERWM
Tom Zeilman, Yakama Nation
Administrative Record

Attachments to 10/18/2012 ER/WM letter signed by R. Jim to R. Skinnarland
re: Comments on Draft Hanford Facility Dangerous Waste Permit (Site-Wide Permit), WA 7890008967

1) The YN ERWM program requests the following changes to the draft Parts I & II conditions of this Permit: General comments and requests (6 pages)
2) General Over-arching SEPA determination comments (4 pages)
3) The YN ERWM program requests the following changes to include in the Hanford Site RCRA Permit *Definitions* (1 page)
4) The YN ERWM program requests the following changes to the draft 300 Area Process Trenches (300 APT) draft permit (10 pages)
5) The YN ERWM program requests the following changes to the draft 1324-N Impoundment and 1324-NA (1 page)
6) The YN ERWM program requests the following changes to the draft 242-A Evaporator permit (3 pages)
7) The YN ERWM program requests the following changes to the draft 183-H Solar Evaporation Basins permit (6 pages)
8) The YN ERWM program requests the following changes to the 216-A-36B Crib permit (7 pages)
9) The YN ERWM program's comments and requests for the following changes to the draft CA-1 Waste Management and CA-2 Groundwater Operable Units permits (1 page)
10) The YN ERWM program requests the following changes to the draft 222-S (Laboratory) Dangerous & Mixed Waste Permit (1 page)
11) The YN ERWM program requests the following changes to the draft 207-A South Retention Basins (SRB) permit (7 pages)
12) The YN ERWM program requests the following changes to the draft 216-A-29 Ditch permit (7 pages)
13) The YN ERWM program requests the following changes to the draft 216-B-3 Pond & Ditch permit (7 pages)
14) The YN ERWM program requests the following changes to the draft 216-B-63-Trench permit (6 pages)
15) The YN ERWM program requests the following changes to the draft 216-A-37-1 Crib permit (7 pages)
16) The YN ERWM program requests the following changes to the draft LERF/ETF Permit (5 pages)
17) The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trench 94 permit (1 page)
18) The YN ERWM program requests the following changes to the draft Double Shell Tank System and 204-AR draft permit (1 page)
19) The YN ERWM program requests the following changes to the draft 241-CX Tank System permit (6 pages)
20) The YN ERWM program requests the following changes to the draft 325 Hazardous Waste Treatment Units (1 page)
21) The YN ERWM program requests the following changes to the draft 400 Area Waste Management Unit permit (1 page)
22) The YN ERWM program requests the following changes to the draft 1301-N Liquid Waste Disposal permit (10 pages)
23) The YN ERWM program requests the following changes to the draft 1325-N Liquid Waste Disposal permit (7 pages)
24) The YN ERWM program requests the following changes to the draft Central Waste Complex permit (11 pages)
25) The YN ERWM program requests the following changes to the draft Hexone Storage and Treatment Facility permit (6 pages)
26) The YN ERWM program requests the following changes to the draft IDF Permit (2 pages)
27) The YN ERWM program requests the following changes to include the 324 Building into the Part IV, Hanford site RCRA Permit (3 pages)
28) The YN ERWM program requests the following changes to the draft NRDWL permit (1 page)
29) The YN ERWM program notes the following are to most of the Part V unit permits and requests these changes be considered as comments and applied to all the draft permits in Part V (1 page)
30) The YN ERWM program requests the following changes to the draft PUREX permit (1 page)
31) The YN ERWM program requests the following changes to the draft Single Shell Tank Unit permit (11 pages)
32) The YN ERWM program requests the following changes to the draft T-Plant Complex Permit (1 page)
33) The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trenches 31 & 34 permit (13 pages)
34) The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trench 94 permit (1 page)
35) The YN ERWM program requests the following changes to the Waste Encapsulating Storage Facility (WESF) draft permit (1 page)
36) The YN ERWM program requests the following changes to the draft Waste Receiving and Processing Facility (WRAP) permit (1 page)
37) The YN ERWM program requests the following changes to the draft Waste Treatment and Immobilization Plant Unit (2 pages)
38) The YN ERWM program requests the following changes to the draft 216-S-10 Pond & Ditch permit (8 pages)

The YN ERWM program requests the following changes to the draft Parts I & II conditions of this Permit:
General comments and requests:

- Revise Part II Conditions to include Ecology oversight of groundwater for the Hanford site for all TSD units. WAC 173-303-610 and WAC 173-303-645 have requirements for groundwater monitoring plans. These plans must have SAPs. Groundwater monitoring plans are a part of the permit application for permit renewal. They are also apart of Closure Plans. Closure Plans are required to be in the RCRA Permit following the WAC 173-303-830 permit modification process.
- The manner in which the new permit condition II.F.2.a is structured will allow use of a CERCLA SAP outside of the WAC 173-303-830 process and outside of the public involvement process under RCRA. Resulting in less review opportunity & the possibility of changes made to GW monitoring plans (and SAPs) during Unit Managers Meetings by agreement of Project Managers only. Ecology could resolve this by extracting from the CERCLA document(s) those sampling actions/requirements which meet the WAC 173-303-610, -645, and -110 requirements and making an Ecology document which is directly incorporated into the Permit along with the Closure Plan or the Corrective Action Plan;
  or there could be a table of contents within the CERCLA document which identifies those portions of the document which are applicable to RCRA TSDs or Corrective Action units & these sections could be directly cited into the Permit. Either of these actions would allow for changes to the SAPs and the GW monitoring Plans to be subject to the review process of WAC 173-303-830. Claims of duplication of efforts is nil as Ecology is the owner of the permit and Ecology has authority of oversight of the Permit and is the agency in charge of modifications to the permit and redistribution of changed pages to the permittee.
- Include a Part II condition requiring demonstration of adequate soil characterization (including the vadose zone using WAC 173-303-815 its omnibus authority) of all permitted facilities [examples: tank farms; cribs; ponds; and trenches]. Include/revise Part II conditions to require statistically based sampling designs.
- It is unclear how Well Remediation and Abandonment and Well Construction compliance with RCRA is ensured. Include these requirement under WAC 173-303-815 authority.
- Revise Part I and II Conditions to include Performance Standards per WAC 173-303-283.
- Revise Part I and II Conditions to include waste analysis/sampling analysis plan(s) criteria per WAC 173-303.
- Revise the II. Y Condition to reflect the 2010, II. Y condition which better retains Ecology's ability for RCRA oversight of corrective action on the Hanford site and retains Tribal and public involvement/review opportunities of documents relating to Hanford site cleanup.
- Throughout new Part II Conditions, the Corrective Action units are excluded from Permit oversight or compliance with Part I & II permit requirements. Nor does the new permit indicate there will be unit-specific requirements. Deferring corrective actions to CERCLA does not preclude compliance with WAC 173-303. Include Part IV units as subject to Parts I and II requirements.
- Requirements to comply with WAC 173-303-810(6) are not evident. Include new permit condition to ensure compliance. Ensure proper design and construction of the Facility such that it is operated and maintained to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous substance to air, soil, ground water, or surface water, which could threaten human health, or the environment. Ensure any changes to approved designs, etc. are formally documented, subject to WAC 173-303-830, and records maintained.
- Air Emission ~~Standards for Process~~ Vents, Equipment Leaks, Tanks, Surface Impoundments, and Containers deleted: Include Part II permit condition requiring compliance with the applicable requirements of 40 CFR Subparts AA, BB, and CC, which are incorporated by reference at WAC 173-303-690 through 173-303-692. Include a condition(s) to ensure that effluent pollutant levels in stack exhaust meet human health exposure criteria at the point of release.
- Include a Part II (or Unit-specific Permit(s) condition(s) requiring submittal of a modification request when any unit-specific new waste streams have been identified and that this modification goes out for public comment and review. Any modification requests for additional or new waste codes should go out for public review under WAC 173-303-830.
- Include a Part II permit condition requiring the use of a Risk Budget Tool to model cumulative effects to groundwater. The permit condition should also include requirements for submittal of the parameters used in the Risk Budget Tool and their selection subject to the permit modification process. Do not to base the risk budget tool on non-validated models.

Specific comments:

I.A.4.a: As drafted, this condition allows for modifications which may not be authorized under the Dangerous Waste WAC 173-303-610(3) regulations [e.g., SAPs developed under CERCLA for use with RCRA TSDs cleanup actions are not directly in the RCRA permit as an attachment to an addendum-only 'referenced.' Changes are possible outside the WAC 173-303-830/840 process [i.e., Changes made to number of contaminants sampled or frequency of sampling without Public Involvement review opportunities. There is no access to records of changes unless you track Unit Manager Minutes]. Request rewrite to state: Each TSD unit shall have an application for a final status Permit or closure/post-closure plan submitted to Ecology in accordance with the schedules identified in the HFFACO. After completion of the Permit application or closure plan review, a final Permit decision will be made pursuant to WAC 173-303-840. Specific Conditions for each TSD Unit shall be incorporated into this Permit in accordance with the Class 3 Permit modification procedures. Changes in Permit referenced TPA schedule dates are subject to WAC 173-303-830/840 to ensure compliance with the Dangerous Waste regulations. Delete reference to II.R. Note: Edit Permit Condition II.R to reflect this change.

I.A.5: Edit to clarify changes in Permit referenced TPA schedule dates are subject to WAC 173-303-830/840 to ensure compliance with the Dangerous Waste regulations (e.g., WAC 173-303-610). As stated, Ecology presumptively agreeing to future requirements (e.g., CERCLA actions to satisfy RCRA corrective actions).

I.A.6: Provide clarification as to the authority which allows non-compliance with Part I & II conditions.

I.C.3: Include somewhere within this condition following text: (*e.g., This process shall apply to modifications to changes in design or operations of the Facility, or any modification or change in dangerous waste management practices covered by this permit.)*

I.D.2: Delete (b): This is a final status facility permit.

I.E.3: Include the following text: *All releases, regardless of location of release, or quantity of release, shall be controlled and mitigated, if necessary, as required by WAC 173-303-145(3).*

I.E.4.a: Edit to include required Quality Control procedures.
I.E.4.b: Provide clarification as to Ecology's authority to allow Permittee to operate equipment which does not have manufacturer's instructions or to perform other actions which do not have applicable regulatory or code requirements.

I.E.5: Include WAC 173-303-390(3)(c).

I.E.6.b: Include WAC 173-303-390(3)(a).

I.F.1.b: New I.F.1.b includes text allowing choice and use of a sampling method not authorized through the regulations. WAC 173-303-110(1) states: *Quality control procedures specified by the testing method or an approved equivalent method must be followed for the analytical result to be considered valid for designation.* WAC 173-303-110(4) states: *Substantial changes to the testing methods described above will be made only after the department has provided adequate opportunity for public review and comment on the proposed changes.*

Delete text and require compliance with WAC 173-303-110(1) and WAC 173-303-110(4).

I.F.2.c: Request new permit condition *I.F.2.c: The Permittees will comply with the requirements of WAC 173-303-810(11)(3), incorporated by reference.*

I.F. 3.a: Condition does not include corrective action units in Part IV of the Permit. Monitoring reporting under WAC 171-303-810(11)(d) must include monitoring of the facility's impacts. WAC 173-303-requires corrective action units must be in the Permit. Include Part IV units.

I.F.5: Also cite compliance with WAC173-303-145(2) which requires immediate notification of a spill or nonpermitted discharge.
I.F.5.a: Include text requiring the description of the occurrence and its cause will include all information necessary to fully evaluate the situation and to develop an appropriate course of action.

I.F.6.a: Delete "as appropriate." Meaning is unclear.

I.F.7: Question: Why doesn't Ecology use its omnibus authority (WAC 173-303-815(2) to require 30 days advanced notice of any planned changes and notification immediately after the Permittees become aware of the anticipated noncompliance should a 30 day advance notice not be possible?
I.F.7.a: Statement is made; "An instance of noncompliance under is requirement may instead be documented by inclusion in the Hanford Facility Operating Record maintained pursuant to Permit condition II.I [WAC 173-303-810(14)(g). It is unclear whether intent is to allow non-reporting of such occurrences. Request use of term 'will' instead of 'may be'.

I.H: Permit condition unclear. Requirement to reapply belongs under Permit condition I.E [Duties & Requirements]. Example presented citing when issuance is impracticable due to time or resource constrains is not authorized under WAC 173-303. Request the deletion of this condition.

I.J.1.a: Rewrite to include:

- Include requirement to comply with WAC 173-303-390(2)(h) which requires a description of the changes in volume and toxicity of on-site waste in comparison to previous years.
- To facilitate public involvement/Tribal involvement, include requirement that all reports, required WAC 173-303-810 & WAC 173-303-390, with the exception of the Annual Report, be maintained in the Hanford Facility General Operating Record & the unit specific record files concurrently.

II.A.1: Text states compliance with "enforceable" sections of Permit Attachment #4. Everything in the Permit should be enforceable. Ecology can and should extract those sections of the document(s) that are the basis of a Permit requirement and write their own document(s) and include them as Permit attachments. There is not duplication of efforts as Ecology is the owner of the Permit and Ecology is required to issue modifications to the Permit under WAC 173-303-815, -830-840. Ecology then provides the updates to the Permittee. (NOTE; whereas previous specific subsections of a WAC requirement were identified, the full requirement is now cited. When a full WAC regulation is cited without a specific call out of a subsection, the entire section is considered to apply. (ex WAC 173-303-350 is full cite of all subsections as applied vs. specific identification of subsection being applied -WAC 173-303-350(4))

II.A.2: Include citation: WAC 173-303-830(4) requirements for the permit modification process.

II.B.1: Cites design, construction, operations, and maintenance under WAC 173-303-340 requirements. Include WAC 173-303-283 [Performance Standards] citation.

II.C: Include new Permit condition *II.C.5.d: The Permittees shall provide the necessary training to non-Facility personnel (i.e., visitors, sub-contractors) as appropriate, for the locations of such personnel, and the activities that will be undertaken. At a minimum, this training shall describe dangerous waste management hazards at the Facility. [use WAC 173-303-815(2)].*

II.D: Clarification and editing required throughout:

- Unclear whether there will be written waste analyses or sampling analyses plans (WAPs & SAPs) required for each TSD or Corrective Action Units. Edit condition to reflect this be required subject to WAC 173-303. Retain compliance requirements under WAC 173-303-815(2).
- Unclear whether these 'plans' will be subject to compliance with the requirements of WAC 173-303-110 or WAC 173-303-610 or WAC 173-303-830/840 processes. Edit condition to reflect all SAPS to be subject to these WAC 173-303- requirements.
    - (Note: New condition II.D.2.a. references newly revised conditions II.Y.2. This process affects all land-based units [including the tank farms in the future]. While stating that if the work done under CERCLA is

not accepted the Permittees will have to comply with WAC 173-303-300 [waste analysis requirements], Ecology is implying that WAPs & SAPs developed under corrective actions through the HAFFCO will not be subject to the same modification and public involvement review process as afforded by RCRA-WAC 173-303-830/840. Unsaid is the inferred agreement that changes to these plans maybe agreed to during Unit Manage Meetings by Project Managers as currently allowed under the HFFACO.)

- Unclear how this Condition ensures compliance with the requirements off WAC 173-303-300(4) & (5). Citation of only these subsections WAC 173-303-300 is incomplete compliance with WAC 173-303-300 regulations. Include compliance with all WAC 173-303-300.
- Basis for Quality Assurance/Quality Control in WAPs/SAPs unclear. Request inclusion of text requiring consistency with Ecology Publication # 04-03-030 [Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies].
- Unclear why requirements for meeting the additional waste analysis requirements as specified in WAC 173-303-140(4)(b), 173-303-395(1), 173-303-630 thru 173-303-670 and 40 CFR 264.1034, 264.1063, 284(a) and 268.7 have been deleted. Include new condition requiring compliance with these requirements.
- WAP/SAP requirements for off-site facilities deleted. Include new condition to ensure compliance with WAC 173-303-300(3), (5)(g) & (6) and WAC 173-303-380(j through n).
- Within new waste analysis conditions, cannot locate requirement to comply with WAC 173-303-300(2)(b)[recordkeeping]. Include compliance with these requirements.

II.F: Clarification and editing required.

- New II.F.2.a states permittee will satisfy groundwater protection and monitoring requirements by use of alternative requirements and schedules in the HFFACO. Revise TEXT to state "may". Ecology must first make a determination that the proposed groundwater monitoring plan meets the requirements of WAC 173-303-645; as currently stated, Ecology is making presumptive agreements and does not have this authority. Not all TSD units satisfy the criteria listed. A decision must be 'consistently applied' over the facility [i.e., every instance] or the decision is subject to challenge on the basis of being arbitory and capricious.
- New II.F.2.b states the Permittee will promptly identify to Ecology any document etc. As written, this document bypasses the WAC 173-303-830 modification and public involvement process and implies approval without Ecology review or need to incorporate changes into the Permit through reviews. It appears to say that the HFFACO is the authority by which Ecology does permitting oversight. This appears to be in violation of the authority granted Ecology by EPA to do oversight of the Hanford Facility under the Dangerous Waste regulations of WAC 173-303.
- Evaluation of the applicability of vadose zone monitoring deleted. Purgewater Management requirements deleted. Include Part II Permit condition(s) to reflect compliance with WAC 173-303.
- Unclear how Well Remediation and Abandonment and Well Construction compliance with RCRA is ensured. Include these requirement under WAC 173-303-815 authority.

II.I: Clarification and editing required.

- Edit II.I.1 to state: The Permittee will comply with WAC 173-303-380(1) in its entirety, -380(3) AND -810(11), incorporated by reference, in addition to unit-specific recordkeeping and reporting requirements specified in Parts, III, IV, V, and VI.
- Edit II.I to include a permit condition requiring identification and description of the system(s) currently utilized to generate Occurrence Reports. Require identification of on-site location of hard-copy Occurrence Reports, an identification of on-site access to the systems' data, and an on-site contact name and telephone number [utilize WAC 173-303-815(2) authority].
- Edit II.I to include a permit condition requiring compliance with WAC 173-303-390(1).
- Edit II.I to include a permit condition requiring compliance with WAC 173-303-360(2)(k).
- Edit II.I to include a permit condition requiring compliance with WAC 173-303-610(10) and inclusion of these records in the Facility Operating Record.
- Edit II.I.to include a permit condition requiring compliance with WAC 173-303-390(2) & (3).
- Edit II.I.5 to read: *The following, but not limited to, records will be placed in the Hanford Facility Operating Record, in addition to the recordkeeping requirements specified elsewhere in this Permit.*

- Edit II.I.5.b to read: *Summaries of all records of corrective actions and including summaries of all records of groundwater corrective action required by WAC 173-303-645.*

II.J: Edit to include condition requiring compliance with WAC 173-303-610(2) and WAC 173-303-283.

II.N: Unable to locate compliance with WAC 173-303-395 regarding loading of manifest wastes from off-site. Include permit condition to read: *The Permittees will comply with the requirements of WAC 173-303-395(1) and WAC 173-303-395(4).*
II.N: Include new condition: *The Permittees will comply with the requirements of WAC 173-303-300(6).*
II.N: Include new condition: *All non-containerized solid, dangerous waste transported to or from TSD units, subject to this Permit, be covered to minimize the potential for material to escape during transport.*
II.N.3: Edit to include required compliance with WAC 173-303-190.
II.N.5: New condition II.N.5 allows incomplete resolution of discrepancies; Edit text to also include requirement that discrepancies must be reconciled within 15 days in compliance with WAC 173-303-370(4)(b).

II.O: New condition II.O states modification to LDR requirements may be modified by treatment requirements set forth in the HFFACO or as modified by treatment requirements set forth in the Permit. Ecology appears to be giving presumptive approval to allow changes to Land Disposal Restrictions based on approval changes granted under the HFFACO. Ecology does not have the authority to guarantee changes to LDRs through any process but that which is outlined in WAC 173-303-140 and through the WAC 173-303-830 permit modification process. Edit this text to ensure compliance with WAC 173-303-140 and WAC 173-303-830.

II.Q: Include permit condition: *All air emissions from TSD units subject to this Permit shall comply with all applicable state and federal regulations pertaining to air emission controls, including but not limited to, Chapter 173-400 WAC, General Regulations for Air Pollution Sources; Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants; and Chapter 173-480 WAC, Ambient Air Quality Standards and Emissions Limits for Radionuclides.*

II.R: Edit or delete: New II.R Condition states modification to RCRA facilities' permit compliance schedules will not be subject to the WAC 173-303-830 process. [e.g., Changes in the HFFACO milestones for submittal of Closure Plans or other types of documentation used to support RCRA permitting decisions [SAPs/RI/FS/DQO]. Include requirement to comply with WAC 173-303-830 for any changes in the HFFACO milestones affecting units in the Hanford Facility Permit. Require copies of correspondence regarding schedule extension to be kept in the Operating Record.

II.T: Edit to include required compliance with WAC 173-303-390(2).

II.Y: The Yakama Nation-ERWM program does not support the new changes to the II.Y. Condition(s) and request Ecology Revise the II. Y Condition to reflect the 2010, II. Y condition(s).

- There is high concern that our treaty rights, including full access to cultural resources on the Hanford Site by the Yakama Nation, the protection of the health of Yakama Nation tribal members and the environment, and Land Use Agreements (Open and Unclaimed Lands) maybe in jeopardy (*see comments on 1325-N for further clarity*).
- These changes impact the Public Involvement process of WAC 173-303-830/840 and limit the Yakama Nation-ERWM program's opportunities to challenge or seek modification of corrective action decisions in the future. We do not believe that Ecology's reservation of authority to review and impose corrective actions after completion of CERCLA actions will afford us the same opportunities for Public Involvement as provided through the Dangerous Waste Regulations for permit modification(s).
- The purpose of corrective actions is to ensure full characterization of releases to the environment. Such characterization is necessary to define the nature and extent of contamination. We do not believe corrective actions performed under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) actions will be as complete and have cleanup levels as stringent as under RCRA corrective actions (i.e., particularly the characterization of the vadose zone beneath units subject [e.g. 'Green Islands'-LLBG] to the II.Y. Condition(s)). (*see comments on 300 APT for further clarity*).
- Use of *past-practice authority* has <u>not</u> proven to be the most efficient way to remediate groundwater plumes of mixed waste from a combination of past-practice treatment, storage, and disposal units. Ecology's earlier

"coordination" of corrective action at 300 APT with CERCLA remedial actions has not resulted in compliance with Dangerous Waste regulations –WAC 173-303-283, -610, -or -645 requirements to protect human health or the environment. More stringent facility cleanup standards should be applied.

- For further clarification, see out 6/21/2010 comment response letter on Review of the Corrective Action Class 3 Permit Modification of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit (WA 7890008967), Introduction and II.Y Conditions. These concerns remain relevant.

General Over-arching SEPA determination comments: Associated with the Permit are SEPA determinations for the specific units and an over-arching determination. Comments on these are attached and/or included in our comments on the draft Hanford Facility permit.

SEPA determinations:

1. Ecology has also chosen to implement a "Phase Review" despite the fact that SEPA checklists were or should have been submitted with the Part B Applications. If not Ecology is not incompliance with WAC 173-303 in accepting the Application as complete. WAC 197-11-060, SEPA specifically says that phased review can't be used if it would split up units and allow an agency to ignore the cumulative impacts of the units.
2. Ecology made an over-arching determination of non-significance-DNS. How can Ecology make a DNS until it is known what all the Hanford Site mitigation plans will be?
3. At the very minimum, a determination of mitigated significance (MDNS) should have been the over-arching SEPA determination for the Hanford Facility based on the unit-specific SEPA determinations which indicated impacts or the need to mitigate impacts. Given these facts, even a MDNS has several concern:
    1. This determination assumes units, such as the SST unit, can be completely mitigated so there is no environmental impact during the closure process, but the permit applicants have provided no such evidence.
    2. Any mitigation plans would have no EIS to confirm the extent or nature of the damage they claim to address without defensible justification.
    3. A mitigated determination can be slightly deceptive: it assumes that once a permit in place, there is no environmental impact, while at the same time it does not require mitigation plans be implemented.
4. Include necessary mitigations within the unit-specific Permits as required compliance conditions (Note: these mitigations are not evident in most permits).
5. Questionable need for permit condition(s) requirement for a cultural and biological report. When the SEPA checklists were submitted with the permit applications, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determinations.

General Over-arching Permit comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. *PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984*, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued. The draft permit does not comply with this EPA directive.

   Furthermore, there is a general lack of clarity, rationale and logic presented in the document(s). No rationale or logic presented in either the overarching or unit-specific Fact Sheets or the unit-specific Permits to support Ecology's decision-making process. (e.g., Modified/Partial closure of an individual unit is not authorized under WAC 173-303- regulations [*see* 1325-N]. More examples: Introduction page 6; Reorganization of tank farms reorganized into 7 WMAs is not clear.)

2. Use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303-610]. The unit descriptions imply closure actions to be done under a CERCLA work plan authority rather than the RCRA permit. Workplans do not fall under the WAC 173-303-830/840 modification/review process. Corrective Action decisions (should this approach continue) have their own comment periods and are outside the Dangerous Waste regulatory process. Additionally, Tribal or public comment or right of challenge are not subject to the same rights as under the Dangerous Waste process. See YN ERWM comment letter on the II.Y condition and changes to the TPA (2010).

3. Use of *past-practice authority* has <u>not</u> proven to be the most efficient way to remediate groundwater plumes of mixed waste from a combination of past-practice treatment, storage, and disposal units. Ecology's earlier "coordination" of corrective action at 300 APT with CERCLA remedial actions has <u>not</u> resulted in compliance with Dangerous Waste regulations –WAC 173-303-283, -610, -or -645 requirements to protect

human health or the environment. More stringent facility cleanup standards should be applied. Correct and implement groundwater monitoring plans compliant with WAC 173-303.

4. WAC 173-303-645-(1)(e) requires the director to determine that *it is not necessary to apply the requirements of this section because the alternative requirements will protect human health and the environment.* The required determination has not been made as there are no alternative requirements in place. Furthermore, it is inappropriate to prospectively accept CERCLA work via the II.Y conditions as satisfying the Dangerous Waste WAC 173-303-645/646 corrective action permit while the remedy selected remains an unproven technology (The preferred remedial alternative for the protection of groundwater relies on the application of polyphosphate solution to deeper zones of uranium contamination. Polyphosphate remediation has been previously attempted in the 300 Area and has proven to be both problematic and ineffective. In the event that the polyphosphate application does not reduce the mobility of uranium in the deep subsurface, the proposed alternative specifies that no additional treatment will be applied.). Correct and include WAC 173-303-610 and -645 requirements for soils and groundwater cleanup.

5. Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done. Correct.

6. Permits use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610(3) requirements; this approach is the prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements as these CERCLA documents don't yet exist. Correct and include WAC 173-303-610(3) requirements.

7. No Performance Standards included in permit as required by WAC 173-303-283. Revise Part II conditions and unit-specific permit condition(s) to include the following: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land). However, use of Methods A and C to meet cleanup standards is in violation of previous commitments by DOE to unrestricted residential use along the River Corridor. Additionally the Hanford site does not meet the criteria for application of Method A; it has too complex waste streams to qualify.
   Correct and include the following closure performance standards for contaminated soils to ensure compliance with the Dangerous Waste Regulations:
   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:

   1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
   2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
   3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

8. Permits lack conditions identifying required clean closure of or excavation of near-surface soil and remove any associated pipelines or structures (ancillary equipment) per WAC 173-303-283 performance standard requirements. Correct and include requirements for RTD under WAC 173-303-630(10), -640(8), and -650(6).

9. The permits do not utilize the Closure Plans submitted in the Part B applications (2004). Ecology should utilize these closure plans and write appropriate Closure Permit conditions to rectify any non-compliance with unit specific closure requirements under WAC 173-303. Include these Closure Plans and/or Permit Conditions within the Permit(s) to ensure compliance with WAC 173-303-610. Correct and ensure closure plans are consistent with unit-specific Dangerous Waste Regulations (e.g., WAC 173-303-650 Surface Impoundment regulations) as well as the rest of WAC 173-303.

10. All Addenda identified as "reserved" must include the WAC 173-303 required information in order to be in compliance with the regulations and be included in their respective unit permit (e.g., Sampling and Analysis Plans). Correct and include required information.

11. All Addenda included the permit should include the unit specific information not merely reference a document (e.g., Training Plans are located in the unit-specific file rather than the permit, possibly confusing to the permittee. Definitely confusing to the public). Correct and include these types of documents as attachments to their respective Permit Addendum.

12. Permits do not include Ecology approved and Dangerous Waste WAC 173-303 compliant RCRA Groundwater Monitoring Plans as attachments to unit specific Permits within their Closure Plan Addenda. Groundwater monitoring plans are not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). The permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing. Correct and include these requirements to ensure compliance with Dangerous Waste regulations – WAC 173-303.

13. Some Permits conditions include incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b). Review Permits and correct text or rescind wavier.

14. Modified/Partial closure of an individual unit is not authorized under WAC 173-303 regulations and is included as an option in permit closure [*see* 1325-N). Delete. Update Permits to reflect compliance with WAC 173-303-610(3) and other WAC 173-303 requirements.

15. All unit-specific groundwater monitoring plans should be consistent with Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies. Include this as a requirement in all Permits.

16. Permits' Contaminant of Concern (COC) lists do not encompass the full range of contaminants. Include in each unit-specific Permit, the full list of COCs as noted or identified in associated draft RI/FS documents previously submitted to Ecology (e.g., Part V Permit unit-specific permits do not include COCs from earlier submitted RI/FS done to support submittal of Closure Plans: *see* DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7).

17. Permit conditions do not require use of a methods-based approach in the unit-specific Sampling and Analysis Plans. Nor is use of non-filtered sampling in the Sampling and Analysis Plans required. Include requirements for these in unit-specific Permit conditions (or include a Part II condition applicable to all units) to ensure compliance with WAC 173-303 regulations.

18. Permit conditions do not require repairs and replacement of wells per WAC 173-160. Include Permit(s) condition(s) to require compliance with WAC 173-160 requirements.

19. Permit conditions do not require coordination and incorporation of RCRA inspection requirements for the unit-specific permits with those for the associated CERCLA groundwater operable unit's. Inspection should at a minimum, be on a semi-annual basis. Include permit conditions to require coordination of inspections for unit-specific permits with those for the associated CERCLA groundwater operable unit's requirement.

20. Permit conditions do not ensure that all unit-specific Closure Schedules are compliant with the Dangerous Waste WAC 173-303-610 requirements or 173-303-815(3)(b). Correct.

21. Statements are made in several permits to the effect that the Permittee have made the determination that the unit can't meet clean closure standards. Delete this text and rewrite to reflect that Ecology makes permitting decisions in accordance with WAC 173-303.

22. All Permit(s) do not identify list of other applicable laws or required permits nor are there conditions which reflect how compliance of these will be achieved. Identify these in each permit.

23. Evaluate and confirm that all information on these Part A forms is consistent with Washington State Dangerous Waste Permit Application; Part A Form and Instruction publication ECY 303-31 (6-2003) requirements as well as information presented in the SEPA checklists submitted with the Part B Permit application, the unit(s) specific draft Permit Conditions, and the draft factsheet(s) (e.g., the LLBG Part A form & the permit indicates in-trench treatment or placement of liquids within landfill. This is not allowed by the Landfill regulations].

24. Review and revise Part V (Closing) Permits to ensure compliance with Land Disposal Restrictions (LDRs) – WAC 173-303-140.

25. Review and revise Part V (Closing) Permits to ensure that non-existent Part II conditions are not cited (e.g.1301-N).

26. Radionuclides are not regulated under Dangerous Waste Regulations at WAC 173-303. Instead they are regulated under CERCLA regulations at 40 CFR 300. However, Ecology should ensure that anticipated remedial actions for radioactive constituents shall be consistent with the closure activities required under WAC 173-303. Include language as such in all Permit(s).

27. Basis for permit conditions is incorrectly stated as coming from CERCLA & TPA Milestone requirements rather than first identified as requirements under the Dangerous Waste regulations. It is very difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit, rather than referenced, is more transparent and publicly accessible. Concerns regarding "double jeopardy" could be eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA Dangerous Waste WAC 173-303 permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary. Develop this matrix approach.

28. Permit lacks a Part II condition of the definition of the term "Critical Systems": Include following definition: Critical Systems, as applied to determining whether a Permit modification is required, means those specific portions of an operating unit group's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, or systems which include processes which treat, transfer, store, or dispose of regulated wastes. Changes to specific portions of a dangerous waste management TSD identified as a critical system, are subject to the permit modification requirements of WAC 173-303-830.

29. Permit lacks a Part II condition of the definition of the term "Ancillary Equipment": Include following definition: The term 'ancillary equipment' will mean any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter or control the flow of dangerous waste from its point of generation to a storage or treatment tank(s), between dangerous waste storage and treatment tank(s) to a point of disposal on-site, or to a point of shipment for disposal off-site.

30. This is a new permit not a revision of a permit. It should not be identified as Rev.9.

The YN ERWM program requests the following changes to include in the Hanford site RCRA Permit *Definitions*:

1. Include a definition for ancillary equipment for all tanks systems. Suggest text: The term **"ancillary equipment"** will mean any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of dangerous waste from its point of generation to a storage or treatment tanks(s), between dangerous waste storage and treatment tanks to a point of disposal on-site, or to a point of shipment for disposal off-site. These are to be regulated as a part of the tank system and are to be considered subject to WAC 173-303-640 closure regulations.

- **The YN ERWM program requests the following changes to the draft 300 Area Process Trenches (300 APT) draft permit:**

SEPA: There remain persistent and significant impacts to the groundwater from sources in the vadose zone underlying the 300APT. The current DNS is outdated and unwarranted.

General Background:

The 300 Area Process Trenches (300 APT) are inactive Treatment, Storage, and Disposal (TSD) units. The unit is also known as the 316-5 Process Trenches. The permittee used them to dispose of 300 Area process effluents from the uranium fuel fabrication facilities. Waste from 300 Area laboratories that was determined to be below discharge limits was also released to the trenches.

The 300 Area Process Trenches were open, and unlined. All of the effluent either infiltrated the soil column or evaporated. The 300 Area Process Trenches (300 APT) allowed liquid effluents to percolate into the vadose sediments. Discharges to the 300 APT were permanently discontinued in December 1994 in support of the HFFACO Milestone M-17-10 (Vadose Zone Clean Closure Report for the 300 Area Process Trenches, BHI-01171, May 1998. Post-closure monitoring continues because of releases from the unit which have impacted groundwater.

The 300 Area Process Trenches received dangerous waste discharges consisting of state-only toxic wastes, discarded chemical product, corrosive waste, chromium, spent halogenated solvents and spent nonhalogenated solvents. Estimated daily discharge volume was 3,000,000 gallons per day.

Groundwater contaminants of concern addressed by the interim actions established the 300-FF-5 record of decision (ROD 1996) (DOE/RL-2005-41, Rev 0) [see *Record of Decision. 1996. Declaration of the Record of Decision, USDOE Hanford Area 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington.* Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland, Washington and DOE/RL-2005-41 Rev. 0 (Work plan for Phase III FS 300-FF-5 OU)] were:

- Trichloroethene
- 1, 2-dichloroethene
- Uranium

Subsequent groundwater monitoring reports (PNNL-15070, (Hanford Site Groundwater Monitoring for Fiscal Year 2004): Pgs.2.12-2/3/4/5 & 2.12-10) identified the following chemical contaminants that exceeded closure performance standards:

- Cis-1, 2-1, 2-dichloroethene
- Trichloroethene
- Uranium
- Strontium-90

Tributyl phosphate was detected, but removed as a contaminant of concern (COC) and should be retained as a COC.

General Permitting History: The permittee submitted to Ecology a certification of closure for the 300 APT. The permittee stated that "Groundwater contamination attributable to the 300 APT remains above cleanup standards at this time." Ecology accepted the certification of closure of the 300 APT. The 300 APT was administratively moved into post-closure status. [*see* Certification of Closure for the 300 Area Process Trenches (300 APT), U.S. Dept. of Energy letter 98-EAP-347, from James E. Rasmussen (DOE) and Michael C. Hughes (Bechtel Hanford, Inc.) to Laura J. Cusack (Ecology), dated July 9, 1998 and Acceptance of Certification of the 300 Area Process Trenches Clean Closure of the Soil Column and Ground Water Corrective Action Requirements, letter from Ted A. Wooley (Ecology) to James A. Rasmussen (US DOE), dated August 10, 1998].

Ecology's acceptance of the certification of closure was based on the permittee request for a permit modification including the submittal of a post-closure plan. The Permittees' request for permit modification stated that "a plan for a corrective action groundwater-monitoring plan is required" based on exceedances of concentration limits for constituents of interest at compliance monitoring wells." [*see* Hanford Facility RCRA Permit Modification Notification Form, for 300 Area Process Trenches, attachment to Request for Class 1 Modification of the 300 Area Process Trenches Portion of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, U.S. Dept. of Energy letter 98-EAP-301, from James E. Rasmussen (DOE) and Michael C. Hughes (Bechtel Hanford, Inc.) to Laura J. Cusack (Ecology), dated June 30, 1998.]

Ecology responded to the U.S. DOE modification request by revisiting the need for modifying the permit to reflect corrective action.

Instead of specifying corrective action, Ecology accepted the remediation of groundwater under a CERCLA Record of Decision as consistent with the requirements for information necessary to select corrective action: "Corrective action for groundwater contamination at 300 APT has been initiated as part of the 300-FF-5 groundwater remedial actions."

Since 1998 when Ecology accepted the closure certification for the 300 APT, information has become available which indicates the CERCLA remedy has not been effective, and high concentrations of chlorinated solvent have been discovered (Compensation, and Liability Act of 1980 (CERCLA) Five-Year Review letter from Jane Hedges (Ecology) to Keith Klein (US DOE), dated June 15, 2006 [including the " findings..."].

More recent 300 APT monitoring results indicated the continuing presence of organics (i.e., tetrachloroethene, cis-1, 2-dichloroethene, trichloroethene) in the groundwater [*see* Results of Groundwater Monitoring for the 300 Area Process Trenches Reporting Period: July – December 2006", March 2007, PNNL-16492]. Although knowledge of organic waste disposal is not new information, its persistence in the environment is new information. Persistent contamination of groundwater by organics was not identified either in previously submitted permitting documents, or in CERCLA documents.

Additional information was provided with the drilling of eleven new wells as part of the characterization effort performed for the 300 Area RI/FS [*see* U.S. Department of Energy. (DOE) 2011e. *Remedial Investigation Feasibility Study for the 300-FF-1, 300-FF-2, and 300-FF-5 Operable Units* (DOE/RL-2010-99 Draft A)] However, characterization efforts were focused on only 5 identified waste sites (North Process Pond, South Process Pond, Process Trenches, 307 Disposal Trenches, and 307 Retention Basins). Of the 11 wells drilled, 7 were focused on further refining already-identified groundwater contamination. Multiple instances of previously unidentified contamination being discovered in the 300 Area indicate that full characterization of the nature and extent of contamination in the 300 Area is far from complete.[1] As a result, it is not possible to identify the remedial actions that will be necessary to completely remediate the site.

Furthermore, groundwater contamination constituents in the 300 Area include gross alpha activity, nitrate, trichloroethene (TCE), cis-1, 2-dichloroethene (DCE), and hexavalent chromium. All of these contaminants have been detected at concentrations that exceed groundwater regulatory standards. Some of these are not included as COCs in the permit.

Regarding the former; the selected remedial action for 300 Area groundwater was natural attenuation and institutional controls. That action was selected because "The RI/FS predicted that the remedial action objectives (RAOs) would be attained in 3 to 10 years." [*see* Declaration of Record of Decision for 300-FF-1 and 300-FF-5 OU, July 1996] When the RAOs were not achieved after 10 years, US DOE initiated a Phase III RI/FS [*see* 300-FF-5 Operable Unit Limited Field Investigation Plan, September 2005, DOE/RL-2005-47. Rev. 0]. During the RI/FS, two of the newly drilled wells encountered the highest known concentrations of chlorinated organics in 300 Area groundwater.

Uranium, although it is radioactive, also has a chemical toxicity to humans and ecological receptors. For this reason, it is regulated under the dangerous waste regulations. Additional information indicates Uranium in the groundwater currently exceeds Drinking Water standards three to five times.

The selected remedial action for 300 Area groundwater was natural attenuation and institutional controls. That action was selected because "The RI/FS predicted that the remedial action objectives (RAOs) would be attained in 3 to 10 years." When the RAOs were not achieved after 10 years, US DOE initiated a Phase III RI/FS. During the RI/FS, two of the newly drilled wells encountered the highest known concentrations of chlorinated organic in 300 Area groundwater. [*see* Declaration of Record of Decision for 300-FF-1 and 300-FF-5 OU, July 1996 and 300-FF-5 Operable Unit Limited Field Investigation Plan, September 2005, DOE/RL-2005-47. Revision 0].

General Comments on the draft Permit:

1. Waste was left in place. The 300 APT unit will require post-closure care and maintenance, and must comply with WAC 173-303-645 for releases from regulated units.

[1] For example, the discovery of cesium-137 and strontium-90 contamination below the 324 building and recent addition of the uranium plume from the 618-7 burial ground.

2. Use of *past-practice authority* has not proven to be the most efficient way to remediate groundwater plumes of mixed waste from a combination of past-practice treatment, storage, and disposal units. Ecology's earlier "coordination" of corrective action at 300 APT with CERCLA remedial actions has not resulted in compliance with Dangerous Waste regulations –WAC 173-303-283, -610, -or -645 requirements to protect human health or the environment. More stringent facility cleanup standards should be applied.
3. WAC 173-303-645-(1)(e) requires the director to determine that *it is not necessary to apply the requirements of this section because the alternative requirements will protect human health and the environment.* The required determination has not been made as there are no alternative requirements in place. Furthermore, it is inappropriate to prospectively accept CERCLA work via the II.Y conditions as satisfying the Dangerous Waste WAC 173-303-645/646 corrective action permit while the remedy selected remains an unproven technology. [The preferred remedial alternative for the protection of groundwater relies on the application of polyphosphate solution to deeper zones of uranium contamination. Polyphosphate remediation has been previously attempted in the 300 Area and has proven to be both problematic and ineffective. In the event that the polyphosphate application does not reduce the mobility of uranium in the deep subsurface, the proposed alternative specifies that no additional treatment will be applied.]
4. Include a Permit condition requiring the RTD for any remaining soils not clean-closed to MTCA Method B standards to ensure compliance with WAC 173-303-283 and the degradation of groundwater quality.
5. Include a Permit condition to ensure that all waste which has escaped into the environment (including the Vadose Zone and outside the boundaries of the 300 APT) is identified, characterized such that the vertical and lateral extent of the contamination is identified, and that such releases are remediated in accordance with the Dangerous Waste Regulations under WAC 173-303-645. [Use WAC 173-303-815(2)]
6. Include a Permit condition to ensure that natural attenuation is not "determined" by the Director of Ecology as meeting the corrective action Permit requirements of WAC 173-303-646.
7. Significant exceedances of the Drinking Water Standards for Uranium are noted (approximately 3 to 5 times) in the 300 Area groundwater operable unit Ecology has authority under WAC 173-303-830 to modify the permit and require compliance with WAC 173-303-645(11) for the 300 APT. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(3), (4), (5), (6), (7), and (8). Furthermore, WAC 173-303-645(11)(d) requires establishment and implementation of a groundwater monitoring program to demonstrate the effectiveness of the correction action program. The Permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. The current groundwater monitoring plan is outdated; elements that comprise groundwater protection standards are missing
8. Include groundwater monitoring Permit conditions based on the requirements of WAC 173-303-645(10). Include the following requirements in the plan for post-closure groundwater monitoring:
    - The Permittee shall monitor the following 300APT Unit's groundwater monitoring wells: 399-1-10A/B, 399-1-16A/B/C/D, 399-1-17A, B, C, and 399-1-18. In addition to these wells, the following wells shall be sampled quarterly until a compliant well monitoring network is in place: 399-1-1,399-1-3,399-1-7,399-1-4, 399-1-5,399-1-6,399-1-2,399-1-15,399-1-14A/B, and 399-1-11.
    - The Permittee shall ensure ground water protection standards of WAC 173-303-645(3) are satisfied by complying with conditions specified in this permit to ensure that dangerous constituents under WAC 173-303-645(4) are detected in the groundwater from the 300 Area Process Trenches beyond the 300 APT Unit's point of compliance (as defined in WAC-173-303-645(6)(a)), i.e., a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit(s)) during the active life (as defined by WAC 173-303-040) of the 300 Area Unit (including any future waste management activity during the closure period, prior to post-closure care, and during post-closure care and maintenance).
    - The groundwater monitoring plan shall identify a compliance monitoring period that satisfies WAC 173-303-645(7).
    - The groundwater monitoring plan shall be submitted within forty-five (45) days of the effective date of this permit.
    - The groundwater monitoring plan shall be submitted certified pursuant to WAC 173-303-810(12), and -810(13) in accordance with WAC 173-303-830, and -840.
    - Should the groundwater monitoring network not satisfy the general groundwater monitoring requirements of WAC 173-303-645(8) and (10) the groundwater monitoring plan shall include a schedule which

specifies actions and dates by which the groundwater monitoring network will satisfy the general groundwater monitoring requirements of WAC 173-303-645(8) and (10).

- The Permittee shall implement the groundwater monitoring plan within forty-five (45) days of receiving Ecology's approval of the plan.
- The groundwater monitoring plan required shall include a description of how the effective groundwater flow (contaminant transport) direction will be determined; to establish the point of compliance [per WAC 173-303-645(6)] for the 300 APT. The groundwater monitoring plan will also specify the following:
- The location of an upgradient well for the 300 APT will be based on the flow direction determination.
- If well 399-1-18 is determined not to be upgradient, a new well cluster will be installed to serve as the upgradient well cluster for the 300 APT.
- After determination of the point of compliance, at least two well clusters, in addition to well 399-1-17, will be completed along the point of compliance.
- All wells specified in the groundwater monitoring plan shall be cluster wells with one completed at the top of the unconfined aquifer and one at the bottom of the unconfined aquifer.
- All wells included in, or resulting from, the groundwater monitoring plan will be sampled at least quarterly (i.e., four samples per year to satisfy WAC 173-303-645(10)) with one sampling during high river seasonal stage and one sampling during low seasonal river stage
- For the purposes of satisfying the groundwater monitoring requirements of WAC 173-303-645(8) and (10), statistical comparisons between upgradient well 399-1-18, or other upgradient well identified in the groundwater monitoring plan and downgradient monitoring wells, including 399-1-17 shall be described in the groundwater monitoring plan submitted to Ecology.
- The groundwater monitoring plan will specify which 300APT constituents and parameters will be used for statistical comparison. At a minimum, statistical comparison between upgradient and downgradient wells must be performed for the following waste constituents: arsenic, beryllium, chromium, copper, lead, mercury, fluoride, nitrate, nitrite, tetrachloroethene, trichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, and vinyl chloride.
- In addition, alkalinity will be determined in all wells, but will not be used for purposes of statistical comparison.
- All groundwater constituents detected during the analysis for constituents will be reported on a quarterly basis. Alternatively, a user friendly, acceptable to Ecology, electronic data interface will be provided that allows access to all groundwater data as it becomes available.
- For the purposes of satisfying the groundwater monitoring requirements of WAC 173-303-645(8)(g) and (10)(d), after determining the effective groundwater flow direction, the Permittee shall determine initial upgradient concentrations for the 300 APT specific constituents and parameters by obtaining at least four replicate measurements for each constituent identified quarterly for one year in well 399-1-18 **or other** upgradient well cluster identified in the groundwater monitoring plan.
- The groundwater monitoring plan shall identify the 300 APT specific radionuclides as "waste indicators" or "tracers." For the purposes of satisfying the Hanford Federal Facility Agreement and Consent Order (HFFACO) Action Plan Section 6.3, the Permittee shall monitor the wells identified on the frequency and in support of the 300-FF-5 groundwater remediation action, the Permittee shall monitor the wells identified in the groundwater monitoring for the following 300 APT waste indicators and/or tracers: gross beta, tritium, and uranium. The groundwater monitoring plan shall specify that statistical comparisons are not required for these waste indicators and/or tracers.
- The groundwater monitoring plan shall include, pursuant to WAC 173-303-645(11) a Corrective Action plan for groundwater monitoring of the chlorinated hydrocarbon plume . This Corrective Action plan shall describe how the requirements of WAC 173-303-645(11) will be satisfied, and specify the schedule and requirements.
- Within three (3) years of the effective date of this permit the Permittee shall submit a characterization report for the 300 APT chlorinated hydrocarbon plume. This report shall indicate the concentrations and distribution of contaminants in the plume, present and potential impacts to the Columbia River, and shall outline potential remediation measures.
- The groundwater monitoring plan shall include a sampling and analysis plan (SAP) which will identify analytical methods and include descriptions of analytical procedures that will be followed for analyzing

the 300 APT Unit-specific waste constituents and indicators. The SAP shall specify how all analytical data (i.e., detects, non-detects, tentatively identified compounds, etc.) as reported from the laboratory will be made available to Ecology.

- The SAP required shall describe quality assurance/quality control (QA/QC) for sampling and laboratory analysis and will be consistent with consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]. SAPs will also be required to include the following:
- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
  - Data Collection Strategy section including, but not limited to, the following:
  - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
  - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
  - Sampling section which shall include or describe, and reference or cite:
  - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
  - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
  - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
  - Methods for, or specification of, measuring all necessary ancillary data;
  - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
  - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
  - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
  - Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
  - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
  - Calibration of field devices (as applicable);
    - Collection of replicate samples;
    - Submission of field-biased blanks, where appropriate;
    - Potential interferences present at the facility;

- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f). This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
    - A data record including the following:
    - Unique sample or field measurement code;
    - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
      Sampling or field measurement raw data;
      Laboratory analysis identification (ID) number;
      Result of analysis (e.g., concentration);
    - Tabular displays, as appropriate, illustrating:
        - Unsorted validated and invalidated data;
        - Results for each medium and each constituent monitored;
        - Data reduction for statistical analysis;

        - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
        - Summary data.
    - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
        - Displays of sampling location and sampling grid;
        - Identification of boundaries of sampling area and areas where more data is required;
        - Displays of concentrations of contamination at each sampling location;
        - Displays of geographical extent of contamination;
        - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
        - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
        - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 300 APT permit.

- The groundwater monitoring plan shall specify the following water level measurements criteria.
    - Each time 300 APT Unit's groundwater monitoring wells are monitored, the ground water surface elevation shall be measured to the nearest 0.01 feet using an electric water level indicator prior to evacuation and collection of samples and immediately after samples are collected.
    - Water level measurements should be made within one day and as close to one another in time as possible.
    - All groundwater elevation measurements shall be recorded on a groundwater measurement form.
    - Prior to the collection of ground water elevation measurements, equipment to be used shall be calibrated in accordance with the manufacturer's instruction and a National Institute of Standards and Technology (NIST) traceable calibration program.
    - If steel tape equipment is used to measure ground water surface elevations, the operation of the equipment shall first be checked by inserting the probe or contact ends in water to ensure the contact is clearly indicated on the meter.
    - When ground water elevation measurements are collected, at least two consistent measurements shall be taken. Only clean and/or decontaminated equipment shall be used to collect ground water surface elevations.
    - A description of how the ground water surface elevation measurements will be taken.
    - Any corrections needed because a well(s) is not vertical shall be appropriately applied to correct for non-vertical wells.
- The groundwater monitoring plan shall specify the following groundwater monitoring well maintenance elements.
    - Each time 300 APT Unit wells are sampled/monitored; the condition of the wellhead and associated structure will be inspected and recorded. Problems with the pump or the sample (e.g., excessive turbidity) are also to be noted and the associated repairs are to be made within sixty (60) days according to approved contractor procedures.
    - Subsurface ground water monitoring well inspection and maintenance shall be performed on a 5-year schedule or as needed to repair problems identified during sampling.

- In the event a ground water monitoring well becomes unsuitable for use, the status shall be documented and reported to Ecology within ninety (90) days of identifying the well as unsuitable for use.
- In addition, the "unsuitable-for-use" well will be evaluated within thirty (30) days of the designation to determine if a new well should be constructed. A copy of the evaluation shall be provided to Ecology. If applicable, the "unsuitable-for-use" well shall be placed on a well decommissioning candidate list for Ecology's approval.
- In the event an "unsuitable-for-use" well must be replaced to satisfy this permit and WAC 173-303-645 (8) and (10) requirements, the Permittee shall provide a schedule for the replacement of the well.
- Problems and/or damages will be noted in a log book. and noted in the well information database.

- The groundwater monitoring plan shall specify the following groundwater monitoring well purging elements.
  - The purge volume shall be calculated based on voiding three (3) borehole volumes of water from the well. The calculated purge volume shall be documented at the time of sampling.
  - During well purging, purgewater management will be conducted in accordance with a new "Condition II.F. for this Permit. Write a Part II. F. condition for management of purgewater.
  - The volume of water purged shall be documented after completion of purging.
  - Alternatively, if low-flow pumping is conducted for sample collection, the groundwater monitoring plan shall specify and describe the installation of low-flow pumps and include a description of the low-flow pumping routine that will be instituted for collecting groundwater samples.
- The groundwater monitoring plan shall specify the following groundwater monitoring in-situ measurements elements to be followed during well purging.
  - During well purging, at a minimum, the following in-situ criteria shall be measured and documented: temperature, pH, and conductivity.
  - Temperature, pH, and conductivity shall be obtained at least three times (start, middle, and end of designated purge time).
  - The in-situ readings shall stabilize prior to sampling and shall be considered "stable" when the following criteria are met: pH – two consecutive measurements are within 0.2 pH units, temperature – two consecutive measurements agree within 0.2 °C, and conductivity – two consecutive measurements agree within 10% of each other.
  - In addition to the collection of temperature, pH, and conductivity, in-situ turbidity measurements shall be collected.
- The groundwater monitoring plan shall specify the following groundwater monitoring in-situ measurements elements to be followed during well purging. During well purging, in-situ criteria turbidity readings shall be taken and documented. When possible, and when temperature, pH, and conductivity readings are "stable", turbidity readings shall be below 5 nephelometric turbidity units (NTUs) prior to sample collection. In addition, two turbidity readings (duplicates) of the same water shall be taken and documented just prior to sampling.
- The groundwater monitoring plan shall specify that if in-situ turbidity criteria are not met, two sets of samples for metals analysis shall be collected. One set of samples shall be filtered and the other set of samples shall not be filtered.
- The groundwater monitoring plan and/or the SAP required shall specify the order of filling sample containers and shall begin with volatile organics, semivolatile organics, metals, and end with radionuclides, as applicable.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be collected. At a minimum, the description shall include the following: the removal of bottle/container caps, the filling of the sample bottle/container (including description for filling bottles requiring zero headspace), replacement of bottle/container caps.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be filtered when in-situ turbidity readings criteria is not met.
- The groundwater monitoring plan shall include an identification that immediately after filling the last sample container, the pH, temperature, and specific conductivity of groundwater will be measured and documented.

- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be managed to maintain chain of custody. At a minimum, the description shall include identification and/or a description of the system for: labeling samples, identifying samples, tracking samples, documenting chain of custody controls, etc.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be packaged and shipped. The description shall include a description of how the chain of custody will be maintained during packaging and shipping.
- The groundwater monitoring plan and/or the SAP shall include a description of decontamination of sampling equipment and/or bottles/containers used during collection of ground water samples and/or a description of the use of pre-cleaned bottles/containers.
- The groundwater monitoring plan and/or the SAP shall specify how the requirements of WAC 173-303-645(10)(g) will be satisfied. If the groundwater monitoring plan does not satisfy the requirements of WAC 173-303-645(10)(g), the supporting information and justification must be provided in the groundwater monitoring plan as well as a description of how the intent of WAC 173-303-645(10)(g) may be satisfied (i.e., method-based analysis).
- The groundwater monitoring plan shall specify how the rate and direction of groundwater flow in the uppermost aquifer will be determined on an annual basis as required by WAC 173-303-645(10)(e). In addition, the plan shall specify when and how the rate and direction of groundwater flow determinations required by WAC 173-303-645(10)(e) will be reported to Ecology on an annual basis.
- The groundwater monitoring plan shall specify the rate of decline of the water table at the 300 APT Unit's point of compliance (as defined by WAC 173-303-645(6)) will be determined on an annual basis until such time as the decline associated with the 300 APT Unit's water table mounding (due to 300 APT Unit discharges) has ceased. In addition, the plan shall specify when and how the water table regression rate will be reported to Ecology on an annual basis until such time as the water table decline has ceased.
- The groundwater monitoring plan shall include a plan for future use and/or remediation for all noncompliant wells in the vicinity of the 300 APT.
- Prior to any actions taken to deepen "dry" wells within the vicinity of the 300 APT Unit the Permittee shall submit a well deepening plan for Ecology approval that satisfies the groundwater protection standards of Chapter 173-160 WAC. The well deepening plan shall not be implemented until after the Permittee receives Ecology's approval of the plan. For wells located downgradient to and in the immediate vicinity of the 300 APT Unit for which new information (i.e., inspection information, report of damage, indication during use, etc.) has been obtained via well maintenance activities, routine use, or incident reporting indicating the well is an environmental, safety, or public health hazard, the Permittees shall provide Ecology written notice of the conditions of the well. For such wells, the Permittees shall provide Ecology a description of actions to be taken which includes a schedule for well remediation or decommissioning. For such wells, the Permittees must obtain Ecology's written approval to remediate or decommission the well.
- Prior to the installation of any additional wells to be used to satisfy WAC 173-303-645 groundwater monitoring requirements associated with the 300 APT Unit, the Permittee shall submit, for Ecology's approval, a well installation plan that specifies the proposed location of well, well design, installation procedures, management of wastes generated during well installation, etc. The well installation plan shall satisfy Tri-Party Agreement Milestone M-24 requirements for decision documents and/or sampling and analysis plans.
- For wells located downgradient to and in the immediate vicinity of the 300 APT Unit for which new information (i.e., inspection information, report of damage, indication during use, etc.) has been obtained via well maintenance activities, routine use, or incident reporting indicating the well is an environmental, safety, or public health hazard, the Permittees shall provide Ecology written notice of the conditions of the well. For such wells, the Permittees shall provide Ecology a description of actions to be taken which includes a schedule for well remediation or decommissioning. For such wells, the Permittees must obtain Ecology's written approval to remediate or decommission the well.
- Five (5) years after the groundwater monitoring plan has been implemented, the Permittee shall submit a revised groundwater monitoring plan which specifies the 300 APT Unit's dangerous waste constituents to which the groundwater protection standards of WAC 173-303-645(3) apply.

- The groundwater monitoring plan shall identify 300 APT Unit's waste constituents for which there has been evidence of an increase in contamination at the 300 APT Unit's compliance point. For 300 APT Unit's waste constituents that are required to be monitored as specified in this permit for which the Permittee proposes to exclude from meeting the groundwater protection standards of WAC 1730303-645(3), the Permittee must address considerations of WAC 173-303-645(4)(b)(i), (ii), and (iii).
- The groundwater monitoring plan shall identify proposed 300 APT Unit's waste constituent concentration limits that satisfy WAC 173-303-645(5)(a)(i) or (ii).
- The groundwater monitoring plan shall specify actions to be taken when proposed concentration limits have been exceeded which include 1) notification of the exceedence, and 2) submittal of an application for a permit modification to establish a corrective action groundwater monitoring program which satisfies WAC 173-303-645(11).
- The Permittee shall implement the groundwater monitoring plan required by this Condition within forty-five (45) days of receiving Ecology's approval of the plan.
- The groundwater monitoring plan shall specify when the three (3) additional groundwater monitoring wells will be installed at the 300 APT Unit's point of compliance (as defined by WAC 173-303-645(6)). The groundwater monitoring plan shall include:
- A schedule for submitting a well installation plan.

1. The groundwater monitoring plan shall also either identify that the proposed new wells will be administratively documented as needed and planned for installation through Tri-Party Agreement Milestone M-24 or specify the process to be followed to ensure installation of the wells on the identified schedule. The groundwater monitoring plan shall describe and/or specify river stage fluctuation influences on the water table in the vicinity of the 300 APT Unit. If river stage fluctuations affect the water table in the vicinity of the 300 APT Unit, the groundwater monitoring plan must include a description of how groundwater monitoring will be conducted to maximize the amount of groundwater (as opposed to river or surface water) being sampled.

9. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
   - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
   - Sampling and monitoring equipment operation and maintenance
   - Monitoring and reporting on groundwater well security and maintenance
   - Providing sample chain of custody to the laboratory
   - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
   - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
   - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
   - Vegetative cover condition
   - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
   - Should also coordinate and incorporate requirements listed for the 300-FF-5 OU inspection requirements.
10. Edit Inspection schedule as follows:

Inspection Schedule for the 300 APT Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3-5 years

The YN ERWM program requests the following changes to the draft 1324-N Impoundment and 1324-NA Percolation Pond Permit:

1. Groundwater contamination and other issues associated with the facility suggest that it has not been closed appropriately under the regulations. Place this unit in Part V rather than Part VI and include Permit conditions to ensure compliance with WAC 173-303-610,-645, and WAC 173-303-650.
2. Include/revise permit conditions to ensure the following wells are included in the Groundwater monitoring plan: Wells: 199-N-71, -72, -73, -77, 199-N-165, 199-K-182, 199-N-189, AND 199-K-164. Require non-filtered sampling.
3. Include/revise permit conditions to ensure sampling for field parameters, VOA, SVOA, PAH, TPH-G, TPH-D, metals (full suite of RCRA metals), anions, and alkalinity. Sample for TOC.
4. Include permit requirement for a test pit or borehole to determine if contaminated vadose zone occurs beneath the 1324-N waste site.
5. See comments on 1301-N and 1325-N. Address similar concerns in this permit.

The YN ERWM program requests the following changes to the draft 242-A Evaporator permit:

SEPA: Based on old previously submitted SEPA checklists; determinations are previous determinations. Permit permits require new evaluations.

General comments on Fact Sheet:

1. Does not address major upgrades recently made (e.g., new off gas system).
2. Does not address need for equipment replacement. The thirty-five (35) yr old evaporator has had equipment failures on established frequency which will continue into the future (e.g., the facility needs to work at a minimum, for another twenty (20) years. Key is the boiler system. Loss of the main boiler unit will result in facility shut-down; requiring a minimum of one to two years to replace it). Failure of the facility will significantly impact the function of the WTP facility.
3. The fact sheet omits the fact that ammonia specifications for evaporator feed have been routinely ignored resulting in corrosion in the off-gas system.
4. The fact sheet omits any of the events which have yielded unplanned contamination.

Permit Conditions General Comments:

1. Include a Permit condition to ensure the 242-A Evaporator has necessary upgrades, including replacing equipment (including pre-purchasing of the *broiler unit replacement equipment)*, to safely operate the additional campaigns to process WTP waste streams and to ensure operational lifetime as necessary to do so.
2. Include a permit condition to require a maintenance schedule and plan to address the projected future equipment failures. Base this schedule on a review of historical failure frequency. Require detail operational descriptions per WAC 173-303 requirements.
3. Revise/include permit conditions to ensure that past events where contamination and hazardous waste have been unconfined inside the evaporator building do not occur. Require all modifications to secondary containment be prior approved by Ecology. Require these modifications must be subject to WAC 173-303-830 process.
4. Include a Permit condition to address accumulation of organics in the facility's tanks.
5. Identify requirements for limiting volatile organics within the waste acceptance criteria condition.
6. Ensure Permit conditions address the dangers of ammonia, including flammability and corrosivity.
7. Include details of PCB management.

Addenda:

Addendum B:

General comments:

1. Edit Addendum to include detail description of how waste streams received by the DST may be chemically adjusted to ensure compliance with the 242-A Evaporator waste acceptance criteria. (note: Include these details in the DST permit).
2. Edit throughout to include requirements to comply with WAC 173-303-300.
3. Edit to include requirements for compliance with WAC 173-303-140 for those waste streams subject to WAC 173-303-170.
4. Edit (to ensure consistency) to include updates to the LERF WAP. See comments on the draft LERF/ETF permit.
5. Edit to include compliance with WAC 173-303-110.
6. Provide regulatory authority and clarity of details for the following: *Waste may be staged for candidate tank sampling in any DST, including tank 241-AW-102.*
7. Provide and include schedule of and identification of *candidate waste feed tanks*. A modification per WAC 173-303-830 can be requested if needed to re-align schedule.
8. Provide details for regulatory path for waste unacceptable for processing, and no acceptable pre-treatment or blending options can be identified. Include a permit condition to ensure compliance with WAC 173-303 for disposition of these waste streams. Include this in the DST permit.
9. Provide details of the determination that The 242-A Evaporator steam condensate, cooling water and 242-A-81 back flush water waste streams have been determined to not designate as dangerous waste are not subject to requirements of WAC 173-303.
10. Include a permit condition(s) for the submittal of a Sampling and Analysis plan for waste streams to ensure compliance with WAC 173-303-300. Furthermore, it is unclear how the *process control plan* relates to LERF acceptance criteria or how it ensures compliance with WAC 173-303-140. Provide details. Include permit conditions to ensure compliance with WAC 173-303-140 for waste streams subject to WAC 173-303-170 as well.

11. Include requirement Quality Assurance/Quality Control as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
12. Include details to describe potentially abnormal feed streams which could threaten human health or the environment and how these will be documented.
13. Include details on how the solids are prevented in the waste streams or removed to prevent fouling
14. Provide justification: Statements in Section B.11.1.1 indicate use of only one riser. While it is indicated that there is negligible lateral variability in tank supernates, there remains difficulties in obtaining representative samples. There needs to be a caveat for those instances where additional sampling to ensure a representative sample is taken at the required incremental depths.
15. Include details on how waste streams reflect EPA SW-846, Method 9090 to insure compatibility with LERF liner materials.
16. Edit Addendum and Table 2.B.3 to include detail description of management of PCBs.

Specific comments:

1. Edit Addendum C, Section C.1.7 regarding the schedule for conducting integrity assessments for the 242-A Evaporator. Require integrity assessment to be at a frequency of every 5 (calendar) years or as required for system repairs This increase is warranted due to future necessary additional campaigns to process WTP waste streams. (See WAC 173-303-640(2)(e)).
2. Edit Addendum C, Section C.1.7 to delete following text: *Preventive and corrective maintenance including some replacement in kind activities or work that does not change the form, fit or function of existing equipment do not require an IQRPE review under either WAC 173-303-640(7)(f) or WAC 173-303-640(2)(a).* Edit and require Ecology approval of "replacement in kind activities or work" (i.e. *equivalent equipment*). Include a permit condition to ensure compliance with WAC 173-303 regarding facility expansion. Require requests subject to the WAC 173-303-830 process. Require IQRPR review.

Addendum H:

General Comments:

1. Edit Addendum (and elsewhere as needed) to include text that in addition to EPA/240/B-01/003 (EPA/QA R-5), *EPA Requirements for Quality Assurance Project*41 *Plans*, as amended, the sampling and analysis plan will be consistent with Ecology Publication #94-111, Guidance for Clean Closure of Dangerous Waste Units and Facilities as amended.
2. Revise Addendum (an elsewhere throughout the document as necessary) to also state tanks closures will comply with WAC 173-303-640(8) requirements. Define that all tanks not meeting clean debris performance standards will be macro-encapsulated in their entirety, by use of a jacket of inert inorganic materials and disposed of in a RCRA compliant storage facility [e.g. ERDF].
3. Revise Addendum to state *If it is not possible to meet the clean debris surface standard or the piping or ancillary equipment cannot be inspected, those portions of the piping and ancillary equipment will be removed, designated, and disposed of according to WAC 173-303-640(8) and* will be macro-encapsulated in their entirety, by use of a jacket of inert inorganic materials and disposed of in a RCRA compliant storage facility [e.g. ERDF].
4. To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:
    - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
    - Direct contact consistent with WAC 173-340-900 (Table 745-1),
    - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
    - Protection of ecological receptors achieved through one of the following methods:
        1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
        2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
        3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

Addendum I:

General Comments:

1. Edit appropriate Sections to ensure compliance with WAC 173-303-320, -630(6), -640(6) requirements.

2. Edit Addendum to ensure compliance with WAC 173-303-320(2)(d) requirements with regards to identification of the date and nature of any repairs or remedial actions taken throughout the facility to be included in the inspection log(s).
3. Edit Addendum to include an Attachment with example of the checklist used by the qualified inspector.

The YN ERWM program requests the following changes to the draft 183-H Solar Evaporation Basins permit:
SEPA: Based on old previously submitted SEPA checklists; determinations are previous determinations. Permit permits require new evaluations. Indicates an approved closure plan existed. Closure certification is in question.

Permit Conditions General Comments:

1. Ecology acceptance of closure certification in question as there doesn't seem to be an approved closure plan
2. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. *PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984*, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
   Request for submittal of updated post-closure plan to include placement of a cover; placement of a cover should have been a closure action so how can the unit be in post-closure?

Addenda:

Addendum B:

Additionally, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:

- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identifies any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
  - Data Collection Strategy section including, but not limited to, the following:
  - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
  - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
  - Sampling section which shall include or describe, and reference or cite:
  - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
  - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
  - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
  - Methods for, or specification of, measuring all necessary ancillary data;
  - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;

- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identifies and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall

also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.

- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 183-H Solar Basins.

Addendum D: Filtered sampling; incomplete list of COCs'; Groundwater document (Hartman 1997) is outdated and not in compliance with WAC 173-303-645:

- Objective stated 'to evaluate general trends in concentration of 183-H COCs. This does not meet WAC 173-303-645(11) requirements.
- Not all COCs previously identified as exceeding groundwater protection standards are monitored (e.g., manganese).
- Wells listed are inconsistent with referenced documents and permit Addendum D. Include 199-H4-12A, 199-H4-12C, 199-H4-3, 199-H4-4, 199-H4-7, 199-H4-8, and 199-H4-65 and any new wells added to the network to replace or supplement existing well (to add conservatism and ensure historical continuity of data) and monitor on a quarterly basis.
- Concentration limits (D.1.1.2 are not consistent with unrestricted use (Method B) clean up levels but are based on background concentrations from upgradient wells H3-2A and H4-6.
- Request Permit conditions be included to ensure the future Groundwater Monitoring Plan specifies or identifies and include the following information:
  - The groundwater monitoring plan specifies the following water level measurements criteria.

- Each time 183-H Solar Evaporation Basins groundwater monitoring wells are monitored, the ground water surface elevation shall be measured to the nearest 0.01 feet using an electric water level indicator prior to evacuation and collection of samples and immediately after samples are collected.
- All groundwater elevation measurements shall be recorded on a groundwater measurement form.
- Prior to the collection of ground water elevation measurements, equipment to be used shall be calibrated in accordance with the manufacturer's instruction and a National Institute of Standards and Technology (NIST) traceable calibration program.
- If steel tape equipment is used to measure ground water surface elevations, the operation of the equipment shall first be checked by inserting the probe or contact ends in water to ensure the contact is clearly indicated on the meter.
- When ground water elevation measurements are collected, at least two consistent measurements shall be taken.
- Only clean and/or decontaminated equipment shall be used to collect ground water surface elevations.
- A description of how the ground water surface elevation measurements will be made.

o The groundwater monitoring plan specifies the following groundwater monitoring well maintenance elements.
- Each time 183-H Solar Evaporation Basins wells are monitored; the condition of the well will be noted and recorded.
- Subsurface ground water monitoring well inspection and maintenance shall be performed on a 3- to 5-year schedule or as needed to repair problems identified during sampling. In the event a ground water monitoring well becomes unsuitable for use, the status shall be documented and reported to Ecology within fifteen (15) days of identifying the well as unsuitable for use. In addition, the "unsuitable-for-use" well will be evaluated within thirty (30) days of the designation to determine if a new well should be constructed. A copy of the evaluation shall be provided to Ecology. If applicable, the "unsuitable-for-use" well shall be placed on a well decommissioning list for Ecology's approval.

o The groundwater monitoring plan specifies the following groundwater monitoring well purging elements.
- The purge volume shall be calculated based on voiding three (3) borehole volumes of water from the well.
- The calculated purge volume shall be documented at the time of sampling.
- The volume of water purged shall be documented after completion of purging.

o The groundwater monitoring plan specifies the following groundwater monitoring in-situ measurements elements to be followed during well purging.
- During well purging, at a minimum, the following in-situ criteria shall be measured and documented: temperature, pH, and conductivity.
- Temperature, pH, and conductivity shall be obtained at least three times (start, middle, and end of designated purge time).
- The in-situ readings shall stabilize prior to sampling and shall be considered "stable" when the following criteria are met: pH – two consecutive measurements are within 0.2 pH units, temperature – two consecutive measurements agree within 0.2 °C, and conductivity – two consecutive measurements agree within 10% of each other.
- In addition to the collection of temperature, pH, and conductivity, in-situ turbidity measurements shall be collected.
- If in-situ turbidity criteria is not met, two sets of samples for metals analysis shall be collected. One set of samples shall be filtered and the other set of samples shall not be filtered. The SAP include a description of how the samples will be filtered when in-situ turbidity readings criteria is not met.
- The groundwater monitoring plan include an identification that immediately after filling the last sample container, the pH, temperature, and specific conductivity of groundwater will be measured and documented.
- The groundwater monitoring plan include the technical basis for use of wells 199-H4-9, 199-H4-3, and 199-H4-65 to satisfy the point of compliance definition of WAC 173-303-645(6).
- The technical basis should address well location, well design, screen placement, etc.
- If a technical basis cannot be provided for using wells 199-H4-9, 199-H4-3, and 199-H4-65 to satisfy groundwater monitoring requirements of WAC 173-303-645 (6) and (8), the groundwater monitoring

plan shall specifies when groundwater monitoring wells will be installed at the 183-H Solar Evaporation Basins' point of compliance (as defined by WAC 173-303-645(6)).

- If applicable, the groundwater monitoring plan include a schedule for submitting a well installation plan.
- The groundwater monitoring plan specifies how the rate and direction of groundwater flow in the uppermost aquifer will be determined on an annual basis as required by WAC 173-303-645(10)(e). In addition, the plan specifies when and how the rate and direction of groundwater flow determinations required by WAC 173-303-645(10)(e) will be reported to Ecology on an annual basis.
- The groundwater monitoring plan specifies the changes to groundwater flow and groundwater quality due to interim remedial measures (i.e., pump-and-treat) at the 183-H Solar Evaporation Basins' point of compliance (as defined by WAC 173-303-645(6)) will be determined on a quarterly basis. In addition, the plan shall specifies that, on a quarterly basis, it will be determined if and how the interim remedial measures affect the groundwater monitoring wells.
- The groundwater monitoring plan describes and/or specifies river stage fluctuation influences on the water table in the vicinity of the 183-H Solar Evaporation Basins. If river stage fluctuations affect the water table in the vicinity of the 183-H Solar Evaporation Basins, the groundwater monitoring plan must include a description of how groundwater monitoring will be conducted to maximize the amount of groundwater (as opposed to river or surface water) being sampled.
- The groundwater monitoring plan describes the annual aquifer tube monitoring at the following river seepage locations: 46, AT-H-1, AT-H-2, AT-H-3, and 47. The plan shall identifies waste constituents, parameters, and/or tracers that will be monitored. At a minimum, the waste constituents, parameters, and/or tracers identified for the 183-H Solar Basins shall be considered for monitoring when sufficient water quantity allows.
- The plan identifies how annual monitoring results will be submitted to Ecology.
- The groundwater monitoring plan describes how 183-H Solar Evaporation Basin contaminants occurring downgradient from the unit will be characterized in the unconfined aquifer. Specifically, the plan shall describe how contaminant stratification characterization in the unconfined aquifer will be achieved.
- The groundwater monitoring plan specifies how the "duration of use" of all groundwater monitoring wells within the vicinity of the 183-H Solar Evaporation Basins (e.g., 199-H4-7, 199-H4-9, 199-H4-3, 199-H4-65, 199-H4-12A, 199-H4-12B, 199-H4-12C, and 199-H4-4) will be estimated. In addition, the plan shall specifies the "duration of use" estimates will be reported to Ecology on an annual basis.

o Include a permit conditions to ensure that prior to the installation of any additional wells to be used to satisfy WAC 173-303-645 groundwater monitoring requirements associated with the 183-H Solar Evaporation Basins, the Permittee shall submit, for Ecology's approval, a well installation plan that specifies the proposed location of well, well design, installation procedures, management of wastes generated during well installation, etc.

o Include a permit conditions to ensure that prior to any actions taken to deepen "dry" wells within the vicinity of the 183-H Solar Evaporation Basins, the Permittee shall submit a well deepening plan for Ecology approval that satisfies the groundwater protection standards of Chapter 173-160 WAC.

- The well deepening plan shall not be implemented until after the Permittee receives Ecology's approval of the plan.
- For wells located downgradient to and in the immediate vicinity of the 183-H Solar Evaporation Basins (i.e., wells 199-H4-7, 199-H4-9, 199-H4-3, 199-H4-65, 199-H4-12A, 199-H4-12B, 199-H4-12C, and 199-H4-4) for which new information (i.e., inspection information, report of damage, indication during use, etc.) has been obtained via well maintenance activities, routine use, or incident reporting indicating the well is an environmental, safety, or public health hazard, the Permittees shall provide Ecology written notice of the conditions of the well.
- For such wells, the Permittees shall provide Ecology a description of actions to be taken which includes a schedule for well remediation or decommissioning. For such wells, the Permittees must obtain Ecology's written approval to remediate or decommission the well.

- Three (3) years after the groundwater monitoring plan has been implemented, the Permittee submit a revised groundwater monitoring plan which specifies the 183-H Solar Evaporation Basins dangerous waste constituents to which the groundwater protection standards of WAC 173-303-645(3) apply.
  - The groundwater monitoring plan shall identifies 183-H Solar Evaporation Basins waste constituents for which there has been evidence of an increase in contamination at the 183-H Solar Evaporation Basins compliance point.
  - For 183-H Solar Evaporation Basins waste constituents that are required to be monitored for which the Permittee proposes to exclude from meeting the groundwater protection standards of WAC 1730303-645(3), the Permittee must address considerations of WAC 173-303-645(4)(b)(i), (ii), and (iii).
  - The groundwater monitoring plan identifies proposed 183-H Solar Evaporation Basins waste constituent concentration limits that satisfy WAC 173-303-645(5)(a)(i) or (ii).
  - The groundwater monitoring plan specifies actions to be taken when proposed concentration limits have been exceeded which include 1) notification of the exceedence, and 2) submittal of an application for a permit modification to establish a corrective action groundwater monitoring program which satisfies WAC 173-303-645(11).
  - The groundwater monitoring plan is signed and certified in accordance with the requirements of WAC 173-303-810(12) and (13).
  - The Permittee shall implement the groundwater monitoring plan required by this Condition within forty-five (45) days of receiving Ecology's approval of the plan.
- Which 183-H Solar Evaporation Basins-specific waste constituents, indicators, and/or groundwater contaminants will be used for statistical comparisons? At a minimum, statistical comparisons between upgradient and downgradient wells must be performed for the following waste constituents, indicators, and/or groundwater contaminants: chloroform, methylenechloride, tetrachloroethene, trans-1,2-dichloroethylene, trichloroethene, 1,1,1-trichloroethane, aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, strontium, thallium, tin, titanium, vanadium, zinc, chloride, fluoride, nitrate, nitrite, phosphate, sulfate, cyanide, formic acid, and total organic carbon.
- For purposes of satisfying groundwater monitoring requirements of WAC 173-303-645(8)(g) and (10)(d), the Permittee be required by Permit condition to establish initial upgradient concentrations for the 183-H Solar Evaporation Basins -specific waste constituents, indicators, and/or groundwater contaminants by obtaining at least four replicate measurements for each constituent identified collected quarterly for one year from the upgradient well identified for which statistical comparisons will be made.
- The groundwater monitoring plan identifies the 183-H Solar Evaporation Basins-specific waste constituents, indicators, and/or groundwater contaminants that will be monitored. At a minimum, the groundwater monitoring plan must identifies 183-H Solar Evaporation Basins-specific waste constituents, indicators, and/or groundwater contaminants and respective analytical methods.
- The groundwater monitoring plan identifies cesium-137, cobalt-60, strontium-90, isotopic uranium, plutonium-239/240, technetium-99, zinc-65, gross alpha, and gross beta as the 183-H Solar Evaporation Basins-specific radionuclides as "waste indicators" or "tracers". Statistical comparisons are not required to be performed on waste indicators.
- The groundwater monitoring plan include a sampling and analysis plan (SAP) which will identifies analytical methods and include descriptions of analytical procedures that will be followed for analyzing the 183-H Solar Evaporation Basins-specific waste constituents and indicators. The SAP shall be consistent with the following and Ecology publication Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]

Addenda H & K: Future actions identified in are closure actions (i.e., disposition of remaining nitrate and fluoride contamination in underlying soils; design of and placement of a landfill cover). There is no final corrective action for groundwater monitoring plan. It is unclear how the interim action treatment methodology is able to demonstrate achievement of the Corrective Action goals. Reliance on unwritten CERCLA documents is not compliant with the Dangerous Waste regulations of WA C173-303-610(7). This unit belongs in Part V until these all future actions are completed.

The YN ERWM program requests the following changes to the draft 216-A-36B Crib permit:

SEPA: The DNS appears to be based on an old non-compliant GW monitoring plan for an interim status facility. All TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
2. Statements in Fact Sheet inconsistent with Permit conditions
3. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b)
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws discussed.
6. Fact sheet written as a permit rather than a Fact Sheet. Permit Fact Sheets formats are inconsistent with each other.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Requirement of submittal of a Part A to correct errors after approval should have resulted in the denial of the permit application. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s) although they were submitted. DOE submitted a Closure plan for the 216-A-36B crib (DOE/RL-2005-88, Draft A.; use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). Unit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.

Specific Permit Condition comments:

1. V.12.B.1: Revise V.12.B.1 to state closure in accordance with Permit Condition V.12.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.12.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions
2. V.12.B.1.a: Questionable need for permit condition V.12.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.12.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.12.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610.

WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

- Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
- Direct contact consistent with WAC 173-340-900 (Table 745-1),
- Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
- Protection of ecological receptors achieved through one of the following methods:
  1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
  2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
  3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

5. V.12.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.12.B.8 & 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
     - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;

- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;

        - Surrogate samples;
    - Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
    - The Data Management Plan shall include the following as applicable:
        - A data record including the following:
        - Unique sample or field measurement code;
        - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
          Sampling or field measurement raw data;
          Laboratory analysis identification (ID) number;
          Result of analysis (e.g., concentration);
        - Tabular displays, as appropriate, illustrating:
            - Unsorted validated and invalidated data;
            - Results for each medium and each constituent monitored;
            - Data reduction for statistical analysis;
            - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
            - Summary data.
        - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
            - Displays of sampling location and sampling grid;
            - Identification of boundaries of sampling area and areas where more data is required;
            - Displays of concentrations of contamination at each sampling location;
            - Displays of geographical extent of contamination;
            - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
            - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
            - Identification of features affecting intramedia transport and identification of potential receptors;
- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-A-36B permit.

7. V.12.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.12.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.12.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.12.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative

requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.

11. No list of other applicable laws.
12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. Addendum D is a Groundwater monitoring plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The Groundwater plan is not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). The permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing.

   The list of Contaminants of Concern is short and should also include the following. Rational provided: The permittee previously defined contamination at the 216-A-36B Crib through remedial investigations (DOE/RL-2004-25, Draft A). The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituents. See DOE/RL-2004-25 DRAFT A (RI): Pg 3-16.
   - Bismuth.
   - Nitrate as nitrogen.
   - Nitrite as nitrogen.
   - Nitrate and nitrate/nitrite as nitrogen.
   - Total uranium.

   The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater. See DOE/RL-2004-25 DRAFT A : Pg 4-15 -16 & Tables 4-8 & 4-11 & 6-1 ; DOE/RL-2000-60, Rev.1: Pg. 3-11; DOE/RL-2004-85 DRAFT A (feasibility study): Pg. D-46-Table D-14 & Pg. 2-61/62& E-1.These reports also indicated the crib impacted groundwater and is subject to WAC 173-303-645.
   - Bismuth.
   - Gross beta.
   - Iodine-129.
   - Isophorone.
   - Nitrate and Nitrate/nitrite N.
   - Strontium-90.
   - Technecium-99.
   - Thorium.
   - Total Uranium.
   - Tritium.

The permittee previously found the following contaminants threatening ecological receptors through the soil pathway in DOE/RL-2004-25, DRAFT A (RI report): Pg 4-34-35, Tables 4-29 & 6-1; DOE/RL-2004-85 DRAFT A: Pg. E-1 & D-29-Table D-12.

- Silver
- Isophorone.
- Thorium.
- Actinium-228.
- Bismuth-212.
- Lead-212/214.
- Thallium-208.

Furthermore, Groundwater monitoring results reported in PNNL-13788 (DOE/RL-2000-60, Rev.1) reported radiological contaminations that exceed groundwater protection standards. These included gross beta, iodine-129, strontium-90, and tritium. See DOE/RL-2000-60 REV 1: Work plan & SAP for PW 2/4: Pg 3-11.
High levels of plutonium-239/240 and americium -241 in waste sample B17487 suggest some of the soil in this crib may be transuranic waste. See DOE/RL-2004-25 DRAFT A: Pg. 3-16.

All radiological constituents should be included as indicators for tracking purposes only.

A "Method based" approach is not used. Unfiltered sampling is called for in SAP [a good thing] but it is unclear in the GW monitoring plan if exactly which COCs will be sampled. Repairs & replacement of monitoring wells is not described. These actions must be in accordance with WAC 173-160. Any new wells need to be RCRA compliant wells.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
    - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
    - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
    - Sampling and monitoring equipment operation and maintenance
    - Monitoring and reporting on groundwater well security and maintenance
    - Providing sample chain of custody to the laboratory
    - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
    - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
    - Vegetative cover condition
    - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)
8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-PO-1 OU inspection requirements.

Inspection Schedule for the 216-A-36B Crib Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610.

The YN ERWM program's comments and requests for the following changes to the draft CA-1 Waste Management and CA-2 Groundwater Operable Units permits:

1. Include a Permit(s) condition(s) requiring submittal to Ecology of RCRA groundwater monitoring requirements from all CERCLA documents for incorporation into the units-specific Addenda housing the Groundwater Monitoring Plans. Ecology should require a crosswalk-table which identifies RCRA requirements in the CERCLA documents which are cited in the RCRA Permit and subject to WAC 173-303-830/840 process.
2. Until such time that Ecology has accepted the modeled results from the STOMP-1D code according to criteria in the Dangerous Waste Regulations, Ecology should require and incorporate unit-specific groundwater monitoring into the TSD Permit(s) in compliance with WAC 173-303-610(2)(b)(i) requirements.
3. Include/revise a Permit(s) condition(s) to ensure the Permittee complies with WAC 173-303 requirements to characterize the vertical and horizontal extent of contamination.
4. The Permit requires the Permittee to supply "a sufficient number of groundwater monitoring wells, and (to) add new wells as necessary to catch contaminants movement in the groundwater and identify compliance status," the number of usable wells on the Central Plateau is rapidly decreasing due to the dropping Water Table. Revise/include Permit(s) condition(s) requiring a sufficient number of monitoring wells be sited according to subsurface studies that identify suitable thick intervals of wetted aquifer to support groundwater monitoring into the future.
5. Revise/include a Permit(s) condition(s) requiring Groundwater Monitoring Plan(s) to require identification of the number and location (and criteria for determining these) of groundwater and leaked waste monitoring wells.
6. The vadose zone is not present in the Permit(s) groundwater monitoring plans. Include Permit(s) conditions providing for Ecology's oversight of vadose zone characterization and remediation activities as an important segment of the overall Hanford clean-up schema. Utilize Omnibus Authority under WAC 173-303-815(2) and include a Permit(s) condition(s) requiring characterization (i.e., physical sampling) and monitoring of the vadose zone beneath the Tank Farms and other mixed waste sites on the Hanford site [e.g., Tank Farms].
7. Ecology is cautioned that the Central Plateau Water Table level decline is making "wet" monitoring wells much harder to find or sustain. Since the Permit states that "Wells that are no longer sampled due to water table decline (i.e., "dry groundwater monitoring wells"), and for which there is no future use, must be decommissioned," review/ include a Permit(s) condition(s) requiring evaluation of the utility of using these dry groundwater monitoring wells for use in sampling, using pore water geochemical sampling, radiological or geophysical methods prior to decommissioning.
8. Include a Permit condition to ensure Ecology authority and oversight of all pump & treat systems including how groundwater monitoring wells are installed (compliant with WAC 173-160), utilized and managed.
9. Include a Permit condition requiring the use of a Risk Budget Tool to model cumulative effects to groundwater. This Permit(s) condition(s) should also include requirements for submittal of the parameters used in the Risk Budget Tool and their selection subject to the permit modification process. Do <u>not</u> to base the risk budget tool on non-validated models.
10. The statement that "Ecology, EPA, and DOE agree that past-practice authority may provide the most efficient means for addressing mixed waste groundwater contamination plumes originating from a combination of TSD and past-practice units" is not substantiated within the Dangerous Wastes regulations [WAC 173-303]. This statement does not provide for RCRA groundwater monitoring, nor does it provide for public involvement in important groundwater decisions. Delete this text from the Permit(s). It could be retained in the Fact Sheet.
11. It inappropriate to prospectively accept CERCLA work via the II.Y conditions as satisfying the Dangerous Waste WAC 173-303-645 corrective action permits requirements.

The YN ERWM program requests the following changes to the draft 222-S (Laboratory) Dangerous & Mixed Waste permit:

Permit Conditions General Comments:

1. Include a Permit condition to ensure the 222-S identification of all waste codes for all waste processed in the facility.
2. Include a Permit condition to ensure 222-S facility has the necessary upgrades, including maintenance and replacement of equipment for safe operations (examples: plumbing, sumps, and associated piping to waste receiving tanks).

The YN ERWM program requests the following changes to the draft 207-A South Retention Basins (SRB) permit:
SEPA: Indication of submittal of a required closure plan and closure actions under M-037- 10 & -02 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.
General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
2. Statements in Fact Sheet inconsistent with Dangerous Waste –WAC 173-303. Simply because the unit is not included in a groundwater monitoring network, does not exclude the requirement for groundwater monitoring under WAC 173-303-610(3).
3. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b)
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws discussed.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Requirement of submittal of a Part A to correct errors after approval should have resulted in the denial of the permit application. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. No closure plan(s) in the new RCRA permit(s) although these were submitted. DOE submitted a Closure Plan for 207-A SRB (DOE/RL-2005-89, Draft A). Delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
4. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion).

Specific Permit Condition Comments:

1. V.9.B.1: Revise V.9.B.1 to state closure in accordance with Permit Condition V.9.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Dangerous Waste closure regulation require these details in an approved Closure Plan
2. Delete current V.9.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions
3. V.9.B.1.a: Questionable need for permit condition V.9.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
4. V.9.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
5. V.9.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

   To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]

- Direct contact consistent with WAC 173-340-900 (Table 745-1),
- Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
- Protection of ecological receptors achieved through one of the following methods:
  1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
  2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
  3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

6. V.9.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
7. V.9.B.8 & 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
     - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
     - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
     - Methods for, or specification of, measuring all necessary ancillary data;
     - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
     - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
     - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
    - A data record including the following:
    - Unique sample or field measurement code;

- Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
  Sampling or field measurement raw data;
  Laboratory analysis identification (ID) number;
  Result of analysis (e.g., concentration);
- Tabular displays, as appropriate, illustrating:
  - Unsorted validated and invalidated data;
  - Results for each medium and each constituent monitored;
  - Data reduction for statistical analysis;
  - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
  - Summary data.
- Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
  - Displays of sampling location and sampling grid;
  - Identification of boundaries of sampling area and areas where more data is required;
  - Displays of concentrations of contamination at each sampling location;
  - Displays of geographical extent of contamination;
  - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
  - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
  - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-A-37-1 permit.

8. V.9.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit.
9. V.9.D: To ensure compliance with the Dangerous Waste Regulations, require Addenda B & H to include WAC 173-303-610(3) required information. No list of other applicable laws.
10. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites. Include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B]:

- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
    - Data Collection Strategy section including, but not limited to, the following:
    - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
    - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
    - Sampling section which shall include or describe, and reference or cite:
    - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
    - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
    - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
    - Methods for, or specification of, measuring all necessary ancillary data;
    - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
    - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
    - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
    - Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
    - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
    - Calibration of field devices (as applicable);
    - Collection of replicate samples;
    - Submission of field-biased blanks, where appropriate;
    - Potential interferences present at the facility;
    - Field equipment listing and sample containers;
    - Sampling order; and,
    - Descriptions of decontamination procedures.
    - Selection of appropriate sample containers, as applicable;
    - Sample preservation methods, as applicable; and,
    - Chain-of-custody procedure descriptions as applicable, including:

- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
    - A data record including the following:
    - Unique sample or field measurement code;
    - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
      Sampling or field measurement raw data;
      Laboratory analysis identification (ID) number;
      Result of analysis (e.g., concentration);
    - Tabular displays, as appropriate, illustrating:
        - Unsorted validated and invalidated data;
        - Results for each medium and each constituent monitored;
        - Data reduction for statistical analysis;
        - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
        - Summary data.
    - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:

        - Displays of sampling location and sampling grid;
        - Identification of boundaries of sampling area and areas where more data is required;
        - Displays of concentrations of contamination at each sampling location;
        - Displays of geographical extent of contamination;
        - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
        - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
        - Identification of features affecting intramedia transport and identification of potential receptors;
    - All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 207-A-SRB permit.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Reserved. However, U.S. DOE defined contamination at the 207-A South Retention Basin through remedial investigations (DOE/RL-2004-25 DRAFT A). The following are indicated to be contaminants of concern (COCs) and should be identified as such in the permit:
    - Spent halogenated and nonhalogenated solvents (F001, F002, F003, F004, and F005)(Acetone, Cresol-m, Cresol-o, Cresol-p, Methylene Chloride, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Trichloroethene)
    - silver,
    - arsenic,
    - nitrate,
    - tributyl phosphate,
    - 2,4-dichlorophenoxyacetic acid,
    - 2-(2,4,5-trichlorphenoxy)
    - propionic acid,
    - acetone,
    - chloroform,
    - butylbenzylphthalate,
    - and the state-only dangerous waste, ammonia (WT02).
4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum.
7. Addendum H: Information should have been submitted with application
8. Addendum J: Reserved but information should have been submitted.

The YN ERWM program requests the following changes to the draft 216-A-29 Ditch permit:

SEPA: The DNS appears to be based on an old non-compliant GW monitoring plan for an interim status facility. All TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments Fact Sheet:

1. Statements inconsistent with data and lead the reader to believe there are no threats or potential threats [e.g. The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater. See DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7; Table 6-1; DOE/RL-2005-63, Draft A, Pg. 2-35 & 2-88, Table 2-8; DOE/RL-2005-64, DRAFT A (Proposed Plan): Table 4; DOE/RL-2005-64, DRAFT B REISSUE (Proposed Plan):Pg 4; Table 1].
2. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
3. Statements in Fact Sheet inconsistent with Permit conditions
4. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b)
5. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
6. No list of other applicable laws discussed.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s); use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). U nit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.

Specific Permit Condition comments:

1. V.11.B.1: Revise V.11.B.1 to state closure in accordance with Permit Condition V.11.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.11.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions
2. V.11.B.1.a: Questionable need for permit condition V.11.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.11.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.11.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610.

WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

- Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
- Direct contact consistent with WAC 173-340-900 (Table 745-1),
- Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
- Protection of ecological receptors achieved through one of the following methods:
  1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
  2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
  3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

5. V.11.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.11.B.8 & 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
     - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
     - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
     - Methods for, or specification of, measuring all necessary ancillary data;

- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f). This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall

also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.

- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-A-29 permit.

7. V.11.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.11.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.11.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.11.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.
11. No list of other applicable laws.
12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of

the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Addendum H cites a Sampling and Analysis Plan outside the permit; regulations require inclusion of this within the permit while permit says "Reserved". Revise Addendum B, Section B.7 Quality Assurance/Quality Control as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA QC Requirements at Nuclear Waste Sites. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites. See above comments.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. D is a GW plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The GW plan is not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing.
   List of Contaminants of Concern is short and should also include the following. Rational provided: The permittee previously defined contamination at the 216-A-29 Ditch through remedial investigations (DOE/RL-2004-17, Draft A). The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituents. See DOE/RL-2004-17, Draft A (RI),Pg. ES-6, Table ES-2 & pg 6-8; Table 6-2,DOE/RL-2005-63, Draft A (FS) Pg. 2-35 & 2-88, & Tables 2-3, 2-8
   - 1, 2-Dichloroethane.
   - Aroclor-1254.
   - Benzo (a) anthracene.
   - Benzo (a) pyrene.
   - Benzo(b)fluoranthene
   - Bismuth.
   - Cadmium.
   - Chrysene.
   - Tributyl phosphate.

   The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater. See DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7; Table 6, DOE/RL-2005-63, Draft A, Pg. 2-35 & 2-88, Table 2-8, DOE/RL-2005-64, DRAFT A (Proposed Plan): Table 4, DOE/RL-2005-64, DRAFT B REISSUE (Proposed Plan):Pg 4; Table 1.
   - 1, 2-Dichloroethane.
   - Aroclor-1254.
   - Arsenic.
   - Benzo (a) anthracene.
   - Bismuth.
   - Cadmium.
   - Chrysene.
   - Mercury.
   - Methylene chloride.
   - Nitrate.
   - Nitrate/nitrite.
   - Sulfate.
   - Tributyl phosphate.

- Total Uranium
- Tetrachloroethylene
- Uranium

The permittee previously found the following contaminants threatening ecological receptors through the soil pathway in DOE/RL-2004-17, Draft A and two others (DOE/RL-2005-63 and DOE/RL-2005-64, DRAFT B REISSUE. See DOE/RL 2004-17 DRAFT A, Pg 4-171, Table 4-33, DOE/RL-2005-63, DRAFT A: pg 2-83; Table 2-8, DOE/RL-2005-64, DRAFT B REISSUE:, Pg 4; Table 1, DOE/RL-2005-64, DRAFT A: Table 4).

- 1, 2-Dichloroethane.
- Acetone.
- Aroclor-1254.
- Arsenic
- Bismuth.
- Benzo (a) anthracene.
- Benzo (b) fluoranthene.
- Bis (2-ethylhexyl) phthalate.
- Boron.
- Butylbenzylphthalate.
- Cadmium.
- Chromium VI.
- Chrysene.
- Chloride.
- Diethyphthalate.
- Di-n-butylphthaltae.
- Fluoranthene.
- Lead.
- Methylene chloride.
- Molybdenum.
- PCBs
- Pyrene.
- Selenium.
- Silver.
- Sulfate.
- Tetrachloroethylene
- TPH-kerosene range.
- Tributyl phosphate
- Uranium.
- Vanadium.

These studies reported radioactive radium, thorium, plutonium, cesium, total uranium (and daughter products), tritium, and others. They also reported the radioactive contaminants of potential ecological concern, neptunium-237 and antimony-125, plutonium-238, and thorium-230. See DOE/RL-2004-17, DRAFT A: pg 4-17 & Table 4-37, DOE/RL-2005-63, Draft A, Table 2-8. These should be included as indicators for tracking purposes only.

It was noted that a "Methods based approach" is not used. Filtered sampling is use instead of non-filtered per regulations. Repairs and replacement of monitoring wells is not described. Repairs and replacement of monitoring wells must be in accordance with WAC 173-160-. Any new wells need to be RCRA compliant wells.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.

- Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
- Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
- Sampling and monitoring equipment operation and maintenance
- Monitoring and reporting on groundwater well security and maintenance
- Providing sample chain of custody to the laboratory
- Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
- Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)
8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-PO-1 OU inspection requirements.

Inspection Schedule for the 216-A-29 Ditch Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3-5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610

The YN ERWM program requests the following changes to the draft 216-B-3 Pond & Ditch permit:

SEPA: All TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure]. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't yet exist.
2. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b).
3. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements.
4. No list of other applicable laws discussed.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s); use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Nothing in permit identifying required clean closure of or excavation of near-surface soil and remove any associated pipelines or structures (ancillary equipment) [WAC 173-303-610].
6. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). U nit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.
7. Radionuclides are not regulated under Dangerous Waste Regulations at WAC 173-303. Instead they are regulated under CERCLA regulations at 40 CFR 300. However, Ecology should ensure that anticipated remedial actions for radioactive constituents shall be consistent with the closure activities required under WAC 173-303.

Permit Conditions Specific Comments:

1. V.22.B.1: Revise V.22.B.1 to state closure in accordance with Permit Condition V.22.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.22.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions
2. V.22.B.2: Questionable need for permit condition V.22..B.2. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.

3. V.22.B.3: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.22.B. 4& 5: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

   To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:
   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:
     1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
     2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
     3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
5. V.22.B. 6 & 7& 8: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.22.B. 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;

- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);

        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;
    - Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f). This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
    - The Data Management Plan shall include the following as applicable:
        - A data record including the following:
        - Unique sample or field measurement code;
        - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
          Sampling or field measurement raw data;
          Laboratory analysis identification (ID) number;
          Result of analysis (e.g., concentration);
        - Tabular displays, as appropriate, illustrating:
            - Unsorted validated and invalidated data;
            - Results for each medium and each constituent monitored;
            - Data reduction for statistical analysis;
            - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
            - Summary data.
        - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
            - Displays of sampling location and sampling grid;
            - Identification of boundaries of sampling area and areas where more data is required;
            - Displays of concentrations of contamination at each sampling location;
            - Displays of geographical extent of contamination;
            - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
            - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
            - Identification of features affecting intramedia transport and identification of potential receptors;
- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-B-3 permit.

7. V.22.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.22.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.22.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.22.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate

unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.

11. No list of other applicable laws.
12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. Addendum D is a Groundwater plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The Groundwater plan is not consistent with the Dangerous Waste regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing. The 200-BP-5 OU and 200-PO-1 should be the groundwater operable units for this permit.

   List of Contaminants of Concern (COC) is short and should also include the following: Rational provided: The permittee previously defined contamination at the 216-B-3 through remedial investigations (DOE/RL-2000-35). The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituents (in the pond).
   - Cadmium.
   - Lead.
   - Arsenic.
   - Nitrate.
   - Mercury

   In this study, the permittee also identified tritium and Cesium-137. In DOE/RL-2002-69, Draft A, the permittee also identified Am-241 as a main contaminant at the pond.
   The permittee has previously identified as major contaminants for the 216-B-3-3 Ditch (DOE/RL-2002-69, Draft A) the following dangerous constituents:
   - Mercury.
   - Aroclor-1254.
   - Aroclor-1260.
   - Arsenic.
   - Cadmium.

   The permittee also identified Cesium-137, Pu-239, Pu-240 and Sr-90 as major contaminants for the 216-B-3-3 Ditch.
   The permittee previously found the following contaminants (and these should also be included on the COC list) threatening ecological receptors through the soil pathway in DOE/RL-2000-35 and DOE/RL-200-06.
   - benzo(a)anthracene.

- benzo(a)pyrene.
- benzo(b)fluoranthene.
- Benzo(K)fluoranthene.
- Cadmium.
- Chrysene.
- Indeno (1,2,3-cd)pyrene.
- Lead.
- Mercury.
- Aroclor 1260.
- Thallium.
- Uranium.
- Radioactive ^{137}cesium.

The permittee previously identified the following contaminants of potential ecological concern (COPECs) in addition to the contaminants above. See DOE/RL-2000-35 and DOE/RL-2002-69.

- Antimony.
- Hexavalent chromium.
- Selenium.
- Radioactive tritium, radioactive thorium-230, uranium-235, uranium-238, and strontium-90.

All radiological constituents should be included as indicators for tracking purposes only.

A "Methods based approach" is not used. Filtered sampling is use instead of non-filtered per regulations. Repairs & replacement of monitoring wells is not described. These actions should be in accordance with WAC 173-160. Any new wells need to be RCRA compliant wells.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310.
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340.
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
    - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
    - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
    - Sampling and monitoring equipment operation and maintenance
    - Monitoring and reporting on groundwater well security and maintenance
    - Providing sample chain of custody to the laboratory
    - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
    - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
    - Vegetative cover condition
    - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)

8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-BP-5 and 200-PO-1OU inspection requirements.

Inspection Schedule for the 216-B-3 Pond Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610

The YN ERWM program requests the following changes to the draft 216-B-63-Trench permit:

SEPA: TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
2. Statements in Fact Sheet inconsistent with Permit conditions
3. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b)
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws discussed.
6. Fact sheet written as a permit rather than a Fact Sheet. Permit Fact Sheets formats are inconsistent with each other.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Requirement of submittal of a Part A to correct errors after approval should have resulted in the denial of the permit application. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s); use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). Unit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.

Specific Permit Condition comments:

1. V.21.B.1: Revise V.21.B.1 to state closure in accordance with Permit Condition V.21.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.21.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions
2. V.21.B.2: Questionable need for permit condition V.21.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.21.B.3: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.21.B.4 & 5: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels

calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

- Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
- Direct contact consistent with WAC 173-340-900 (Table 745-1),
- Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
- Protection of ecological receptors achieved through one of the following methods:
  1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
  2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
  3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

5. V.21.B.6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.21.B.8 & 9& 10: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
     - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
     - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;

- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

o Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation

materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.

- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-B-63 permit.

7. V.21.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.21.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.21.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.21.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.

11. No list of other applicable laws.
12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. D is a GW plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The GW plan is not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). The permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing.

   The list of Contaminants of Concern is short and should also include the following. Rational provided: The permittee previously defined contamination at the 216-B-63 Trench during the 200-CS-1 feasibility study (DOE/RL-2005-63, Draft A); the permittee further defined contamination at the 216-B-63 Trench. See DOE/RL-2005-63, Draft A, Pg. 2-35 & Tables 2-3, 2-8. The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituent:

   - Bismuth.

   The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater. See DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7; Table 6-1; DOE/RL-2005-63, Draft A, Pg. 2-35 & 2-88, Table 2-8; DOE/RL-2005-64, DRAFT B REISSUE: Pg 4; Table 1.

   - Aroclor-1260.
   - Benzene.
   - Bismuth.
   - Cadmium.
   - Methylene chloride.
   - Nitrate.
   - Nitrate/nitrite.

   The permittee previously found the following contaminants threatening ecological receptors through the soil pathway in DOE/RL 2004-17 DRAFT A, Pg 4-169, Table 4-32; DOE/RL-2005-63, DRAFT A: pg 2-88; Table 2-8; DOE/RL-2005-64, DRAFT B REISSUE: Pg 4; Table 1.

   - Acetone.
   - Antimony.
   - Aroclor-1260.
   - Bis (2-ethylhexyl) phthalate.
   - Boron.
   - Methylene chloride.
   - Selenium.
   - Sulfide.
   - Toluene.
   - Vanadium.

This study (DOE/RL-2004-17, DRAFT A: pg 4-17 & Table 4-36) also reported radioactive cesium, neptunium, strontium, thorium, and others. It also reported potential ecological concern, neptunium-237, thorium-230, and total radioactive strontium.

All radiological constituents should be included as indicators for tracking purposes only.

It is unclear if a "Method based" approach is used. Unfiltered sampling is called for in SAP [a good thing] but it is unclear in the GW monitoring plan if exactly which COCs will be sampled. Repairs & replacement of monitoring wells is not described. These actions must be in accordance with WAC 173-160-. Any new wells need to be RCRA compliant wells. GW Plan seems to indicate more upgradient wells being sampled than what the SAP indicates; there seems to be some inconsistencies.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
   - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
   - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
   - Sampling and monitoring equipment operation and maintenance
   - Monitoring and reporting on groundwater well security and maintenance
   - Providing sample chain of custody to the laboratory
   - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
   - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
   - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
   - Vegetative cover condition
   - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)
8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-PO-1 OU inspection requirements.

Inspection Schedule for the 216-B-63-Trench Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610.

The YN ERWM program requests the following changes to the draft 216-A-37-1 Crib permit:

SEPA: The DNS appears to be based on an old non-compliant GW monitoring plan for an interim status facility. All TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
2. Statements in Fact Sheet inconsistent with Permit conditions
3. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b)
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws discussed.
6. Fact sheet written as a permit rather than a Fact Sheet. Permit Fact Sheets formats are inconsistent with each other.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Requirement of submittal of a Part A to correct errors after approval should have resulted in the denial of the permit application. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s) although these were submitted. DOE submitted a Closure Plan for 216-A-371 Crib (DOE/RL-2005-88, Draft A) ; use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). Unit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.

Specific Permit Condition Comments:

1. V.13.B.1: Revise V.13.B.1 to state closure in accordance with Permit Condition V.13.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.13.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers].
2. V.13.B.1.a: Questionable need for permit condition V.13.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.13.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.13.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations

(MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

- Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
- Direct contact consistent with WAC 173-340-900 (Table 745-1),
- Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
- Protection of ecological receptors achieved through one of the following methods:
  1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
  2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
  3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

5. V.13.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.13.B.8 & 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
     - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
     - Sampling section which shall include or describe, and reference or cite:
     - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
     - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
     - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
     - Methods for, or specification of, measuring all necessary ancillary data;

- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

o Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting

procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.

- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-A-37-1 permit.

7. V.13.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.13.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.13.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.13.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.
11. No list of other applicable laws.

12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. D is a GW plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The GW plan is not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). The permit must clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing.

   The list of Contaminants of Concern is short and should also include the following. Rational provided: The permittee previously defined contamination at the 216-A-37-1Crib through remedial investigations (DOE/RL-2004-25, Draft A). The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituents. See DOE/RL-2004-25 DRAFT A (RI): Pg 3-19.
   - Nitrate.
   - Nitrate/nitrite.
   - Aluminum.
   - Halogenated solvents/Nonhalogenated solvents.
   - Manganese.
   - Thallium.

   The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater. See DOE/RL-2004-25 DRAFT A: Pg 4-15 & Tables 4-8 & 4-11 & 6-1, DOE/RL-2000-60, Rev.1 (Work plan & SAP for PW 2/4): Pgs. 2-46 & 3-11, DOE/RL-2004-85 DRAFT A (feasibility study): Pg. D-47-Table D-14 & Pg. 2-61& E-1. These reports also indicated the crib impacted groundwater, and therefore must comply with WAC 173-303-645 for releases from regulated units.
   - Aluminum.
   - Cobalt.
   - Halogenated solvents/Nonhalogenated solvents.
   - Manganese.
   - Nitrate and Nitrate/nitrite-N.
   - Thallium.
   - Thorium.
   - Tributylphosphate.
   - Uranium.

   The permittee previously found the following contaminants threatening ecological receptors through the soil pathway in DOE/RL-2004-25, DRAFT A (RI report): Pg 4-34, Tables 4-30 & 4-36 & 6-1, DOE/RL-2004-85 DRAFT A: Pg. E-1 & D-3-Table D-12.
   - Acetone.

- Ammonia.
- Barium.
- Bis (2-ethylhexyl) phthalate.
- Boron.
- Halogenated solvents/Nonhalogenated solvents.
- Nitrate.
- Nitrite.
- Thorium.
- Tributylphosphate.

This study (DOE/RL-2004-25 DRAFT A: Pg 4-34) also reported radioactive actinium-228, bismuth-212/214, lead-212/214, and thallium-208 as exceeding ecological screening levels. See DOE/RL-2004-25 DRAFT A: Pg 4-34. Groundwater monitoring results reported in DOE/RL-2004-25, DRAFT A and PNNL-13788 (DOE/RL-2000-60, Rev.1) also identified radiological contaminants that have impacted groundwater (tritium and Iodine-129). See DOE/RL-2004-25, DRAFT A: Table 6-1 and DOE/RL-2000-60, Rev.1: Pg. 3-11.

Furthermore, Groundwater monitoring results reported in PNNL-15070 identified the following radiological constituents (some noted as exceeding groundwater protection standards). Some of these were also noted in noted in the closure plan (DOE/RL-2005-88 DRAFT A, PG 5.5) submitted previously:

- Total plutonium.
- Gross alpha.
- Gross beta.
- Americium-241.
- Strontium-90.
- Tritium.

Geophysical logging for the 216-A-37-1 crib (CP-18666) also detected cesium-137 that exceeded groundwater protection standards.

All radiological constituents should be included as indicators for tracking purposes only.

It is unclear if a "Method based" approach is used. Unfiltered sampling is called for in SAP [a good thing] but it is unclear in the GW monitoring plan if exactly which COCs will be sampled. Repairs & replacement of monitoring wells is not described. These actions must be in accordance with WAC 173-160-. Any new wells need to be RCRA compliant wells.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
    - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
    - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
    - Sampling and monitoring equipment operation and maintenance
    - Monitoring and reporting on groundwater well security and maintenance
    - Providing sample chain of custody to the laboratory
    - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)

- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)
8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-PO-1 OU inspection requirements.

Inspection Schedule for the 216-A-37-1 Crib Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610.

The YN ERWM program requests the following changes to the draft LERF / ETF Permit:

SEPA: DNS base on previously submitted SEPA checklists and prior determinations. New permits require new evaluations of current operations.

General Comments on Permit Conditions:

1. Edit /revise permit conditions to ensure consistency with DST permit conditions.
2. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-640(7); only WAC 173-303-640 is hyper-linked and not the necessary (7) portion).
3. Revise Addendum B, Section B.7 Quality Assurance/Quality Control as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
4. To ensure secondary containment system capacity requirements (WAC 173-303-630(7) are met; Include/revise a permit condition limiting to 50 percent of floor area of the container storage (22.9 by 8.5 by 0.15 meters) to be occupied by containers at any one time. [See pg. 17 Addendum C, line 1, Section C.3.4.3].
5. To ensure compliance with Addendum C, Revise Waste Acceptance Permit conditions to identify the criteria for receiving new waste WTP streams at ETF. Take into consideration the uncertainty of characterization and volumes of waste streams primarily coming from WTP and going to ETF, and ensure a robust and conservative waste acceptance criterion for ETF.
6. Edit and explain in Addendum C Section C.6 the following text: *because the 200 Area ETF main treatment train is a Clean Water Act, equivalent treatment unit [40 CFR 268.37(a)] incorporated by reference by WAC 173-303-140, generators are not required to identify underlying hazardous constituents for characteristic wastes pursuant to 40 CFR 268.9, incorporated by reference by WAC 173-303-140, for wastewaters (i.e., <1 percent total suspended solids and <1 percent total organic carbon)this precludes 10% or greater organics in waste streams to be processed at ETF.* Delete Addendum B, Section B.2.2.2 Pg. 14, lines 6 & 7 statements that it would be impractical to define numerical acceptance or decision limits, etc. [see Section C.6 Air Emissions Control: Subpart BB (WAC 173-303-691) is not applicable because aqueous waste with 10 percent or greater organic concentration would not be acceptable for processing at the ETF.]
7. Include more details in Addendum C (in the appropriate Section(s)) as to what human health or environmental hazards may exist as a result of facilities operations and the controls in place to mitigate or eliminate these concerns
8. Include more details in Addendum C, Pg. 8, line 3, Section C.2.2 Effluent Treatment Facility Operating Configuration to describe potentially abnormal feed streams which could threaten human health or the environment and how these will be documented.
9. Include more details in Addendum C, Pg. 10, line 39, Section Verification on what's done to the effluent returned to the LERF, should a treated effluent not meet Discharge Permit or Final Delisting requirements.
10. Include more details in Addendum C, Pg.11, line 40, Section Concentrate Staging on how the solids are removed to prevent fouling and to protect the thin film dryer, and to maintain concentrate tank capacity.
11. Include more details in Addendum C, Pg. 36, line 45, Section C.5.2.1.5 Internal and External Pressure Gradients on how the filter extracts the organic compounds ensuring the air is non-toxic.
12. Include details in Addendum C, Pg.12, line 14, Section Container Handling on safety precautions during manual recapping of filled containers and complies with WAC 173-303-630(5) requirements.
13. Include details in Addendum C, Pg.15, line 9 on how the 200 Area ETF floor provides secondary containment, and the 200 Area ETF roof and walls protects all containers from exposure to the elements in accordance with the WAC 173-303-630(7),(8),and (9)requirements.
14. Include details in Addendum C, Pg.15, line 14 on how the absorbents are added, as necessary in accordance with the WAC 173-303-160(4)(b)(i) thru (iv) requirements.
15. Include details in Addendum C, Pg.15, line 27 on how any reused or reconditioned container will comply with WAC 173-303-160 requirements.
16. Include citation WAC 173-303-630 as a compliance requirement in Addendum C, Pg 15, line 31, Section C.3.2 Container Management Practices.
17. Include citation WAC 173-303-630(9) as a compliance requirement in Addendum C, Pg 17, line 23, Section C.3.4.6: Prevention of Ignitable, Reactive, and Incompatible Wastes.

18. Include details in Addendum C, Pg.13, Section C.2.5.2 Vessel Off gas System & Pg. 31, Section C.4.6 Air Emissions on how the following is dealt with and how this is in compliance with WAC 173-303-630(11) requirements [note: Section C.6 is very well written]:
    a. Degasification; on how purged carbon dioxide is vented to the vessel off gas system (including description of air filters).
    b. Thin Film Drying; on how noncondensible vapors and particulates from the spray condenser are exhausted to the vessel off gas system (including description of air filters).
19. Addendum D: General Comments:
    1. Addendum D monitored dangerous constituents and those monitored in Addendum H are, disconnected. Retain Arsenic, beryllium as constituents of concern in both Addenda.
    2. Edit/revise Addendum D (e.g., D.3.9.6) to remove any reference to use of the Shewhart/CUSUM method and revise with Ecology approved statistical method. (see Appendix A-PNNL-14521-Communications with Ecology; A.1 letter from D. Goswami to M.J.Furman)
    3. Edit Groundwater Permit conditions and Addendum D to ensure compliance with WAC 173-303-645. Addendum D: Pg 5, line 24 Section D.1 states "Inter-well statistical evaluation of LERF groundwater monitoring data has not been performed since 2001." Given that background or baseline values are used to determine whether a RCRA-regulated unit has adversely affected the groundwater quality in the uppermost aquifer beneath the site. And that this is accomplished by testing for statistically significant changes in concentrations of constituents of interest in a downgradient monitoring well relative to baseline levels. And that these baseline levels could be obtained from upgradient (or background) wells, and are referred to as interwell (or between-well) comparisons, it is unclear how required (WAC 173-303-645) statically significant evidence of contamination is obtainable.
    4. Edit Addendum D and include Permit condition(s) to ensure monitoring well maintenance, remediation, and abandonment will involve and be performed in accordance to the following:

- Development of a well inspection plan involving inspection of wells at least once every 5 years; placement of inspection documentation in the Hanford Facility Operating Record).
- Evaluation of wells in accordance with Sections 4.2 through 4.8.3 of Attachment 1 of the HF RCRA
- Provision of written notice to Ecology at least 72 hours before the Permittees remediate (excluding maintenance activities) or abandon any well subject to the HF RCRA Permit.
- Construction of wells pursuant to the HF RCRA Permit in compliance with WAC 173-160.

    5. Addendum D: Edit LERF Groundwater Permit conditions and Addendum D to require re-drilling of well 299-E35-2 to depths sufficient for groundwater monitoring sampling requirements (i.e., yield representative samples of groundwater) and drill additional new upgradient and down-gradient wells (see SGW-41072, REV 0, 'The main potential weakness of the well configuration for monitoring would be for constituents to sink and transport below well 299-E26-10 because the well is not fully penetrating & Addendum D, Pg. 11, line 13 Section D.2.4). LERF Groundwater monitoring wells: Well 299-E26-11 [east of LERF] formerly identified as the 'upgradient well,' has been determined to be in a semi-confined aquifer and may not provide representative samples in comparison to the other wells in the monitoring system. It and well 299-E26-10 are projected to be unfit for sampling with the decline of the water table. Furthermore, as groundwater flow rates and directions is westerly when incorporating well 299-E26-11 water-level data and more southerly when data for well 299-E26-11are not incorporated (SGW-41072, REV 0), it has not been demonstrated how the current well monitoring system can be "deemed adequate" and in compliance with WAC 173-303-645(8)(a) without appropriate location of and depth of reliable upgradient and downgradient wells.
    6. Edit Addendum D, as need, for clarity to include:

- Calculation of the rate of unconfined aquifer decline at all groundwater monitoring wells at the LERF point of compliance
- Establishment of the lateral continuity of the unconfined aquifer between groundwater monitoring wells at the LERF point of compliance
- Establishment of the hydrogeologic and groundwater chemistry relationships between groundwater in the Hanford Formation and the uppermost portion of the Elephant Mountain Member (i.e., determine if these represent a single, laterally-continuous aquifer)
- Hydrogeologic testing, well construction, monitoring, etc., as necessary, to achieve the stated objectives of the groundwater monitoring program.

- Calculation and recording of a "leakage rate" for each basin quarterly (once per every three months). The "leakage rate" calculation will be based on totalizer readings, leachate pump rate, and sump level change. The "leakage rate" will be calculated and recorded in units of gallons/acre/day.
- A description of procedures and protocol followed for quarterly (once per every three months) leachate quantity measurements and "leakage rate" calculations. The procedures and protocol followed will be maintained at the LERF Basin's unit. The description will include a description of equipment and methods for reading and/or calculating volumes.
- Explanation of how records and results of leachate quantity measurements and "leakage rate" calculations will be maintained at the LERF Basin's unit.

7. From the different geochemistry observed at the various LERF wells, it might be concluded that the wells are not interconnected. As such, Ecology should demonstrate how it was determined that the current groundwater monitoring network is sufficient to detect releases from LERF. Since this cannot be demonstrated and given the presence of nitrate and sulfates, and the lack of a monitoring well in the confined aquifer (in the basalt), vadose zone monitoring is justified (using omnibus authority WAC 173-303-815(2)(b)(ii)).

   Edit Addendum D to ensure satisfaction of performance standards of WAC 173-303-283 that prevent degradation of groundwater quality by to include a sampling and analysis(SAP) describing how the Permittee will evaluate, select, construct, and implement unsaturated monitoring beneath the LERF surface impoundments. This should include description of procedures, structures, or equipment used in the Unsaturated Monitoring Plan; the type(s), numbers, and location of instruments deployed; schedule for constructing or installing any new equipment; description of sampling and analysis; reporting schedules; description of procedures to be followed in the event of a detected release. Consideration should be given to the following alternative environmental monitoring technologies:
   - Neutron-Neutron: determination of moisture content, porosity (saturated), and identification of aquitards and lithology
   - Tensiometry/Suction Lysimetry: derivation of matric potential; water content, hydraulic conductivity; pore water samples
   - Resistivity Tomography: monitor changes in bulk density;
   - Crosshole Radar: moisture distribution, lithology, soil disturbances, buried materials
   - Seismic Tomography: porosity, mechanical rock properties, lithology;
   - Crosshole Electromagnetic Induction: moisture distribution, identification of shallow contaminant plumes, lithology through steel casing
   - High-Resolution Resistivity: moisture, lithology, geologic structure, buried materials, identification of shallow contaminant plumes
   - Time Domain Reflectrometry: monitoring flow and transport, and lithology

8. Edit Addendum D, as need, to reference to D.3.11 when discussing data evaluations not D.3.13.
19. Edit Addendum F, to include compliance with WAC 173-303-340 requirements.
20. Edit Addendum F Pg. 6, line 29, Section F.2.1 to specifically cite [as appropriate given the event] WAC 173-303, -145, -350, -360, -610, -645 as the regulatory requirements for management of spills.
21. Edit Addendum F, Pg 8, line 37, Section F.3 to delete following text: *Therefore, the requirements of WAC 173-303-806(4)(a) are not applicable.* All RCRA permitted facilities are subject to WAC 173-303-806(4).
22. Edit Addendum G Training Category Matrix Table, for consistency with Addendum H, to require training in Emergency Response for Sampling Personnel.
23. Edit Addendum H to include text as needed to provide details [e.g., name of TSD disposal unit] of the management of containers filled with waste as a result of various closure actions for these facilities.
24. Edit Addendum H to include text as needed to ensure all "disposals" are in a RCRA compliant facility includes meeting LDR requirements of WAC 173-303-140.
25. Edit Addendum H Pg. 6, line 40-41, Section H.2.3 Closure Standards for Underlying Soils (and elsewhere as needed) to include text that in addition to EPA/240/B-01/003 (EPA/QA R-5), *EPA Requirements for Quality Assurance Project*41 *Plans*, as amended, the sampling and analysis plan will be consistent with Ecology Publication #94-111, Guidance for Clean Closure of Dangerous Waste Units and Facilities as amended.
26. Edit Addendum H, Pg. *5, line 17 Section H.1 to delete "aqueous makeup" as* included in uncontaminated equipment and structures, etc.

27. Edit Addendum H, Pg. 6, line 3 to delete "practical". All ancillary equipment must be flushed and drained. Provide details as to the disposal in a RCRA compliant facility. Edit line 12, to delete reference to partial closure.
28. Edit Addendum H, Pg. 6, line 22 Section H.2.3 to cite WAC 173-303-140 requirements.
29. Edit Addendum H, Pg. 6 lines 30-41 Section H.2.3 to include citation WAC 173-303-610(2)(b)(i), or background levels for Hanford soil if background is greater as the closure performance standard for soils/soil/bentonite mixture under ETF. Identify requirement of the Sampling and Analysis Plan to be consistent with Ecology Publication #09-05-007.
30. Edit Addendum H, Pg. 7 Section H.3.1 General Closure Activities to state closure will comply with WAC 173-303-640 and 173-303-650 requirements as well as 173-303-610.
31. Revise Addendum H, Pg. 8, lines 45-46-, Section H.3.4.2 [an elsewhere throughout the document as necessary] "Drainage Layer and Secondary Liner" Line 14: Include text to describe management of filled waste containers. Edit Addendum H to include text to describe management of containers filled with waste as a result of various closure actions for these facilities.
32. Revise Addendum H, Pg. 8, lines 45-46-, Section H.3.4.2 [an elsewhere throughout the document as necessary] "Drainage Layer and Secondary Liner" to also state the sampling and analysis plan will also be consistent with Ecology Publication #09-05-007.
33. Revise Addendum H, Pg. 9, lines 16-, Section H.3.4.3 [an elsewhere throughout the document as necessary] "Tanks" to also state tanks closures will comply with WAC 173-303-640(8) requirements. Define that all tanks not meeting clean debris performance standards will be macro-encapsulated in their entirety, by use of a jacket of inert inorganic materials and disposed of in a RCRA compliant storage facility [e.g. ERDF].
34. Revise Addendum H, Pg. 10, lines 13-15, Section H.3.4.4 [an elsewhere throughout the document as necessary] "Internal and External Piping and Ancillary Equipment" to state: *If it is not possible to meet the clean debris surface standard or the piping or ancillary equipment cannot be inspected, those portions of the piping and ancillary equipment will be removed, designated, and disposed of according to WAC 173-303-640(8) and 173-303-650 requirements.* Delete text, lines 16-19: It is inconsistent with WAC 173-303 Dangerous Waste regulations to require compliance *with closure consistent with the 200-IS-1 operable unit decisions*; these decisions remain outstanding.
35. Revise Addendum H, Pg. 11, lines 2-18 Section H.3.4.7 [an elsewhere throughout the document as necessary] "Structures" to state closure steps *will include but not be limited to the following activities in accordance to WAC 173-303-610(2)(b)(ii) requirements:*
36. *Revise Addendum H, Pg. 11, Section H.3.4.7 [an elsewhere throughout the document as necessary] "Underlying Soils" to require soil sampling under LERF's secondary liner in accordance with WAC 173-*303-650(6) and 173-303-610(2)(b)(i) requirements.
37. Revise Addendum H, Pg. 11, lines 26-37 Section H.3.4.7 [an else*where throughout the document as necessary] "Underlying Soils" to* require sampling of the concrete floors and bermed areas in accordance with WAC 173-303-640(8) requirements.
38. Revise Addendum H, Pg. 11, lines 38-40 Section H.3.4.7 [an elsewhere throughout the document as necessary] "Underlying Soils" to require sampling of the soil areas underneath external piping (transfer lines) between the 242-A Evaporator and LERF and 200 Area ETF in accordance with WAC 173-303-640(8) requirements.
39. Revise Addendum H, Pg. 12, line 4, Section H.5.1 [an elsewhere throughout the document as necessary] Closure of Containers to require Closure in accordance with WAC 173-303-610 & 173-303-630 requirements.
40. Revise Addendum H, Pg. 12, line 12, Section H.5.2 [an elsewhere throughout the document as necessary] Closure of Tanks to require Closure in accordance with WAC 173-303-610 & 173-303-640 requirements.
41. Revise Addendum H, Pg. 12, line 18, Section H.5.3 [an elsewhere throughout the document as necessary] Closure of Surface Impoundments to require Closure in accordance with WAC 173-303-610 & 173-303-650(6)(a) and (6)(b)requirements.
42. Edit appropriate Sections of Addendum I, to ensure compliance with WAC 173-303-320, -630(6), -640(6), and 650(4) requirements.
43. Edit Addendum I, Pg. 8, line 5, Section I.1.3 to ensure compliance with WAC 173-303-320(2)(d) requirements with regards to identification of the date and nature of any repairs or remedial actions taken throughout the facilities(LERF & ETF) to be included in the inspection log(s). Edit subsections as needed to also reflect this compliance.
44. Edit Addendum I to include an Attachment with example of the checklist used by the qualified inspector [reference; Pg 8, line 24, Section I.1.4]

45. Clarify operating levels stated in Addendum I, Pg 7, line 2; other descriptions have indicated 29.5 million as limit.
46. Delete following text in Addendum I, Pg. 7, line 22: *The WAC 173-303-650 regulations do not require a discussion of piping for surface impoundments.* WAC 173-303-650(2)(c) indicates the need to address ancillary equipment which includes piping. Note; It is appropriate to require comprehensive coverage and integrity assessments on piping.
47. Edit for clarity, Addendum J to ensure compliance with WAC 173-303-340(3) is maintained and consistency with Addendum F.
48. Revise Addendum J, Pg. 5, Table J.1 to include all cited sections of Permit Attachment 4, Hanford Emergency Management Plan (DOE RL-94-02) referenced within the Addendum (e.g., Section 5.1 of Permit Attachment 4 is identified on Pg. 11,line 7, Section J.3.4 as a requirement but unlisted in Table J.1). Provide explanations for 'blank footnotes' In Table J.1.
49. Revise Addendum J, Pg. 10, line 31, Section J.3.2.5.1 to provide explanation of waiver of WAC 173-303-350(3)(b) requirements.
50. Edit Addendum J, Pg. 11, line 5, Section J.3.4 to require written recovery plan to be developed as an Attachment to Addendum J (i.e., prior to). Suggest use of WAC 173-303-815 omnibus authority as support to ensure compliance with WAC 173-303-360(2)(f) thru (i) and (k)(ix).
51. Revise Addendum J, Pg. 14, line 17, Section J.6 to include required compliance with WAC 173-303-350(5) in addition to Permit Attachment 4.

The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trench 94 permit:

SEPA General Comments:

1. FEIS for this TSD unit emphasizes the need for the over-all SEPA determination to be at least a MDNF rather than a DNS.

Fact Sheet General Comments:

1. Revise Groundwater monitoring section to state a groundwater monitoring plan will be in compliance with WAC 173-303-645 and -610.
2. Groundwater section has text describing submittal of characterization information which is not included in the Permit conditions.

Permit Conditions General Comments:

1. Edit/include a Permit condition(s) to require a groundwater monitoring plan in compliance with WAC 173-303-645,-610, -600, and -665. Include a permit condition(s) requiring the identification of the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Identify dangerous constituents (including lead and mercury), concentration limits, point of compliance, compliance period (at a minimum, it should be specified to be the entire time the permit is in effect – 10 years), and other general groundwater monitoring requirements.
2. Edit and include a Permit condition, utilizing Omnibus Authority under WAC 173-303-815 requiring characterization of the vadose zone beneath the trench (Section C.2, "Releases From Trench 94," projects there will be no lead leachate until 600 to 2,000 years. The projection is that it will take hundreds of thousands of years for the lead to reach the Columbia River. Provide details of modeling used to determine how it arrived at "hundreds of thousands of years. Ecology needs data to project movement through the vadose zone and predict when lead will reach the groundwater.).
3. Edit and include a Permit condition requiring on-going groundwater well evaluation and deepening wells as the groundwater level drops.
4. Edit to revise the Inspection requirements to ensure that the Permittee can demonstrate its ability to maintain oversight of the trenches for the duration of operations.
5. Edit and include a Permit condition requiring at a minimum, installation of four additional groundwater monitoring wells (two upstream and two downstream).
6. Include permit condition(s) requiring the Waste Analysis Plan & Sampling and Analysis Plan and criteria for waste acceptance at the LLBG be informed by the results of the Risk Budget Tool. Require impacts from nearby waste sites/ trenches to bound cumulative impacts to groundwater in the model used in the Risk Budget Tool.
7. Include Permit condition to ensure corrective actions to be taken in the event of leaching of contamination from Trench 94 into the groundwater (e.g. The permit admits that lead from Trench 94 is expected to contaminate the Columbia River. Addendum C Section 3.2.1, Containment states that the lifetime of the outer container holding the lead is 500 years for the older reactors, 750 for the newer reactors and an estimated 1,500 to 2,000 years for the newest reactors (These numbers are rounded off for general discussion purposes.) The obvious conclusion is that between 500 and 2,000 years, at least 5,000 metric tons of lead will be exposed to the environment and will be subject to movement into the vadose zone and into the groundwater beneath Trench 94.)
8. Include a permit condition requiring a modification per WAC 173-3036-830 to the waste acceptance criteria for Trench 94 (and require this permit condition in all LLBG units) prior to acceptance of waste constituents not listed in the waste acceptance criteria.
9. Include text to reflect new permit conditions for modifications to the waste acceptance criteria for specific waste streams or mitigation measures. Include all modifications to the waste acceptance criteria are subject to WAC 173-303-830/840 process.
10. Include permit condition requiring compliance with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

The YN ERWM program requests the following changes to the draft Double Shell Tank System and 204-AR draft permit:

General Permit Comments:

1. Revise/include a Permit condition for sampling per WAC 173-303-110, the *candidate waste feed tanks* DSTs. Include requirement to update WAP Addendum to include better justification (e.g., provide study references) of only four representative samples when it is known that there exist more areas of variability within the tanks.
2. Provide schedule of and identification of *candidate waste feed tanks* to the 242-A Evaporator.
3. Revise/include a Permit condition to address leaks from all waste transfer lines (including HIHT), diversion boxes, and other system components (including all ancillary equipment).
4. Revise/include a Permit condition to ensure that all waste which has escaped into the environment (including the Vadose Zone and outside the boundaries of Tank Farms) is identified, characterized such that the vertical and lateral extent of the contamination is identified, and that such releases are remediated in accordance with the Dangerous Waste Regulations under WAC 173-303-645.
5. Ecology should use its omnibus authority under the Resource Conservation Recovery Act (RCRA) [WAC 173-303-815(2)] to better regulate and protect Hanford workers from exposure to chemical vapors at Hanford, specifically with reference to those chemical vapors emanating from the high-level nuclear waste stored in Hanford's underground radioactive waste tanks. Include a permit condition reflecting this.
6. Include/revise a Permit(s) condition(s) requiring the construction of new double shell tanks and emptying of the tanks known or suspected of leaking as expeditiously as possible. [we support a 12/31/2019 *ready date* for these new tanks at the latest.]
7. Revise/include a Permit condition(s) to ensure consistence, integration of operations, and to comply with new, requested and required 242-A Evaporator/LERF/SST permitting conditions. See 242 A Evaporator/LERF/SST comments.
8. Revise inspection frequencies: Include a more frequent inspection schedule of the double-shell tanks. We support this periodic inspection to be no less frequent than every four years for each tank, and more frequent for any tank showing significant issues.

The YN ERWM program requests the following changes to the draft 241-CX Tank System permit:
SEPA determination indicates continuing management of waste and clean closure and the permit indicates otherwise. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.
General comments on Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure].
2. No clarification of what dangerous waste constituents have been eliminated or what the DQO process is for the 200-IS-1 characterization since the units going to coordinate closure with this unit.
3. Confusing statements about not implementing Groundwater monitoring plans if they 'Clean Close' while text indicates Clean Closure is not possible due to placement of grout in tanks -71 & 72. Grout placement precludes clean decontamination.
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws discussed.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s); use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303]. Reference to possible coordination of closure actions under non-existent CERCLA document actions [200-IS-1OU] does not meet the Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3).
5. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). Unit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.
6. Estimated Annual Quantity of Wastes volumes presented as pounds. These figures seem inconsistent with stated facility design capacities. There is no differentiation between Dangerous Waste No and quantities of waste [everything lumped under one code #].
7. Unit description text for tank -72 states there's insufficient waste characterization data. The permittee is required to identify all wastes per the Dangerous Waste Regulations of WAC 173-303 in the Part B application. The Part A identifies dangerous waste codes. This statement is either erroneous or the Part A should not have been approved or the Part B application should not have been accepted as complete. Ecology letter dated Nov. 10, 2004 to DOE regarding LDR Report Inspection of the 241 CX Tank System identified that substantial number of WAC 173-303 requirements had not been fulfilled. The letter called out waste characterizations and integrity assessments. There are no permit conditions identifying requirements to fulfill these requirements to be in compliance with Dangerous Waste regulations under WAC 173-303.

Specific Comments on Permit Conditions:

1. V.15.B.1: Revise V.15.B.1 to state closure in accordance with Permit Condition V.15.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document ignores Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.15.B.1: Conditions for submittal of documents which were or should have been included in the Permit

Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions

2. V.15.B.1.a: Questionable need for permit condition V.15.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.15.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.15.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

   To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:
     1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
     2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
     3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
5. V.15.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.15.B.8 & 9: While points on the SAP are acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:

   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:

- Data Collection Strategy section including, but not limited to, the following:
- A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
- A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
- Sampling section which shall include or describe, and reference or cite:
- Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;

- Data reduction, validation, and reporting;
  - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
    - Method blank(s);
    - Laboratory control sample(s);
    - Calibration check sample(s);
    - Replicate sample(s);
    - Matrix-spiked sample(s);
    - "Blind" quality control;
    - Control charts;
    - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 241-CX permit.

7. V.15.C.1: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.15.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include this condition's information and other WAC 173-303-610(3) required information. See comments above.
9. No list of other applicable laws.
10. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information should have been submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved but information should have been submitted with application and should be included.
3. Addendum D: Reserved but information should have been submitted with application and should be included.
4. Addendum E: Reserved but information should have been submitted with application and should be included. Required by WAC 173-303-310.
5. Addendum F: Reserved but information should have been submitted with application and should be included. Required by WAC 173-303-640.
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Also include training in following:
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
    - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
    - Vegetative cover condition
    - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
7. Addendum H: Closure Plan: The following issues are noted and must be corrected to ensure compliance with the Dangerous Waste regulations:
    - DOE/RL-2008-51, REV. 1 has been previously approved by Ecology via a letter dated October 13, 2009. This action by Ecology violates DW regulations of WAC 173-303. By approval, Ecology also approved the SAP [DOE/RL-2002-14, Appendix C], which does not meet the WAC 173-303-300. These must go out for public review and subject to the WAC 173-303-830/840 modification process.
    - II.Y can't be used for TSD closure requirements.
    - 200-IS-1 OU: Document is not final; Ecology cannot rely on this document ensure compliance with closure requirements of WAC 173-303-640 or the cleanup of the piping and other ancillary equipment for this TSD unit. Ancillary equipment should include both the effluent and affluent piping from the point of exit from the non-RCRA facility to the TSD unit to the next non-RCRA facility.
    - Closure Plan: Pages beginning on 6.1 through till end of *Closure Activities* are not in compliance with the requirements of WAC -173-303-610 [e.g. "Sampling is intended to identify the tank waste characteristics in support of a tank disposition study that will help to identify a tank closure approach and to perform a waste designation on tank contents."]
    - Fig 6-1: does not include required soil sampling or verification sampling for piping or tank surfaces; Tank - 72 pathway to closure is incorrect per WAC 173-303-640 regulations.
    - Section 7.2.1 Tank Closure Activities states Tanks 241-CX-70 and 241-CX-71 and all tank system piping are proposed to be clean closed by removal for disposal, as described in Section 7.1.3. Tanks 241-CX-70 and 241-CX-71 are planned to be removed without further characterization. The vent piping and risers from the buried tanks to the ground surface are integral portions of the tank and will be removed along with the tank. Tank 241-CX-70 is planned to be demolished in place and removed as contaminated debris. Tank

241-CX-71 currently is planned to be removed intact because this tank is relatively small and readily removable. However, if removal of the tank intact is not feasible, it could be demolished in place and removed as debris. These actions require demonstrations that Clean Closure is not attainable & Ecology decisions which have not yet been given. The Permittee must first attempt Clean Closure.

- Clean Closure Levels for tank system COCs: Soil Concentrations protective of Groundwater values in Table 6-2: Chromium VI: 18.4 mg/kg used instead of .2mg/kg: Unclear where the 270mg/kg for Lead is derived from, why isn't the MCL of 15ug/l used as it is more protective? Ecological values are for only wildlife and don't include biota, etc. When did Ecology agree and how did Ecology agree to use industrial cleanup Method C for this site? [See comments from Ecology: Ecology's comments on the Response Action Report for 200-MG-1 Operable Unit Waste Site 600-26, DOE/RL-2010-66, Draft indicates disagreements with future land use designations. Ecology requested deletion of designation for future land use as 'conservation and mining' and use of 'unrestricted.' Ecology also requested reduction in the detection level for arsenic to 1 mg/kg (values of less than 1 mg/kg are achieved in the river corridor). Ecology rejected use of 18.4 mg/kg for soil pathway to groundwater for hexavalent chromium because it is not protective. Ecology requested ecological protection values be added to Table 2 and noted site as failing the 3-part and 2-part tests for hexavalent chromium.] These need to be changed to reflect unrestricted use cleanup levels.
- Nothing in the WAC -610 or -640 regs which allow partial closure of a tank system as indicated with cleanup of ancillary facilities [piping, etc] for the 241-CX-72 tank and deferment of the tank closure.
- DOE/RL-2002-14, Appendix C, states The SAP prepared for the 241 -CX-72 Storage Tank (Appendix C) has a limited scope and focuses on characterization of the waste remaining in the tank. Sampling of remaining waste will be conducted to determine the composition and concentrations of radionuclide and nonradionuclide constituents. A single borehole will be completed through the grout fill present in the tank and into the underlying residual waste material. Analytical results will be used in the assessment of the disposal options for the remaining waste, if removal of the tank is performed: This Sampling and Analysis Plan (SAP) directs the activities to be performed to characterize the waste contents within the *Resource Conservation and Recovery Act of 1976* (RCRA) treatment, storage, and/or disposal (TSD) unit CX-241-72 Storage Tank in the 200-IS- I Operable Unit (OU). Characterization of the CX-24 1-72 tank contents is not a Phase 1 sampling activity associated with the pipeline systems. This sampling is being performed to gather data needed for evaluation of RCRA tank closure options [clean closure must first been attempted]. The sampling and analyses described in this document will provide data to characterize the waste contents within the 241 -CX -72 Storage Tank. *See* pages 1-25 & C1-1. The SAP is not consistent with the Dangerous Waste regulations.

8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-BP-5 OU inspection requirements and also reflect the following .

Inspection Schedule for the 241-CX Tank System Operable Unit	
Surveillance of the 241-CX Tank System	Daily
Surface Inspections	Daily
Security control devices: well caps, and locks	Daily
Well condition	Daily
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information should have been submitted with application and should be included. Required by WAC 173-303-610.

The YN ERWM program requests the following changes to the draft 325 Hazardous Waste Treatment Units permit:

General comments:

1. Include a Permit condition to ensure 325 Facility has the necessary upgrades, including maintenance and replacement of equipment for safe operations (examples: plumbing, sumps, and associated piping to waste receiving tanks).
2. Include a Permit conditions to ensure the 325 Hazardous Waste Treatment Units identification of all waste codes for all waste processed in the facility.

The YN ERWM program requests the following changes to the draft 400 Area Waste Management Unit permit:
General Comments:

1. Include a Permit condition preventing acceptance of offsite waste at the 400 Area using its authority under WAC 173-303-815(2).
2. Include a Permit condition preventing acceptance of incompatible waste by their waste acceptance criteria.
3. Include a Permit condition with dates for the removal of all sodium-bearing materials and subsequent clean closure.
4. Review and revise the Part A form to limit storage capacity to the currently stored volumes of sodium-bearing mixed waste currently stored in the facility.

The YN ERWM program requests the following changes to the draft 1301-N Liquid Waste Disposal permit:
SEPA: Based on old previously submitted SEPA checklists; determinations are previous determinations. Permit permits require new evaluations.

General comments on the Fact Sheet:

1. Facility identified by what occurred at the site rather than by the appropriate Dangerous Waste Regulatory basis. Unit is subject to regulations under WAC 173-303-650 for Surface Impoundments.
2. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations. Partial closure of an individual unit is not authorized under WAC 173-303- regulations. Implication that there's been an approved Closure Plan without the public review process.
3. Wavier [variance] to regulations (WAC 173-303-645(11) identified without justifications [no references to supporting documentation]).
4. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
5. No list of other applicable laws.
6. Nothing addresses or references cleanup of PCBs.
7. Incorrect reference to other parts within the permit [e.g. Saying Post Closure will be done under the Addendum for Closure rather than the appropriate addendum containing the plan].

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004 [*see* Attachment #41 of 2004 submittal; required by WAC 173-303-806].
   Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. Reference to closure actions under non-existent CERCLA document violates DW closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Conditions directing closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.
4. Incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.
5. No compliance schedule.
6. No list of other applicable laws.
7. Focused Feasibility Study needed to deal with hexavalent chromium concerns
8. Nothing addresses or references cleanup of PCBs
9. TPH remediation and SAP should be under the RCRA permit. The SAP should have gone out for public review in compliance with WAC 173-303-830.
10. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Addendum H cites a Sampling and Analysis Plan outside the permit; regulations require inclusion of this within the permit while permit says "Reserved".
2. Addendum C: Reserved but information was submitted with application and should be included.

3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. As presented, this is for an interim status permitted facility; Hanford is permitted as a final status facility.
    - Statements made that Ecology has accepted data from non-RCRA compliant wells for years does not make it acceptable in this permit.
    - Submittal dates for required GW monitoring plan activities not included.
    - The groundwater monitoring plan referenced cites very old QA/QC documents instead of Ecology's more direction [Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies].
    - List of wells for groundwater monitoring is short & with 3 out of 5 wells not RCRA compliant and should also include 119-N-002, 199-N-017,199-N-018,199-N-021,199-N-027,199-N-028,199-N-31, 199-N-041,199-N-054, ,199-N-059,199-N-064,199-N-067,199-N-070,199-N-072,199-N-073,199-N-075,199-N-076,199-N-077,199-N-080,,199-N-092A,199-N-096A, 199-N-099A ,199-N-103A, and 199-N-106A 199-N-16, 199-N-19, 199-N-21,199-N-26, 199-N-56, 199-N-57, and 199-N-64.
    - List of Contaminants of Concern is short and should also include antimony, arsenic, barium, beryllium, boron, cadmium, carbon tetrachloride, gross alpha, gross beta, hydrazine, iron, lead, manganese, magnesium, nickel, nitrate, phosphates ruthenium-106, sulfate, tetrachloroethene, tin, tritium, uranium-235, vanadium, and zinc (and those from the expanded ICP Metals list not previously listed).See DOE/RL-2000-16, Rev.2 (Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 TSD units)
    - Methods based approach is not used.
    - Filtered sampling is use instead of non-filtered per regulations.
    - Repairs & replacement of monitoring wells is per 'approved contractor procedures' rather than WAC 173-160-. Any new wells need to be RCRA compliant wells.
    - Inconsistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Needs to clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing. The groundwater monitoring plan shall include a sampling and analysis plan (SAP) which will identify analytical methods and include descriptions of analytical procedures that will be followed for analyzing the 1301-N Unit-specific waste constituents and indicators. The SAP shall specify how all analytical data (i.e., detects, non-detects, tentatively identified compounds, etc.) as reported from the laboratory will be made available to Ecology.
    - The SAP required shall describe quality assurance/quality control (QA/QC) for sampling and laboratory analysis and will be consistent with consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]. SAPs will also be required to include the following:
    - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
    - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
    - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
    - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
    - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]

- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
  - Data Collection Strategy section including, but not limited to, the following:
  - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
  - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
  - Sampling section which shall include or describe, and reference or cite:
  - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
  - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
  - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
  - Methods for, or specification of, measuring all necessary ancillary data;
  - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
  - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
  - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
  - Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
  - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
  - Calibration of field devices (as applicable);
    - Collection of replicate samples;
    - Submission of field-biased blanks, where appropriate;
    - Potential interferences present at the facility;
    - Field equipment listing and sample containers;
    - Sampling order; and,
    - Descriptions of decontamination procedures.
    - Selection of appropriate sample containers, as applicable;
    - Sample preservation methods, as applicable; and,
    - Chain-of-custody procedure descriptions as applicable, including:
    - Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
    - Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
    - Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
    - Provision for a laboratory sample custody log; and,
    - Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
    - Sample storage procedure descriptions and storage times;
    - Sample preparation methods;

- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f). This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
    - A data record including the following:
    - Unique sample or field measurement code;
    - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
      Sampling or field measurement raw data;
      Laboratory analysis identification (ID) number;
      Result of analysis (e.g., concentration);
    - Tabular displays, as appropriate, illustrating:
        - Unsorted validated and invalidated data;
        - Results for each medium and each constituent monitored;
        - Data reduction for statistical analysis;
        - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
        - Summary data.
    - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
        - Displays of sampling location and sampling grid;
        - Identification of boundaries of sampling area and areas where more data is required;
        - Displays of concentrations of contamination at each sampling location;
        - Displays of geographical extent of contamination;
        - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
        - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
        - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 1301-N permit.
- The groundwater monitoring plan shall specify the following water level measurements criteria.
  - Each time 1301-N Unit's groundwater monitoring wells are monitored, the ground water surface elevation shall be measured to the nearest 0.01 feet using an electric water level indicator prior to evacuation and collection of samples and immediately after samples are collected.
  - Water level measurements should be made within one day and as close to one another in time as possible.
  - All groundwater elevation measurements shall be recorded on a groundwater measurement form.
  - Prior to the collection of ground water elevation measurements, equipment to be used shall be calibrated in accordance with the manufacturer's instruction and a National Institute of Standards and Technology (NIST) traceable calibration program.
  - If steel tape equipment is used to measure ground water surface elevations, the operation of the equipment shall first be checked by inserting the probe or contact ends in water to ensure the contact is clearly indicated on the meter.
  - When ground water elevation measurements are collected, at least two consistent measurements shall be taken. Only clean and/or decontaminated equipment shall be used to collect ground water surface elevations.
  - A description of how the ground water surface elevation measurements will be taken.
  - Any corrections needed because a well(s) is not vertical shall be appropriately applied to correct for non-vertical wells.
- The groundwater monitoring plan shall specify the following groundwater monitoring well maintenance elements.
  - Each time 1301-N Unit wells are sampled/monitored; the condition of the wellhead and associated structure will be inspected and recorded. Problems with the pump or the sample (e.g., excessive turbidity) are also to be noted and the associated repairs are to be made within sixty (60) days according to approved contractor procedures.
  - Subsurface ground water monitoring well inspection and maintenance shall be performed on a 5-year schedule or as needed to repair problems identified during sampling.
  - In the event a ground water monitoring well becomes unsuitable for use, the status shall be documented and reported to Ecology within ninety (90) days of identifying the well as unsuitable for use.
  - In addition, the "unsuitable-for-use" well will be evaluated within thirty (30) days of the designation to determine if a new well should be constructed. A copy of the evaluation shall be provided to Ecology. If applicable, the "unsuitable-for-use" well shall be placed on a well decommissioning candidate list for Ecology's approval.
  - In the event an "unsuitable-for-use" well must be replaced to satisfy this permit and WAC 173-303-645 (8) and (10) requirements, the Permittee shall provide a schedule for the replacement of the well.
  - Problems and/or damages will be noted in a log book. and noted in the well information database.
- The groundwater monitoring plan shall specify the following groundwater monitoring well purging elements.
  - The purge volume shall be calculated based on voiding three (3) borehole volumes of water from the well. The calculated purge volume shall be documented at the time of sampling.
  - During well purging, purgewater management will be conducted in accordance with a new "Condition II.F. for this Permit. Write a Part II. F. condition for management of purgewater.

- The volume of water purged shall be documented after completion of purging.
- Alternatively, if low-flow pumping is conducted for sample collection, the groundwater monitoring plan shall specify and describe the installation of low-flow pumps and include a description of the low-flow pumping routine that will be instituted for collecting groundwater samples.

- The groundwater monitoring plan shall specify the following groundwater monitoring in-situ measurements elements to be followed during well purging.
  - During well purging, at a minimum, the following in-situ criteria shall be measured and documented: temperature, pH, and conductivity.
  - Temperature, pH, and conductivity shall be obtained at least three times (start, middle, and end of designated purge time).
  - The in-situ readings shall stabilize prior to sampling and shall be considered "stable" when the following criteria are met: pH – two consecutive measurements are within 0.2 pH units, temperature – two consecutive measurements agree within 0.2 °C, and conductivity – two consecutive measurements agree within 10% of each other.
  - In addition to the collection of temperature, pH, and conductivity, in-situ turbidity measurements shall be collected.
- The groundwater monitoring plan shall specify the following groundwater monitoring in-situ measurements elements to be followed during well purging. During well purging, in-situ criteria turbidity readings shall be taken and documented. When possible, and when temperature, pH, and conductivity readings are "stable", turbidity readings shall be below 5 nephelometric turbidity units (NTUs) prior to sample collection. In addition, two turbidity readings (duplicates) of the same water shall be taken and documented just prior to sampling.
- The groundwater monitoring plan shall specify that if in-situ turbidity criteria are not met, two sets of samples for metals analysis shall be collected. One set of samples shall be filtered and the other set of samples shall not be filtered.
- The groundwater monitoring plan and/or the SAP required shall specify the order of filling sample containers and shall begin with volatile organics, semivolatile organics, metals, and end with radionuclides, as applicable.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be collected. At a minimum, the description shall include the following: the removal of bottle/container caps, the filling of the sample bottle/container (including description for filling bottles requiring zero headspace), replacement of bottle/container caps.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be filtered when in-situ turbidity readings criteria is not met.
- The groundwater monitoring plan shall include an identification that immediately after filling the last sample container, the pH, temperature, and specific conductivity of groundwater will be measured and documented.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be managed to maintain chain of custody. At a minimum, the description shall include identification and/or a description of the system for: labeling samples, identifying samples, tracking samples, documenting chain of custody controls, etc.
- The groundwater monitoring plan and/or the SAP shall include a description of how the samples will be packaged and shipped. The description shall include a description of how the chain of custody will be maintained during packaging and shipping.
- The groundwater monitoring plan and/or the SAP shall include a description of decontamination of sampling equipment and/or bottles/containers used during collection of ground water samples and/or a description of the use of pre-cleaned bottles/containers.
- The groundwater monitoring plan and/or the SAP shall specify how the requirements of WAC 173-303-645(10)(g) will be satisfied. If the groundwater monitoring plan does not satisfy the requirements of WAC 173-303-645(10)(g), the supporting information and justification must be provided in the groundwater monitoring plan as well as a description of how the intent of WAC 173-303-645(10)(g) may be satisfied (i.e., method-based analysis).

- The groundwater monitoring plan shall specify how the rate and direction of groundwater flow in the uppermost aquifer will be determined on an annual basis as required by WAC 173-303-645(10)(e). In addition, the plan shall specify when and how the rate and direction of groundwater flow determinations required by WAC 173-303-645(10)(e) will be reported to Ecology on an annual basis.
- The groundwater monitoring plan shall specify the rate of decline of the water table at the 1301-N Unit's point of compliance (as defined by WAC 173-303-645(6)) will be determined on an annual basis until such time as the decline associated with the 1301-N Unit's water table mounding (due to 1301-N Unit discharges) has ceased. In addition, the plan shall specify when and how the water table regression rate will be reported to Ecology on an annual basis until such time as the water table decline has ceased.
- The groundwater monitoring plan shall include a plan for future use and/or remediation for all noncompliant wells in the vicinity of the 1301-N.
- Prior to any actions taken to deepen "dry" wells within the vicinity of the 1301-N Unit the Permittee shall submit a well deepening plan for Ecology approval that satisfies the groundwater protection standards of Chapter 173-160 WAC. The well deepening plan shall not be implemented until after the Permittee receives Ecology's approval of the plan. For wells located downgradient to and in the immediate vicinity of the 1301-N Unit for which new information (i.e., inspection information, report of damage, indication during use, etc.) has been obtained via well maintenance activities, routine use, or incident reporting indicating the well is an environmental, safety, or public health hazard, the Permittees shall provide Ecology written notice of the conditions of the well. For such wells, the Permittees shall provide Ecology a description of actions to be taken which includes a schedule for well remediation or decommissioning. For such wells, the Permittees must obtain Ecology's written approval to remediate or decommission the well.
- Prior to the installation of any additional wells to be used to satisfy WAC 173-303-645 groundwater monitoring requirements associated with the 1301-N Unit, the Permittee shall submit, for Ecology's approval, a well installation plan that specifies the proposed location of well, well design, installation procedures, management of wastes generated during well installation, etc. The well installation plan shall satisfy Tri-Party Agreement Milestone M-24 requirements for decision documents and/or sampling and analysis plans.
- For wells located downgradient to and in the immediate vicinity of the 1301-N Unit for which new information (i.e., inspection information, report of damage, indication during use, etc.) has been obtained via well maintenance activities, routine use, or incident reporting indicating the well is an environmental, safety, or public health hazard, the Permittees shall provide Ecology written notice of the conditions of the well. For such wells, the Permittees shall provide Ecology a description of actions to be taken which includes a schedule for well remediation or decommissioning. For such wells, the Permittees must obtain Ecology's written approval to remediate or decommission the well.
- **Five (5)** years after the groundwater monitoring plan has been implemented, the Permittee shall submit a revised groundwater monitoring plan which specifies the 1301-N Unit's dangerous waste constituents to which the groundwater protection standards of WAC 173-303-645(3) apply.
- The groundwater monitoring plan shall identify 1301-N Unit's waste constituents for which there has been evidence of an increase in contamination at the 1301-N Unit's compliance point. For 1301-N Unit's waste constituents that are required to be monitored as specified in this permit for which the Permittee proposes to exclude from meeting the groundwater protection standards of WAC 1730303-645(3), the Permittee must address considerations of WAC 173-303-645(4)(b)(i), (ii), and (iii).
- The groundwater monitoring plan shall identify proposed 1301-N Unit's waste constituent concentration limits that satisfy WAC 173-303-645(5)(a)(i) or (ii).
- The groundwater monitoring plan shall specify actions to be taken when proposed concentration limits have been exceeded which include 1) notification of the exceedence, and 2) submittal of an application for a permit modification to establish a corrective action groundwater monitoring program which satisfies WAC 173-303-645(11).
- The Permittee shall implement the groundwater monitoring plan required by this Condition within forty-five (45) days of receiving Ecology's approval of the plan.

- The groundwater monitoring plan shall specify when the three (3) additional groundwater monitoring wells will be installed at the 1301-N Unit's point of compliance (as defined by WAC 173-303-645(6)). The groundwater monitoring plan shall include:
- A schedule for submitting a well installation plan.

1. The groundwater monitoring plan shall also either identify that the proposed new wells will be administratively documented as needed and planned for installation through Tri-Party Agreement Milestone M-24 or specify the process to be followed to ensure installation of the wells on the identified schedule. The groundwater monitoring plan shall describe and/or specify river stage fluctuation influences on the water table in the vicinity of the 1301-N Unit. If river stage fluctuations affect the water table in the vicinity of the 1301-N Unit, the groundwater monitoring plan must include a description of how groundwater monitoring will be conducted to maximize the amount of groundwater (as opposed to river or surface water) being sampled.

8. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
   - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
   - Sampling and monitoring equipment operation and maintenance
   - Monitoring and reporting on groundwater well security and maintenance
   - Providing sample chain of custody to the laboratory
   - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
   - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
   - Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
   - Vegetative cover condition
   - Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).
     - Should also coordinate and incorporate requirements listed for the 300-FF-5 OU inspection requirements
4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
   - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
   - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
   - Sampling and monitoring equipment operation and maintenance
   - Monitoring and reporting on groundwater well security and maintenance
   - Providing sample chain of custody to the laboratory
   - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)

- Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Statement that the Closure Plan presents the physical remedial activities and sampling and analysis required to comply with WAC 173-303-610 but there is no Closure Plan for public review included in Addendum H which meets these requirements. Addendum H text is outdated and incomplete and needs extensive revision. 1325-N and other discussion regarding 'Alternatives' should be deleted.
    - Modified Closure option discussed. This is not allowed per DW regulations.
    - Document cites use of Method C instead of Method B cleanup levels. (*see* Addendum H's closure selection menu and the allowance of MTCA Method C and "modified closure" provided by the undefined "PRES-6 and MCRIS-6" and "MCRIS-7" options. Neither "modified closure" nor MTCA Method C satisfy RCRA closure performance standards of WAC 173-303-610(2)).
    - Closure Schedule is old and non-compliant with closure requirements.
    - References an unavailable document which is to direct RCRA closure activities rather than permit conditions which require unit specific closure actions to be performed. Statement made that the Permit will need to be consistent with CERCLA remedial actions instead of direction to CERCLA as to what specific actions/ARARs are to be included in the ROD for these actions.
    - Incomplete list of constituents of concerns (COCs) and should include antimony, arsenic, barium, beryllium, boron, cadmium, carbon tetrachloride, gross alpha, gross beta, hydrazine, iron, lead, manganese, magnesium, nickel, nitrate, phosphates ruthenium-106, sulfate, tetrachloroethene, tin, tritium, uranium-235, vanadium, and zinc (and those from the expanded ICP Metals list not previously listed).
    - Sampling and analysis plan identified [DOE 2000a] should be included and sent out for public review. Document is currently not available; incorrect citation or reference to a non-existent document.
    - Statements made that verification sampling to determine MTCA compliance for direct soil contact will not be required is inconsistent with the requirements for RCRA closure. Statements made that ancillary equipment [i.e. piping] may be left in place is neither acceptable nor correct and must be removed/treated/disposed. Soils underneath piping must also be sampled in addition to being surveyed.
    - Reference is made to non-compliance with Land Disposal Restrictions. It must first be determined that the sites will need to closure under the Landfill regulations [WAC 173-303-665].
    - Very old QA/QC documents instead of Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies.
8. Addendum I: Revise as indicated and also coordinate and incorporate requirements listed for the 100-NR-2 OU inspection requirements.

Inspection Schedule for the 1301-N Ditch Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610
10. Addendum K: Identified as Recordkeeping and Reporting but draft permit identifies it as Appendix K-Post Closure Plan.
    - As a Post-Closure Plan, it discusses Modified Postclosure/Institutional Controls and Periodic Assessments and cites several non-existent Part II conditions.
    - Document refers and includes discussion of the 1325-N unit.
    - Postclosure groundwater monitoring program cited does not consistent with nor reflect use of alternative requirements.

- Incorrect application of MTCA [173-340-410].
- Some of information within this document on personnel training, inspection, security, etc belongs in this draft permit's Addendums.

The YN ERWM program requests the following changes to the draft 1325-N Liquid Waste Disposal permit:
SEPA: Based on old previously submitted SEPA checklists. Use the SEPA checklist submitted with the new Part B Application. Determinations are previous determinations. Permit permits require new evaluations. Indicates an *approved post-closure plan* exists when it does not.
General comments on the Fact Sheet:

1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations. Ecology did not accept the certification of closure from the permittee. Partial closure of an individual unit is not authorized under WAC 173-303- regulations. Implication that there's been an approved Closure without the public review process.
2. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
3. No list of other applicable laws.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004 [required by WAC 173-303-806]. All "Reserve" Addendums should be complete and in the permit. Correct and include all required information in permit Addenda.

   Additionally, it must first be determined by Ecology that the sites will need to closure under the Landfill regulations [WAC 173-303-665]. As the designated land use for the 100-N area is not industrial property nor will it be in the foreseeable future, use of WAC 173-340-745(5) is in appropriate.

   What was the process of Ecology's acceptance of closure certification? There is not an approved closure plan. The Dangerous Waste regulations do not authorize closure of a RCRA facility via a CERCLA document. The TPA section 5.3 states "All TSD units that undergo closure, irrespective of permit status, shall be closed pursuant to the authorized State Dangerous Waste Program in accordance with 173-303 WAC."

   Request for submittal of updated post-closure plan to include placement of a cover; placement of a cover should have been a closure action. How can the unit be in post-closure if this action remains uncompleted? Clarification of authority and basis of decision making in compliance with WAC 173-303 requested.

2. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
3. No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).
   To ensure compliance with the Dangerous Waste Regulations, include in the Permit, the following closure performance standards for contaminated soils:
   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:
     1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
     2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
     3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

4. Reference to closure actions under non-existent CERCLA document violates DW closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Write a closure plan to include required information.
5. Incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.
6. No compliance schedule in compliance with WAC 173-303-610(3).
7. No list of other applicable laws. Include them.
8. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Specific comments:

1. VI.3.B.1: Revise VI.3.B.1 to state closure in accordance with Permit Condition VI.3.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610.
2. VI.3.B.1 & 2: Delete or revise: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers].
3. VI.3.C.1 & 2: Delete/revise: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. In addition, include the following as required in the Sampling and Analysis Plan (SAP), and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
    - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
    - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
    - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
    - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
    - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
    - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
        - Data Collection Strategy section including, but not limited to, the following:
        - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
        - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
        - Sampling section which shall include or describe, and reference or cite:
        - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;

- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);

        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;
    - Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
    - The Data Management Plan shall include the following as applicable:
        - A data record including the following:
        - Unique sample or field measurement code;
        - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
          Sampling or field measurement raw data;
          Laboratory analysis identification (ID) number;
          Result of analysis (e.g., concentration);
        - Tabular displays, as appropriate, illustrating:
            - Unsorted validated and invalidated data;
            - Results for each medium and each constituent monitored;
            - Data reduction for statistical analysis;
            - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
            - Summary data.
        - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
            - Displays of sampling location and sampling grid;
            - Identification of boundaries of sampling area and areas where more data is required;
            - Displays of concentrations of contamination at each sampling location;
            - Displays of geographical extent of contamination;
            - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
            - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
            - Identification of features affecting intramedia transport and identification of potential receptors;
- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 1325-N permit.

4. VI.3.D.1: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above. More well should be included; see below.
5. VI.3.D.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.

6. VI.3.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information was submitted with application and should be included.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. As presented, this is for an interim status permitted facility; Hanford is permitted as a final status facility.
    - Statements made that Ecology has accepted data from non-RCRA compliant wells for years does not make it acceptable in this permit.
    - Submittal dates for required GW monitoring plan activities not included.
    - The groundwater monitoring plan referenced cites very old QA/QC documents instead of Ecology's more direction [Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies].
    - List of wells for groundwater monitoring is short & with 3 out of 5 wells not RCRA compliant and should also include 119-N-002, 199-N-017,199-N-018,199-N-021,199-N-027,199-N-028,199-N-31, 199-N-041,199-N-054, ,199-N-059,199-N-064,199-N-067,199-N-070,199-N-072,199-N-073,199-N-075,199-N-076,199-N-077,199-N-080,199-N-092A,199-N-096A, 199-N-099A ,199-N-103A, and 199-N-106A 199-N-16, 199-N-19, 199-N-21,199-N-26, 199-N-56, 199-N-57, and 199-N-64.
    - List of Contaminants of Concern is short and should also include antimony, arsenic, barium, beryllium, boron, cadmium, carbon tetrachloride, gross alpha, gross beta, hydrazine, iron, lead, manganese, magnesium, nickel, nitrate, phosphates ruthenium-106, sulfate, tetrachloroethene, tin, tritium, uranium-235, vanadium, and zinc (and those from the expanded ICP Metals list not previously listed).See DOE/RL-2000-16, Rev.2 (Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 TSD units)
    - Methods based approach is not used.
    - Filtered sampling is use instead of non-filtered per regulations.
    - Repairs & replacement of monitoring wells is per 'approved contractor procedures' rather than WAC 173-160-. Any new wells need to be RCRA compliant wells.
    - Inconsistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Needs to clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing.
4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
    - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)

- Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
- Sampling and monitoring equipment operation and maintenance
- Monitoring and reporting on groundwater well security and maintenance
- Providing sample chain of custody to the laboratory
- Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
- Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)
- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Reserved: Closure:
Statement that the Closure Plan presents the physical remedial activities and sampling and analysis required to comply with WAC 173-303-610 but there is no Closure Plan for public review included in Addendum H which meets these requirements. Addendum H text is outdated and incomplete and needs extensive revision. Other discussion regarding 'Alternatives' should be deleted.
    - Modified Closure option discussed. This is not allowed per Dangerous Waste-WAC 173-303 regulations.
    - Document cites use of Method C instead of Method B cleanup levels. **Note: This TSD unit lies within a Traditional Cultural Property. The remedy chosen indicates infringement of Yakama Nation Treaty rights and violation of the NHPA laws. Final decisions on the permit of this unit cannot be made without consultation with the Yakama Nation ERWM Program manager and cultural staff.**
    - Closure Schedule is old and non-compliant with closure requirements.
    - References an unavailable document which is to direct RCRA closure activities rather than permit conditions which require unit specific closure actions to be performed. Statement made that the Permit will need to be consistent with CERCLA remedial actions instead of direction to CERCLA as to what specific actions/ARARs are to be included in the ROD for these actions.
    - Incomplete list of constituents of concerns (COCs) and should include antimony, arsenic, barium, beryllium, boron, cadmium, carbon tetrachloride, gross alpha, gross beta, hydrazine, iron, lead, manganese, magnesium, nickel, nitrate, phosphates ruthenium-106, sulfate, tetrachloroethene, tin, tritium, uranium-235, vanadium, and zinc (and those from the expanded ICP Metals list not previously listed).
    - Sampling and analysis plan identified [DOE 2000a] should be included and sent out for public review. Document is currently not available; incorrect citation or reference to a non-existent document.
    - Statements made that verification sampling to determine MTCA compliance for direct soil contact will not be required is inconsistent with the requirements for RCRA closure. Statements made that ancillary equipment [i.e. piping] may be left in place is neither acceptable nor correct and must be removed/treated/disposed. Soils underneath piping must also be sampled in addition to being surveyed.
    - Reference is made to non-compliance with Land Disposal Restrictions. It must first be determined that the sites will need to closure under the Landfill regulations [WAC 173-303-665].
    - Very old QA/QC documents instead of Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies.
8. Addendum I: Revise as indicated and should also coordinate and incorporate requirements listed for the 100-NR-2 OU inspection requirements.

Inspection Schedule for the 1325-N Ditch Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly

Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610
10. Addendum K: As a Post-Closure Plan, it discusses Modified Postclosure/Institutional Controls and Periodic Assessments and cites several non-existent Part II conditions.
    - Document refers and includes discussion of the 1301-N unit.
    - Postclosure groundwater monitoring program cited does not consistent with nor reflect use of alternative requirements.
    - Incorrect application of MTCA [173-340-410].
    - Request for submittal of updated post-closure plan to include placement of a cover; placement of a cover is a closure action; the unit should still be in closure.
    - Some of information within this document on personnel training, inspection, security, etc belongs in this draft permit's appropriate Addendums.
    - Modified closure options are not in accordance with WAC 173-303-610.

The YN ERWM program requests the following changes to the draft Central Waste Complex Permit:

1. SEPA: DNS base on previously submitted SEPA checklists and prior determinations. New permits require new evaluations of current operations. Current Permit conditions do not ensure mitigation will result in compliance with WAC 173-303 requirements at this unit.
2. MDNS for this TSD unit emphasizes the need for the over-all SEPA determination to be at least a MDNS rather than a DNS.

Fact Sheet: Supports issues identified in permit.

Permit Conditions General Comments: Revise Permit conditions to include all necessary conditions to bring the Central Waste Complex into compliance (e.g., RCRA requires dams, berms, and containment to be present that equal the content of the drums).

1. Ecology is authorizing the permitting of a non-compliant RCRA facility subject to the WAC 173-303 regulations. Ecology is requested to require the construction of a RCRA compliant facility in the foreseeable future. Ecology is requested to revise the Permit conditions as follows:
   - Revise Permit conditions to include requirements that all wastes are properly characterized to ensure that explosive or flammable chemicals are properly stored to comply with all requirements of WAC 173-303, 280(6)(b), WAC 173-303-630(7), (8) & (9) and WAC 173-303-395.
   - Revise Permit conditions to include requirements that all wastes are tested, characterized and properly designated and removed for treatment on an accelerated schedule which is incorporated into the Permit's compliance schedule.
   - Revise Permit conditions to include that all waste stored at the CWC are cataloged and properly labeled.
   - Revise Permit conditions to include that all waste stored outdoors is be removed from the facility and properly stored or shipped offsite on an accelerated schedule which is incorporated into the Permit's compliance schedule.
   - Revise Permit conditions to require no acceptance of any new waste until proper characterization/designation/and needed treatment of the existing waste has been done.
   - Revise Permit conditions allowing unlimited treatment and 24-hour storage of wastes outside on paved areas and other areas beyond the boundaries of the TSD unit. Secondary containment must be provided if the absence of free liquids has not been verified. This is unauthorized storage of wastes. Any waivers request to provide exceptions to the rule should be denied based on evidence from records which include documents about past spills and leaks, and misdesignation of waste containers.
   - Revise Permit conditions to include compliance with Building and Structural Specialty and Fire Code requirements and Secondary Containment volumes.
   - Remove all references to acceptance of Off-site Waste at CWC. Off-site wastes should not be permitted to be buried on the Hanford site until a cumulative Risk Assessment indicates there will be no exceedances of groundwater cleanup standards. Include a Permit condition indicating as such.
2. Revise Permit conditions to require identification of current inventory of CWC stored MLLW and TRUM waste quantities by storage locations; waste type; waste volumes (i.e., packaged & estimates for unpackaged); and number of waste packages. Require this information to be attached to the Permit in Addendum B or C.
3. Edit Permit to include conditions addressing discovery of any *anomalies* and regulatory path forward under WAC 173-303.

Specific Comments on Addenda (NOTE: Requested Permit conditions are included within Addendum comments.):

Addendum B: General: Reader has difficulty in identifying the waste acceptance criterion. Required elements are difficult to track. Edit sections to clearly identify what are the major criteria (e.g., compliance with LDRs; no free liquids; what number of chemical and physical screening anticipated for each separate waste stream and how single container waste steams will be dealt with, etc.). Include text to reflect new permit conditions for modifications to the waste acceptance criteria for specific waste streams or mitigation measures. Include all modifications to the waste acceptance criteria is subject to WAC 173-303-830 process.

1. Revise/qualify text supporting processing of waste which may not meet the onsite LDR treatment standards. Wastes not meeting LDRs are required to have treatment at point of generation. Include this last statement as a permit condition.
2. Include statement that no off-site wastes will be accepted at CWC.
3. Develop appropriate requirements for a WAC 173-303-630 compliant Container Storage area.

4. Include a permit condition requiring submittal of a corrective action plan (CAP) that clearly states the reason for the conformance issues resulting in a waste container not meeting the CWC waste acceptance criteria and describes the actions required to prevent the recurrence and corrective actions to be taken.
5. Include a permit condition requiring waste analysis contained in documented studies on the generator's waste is based on representative and appropriate sampling and testing methods per WAC 173-303-110. Edit Section B.2.1 to include evaluation of such sampling data as part of the pre-shipment review. Edit Section B.2.1.3 to include this as needed to confirm the sufficiency and reliability of the "knowledge" used for the waste profile.
6. Include permit condition treatment to meet LDR standards as part of the 'pre-shipment review process.
7. Include position name and training requirements for the "witness qualified to determine that waste meets CWC waste acceptance criteria."
8. Include permit condition requiring compliance with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

Specific Comments:

1. Edit Section B.1.1.1.2.1: Include requirement of compliance with WAC 173-303-300(2)(a)(i thru iv) to confirm the sufficiency and reliability of the "knowledge."
2. Edit Section B.1.1.1.2.3: Include the responsible person who does review physical screening frequency, determines corrective actions, or resolves waste acceptance issue for CWC.
3. Edit Section B.1.1.1.2.3: Edit text to more clearly state the minimum percentage(s) of those containers subjected to chemical screening by field and/or laboratory analysis. Provide basis for percentages.
4. Edit Section B.1.1.1.2.5: Edit text to also include that discrepancies must be reconciled within 15 days in compliance with WAC 173-303-370(4)(b).
5. Delete Section B.1.1.1.2.6: WAC 173-303-300(2) requires analysis of wastes. What is provided in the Initial Physical Screening Frequency Determination section is barely adequate. Maintain physical screening rates as indicated in Section B.1.1.1.2.3.
6. Edit Section B.1.1.2 to require compliance with WAC 173-303-160, -161, -280, &-395 as well. Include detail description. Identify compliance measures.
7. Edit Section B.1.2 to delete text supporting field screening and sampling at storage locations. Require theses actions to be performed at point of generation to ensure compliance with WAC 173-303-070. Require sampling in accordance with WAC 173-303-110 & -300.
8. Edit Section B.2.1 to clarify location for storage of physical newly generated wastes.
9. Edit Section B.2.1.1 to include evaluation of sampling data as part of the pre-shipment review. Include information required in Section B.2.1.1.3 as required. This will ensure the validity and support statement that the pre-shipment review consists of the waste stream approval and waste shipment approval process.
10. Edit Section B.2.1.1.1 and Figure B.3 to include statement: *Waste that cannot be accepted at the CWC or at an alternative SWOC TSD unit shall be returned to the Generator.*
11. Edit Section B.2.1.1.2 to include under waste description the quantity [volume] of the wastes [include differentiating the wastes] to ensure validity of waste descriptions.
12. Edit Section B.2.1.1.2 to include a new section describing the process of how and who is the responsible person for determining when any of the waste containers will be physically and/or chemically screened.
13. Edit Section B.2.1.1.3.1; (3) to include *detailed chemical, physical, and/or biological analysis of waste* to confirm the sufficiency and reliability of the "knowledge" used for the waste profile.
14. Edit Section B.2.1.2 Verification: Include text requiring treatment to meet LDR standards as part of the 'pre-shipment review' & verification process.
15. Edit Section B.2.1.2 Verification: Include process for compliance with WAC 173-303-160(2)(b). Include detail description. Identify compliance measures.
15. Edit Section B.2.1.2.1 to include text requiring submittal of a corrective action plan (CAP) that clearly states the reason for the conformance issues resulting in a waste container not meeting the CWC waste acceptance criteria and describes the actions required to prevent the recurrence and corrective actions to be taken. Include detail description. Identify compliance measures.
16. Edit Section B.2.1.2.3.2: Require a minimum of 20% physical screening frequency. Clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. State this frequency is per each waste stream and not collectively.
17. Edit Section B.2.2.2.3: See comment #5 on maintaining initial screening frequency.

18. Edit Section B.2.1.2.3.3 to reflect consistency with WAP knowledge requirements. Delete following: If no location can be found to perform the physical screening, no screening is required. Observation of packaging of waste is to be required.
19. Edit Section B.2.1.2.3.3 to include position title and training requirements for 'delegated representative.'
20. Edit Section B.2.1.2.4 to include quantitative evaluations in addition to qualitative testing [It is a part of the Waste Shipment Approval Process.]. Include tests for polycyclic aromatic hydrocarbons (PAH). Edit Table B.1 to include PAHs.
21. Edit B.2.1.2.4.1 to clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. State this frequency is per each waste stream and not collectively.
22. Edit Section B.2.2.4 to include statement that tests will demonstrate compliance with WAC 173-303-090 requirements. Include statement that *"a procedures document"* for CWC that define the basis for selecting screening tests will be provided to Ecology for review and approval and attached as an Addendum to the WAP Addendum B. Include permit condition to require this submittal within 30 days of permit approval.
23. Edit Section B.2.1.2.5 to include statement that changes to sampling methods requires a permit modification per WAC 173-303-830/840 requirements.
24. Edit Section B.2.1.2.4.2 to qualify exemptions for asbestos and hazardous debris. For both, state require designation that waste doesn't also contain something else; that debris rule LDR treatment standards have been applied.
25. Edit Section B.2.1.2.6 to include statement requiring consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
26. Edit Section B. 2.1.2.6.1 as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites during the process [including the NDE process].
27. Edit Section B. 2.1.2.6.2 as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites during the process.
28. Edit Section B.2.1.3 to include that discrepancies (i.e., 'conformance issues") must be reconciled within 15 days in compliance with WAC 173-303-370(4)(b) [see previous comments on *Verification*]
29. Edit Section B.2.1.3 to delete all references to acceptance of off-site wastes.
30. Edit Section B.2.2: See comments #s 15 & 28. Edit as needed.
31. Edit Section B.2.3 to detail description of how WRP TRUM waste can be reclassified as mixed low level waste (MLLW) during the course of retrieval or subsequent storage. Include permit conditions for management of these wastes and ensure compliance with Dangerous Waste Regulations-WAC 173-303- (particularly WA C173-303-150). Include detail description. Identify compliance measures. Include requirements that all wastes are tested, characterized and properly designated and removed for treatment on an accelerated schedule which is incorporated into the Permit's compliance schedule.
32. Edit Section B.2.3 (all) to reflect consistency with B.2.1.1.1 through B.2.2.3. Include requested permit conditions and text edits as noted above.
33. Edit Section B.2.3 to include requirements for a *detailed chemical, physical, and/or biological analysis of waste* to confirm the sufficiency and reliability of the "knowleclge" used for the waste profile.
34. Edit Section B.2.4 to require waste stream approval process consistent with WAC 173-303-300. Operational knowledge alone does not ensure compliance.
35. Edit Section B.2.4.2 to require documentation of changes in waste location to comply with WAC 173-303-380(1)(b).
36. Edit Section B.2.4.1 to include the following text and requirements for waste transfer acceptance: Conformance issues identified during the confirmation process will be documented and managed in accordance with Section B.1.1.1.2.6. Prior to transfer the following conformance issues will be corrected before waste acceptance:

- Waste does not match approved profile documentation,
- Designation, physical, and/or chemical characterization discrepancy,
- Incorrect LDR paperwork,
- Manifest Discrepancies as described in WAC 173-303-370(4)(a), (delete reference to
- Packaging discrepancy.
- Waste that does not meet the CWC waste acceptance criteria

37. Edit Section B.2.4.3 to require consistency with B.2.1.1.1 through B.2.2.3 processes.
38. Edit Section 2.5 bullet #4: Edit 2nd sentence to state: *The container will be dispositioned by returning it to the generator for a detailed chemical, physical, and/or biological analysis of waste.* The current CWC container storage pads are not in compliance with WAC 173-303-630 requirements and a discrepant container does not meet LDR standards for placement in of these areas.
39. Edit Section B.2.5 3rd bullet to include details of separate spill containment area for segregated containers. Include requirements for secondary containment.
40. Edit Section B.2.5 5th bullet to state compliance with WAC 173-303-630 requirements.
41. Edit Section B.2.5 6th bullet to state schedule for discrepancy resolution will be within 15 days.
42. Edit Section B.2.6 to include statement that any Sampling and Analysis Plan shall comply with WAC 173-303-830/840 modification process. Include permit condition requiring submittal per WAC 173-303-830/840 process.
43. Edit Section B.2.6 to include the following SAP requirements:

1. Any changes to the SAP regarding addition or elimination of COCs are subject to the WAC 173-303-830/840 modification process (including public reviews).
2. Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites

- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-*303-300(5)(c)]*
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
- Data Collection Strategy section including, but not limited to, the following:
- A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
- A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
- Sampling section which shall include or describe, and reference or cite:
- Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;

- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
- Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
- Method blank(s);
- Laboratory control sample(s);
- Calibration check sample(s);
- Replicate sample(s);
- Matrix-spiked sample(s);
- "Blind" quality control;
- Control charts;
- Surrogate samples;
- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
- A data record including the following:
- Unique sample or field measurement code;
- Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;

- Sampling or field measurement raw data;
- Laboratory analysis identification (ID) number;
- Result of analysis (e.g., concentration);
- Tabular displays, as appropriate, illustrating:
- Unsorted validated and invalidated data;
- Results for each medium and each constituent monitored;
- Data reduction for statistical analysis;
- Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
- Summary data.
    - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the CWC Facility permit.

44. Edit Section B.4 as needed to ensure QA/QC; require consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
45. Edit Section B.5.2 to include example of laboratory inspection checklist.
46. Edit Section B.5.3 to identify position of and qualifications of personnel performing reviews.
47. Review and edit Section B.7 for consistency throughout Addendum B.
48. Edit Section B.7.1 to require 20% minimum of physical & chemical screening frequencies for verification. Clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. Do not accept waste from off-site generators.
49. Edit Section B.7.2.1 to require for the listed and characteristic waste numbers that apply to the waste, including any UHC identified by 40 CFR 268.2(i), if the Knowledge of the generator is not sufficient to make complete constituent determinations, a *detailed chemical, physical, and/or biological analysis of waste* to will be required.
50. Edit Section B.7.2 to require consideration of storage lasting for the foreseeable lifetime of storage rather only 20 years.
51. Edit Section 7.2.2 to require any modifications to the Sampling and Analysis Methods subject to WAC 173-303-830/840 process.
52. Edit Section B.7.3 to include detail description the regulatory path of wastes requiring treatment other than what the CWC can provide is repackaged, labeled, and transferred to a TSD unit for storage pending identification or development of an appropriate treatment method.
53. Edit Section B.7.3 line 22, to delete following *The alternative treatment standards for hazardous debris as specified in 40 CFR 268.45 or for contaminated s.*
54. Edit Section B.7.3 as need to ensure consistency with required WAC 173-303 regulations.
55. Edit Section B.7.4 to identify position of and qualifications of personnel performing certification of LDR treatment. Edit to include disposition process of LDR waste which does not meet the applicable treatment standards.
56. Edit Section B.8 to include required compliance with WAC 173-303-380.

57. Edit Addendum to incorporate requested changes in Addendum C as needed.

Addendum C:

1. Edit Addendum C, C.1.1 all Sections to reflect compliance with WAC 173-303-630(2 thru 6) for all waste storage units. Include detail description. Identify compliance measures.
2. Edit Addendum C, Section C.1.1 to state and reflect required compliance with WAC 173-303-630(7). Include detail description of underlying base to clearly demonstrate compliance with WAC 173-303-630(7)(a) & (b).
3. Edit Addendum C, Section C.1.1 to state and reflect required compliance with WAC 173-303-630(8)(a)&(b). Use of a *vented catch sump* does not satisfy or ensure compliance with these requirements nor does it preclude spills from affecting other containers. Identify compliance measures.
4. Edit Addendum C, Section C.1.1 to state and reflect required compliance with all requirements of WAC 173-303-395. Section C.1.1 is lacking the detail description of how waste is managed in a manner which is compliant with and prevents situations listed in WAC 173-303-395(1)(a) thru (d) and (4). Identify compliance measures.
5. Edit Addendum C, Section C.1.1 to include details of design of storage modules to demonstrate compliance with requirements for ignitable, reactive, and corrosive dangerous or mixed waste management. Identify compliance measures.
6. Edit Addendum C, Section C.1 to reflect compliance with WAC 173-303-630(9) for all waste storage units. Include detail description. Identify compliance measures.
7. Edit Addendum C, Section C.1 to reflect compliance with WAC 173-303-630(11) for all waste storage units. Include detail description. Identify compliance measures.
8. For these units, include Permit condition requiring compliance with WAC 173-303-630(11).
9. For these units, include Permit condition defining in operational days exactly what is expected to be understood *as timely manner as necessary to prevent overflow* to remain in compliance with WAC 173-303-630(7)(a)(ii).
10. Include Permit condition restricting dangerous and/or mixed waste treatment from being performed within the Flammable and Alkali Metal Waste Storage Modules.
11. Edit Addendum C, C.1.2 all Sections to reflect compliance with WAC 173-303-630(2 thru 6) for all waste storage units. Include detail description. Identify compliance measures.
12. Edit Addendum C, C.1.2 all Sections to state and reflect required compliance with WAC 173-303-630(7). Include detail description of underlying base to clearly demonstrate compliance with WAC 173-303-630(7)(a) & (b). Identify compliance measures. Include the following requirements:
    - Permit condition limiting to 50 percent of floor areas of the container storage to be occupied by containers at any one time.
13. Edit Addendum C, C.1.2 all Sections to state and reflect required compliance with WAC 173-303-630(8)(a)&(b). A statement such as The foundation is *integrated into a perimeter concrete curb and ramps are across the curb for loading and unloading operations. The floors are coated with an epoxy resin floor surfacing system that is compatible with the stored waste* does not satisfy or ensure compliance with these requirements nor does it preclude spills from affecting other containers. Identify compliance measures.
14. Edit Addendum C, C.1.2 all Sections to state and reflect required compliance with WAC 173-303-630(9) for all waste storage buildings or areas. Include detail description. Identify compliance measures.
15. Edit Addendum C, C.1.2 all Sections to state and reflect required compliance with all requirements of WAC 173-303-395. Sections of C.1.2 are lacking the detail description of how waste is managed in a manner which is compliant with and prevents situations listed in WAC 173-303-395(1)(a) thru (d) and (4). Identify compliance measures.
16. Edit Addendum C, C.1.2 all Sections to state and reflect required compliance with all requirements of WAC 173-303-160 and 161. Sections of C.1.2 are lacking the detail description of how treatment of dangerous and/or mixed waste will be performed within the assigned buildings. Identify compliance measures.
17. Edit Addendum C, C.1.2 all Sections to reflect compliance with WAC 173-303-630(11) for all waste storage units. Include detail description. Identify compliance measures.
18. For these units, include Permit condition requiring compliance with WAC 173-303-630(11).
19. For these units, include Permit condition defining in operational days exactly what is expected to be understood *as timely manner as necessary to prevent overflow* to remain in compliance with WAC 173-303-630-(7)(a)(ii).
20. Edit Addendum C, C.1.3 all Sections to reflect compliance with WAC 173-303-630(2 thru 6) for all waste storage units. Include detail description. Identify compliance measures.

21. Edit Addendum C, C.1.3 all Sections to state and reflect required compliance with WAC 173-303-630(7). Include detail description of underlying base to clearly demonstrate compliance with WAC 173-303-630(7)(c). Identify compliance measures.
22. Edit Addendum C, C.1.3 all Sections to reflect compliance with WAC 173-303-630(11) for all waste storage units. Include detail description. Identify compliance measures.
23. Edit Addendum C, C.1.3 all Sections to reflect requirement under WAC 173-303-815(2) Omnibus Authority to comply with WAC 173-303-630(7)(a)(i), (ii), and (iii) in addition to WAC 173-303-630(7)(c). Recent spill issues [e.g., Box 231-Z-DR-11] at CWC defensibly warrant a more stringent regulatory compliance.
24. For these units, include Permit condition defining in operational days exactly what is expected to be understood *as timely manner as necessary to prevent overflow* to remain in compliance with WAC 173-303-630-(7)(a)(ii).
25. For these units, include Permit condition to ensure if any leakage/spill is noted, spill response actions will be performed in accordance with WAC 173-303-145, WAC 173-303-360, and WAC 173-303-610(2)(b)(ii) MTCA Method B clean closure standards. Include Permit condition requiring compliance with WAC 173-303-830 for these instances.
26. For these units, include Permit condition requiring compliance with WAC 173-303-630(11).
27. For these units, include Permit condition restricting dangerous and/or mixed waste treatment from being performed.
28. Edit Addendum C, Section C.1.4: Delete this section and require all referenced WAC 173-303 regulations to apply to CWC dangerous waste management units within current CWC boundaries. Include these regulatory requirements in Section C.2.1.1. [This is unauthorized storage of wastes. All identified actions can be safely and efficiently performed within CWC boundaries.]
29. Revise Permit conditions allowing unlimited treatment and 24-hour storage of wastes outside on paved areas and other areas beyond the boundaries of the TSD unit as described in Section C.1.4. This is unauthorized storage of wastes. Any waivers request to provide exceptions to the rule should be denied based on evidence from records which include documents about past spills and leaks, and misdesignation of waste containers.
30. Edit Addendum C, Section C.2 to include required management and packing of containers to comply with WAC 173-303-160 and -161.
31. Edit Addendum C, Section C.2.1.2 to include required compliance with WAC 173-303-630(5) & (6). Include detail description and identify compliance measures within this section. Include details on safety precautions during manual recapping of filled containers and complies with WAC 173-303-630(5) requirements. Include details on container (drum) row width.
32. Addendum C, Section C.2.2 to reflect requirement under WAC 173-303-815(2) Omnibus Authority to comply with WAC 173-303-630(7)(a)(i), (ii), and (iii) in addition to WAC 173-303-630(7)(c). Recent spills and container integrity issues at CWC defensibly warrant a more stringent regulatory compliance.
33. Edit Addendum C, Section 2.2 to include clarification that containers with liquids are also subject to WAC 173-303-140(4)(b) requirements.
34. Edit Addendum C, Section 2.2.1 to reflect previous comments regarding secondary containment systems.
35. Use of portable secondary containment is allowable however, statements that *when dangerous waste is being managed in the building, the floor areas are coated with epoxy resin; or possible use of individual spill containment pallet/skids; or vented, self-contained catch basins under storage floor; or that containers may be elevated to protect containers from contacting accumulated liquids* does not suffice or ensure compliance with WAC 173-303-630 or other WAC 173-303 requirements for container secondary containment system design and operations. Include details of sump designs and maximum volume containment. Include detail description. Identify compliance measures.
36. Edit Addendum C, Section 2.2.1 to include required compliance with WAC 173-303-320 and WAC 173-303-380(1)(e). For all these units, include Permit condition defining in operational days exactly what is expected to be understood *must remedy any problems revealed* to remain in compliance with WAC 173-303-630-(7)(a) and WAC 173-303-320(3).
37. Edit Addendum C, Section 2.2 to include details of how the portable secondary containment will ensure compliance with WAC 173-303-630(7)(a)(iii) for containers stored in Storage Areas A, B, C, E, and F.
38. Edit Addendum C, Table C.1 to include identification of current volumes of waste currently stored in each unit.
35. Edit Addendum C, Section C.2.2.3 to include requirement for compliance with WAC 173-303-630(7)(a) & (b) and ensure uncovered storage areas are capable of holding at minimum, the additional volume that would result from a maximum twenty-five year storm of twenty-four hours duration.

39. Edit Addendum C, Section C.2.2.3 to require sampling and analysis of all accumulated liquids. It is difficult to clearly demonstrate that accumulated liquids are only accumulated rainwater/snowmelt, and that it is uncontaminated, at least by visual and pH tests. For example, contamination with organic constituents, and a number of metals could be present above levels of concern, yet not be discernible via visual means or pH screening. Edit line 44 to delete *water* and state *liquids*. Include required compliance with WAC 173-303-145, -360, and detail description of how liquids will be stored and disposal path. Edit Addendum J as needed to include these requirements. Include Permit condition defining in operational days exactly what is expected to be understood *temporarily store it as sites that are protective of human health and the environment, etc* to remain in compliance with WAC 173-303-630-(7)(a) and WAC 173-303-145.
36. Edit Addendum C, Section C.2.2.3 to include requirement for compliance with WAC 173-303-110.
37. Edit Addendum C, Section C.2.2.3 to include requirement for compliance with WAC 173-303-380(1)(c) and (f).
40. Edit Addendum C, Section C.2.3 to include requirement for confirmatory sampling, etc. See previous comments on Section 2.2.3. Include detail description. Identify compliance measures.
41. Edit Addendum C, Section C.2.3.1 to require sampling and analysis of all accumulated liquids. It is difficult to clearly demonstrate that accumulated liquids are only accumulated rainwater/snowmelt, and that it is uncontaminated, at least by visual and pH tests. For example, contamination with organic constituents, and a number of metals could be present above levels of concern, yet not be discernible via visual means or pH screening. Edit line 44 to delete *water* and state *liquids*. Include required compliance with WAC 173-303-145 and detail description of how liquids will be stored and disposal path. Edit Addendum J as needed to include these requirements. Include Permit condition defining in operational days exactly what is expected to be understood *temporarily store it as sites that are protective of human health and the environment, etc* to remain in compliance with WAC 173-303-630-(7)(a) and WAC 173-303-145.
38. Edit Addendum C, Section C.2.3.1 to include requirement for compliance with WAC 173-303-110.
39. Edit Addendum C, Section C.2.3.1 to include requirement for compliance with WAC 173-303-380(1)(c) and (f).
42. Edit Addendum C, Section C.2.3.2 to require sampling and analysis of all accumulated liquids. It is difficult to clearly demonstrate that accumulated liquids are only accumulated rainwater/snowmelt, and that it is uncontaminated, at least by visual and pH tests. For example, contamination with organic constituents, and a number of metals could be present above levels of concern, yet not be discernible via visual means or pH screening. Edit line 44 to delete *water* and state *liquids*. Include required compliance with WAC 173-303-145 and detail description of how liquids will be stored and disposal path. Edit Addendum J as needed to include these requirements. Include Permit condition defining in operational days exactly what is expected to be understood *temporarily store it as sites that are protective of human health and the environment, etc* to remain in compliance with WAC 173-303-630-(7)(a) and WAC 173-303-145.
40. Edit Addendum C, Section C.2.3.2 to include requirement for compliance with WAC 173-303-110.
41. Edit Addendum C, Section C.2.3.2 to include requirement for compliance with WAC 173-303-380(1)(c) and (f).
43. Edit Addendum C, section C.3 to include detail description of the administrative controls to be used to ensure compliance with WAC 173-303-630(9)(c). Include detail description. Identify compliance measures.
44. Edit Addendum C, Section C.3.1 & 3.2 to include requirements for compliance with WAC 173-303-161(5) and WAC 173-303-630(4) & (8). Include detail description. Identify compliance measures.
45. Edit Addendum C, Section C.3.3 to include how any reused or reconditioned container will comply with WAC 173-303-160 requirements.
46. Edit Addendum C, Section C.5.1 references to increased storage capacity requests. Until the CWC is 173-303-630 compliant, expansion of storage would be unauthorized under Dangerous Waste Regulations.
47. Edit Tables C.1 & C.2: Rectify inconsistencies Addendum floor area descriptions and other discrepancies in secondary containment capacities. Rectify inconsistencies between Table C.1 & C.2 regarding maximum total volumes and Addendum text. Example: 2403-WD has secondary containment capacity of 312000 liters listed in Table C.2. Table C.1 footnote states maximum volume for these waste types listed above will not exceed 10 time the corresponding secondary containment capacity listed in Table C.2 (5,460,000 liters* in table C.1 vs. 312,000 liters in Table C.2). Any modifications for an increase in storage capacities should be denied until accurate volumes of secondary containment capacity are established. Calculation of unavailable space due to segregation (e.g., berms, aisle space, etc) should be subtracted from what is considered *waste management* and *secondary containment* available area.
48. Edit Addendum B to include these new Addendum C requirements as needed.

Addendum F:

1. Edit Addendum F to include compliance with WAC 173-303-340 requirements.
2. Edit Addendum F to specifically cite [as appropriate given the event] WAC 173-303, -145, -350, -360, -610, -645 as the regulatory requirements for management of spills.

Addendum G:

1. Edit Addendum G to include title and hotlink to reference for public access to document: Refer to the CWC Dangerous Waste Training Plan for a complete description of coursework in each training category.
2. Edit Addendum G Training Category Matrix Table as follows to include additional requirements.

Training Category*					
Permit Attachment 5 Training Category	General Hanford Facility training	Contingency Plan training	Emergency Coordinator training	Operations Training	
CWC DWTP implementing plan	Orientation Program	Emergency Response (contingency plan)	Emergency Coordinator training	General Waste Management	Container Management
Job title/position					
Regulatory Compliance Staff	X	X		X	X
Nuclear Chemical Operator	X	X		X	X
Environmental Compliance Officer	X			X	
Operations Supervisor	X	X	X	X	X
Resident Waste Service Provider	X			X	X
Non-Resident Sampler	X			X	X

Addendum H:

1. Addendum H does not satisfy all requirements of WAC 173-303-806(4)(xiii). The Part B Application requires submittal of a Closure Plan and Post Closure Plan which complies with WAC 173-303-610(3) and -610(8). Specific requirements of WAC 173-303-630(10), and WAC 173-303-806(4)(b) must also be demonstrated.
2. Soil Closure Performance Standards under WAC 173-303-610(2) [i.e., MTCA Method B cleanup values] are required to be identified by Ecology and included in the Permit.
3. Edit statement *If contaminated soils are encountered, or if it is not possible to demonstrate there are no pathways for dangerous wastes or constituents to underlying soils, this circumstance will be considered an unexpected event for closure requiring a modification to the plan pursuant to Permit Condition II.J.* Delete text to state *If contaminated soils are encountered, they are subject to WAC 173-303-610(2)(b)(i)cleanup standards and will be RTD.*
4. Edit Section H.2.2 to require sampling of the soils underlying the buildings. The coated concrete floors have not demonstrated they are RCRA compliant secondary containment.
3. Edit Addendum H to include text as needed to provide details [e.g., name of TSD disposal unit] of the management of containers filled with waste as a result of various closure actions for these facilities.
4. Edit Addendum H to include text as needed to ensure all "disposals" are in a RCRA compliant facility includes meeting LDR requirements of WAC 173-303-140.
5. Edit Addendum H 3 Closure Standards for Underlying Soils (and elsewhere as needed) to include text that in addition to EPA/240/B-01/003 (EPA/QA R-5), *EPA Requirements for Quality Assurance Project*41 *Plans*, as amended, the sampling and analysis plan will be consistent with Ecology Publication #94-111, Guidance for Clean Closure of Dangerous Waste Units and Facilities as amended.

6. Ensure the Sampling and Analysis Plan to be consistent with Ecology Publication #09-05-007.
7. Revise Addendum H, to state: *If it is not possible to meet the clean debris surface standard or the piping or ancillary equipment cannot be inspected, those portions of the piping and ancillary equipment will be removed, designated, and disposed of according to WAC 173-303-610(2(b(i)and 173-303-140 requirements.*
8. Edit Addendum I, Pg. 8, line 5, Section I.1.3 to ensure compliance with WAC 173-303-320(2)(d) requirements with regards to identification of the date and nature of any repairs or remedial actions taken throughout the facilities(CWC) to be included in the inspection log(s). Edit subsections as needed to also reflect this compliance.
9. Edit Addendum I to include an Attachment with example of the checklist used by the qualified inspector
10. Edit for clarity, Addendum J to ensure compliance with WAC 173-303-340(3) is maintained and consistency with Addendum F.
11. Edit Addendum J to require written recovery plan to be developed as an Attachment to Addendum J (i.e., prior to). Suggest use of WAC 173-303-815 omnibus authority as support to ensure compliance with WAC 173-303-360(2)(f) thru (i) and (k)(ix).
12. Revise Addendum J, to include required compliance with WAC 173-303-350(5) in addition to Permit Attachment 4.

The YN ERWM program requests the following changes to the draft Hexone Storage and Treatment Facility permit:

SEPA: DNS based on clean closure yet statements are made without explanation of how Ecology determined the disposal of the Hexone Tank System as hazardous debris. The determination should be a MDNS at the minimum until all closure actions are finalized.

General notes on Fact Sheet:

1. Statements in the Fact Sheet are confusing and inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit (e.gs. Contingency plans are a requirement of landfill closure under WAC 173-303-640(8)(b)]; the DQO process and development of SAPs and reasonable time periods).
2. Description of system doesn't include the 3 distillation vessels stored as mixed wastes-where are they? Why aren't the closure regs being applied? There is discussion of container storage area for rail tank cars but no information regarding their appropriate closure. Did this area close under the Dangerous Waste regulations? Provide rationale for closure decisions. Include required permit conditions for closure of these units and the container storage area for the railcars as necessary.
3. Section on type & quantity of waste has an error by a factor of 1000 times compared to the Part A form (20,000gals. Vs. 245, 000 gals).
4. Lots of "if & may" words instead of "compliance with" language.
5. Statement made of requiring submittal of a revised Closure Plan because the original didn't meet all closure requirements, so how could Ecology deem the application complete; why didn't Ecology write conditions in this permit to rectify these? Closure Plan submitted 12/31/2010. There is an attached Addendum H containing a closure plan for this unit's permit.
6. Confusing statements about not implementing Groundwater monitoring plans if they Clean-Close all the while talking about not meeting Clean Closure.
7. No explanation of how Ecology determined the disposal of the Hexone Tank System as hazardous debris. This statement is in conflict with the permit conditions stating that it will clean close. Tanks aren't hazardous debris.
8. No discussion of the petition for a variance from the LDR for hexone tank bottoms which will be required if the unit is going to be disposed of as hazardous debris.
9. DOE/RL-2009-112, Rev 0 & DOE/RL-2009-116, Rev 0 Hexone Storage and Treatment Facility Closure Plan and SAP submitted in 2010, calculated soil clean-up values using Method C which is inconsistent with WAC 173-303-610.
10. No clarification of what dangerous waste constituents have been eliminated or what the DQO process is for the 200-IS-1 characterization since the units going to coordinate closure with this unit.
11. No list of other applicable laws discussed.
12. Permit Fact Sheets formats are inconsistent with each other. For better reader understanding the heading "Contingency Plan" should include the whole WAC 173-303-350 citation: 'Contingency plan and Emergency Procedures.'

Permit Conditions General Comments:

1. No explanation of how Ecology determined the disposal of the Hexone Tank System as hazardous debris. This statement is in conflict with the permit conditions stating that it will clean close. Tanks aren't hazardous debris.
2. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. *PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984*, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
3. Permit Condition identifying use of WAC 173-303-610(2)(i) is not included. Addendum H Table 6-1 closure standards do not reflect acceptable soil concentrations protective of groundwater (e.g., Hexavalent Chromium). The Clean Closure Standard for Hexavalent Chromium should be 0.2 mg.kg based on the variable 3-phased model with a Hanford Kd of 0. mL/g to be consistent across the Hanford site.
4. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;

5. Permit lacks a compliance schedule in accordance with WAC 173-303-610 closure regulations. Additionally there's an incorrect application of WAC 173-303-815(3).
6. The YNERWM does not support any actions which preclude lean closure removal of the Hexone tanks (i.e., approval of the petition for LDR variance for Hexone Tank Bottoms).
7. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). Unit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.

Specific Permit condition comments:

1. V.19.A.1: Confusing; edit to ensure that it is clear that all the requirements of WAC 173-303-610 are satisfied (i.e. WAC 173-303-610(3) requirements for a plan, the contingent closure plan, a contingent post-closure plan and a sampling and analysis plan) and are included in the Permit. SAPs are intended to be in place in the permit prior to the completion of any Milestone dates for closure actions.
2. V.19.B.1: Confusing since Addendum H includes a closure plan. Revise V.19.B.1 to state closure in accordance with Permit Condition V.19.A. Delete current V.19.B.1: Revise all permit conditions and Addenda to include the required information which was or should have been included in the Permit Application in accordance with Dangerous Waste closure requirements of WAC 173-303-806 & -610 (e.g., complete designs of landfill covers and detailed description of the steps needed to remove or decontaminate all dangerous waste residues and contaminated containment system components, equipment, structures, and soils, etc.). Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions.
8. V.19.B.1.a: Questionable need for permit condition V.19.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
9. V.19.B.2 & 3: Revise: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

   To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:
     1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
     2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
     3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
10. V.19.B.4: Delete or edit to reflect an enforceable permit condition in compliance with revised V.19.B.2 (see Comment #8).
11. V.19.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires all this information to be in the issued Permit. Update the Addenda to ensure compliance.

    Additionally, while points on the SAP are acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. Edit the Sampling and Analysis Plan included in Addendum H to include the following:

    - All transfer piping is to be subject to the same Dangerous Waste WAC 173-303-610 requirements and cleanup standards as Hexone Tank System ancillary equipment.
    - Tanks 276-S-141 & 276-S-142 are to be removed in one piece, macro-encapsulated, and disposed at a RCRA compliant disposal facility.

- Any changes to the SAP regarding addition or elimination of COCs are subject to the WAC 173-303-830/840 modification process (including public reviews). Revise Table 2-6 to reflect these requirements.

In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:

- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
    - Data Collection Strategy section including, but not limited to, the following:
    - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
    - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
    - Sampling section which shall include or describe, and reference or cite:
    - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
    - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
    - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
    - Methods for, or specification of, measuring all necessary ancillary data;
    - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
    - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
    - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
    - Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
    - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
    - Calibration of field devices (as applicable);
    - Collection of replicate samples;
    - Submission of field-biased blanks, where appropriate;
    - Potential interferences present at the facility;
    - Field equipment listing and sample containers;

- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
    - A data record including the following:
    - Unique sample or field measurement code;
    - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
      Sampling or field measurement raw data;
      Laboratory analysis identification (ID) number;
      Result of analysis (e.g., concentration);
    - Tabular displays, as appropriate, illustrating:
        - Unsorted validated and invalidated data;
        - Results for each medium and each constituent monitored;
        - Data reduction for statistical analysis;

        - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
        - Summary data.
    - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
        - Displays of sampling location and sampling grid;
        - Identification of boundaries of sampling area and areas where more data is required;
        - Displays of concentrations of contamination at each sampling location;
        - Displays of geographical extent of contamination;
        - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
        - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
        - Identification of features affecting intramedia transport and identification of potential receptors;
- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the Hexone Storage and Treatment Facility permit.

12. V.19.C.1: Revise: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
13. V.19.F: Revise: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda to include this condition's information and other WAC 173-303-610(3) required information.
14. V.19.G: Contingency plans are a requirement of landfill closure under WAC 173-303-640(8)(b)]. Update Permit Addenda to include this condition's information and other WAC 173-303-610(3) required information.
15. V.19.I: Revise: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included.
16. No list of other applicable laws.
17. Permit lacks a compliance schedule in accordance with -610(3) closure regulations. Incorrect application of WAC 173-303-815(3). Closure schedule in DOE/RL-2009-112, Rev 0 (located in Addendum H) indicates nearly 21/2 years for the completion of closure.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Reserved but information should have been submitted with application and should be included. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
2. Addendum C: Reserved
3. Addendum D: Reserved but information should have been submitted with application and should be included. Is there
4. Addendum E: Reserved but information should have been submitted with application and should be included. Required by WAC 173-303-310.
5. Addendum F: Reserved but information should have been submitted with application and should be included. Required by WAC 173-303-340.
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Also include training in following:
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)

- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Closure Plan:
   - 200-IS-1 OU: Document is not final; Ecology cannot rely on this document ensure compliance with closure requirements of WAC 173-303-640 or the cleanup of the piping and other ancillary equipment for this TSD unit. Ancillary equipment should include both the effluent and affluent piping from the point of exit from the non-RCRA facility to the TSD unit to the next non-RCRA facility.
   - Clean Closure Levels for tank system COCs: Soil Concentrations protective of Groundwater values in Table 6-2: Chromium VI: 18.4 mg/kg used instead of .2mg/kg: Unclear where the 270mg/kg for Lead is derived from, why isn't the MCL of 15ug/l used as it is more protective? Ecological values are for only wildlife and don't include biota, etc. When did Ecology agree and how did Ecology agree to use industrial cleanup Method C for this site? [See comments from Ecology: Ecology's comments on the Response Action Report for 200-MG-1 Operable Unit Waste Site 600-26, DOE/RL-2010-66, Draft indicate disagreements with future land use designations. Ecology requested deletion of designation for future land use as 'conservation and mining' and use of 'unrestricted.' Ecology also requested reduction in the detection level for arsenic to 1 mg/kg (values of less than 1 mg/kg are achieved in the river corridor). Ecology rejected use of 18.4 mg/kg for soil pathway to groundwater for hexavalent chromium because it is not protective. Ecology requested ecological protection values be added to Table 2 and noted site as failing the 3-part and 2-part tests for hexavalent chromium.] Edit to reflect unrestricted use cleanup levels.
   - Unclear how it is determined that there are events which may result in *any potential threats to human health or the environment.* Edit to clearly define intent of text and what actions are to be taken under the Dangerous Waste regulations.
   - These tanks are not empty so how is compliance with WAC 173-303-640(6) ensured under the current proposed inspection schedule.
8. Addendum I: Edit to reflect compliance with WAC 173-303-640(6) requirements. Should also coordinate and incorporate requirements listed for the 200-UP-1 OU inspection requirements and the following.

Inspection Schedule for the Hexone Storage and Treatment Facility Operable Unit	
Surveillance of Hexone Tank system	Daily
Surface Inspections	Daily
Security control devices: well caps, and locks	Daily
Well condition	Daily
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information should have been submitted with application and should be included. This information is required by WAC 173-303-350.

The YN ERWM program requests the following changes to the draft IDF Permit:
SEPA: Current determination based on previous submittals. New permits require new evaluations of current conditions. Determination is *significant* for future. The overall SEPA determination for the Hanford site should be MDNS at a minimum and mitigation measures included in all permits.

General Permit comments:

1. Unit description statement that additionally, mixed waste generated by IDF operations that meet the IDF waste acceptance criteria, either as generated or after necessary treatment at a dangerous waste management unit other than IDF, will be disposed in IDF is confusing and contradictory statement. It implies that other waste forms than immobilized (vitrified) LAW that meets IDF waste acceptance criteria will automatically be disposed in IDF. Condition III.11.A.2 & others prohibit other waste disposals. Unit description needs editing to reflect permit conditions. Clarify that no off-site waste will be accepted at IDF.
2. Addendum C.2: The leachate collection tanks are best described as *Modu-tanks*. They do not meet the WAC 173-303 definition of a tank. They do not qualify subject to WAC 173-303-200. Because of their construction [see drawing H-2-830869], they are required to be authorized, through the permit as either subject to WAC 173-303-650 or WAC 173-303-680 requirements. Include Permit conditions to reflect and ensure compliance and operations with either WAC 173-303-650 or WAC 173-303-680 requirements for these 'tanks.'

Require Specific Permit Condition comments:

1. II.11.A.2: Delete all references to bulk vitrification in the IDF Permit.
2. III.11.C.1: Modify the waste acceptance criteria condition or include a Permit condition which ensures IDF only accepts wastes that have been vitrified or whose entire packages have performance equivalent to vitrification.
3. II.11.C.4: Edit to identify RCRA facility performing sampling and analysis of leachate. Include reference to permitted RCRA TSD (and the SAP) that will perform sampling and analysis for non-vitrified mixed waste (e.g. treatment residues from treatment of IDF leachate that are returned to IDF for disposal). It is unclear in which permit this information is to be accounted for or how these actions are to be performed.
4. III.11.C.6: Revise permit condition(s) to ensure the process for creating the Risk Budget Tool considers the following parameters; the concentration of contaminants in the waste stream, the waste form leachability, if the releases from that material will exceed groundwater or drinking water protection standards. Include impacts from nearby waste sites/ trenches to bound cumulative impacts to groundwater in the model used in the Risk Budget Tool. Do not use a non-validated model and not take credit for the soil column. As Ecology will review modeling assumptions, input parameters, and results of the risk budget tool, it is recommend Ecology seek Tribal/public review and comment input.
   Include a Permit condition requiring submittal of a set of testing protocols to verify how waste could be released in the future from the waste packages in IDF.
5. III.11.K.3: Partial closure is discussed. Delete or clarify text to explain how partial closure in a landfill unit meets final closure requirements of WAC 173-303-610 & 665(6). Partial closure as described is not in accordance with WAC 173-303-610 regulations.
6. III.11.T, III.11.U, III.11.V: Delete, these are unnecessary for this facility.
7. III.11.W: Outdated; revise as needed.
8. Revise permit to include a permit condition which requires the leachate collection tanks to be replaced with tanks regulated under the WAC 173-303-640 regulations as a tank system or require these to be regulated under WAC 173-303-650 regulations as surface impoundments. Current design of the IDF leachate collection system indicates this equipment is best described as Modu-Tanks subject to surface impoundment regulations.
9. Revise/include a Permit condition to ensure waste failing the confirmation process (identified as off-specification) have a path forward for disposal and do not remain on-site.
10. Edit Addendum B, Section 5.2.3.2 to discuss why state only LDRs do not require LDR certification information.
11. Edit Addendum B, Section 5.3 to identify the permitted RCRA TSD that will perform sampling and analysis for non-vitrified mixed waste (e.g. treatment residues from treatment of IDF leachate that are returned to IDF for disposal). It is unclear in which permit this information is to be accounted for or performed.
12. Edit Addendum B, Section 5.3.1.1 to include details of how discrepancies will be resolved.
13. Edit Addendum B, Section 5.3.2 & 5.3.3 to include permit condition or addenda identifying how the generator verifies the waste meets the waste acceptance criteria for disposal at IDF.

14. Edit Addendum B, Section 12 to state Off-specification ILAW or other waste forms are not to be stored longer than 90 days without a permit modification.
15. Revise Addendum B sections on Quality Assurance/Quality Control as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
16. Edit Addendum C and sub-Addendums to reflect:
    - Current conditions/processes any resulting data or actions taken. Information presented while good to include, is outdated in most instances.
    - Confirm all required submittals listed in Table C.1 were reviewed and approved by Ecology.
    - Discuss any remaining future actions.
    - State any future response or mitigation actions would be subject to WAC 173-303-830 permit modification regulations.
    - Edit Section C.2 to include and require compliance with WAC 173-303-650 or WAC 173-303-680 regulations.
17. Edit Addenda D and H to reflect the current initial design capacity of 8.2-hectare meters (82,000 cubic meters) as identified on the Part A form.
18. Addendum H: Partial closure is discussed. Delete or clarify text to explain how partial closure in a landfill unit meets final closure requirements of WAC 173-303-610 & 665(6).
19. Modeling predicts WTP 2nd waste would have to be significantly mitigated before it could be disposed of at IDF. Include permit conditions to restrict 2nd waste disposal until such mitigation actions are taken.

The YN ERWM program requests the following changes to include the 324 Building into the Part IV, Hanford site RCRA Permit:

General Comments:

1. Add 324 Building to the Permit. Due to the B-Cell leak which requires extensive cleanup, this unit should be included in the Permit at the very least as a Part IV Corrective Action Unit.
2. Rationale:
    a. DOE letter 12-AMRP-0023 requesting delays of the 324 Closure, the 324 Removal Action and the 300-296 Remedial Actions.
    b. Additionally, according to DOE, the 324 facility will reopened to remediate the spill under B-cell, and as part of the oversight for operating this facility, which presumably will generate hazardous waste as well as radioactive waste, it should be included in the RCRA permit. Attached below is the list of COCs for the B-cell sampling and analysis plan. In addition to the radionuclides, it contains the metals barium, cadmium, chromium and lead, as well as pH. Ecology's main objection may be that the 324 building waste site contains only radionuclides, thus it need not be included in the RCRA. However, the list of COCs says otherwise.
    c. The statements below are excerpts from PNNL-21214.pdf:
    In October 1986, a spill of a highly radioactive waste stream containing cesium (137Cs) and strontium(90Sr) occurred in the B-Cell of the 324 Building in the 300 Area of the Hanford Site. The spill is estimated to have contained approximately 1.3 million curies of radioactivity. An unknown fraction of this spill was lost to the subsurface through a leak in the sump in the floor of B-Cell. To characterize the extent of contamination under the 324 Building, a pit was excavated on the north side of the building in 2010 by Washington Closure Hanford LLC (WCH). Horizontal closed-end steel access pipes were installed under the foundation of the building from this pit and were used for measuring temperatures and exposure rates under the B-Cell. The deployed sensors measured elevated temperatures of up to 61 °C (142 °F) and exposure rates of up to 8,900 R/hr Field data and simulation results suggest that the pit excavated on the north side of the 324 Building to provide access for direct-push sampling efforts is resulting in increased moisture under the building, due to exposure to natural precipitation that is infiltrating into the subsurface. If excavation of the contaminated sediments under the B-Cell proceeds relatively quickly, say within 1-2 years, then this increasing moisture may be of little or no consequence. However, if the excavation and removal of contaminated sediments under the B-Cell takes longer, then the increased moisture could eventually resulting mobilization and transport of contaminants to groundwater. There are currently no groundwater monitoring wells near and downgradient of the 324 Building.

    In general, site decommissioning and demolition activities in the 300 Area and elsewhere at Hanford have the potential for increasing natural groundwater recharge rates due to surface disturbance. Recharge is the primary driving force for transporting contaminants in the vadose zone to the underlying aquifer.

    Attached COC listing for the 324 Building:

Table 1-1. 300-296 Waste Site Contaminants of Potential Concern List.

Contaminants of Potential Concern	
Radiological Constituents	
Isotopic americium	Am-241
Isotopic cesium	Cs-135, Cs-137
Isotopic uranium	U-234, U-235, U-238
Isotopic plutonium	Pu-238, Pu-239, Pu-240
Total radiostrontium	Sr-90
Nonradiological Constituents, Metals	
ICP metals	Barium, cadmium, chromium, lead
Nonradiological, Physical	
pH	

ICP = inductively coupled plasma

1.4 DATA QUALITY OBJECTIVES

A DQO process was performed for the intrusive characterization of the 300-296 waste site (WCH 2011). The project team felt it prudent to develop a sampling strategy supported by a DQO to improve the understanding of the radiological and nonradiological constituents and the extent of contamination prior to selection of the remediation methodology for the highly contaminated portion of the plume. The data and information collected by use of this SAP, coupled with data collected during the noninstrusive characterization phase, will be used to develop the final decision logic for the removal of the 300-296 waste site contamination. This section includes the key results of the DQO completed to support the intrusive sampling of the 300-296 waste site.

Planning for remediation requires a better understanding of the type, quantity, and condition of the contaminated materials associated with the 300-296 waste site. Record searches about projects and therefore materials that may have been present within B-Cell have been performed. However, because the breach in the liner of B-Cell was unknown until November 2009 there is no literature that defines what materials may have migrated through the breach into the subsurface.

1.4.1 Statement of the Problem

The exact nature, condition, and retrievability of highly radioactive contamination below B-Cell is unknown and requires characterization by physical sampling. The risks and expenses associated with retrieval, transportation, analysis, and disposal of highly radioactive samples

d. **More Notes Regarding the 324 building - from a recent Tri-city Herald article:**

Washington Closure had been expected to issue a request for bids this spring for a major project on the 324 Building, which sits over contaminated soil just north of Richland. Radioactive cesium and strontium leaked from a hot cell in the building to the soil below. Radioactivity in the soil, which is about 1,000 feet from the Columbia River, has been measured at 8,900 rad per hour. Direct exposure for a few minutes would be fatal, according to Washington Closure. The request for bids now is on hold, McKenna said.

It would have sought a subcontractor to design remotely operated equipment to be installed inside the hot cell where the leak occurred. Using the equipment, the subcontractor then would take out the hot cell's

floor, dig up the contaminated soil beneath it and transfer the contaminated soil to nearby hot cells to be grouted in place.

Clean up of the building is required to be completed by the end of this year under the legally binding Tri-Party Agreement. However, DOE and the Washington State Department of Ecology, the regulator on the project, already have been in negotiations for new deadlines because of the leaked waste beneath the building, which was discovered in late 2010.

e. From a recent PNNL report (PNNL-21214):
Finally, field-measured water content distributions and simulation results suggest that the pit excavated on the north side of the 324 Building to provide access to the subsurface is resulting in increased water contents under the building due to infiltration of natural precipitation. If the contaminated sediments underlying the B-Cell are excavated and removed relatively soon (1–2 years) ,then this increasing moisture will likely have little or no consequence. However, if the remediation effort is delayed, the increasing moisture could eventually result in mobilization of contaminants under the B-Cell and transport to groundwater.

The YN ERWM program requests the following changes to the draft NRDWL permit:

SEPA:

1. When the SEPA checklists were submitted with the permit applications, the project specific biological mitigation plan should have been a part of the submittal. Ecology cannot proceed with a final permit unit the SEPA requirements are met and significance of impacts fully known.

Permit Conditions General Comments: Permit conditions do not ensure compliance with WAC 173-303-610 or -665.

1. We reiterate the concerns presented in our, comment response letters (dated 8/30/2010 and 2.22/2011)to DOE regarding the interim action environmental assessment for closures of the Non-Radioactive Dangerous Waste Landfill and Solid Waste Landfill (DOE/EA-1707D) and as they were distributed to Washington State Department of Ecology, they remain relevant to closure under WAC 173-303-610 and -665. Foremost is the lack of a final complete design and valid groundwater monitoring plan. The dangerous waste regulations do not authorize closure on a 'conceptual design basis.'
2. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Requirement of submittal of a Part A to correct errors after approval should have resulted in the denial of the permit application. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued. A permit condition also may not authorize actions not in compliance with the Dangerous Waste regulations.
3. We have substantive concerns about the use of caps, particularly ET barriers, at the Hanford site. The follow lists major concerns:

- Application of this approach will set a precedent for future decisions without clear understanding of the effects of potential failure risks.
- Our doubts are reinforced by experiences elsewhere which note the failure of such designs (*see reference below*).
- Use of an "equivalent evapo-transpiration permeability" approach is not acceptable. Declaration that Borrow Area C soils have the required low permeability to meet the RCRA Subtitle C cover standards has not been demonstrated.
- Lack of additional mitigation measures (i.e. redundancy of multiple hydrologic barriers).
- Lack of mitigation of "Fringe effects" and creation of ephemeral wetlands, site fires and destruction of necessary vigorous vegetation.
- Use and failure of Institutional Controls and subsequent consequences to human health and the environment.
- Future impacts to the Yakama Nation Cultural Resources and violations of Yakama Nation Treaty Rights (i.e. required updates to the Borrow Area C MOA).

References: "Alternative Covers: Enhanced Soil Water Storage and Evapotranspiration in the Source Zone." W.H. Albright, W.J. Waugh, and C.H. Benson, May 2007

4. We remain concerned with statements that Barrow Area C soils have been designated soils for an ET cover. There has not been an agreed to MOA between the Tribes and DOE stipulating use of these soils. The following statement is misleading to the reader. Delete: *An amendment to this MOA has been prepared to reflect the use of the fine-grained soil material at NRDWL/SWL.*
5. We are concern with the new construction laydown area sites and their known impacts to high-quality habitat adjacent to the site will impact our cultural resources.

The YN ERWM program notes the following are to most of the Part V unit permits and requests these changes be considered as comments and applied to all the draft permits in Part V.

1. Utilize the Closure Plans submitted in the Part B application and to write appropriate Closure Permit conditions to rectify any non-compliance with unit specific closure requirements under WAC 173-303.
2. Ensure the approved closure plan is consistent with unit-specific Dangerous Waste Regulations-WAC 173-303 (ex: Surface Impoundment regulations).
3. Include approved Closure Plans and/or Permit Conditions within the Permit(s) to ensure compliance with WAC 173-303-610 and unit specific closure requirements. Ecology should not presumptively approve plans that do not yet exist. There is a lack of requirements for submittal of closure plans in the new RCRA Permit(s). Reference to closure actions under non-existent CERCLA document violates DW closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3).
4. Include Ecology approved and Dangerous Waste WAC 173-303 compliant RCRA Groundwater Monitoring Plans as attachments to unit specific Permits within their Closure Plan Addendums.
5. All Addendums identified as "reserved" should include the WAC 173-303 required information in order to be in compliance with the regulations.
6. Require all unit-specific groundwater monitoring plans be consistent with Ecology Publication # 04-03-030, Guidelines for Preparing Quality Assurance Plans for Environmental Studies.
7. Include in each unit-specific Permit the full list of COCs as noted or identified in unit- associated draft RI/FS documents previously submitted to Ecology.
8. Require use of a methods-based approach in the unit-specific Sampling and Analysis Plans.
9. Require use of non-filtered sampling in the Sampling and Analysis. Ecology should require repairs and replacement of wells per WAC 173-160.
10. Require the unit-specific training plans are included directly within the Training Addenda.
11. Coordinate and incorporate RCRA inspection requirements for the unit-specific Permits with those for the associated CERCLA groundwater operable unit's.
12. Ensure that all unit-specific Closure Schedules are compliant with the Dangerous Waste WAC 173-303-610 requirements or 173-303-815(3)(b)
13. Review and revise Part V (closing) Permits to ensure compliance with Land Disposal Restrictions (LDRs).
14. Review and revise Part V (closing) Permits to ensure that non-existent Part II conditions are not cited (e.g.1301-N).
15. All RCRA TSDs closure performance standards must use MTCA Method B cleanup levels. Include Permit conditions to ensure closure of a RCRA TSD facility as described in the Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).

    To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:

    - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
    - Direct contact consistent with WAC 173-340-900 (Table 745-1),
    - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
    - Protection of ecological receptors achieved through one of the following methods:
        1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
        2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
        3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
16. Permit(s) should include compliance schedules in accordance with WAC 173-303-610 closure regulations.
17. Include a Permit condition requiring submittal of all RD/RA work Plans to Ecology as subject to WAC 173-303-830/840 Permit modification process.
18. Include permit(s) condition(s) for the contingency for additional cleanup should selected remedies, whether carried out under RCRA or CERCLA, prove to be inadequate (e.g., restoration of groundwater as an example).

The YN ERWM program requests the following changes to the draft PUREX permit:

General Comments:

1. Remove, treat, and dispose the materials in the PUREX tunnels as required to comply with the Dangerous Waste regulations-WAC 173-303. Write Permit conditions requiring clean-closure of the PUREX Tunnels.
2. To ensure compliance with WAC 173-303, include Permit conditions that require the characterization and treatment of mixed-wastes in the PUREX tunnels and their volumes and proper disposal of the treated waste in licensed, lined, compliant disposal facilities
3. To ensure compliance with WAC 173-303, expand the contaminant of concern (COC) list to include lead.
4. To ensure compliance with WAC 173-303-140, include Permit conditions for the treatment lead in accordance with land disposal requirements and restrictions.
5. To ensure compliance with WAC 173-303, include Permit conditions that require secondary containment and leak detection and monitoring.
6. To ensure compliance with WAC 173-303-610(2), reconsider the reliance on water transport and electrical systems over a long period of time to maintain protections such as water doors. Include permit conditions for equipment updates throughout the compliance period.

The YN ERWM program requests the following changes to the draft Single Shell Tank Unit permit:
Specific & General Comments:

1. Revise Permit condition V.4.B.3.f (e) [refers to releases to the soils and groundwater] to include identification of specific methodology to be used in determining how releases are identified as occurring and the process for compliance with WAC 173-303-640(4) requirements.
2. Revise/include a Permit condition to address leaks from all waste transfer lines (including HIHT), diversion boxes, and other system components (including all ancillary equipment).
3. Revise/include a Permit condition to ensure that all waste which has escaped into the environment (including the Vadose Zone and outside the boundaries of Tank Farms) is identified, characterized such that the vertical and lateral extent of the contamination is identified, and that such releases are remediated in accordance with the Dangerous Waste Regulations under WAC 173-303-645.[Use WAC 173-303-815(2)
4. Revise Permit condition V.4.B.3.f (h) [refers to tank integrity assessment] to include identification of the process for selection of the methodology/criteria for determining tank integrity citing also WAC 173-303-640(2) regulations and identify the requirements necessary to be in compliance.
5. Revise Permit condition V.4.G.2.c.i [refers to closure Performance Standards] to include all specific criteria which must be met in order meet the required "Impracticability Demonstration."
6. Revise the V.4.C Conditions [refers to SST Groundwater Monitoring] to reflect and cite WAC 173-303-645(11) [Corrective Action Program for release from regulated units] requirements.
7. Include a Permit condition requiring submittal of all TSAPs (Tank or Component Specific Sampling and Analysis Plans) subject to WAC 173-303-830/840 permit modification requirements.
8. Include/revise a Permit(s) condition(s) requiring the construction of new double shell tanks and emptying of the tanks known or suspected of leaking as expeditiously as possible.
9. Revise Permit condition V.4.B.3.g. (k) & (l) [refers to maps and descriptions of tanks/ancillary equipment/piping distribution] to include specific criteria which must be met in order to determine integrity status and retrieval status. [see previous comment regarding Tank Assessments]
10. Include/revise a Permit condition requiring a Compliance Schedule in accordance with WAC 173-303-610(3) requirements. The Milestone Schedule for closure of SST does not support WAC 173-303-610 or 173- 340-360(4) requirements.
11. Include/revise a Permit(s) condition(s) to require a priority basis when establishing plans for emptying tanks (i.e., the "Systems Plan") and the alternatives considered shall require that the tanks be emptied in RCRA priority (i.e., First priority - known leaking tanks, second priority - suspected leaking tanks, third priority - non-compliant single shell tanks, finally all remaining tank wastes).
12. Include/revise a Permit(s) condition(s) to ensure the Permittee (DOE) complies with WAC 173-303 requirements to characterize the vertical and horizontal extent of SST sites contamination.
13. Utilize its Omnibus Authority under WAC 173-303-815 and include a Permit(s) condition(s) requiring characterization (i.e., physical sampling) and monitoring of the vadose zone beneath the SST Tank Farms and other mixed waste sites.
14. Include/revise a Permit(s) condition(s) to ensure better validating leak detection methodology and capability and to establish the criteria for what constitutes acceptable leak detection capability.
15. Include/revise a Permit(s) condition(s) requiring the pumping of water or waste out of "dry wells" and requiring annual (or more frequent) gamma logging of the dry wells to depths >55 feet past the first wetted zone in the soil, and to the full well depth in most cases, to improve early tank waste leak detection.
16. Include/revise a Permit condition(s) requiring the Permittee (DOE) to extend dry wells that do not extend to at least 60 feet and to utilize these wells to perform gamma logging and detection or leaks or extension of contaminate plumes.
17. Include a Permit(s) condition(s) requiring all changes to groundwater monitoring to be incorporated into the RCRA Permit(s) per the WAC 173-303-830/840 process.
18. to revise/include a Permit(s) condition(s) to ensure IQRPE certifications to comply with WAC 173-303-640(2) requirements and include certification of the SST leak integrity.
19. Revise/include a Permit(s) condition(s) to require annual submittal of a schedule for closure of tanks to meet Milestones M-045-70 & M-62-45 requirements.
20. Utilize Ecology's Omnibus authority under WAC 173-303-815 to include a Permit(s) condition(s) to require

annual submittal of a budget report which identifies necessary increases in personnel, equipment, and costs to support compliance with Milestones M-045-70 & M-62-45 requirements.

21. Revise/include a Permit(s) condition(s) to ensure closure of the SST System and compliance with Performance Standards is subject to the WAC 173-303-830/840 process.
22. Revise/include a Permit(s) condition(s) to ensure there is a re-evaluation of the Post-Closure care period after 30 years with subsequent periodic reviews [decadal] throughout the post-closure period (WAC 173-303-610(7) and WAC 173-303-610(8)). The post closure period should be at least 10 half lives of any isotope that is a COC (if it's plutonium that would be 240,000 years) or as long as there are potential health risks from any non-radioactive COCs.
23. Work closely with EPA Headquarters Region 10 RCRA staff to discuss what timeframes are acceptable for the State to allow for known or suspected leaking tanks to remain in that status pending development of treatment. The State should ensure they have written agreement with EPA about what is an acceptable time period to empty the known or suspected leaking tanks, and the non-compliant tanks.
24. Ecology should use its authority under the Resource Conservation Recovery Act (RCRA)[1] to better regulate and protect Hanford workers from exposure to chemical vapors at Hanford, specifically with reference to those chemical vapors emanating from the high-level nuclear waste stored in Hanford's underground radioactive waste tanks [using omnibus authority of WAC 173-303-815(2).
25. Ecology should revise/include a Permit(s) condition(s) to ensure IQRPE certifications to comply with WAC 173-303-640(2) requirements and include certification of the SST leak integrity.
26. Include Permit conditions to ensure closure of a RCRA TSD facility as described in the Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).
    To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:
    - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
    - Direct contact consistent with WAC 173-340-900 (Table 745-1),
    - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
    - Protection of ecological receptors achieved through one of the following methods:
        1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
        2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
        3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
27. Include a definition for ancillary equipment for all tanks systems. Suggest text: The term **"ancillary equipment"** will mean any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of dangerous waste from its point of generation to a storage or treatment tanks(s), between dangerous waste storage and treatment tanks to a point of disposal on-site, or to a point of shipment for disposal off-site. These are to be regulated as a part of the tank system and are to be considered subject to WAC 173-303-640 closure regulations.
28. Include the following as Permit conditions: The following are general permit conditions for SST system retrieval activities/actions developed from the TWRWP document for the C-110 tank but are relevant to the retrieval process for all SST tanks. Include a permit condition requiring these documents be submitted to Ecology for review and approval and inclusion in Addendum H as an attachment (e.g. H.1). Include/revise permit conditions V.4F.1.a.i.(b) and V.4.F.2 to require these documents subject to the WAC 173-303-830 regulations. Include the

[1] 42 U.S.C. § 6973(a)

following as permit conditions; Compliance Schedule items for the SST permit. (Note: revise and include in the DST permit for consistency with the SST permit).

29. The Permittees will initiate retrieval operations of the XXX tank by XXXX. Retrieval will be completed within 12 months of start date. Include date compliant with WAC 173-303-610(3) requirements. Should an extension be required, a modification can be requested per WAC 173-303-830-840.
30. The Permittees shall conduct retrieval activities in accordance with tank specific TWRWPs and these tank management during retrieval conditions. Should there be any deviations from the TWRWP; a field change notice will be submitted for Ecology review and approval.
31. The Permittees will submit for Ecology review and approval, all available information supporting tank integrity.
32. The Permittees will perform tank leak assessments and provide data to Ecology review and approval.
33. The Permittees will perform pre and/or post retrieval sampling and analysis activities. These activities will be consistent and in accordance with the Sampling and Analysis (SAP) Conditions XXX. The SAPs will ensure compliance with Ecology Publication # with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
    a) Ensure the following to be included as required:
    - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
    - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
    - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
    - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
    - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
    - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
        - Data Collection Strategy section including, but not limited to, the following:
        - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
        - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
        - Sampling section which shall include or describe, and reference or cite:
        - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
        - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
        - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
        - Methods for, or specification of, measuring all necessary ancillary data;
        - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
        - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;

- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
    - Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
        - Method blank(s);
        - Laboratory control sample(s);
        - Calibration check sample(s);
        - Replicate sample(s);
        - Matrix-spiked sample(s);
        - "Blind" quality control;
        - Control charts;
        - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall

also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.

- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the SST permit.

34. The Permittees will provide waste volume and physical properties of waste stored in tanks with submittal of closure plan for individual tanks; subject to WAC 173-303-830.
35. The Permittees will update the BBI as new tank waste inventory data becomes available and submit this information for Ecology review.
36. The Permittees will submit a Sampling and Analysis Plans (SAP) for post retrieval activities for Ecology review and approval and subject to WAC 173-303-830.
37. The Permittees will provide to Ecology risk and hazard values information in the post retrieval SAP.
38. The Permittees will perform SAP activities in accordance with RPP-23403, *Single-Shell Tank Component Closure Data Quality Objectives*, and RPP-PLAN-23827, *Sampling and Analysis Plan for Single-Shell Tanks Component Closure*" and the HNF-SD-WM-EV-053, *Double-Shell Tank Waste Analysis Plan*". (Note: or the appropriate documents)

39. The Permittees will submit for Ecology review and approval, the HNF-SD-WM-EV-053, *Double-Shell Tank Waste Analysis Plan.* The plan will include how samplings of SST transfers are to be performed. (Note: title of document subject to change but required)
40. The Permittees will ensure that there are no pathways for water or additional wastes to enter the SST system tanks.
41. The Permittees will submit an updated closure plan to Ecology for review and approval in accordance with Addendum XX (Compliance Schedule). The closure plan shall include a detailed description of the closure of Unplanned Releases (UPRs). UPRs will be closed in accordance with the requirements of WAC 173-303-283.
42. The Permittees will submit an updated Closure Plan to include all tank farm components associated with the SST System and closure path under WAC 173-303-640 & -610.
43. The Permittees will provide closure documentation to Ecology for component closure in accordance with permit condition XXX.
44. The Permittees will submit an updated Part A form with a comprehensive list of all SST associated pipelines and ancillary equipment
45. The Permittees will submit a detailed description(s) (e.g., how equipment is tested/maintained, etc), in addition to those provided in the TWRWPs, of the physical equipment required to retrieve waste from each of the SST System tanks. This equipment will be added to the SST System Part A component list requiring closure. This information shall be submitted to Ecology for review and approval within 90 days of tank retrieval and subject to WAC 173-303-830 process.
46. The Permittees shall ensure that all in-tank cameras or similar devices are installed and maintained during retrieval activities per vendor requirements. The camera must be installed in such a manner to facilitate waste retrieval and aid in minimizing any liquid in the tanks.
47. The Permittees shall ensure that all in-tank cameras or similar devices are installed such that the tank bottom or tank bottom as the extent technical feasible is visible after tank retrieval.
48. The Permittees shall submit all equipment specifications and vendor documentation to Ecology for review. This information will be included in an appendix to the TWRWP.
49. The Permittees shall submit, for Ecology review and approval, information about the DST and the backup DST identified for waste receipt. The supernatant source tank will also be identified with submittal. This information will be included in an appendix to the TWRWP. (Note: revise and include in the DST permit for consistency with the SST permit).
50. The Permittees will submit to Ecology detailed descriptions of specific tank retrieval instrumentation used to monitor process control data (e.g., pressures and flow rates). This information will be included in an appendix to the TWRWP.
51. The Permittees will ensure, as applicable, all ENRAFs are maintained and operating according to vendor specifications. Information gathered by ENRAF technology will be provided to Ecology for review. This information will be included in an appendix to the TWRWP.
52. The Permittees shall provide for Ecology review and approval, tank specific detailed description(s) of the ventilation system and associated equipment, including how it will be maintained and what actions will be taken should it malfunction. This information will be included in an appendix to the TWRWP.
53. The Permittee will provide for Ecology review and approval, the SS tank to which the exhauster condensate drainage will be routed. A compatibility analysis will be performed, as necessary, should other than the source SST be the receiving tank.
54. The Permittees shall manage riser equipment used during retrievals as hazardous waste in accordance with WAC 173-303-640 [as ancillary equipment or under WAC 173-303-815(2)].
55. The Permittees shall manage all portable valve boxes as SST system component/ancillary equipment.
56. The Permittees shall submit for Ecology review and approval, detailed descriptions of the valve box leak detection system, including actions to be taken in the event that there is a leak detected in a portable valve box. This information will be included in an appendix to the TWRWP.
57. The Permittees shall ensure that portable valve box leak detectors are operating and maintained in accordance with vendor specifications. This information shall be provided to Ecology as an appendix to the TWRWP.

58. The Permittees shall submit for Ecology review and approval, detailed descriptions of the valve/transfer line diversion box including actions to be taken in the event that there is a leak detected in a valve/transfer line diversion box. This information will be included in an appendix to the TWRWP.
59. The Permittees shall manage all valve/transfer line diversion boxes as SST system component/ancillary equipment.
60. The Permittees shall manage all pumps as SST system component/ancillary equipment.
61. The Permittees shall submit for Ecology review and approval, detailed descriptions of the pumps including actions to be taken in the event that there is a leak detected in a pump. This information will be included in an appendix to the TWRWP.
62. The Permittees shall manage all steel pits as SST system component ancillary equipment.
63. The Permittees shall submit for Ecology review and approval, detailed descriptions of the steel pits including actions to be taken in the event that there is a leak detected in a steel pits. This information will be included in an appendix to the TWRWP.
64. The Permittees shall manage all leak detectors (e.g., conductivity probe, a thermal leak detector, or another type of leak detector device) as SST system component/ancillary equipment.
65. The Permittees will provide detailed description (s) of transfer pump shut off retrieval activity procedure(s) (i.e., how the leak detection system for the hoses used for waste transfer is designed) for Ecology review and approval. This information will be included in an appendix to the TWRWP.
66. The Permittees will submit for Ecology review and approval, detailed descriptions on secondary containment structure and the procedures, including overflow calculations. This information will be included in an appendix to the TWRWP.
67. The Permittees will submit for Ecology review and approval, detailed descriptions of the closed-circuit television monitoring system. These descriptions shall include actions to be take should the system malfunction. This information will be included in an appendix to the TWRWP.
68. The Permittees will submit for Ecology review and approval detailed description (s) on raw water usage. This description will include estimates of volumes and disposal destinations. This information will be included in an appendix to the TWRWP.
69. The Permittees will submit for Ecology review and approval, a tank specific Process Control Plan. The Process Control Plan shall include routine operational actions and specifications [in accordance with OSD-T-151-00013, *Operating Specifications for Single-Shell Waste Storage Tanks* or the appropriate document.], and including calculations necessary to determine a balanced pumping rate. The plan shall also include possible action scenarios to be taken should there be a deviation from routine operational activities. This plan will be located in Addendum XX.

    41.1) the Process Control Plan will include a tank specific Waste Retrieval Summary Data Table similar to Table 3-2, RPP-33116R2.
70. The Permittees will ensure that tank liquid levels are maintained below the maximum waste level designated in the process control plan.
71. The Permittees will submit for Ecology review and approval, all monitoring plans. These plans will be located in Addendum XX.
72. The Permittees will submit for Ecology review and approval, the HNF-SD-WM-OCD-015, *Tank Farm Waste Transfer Compatibility Program* or the appropriate document. This document will describe the process for determinations that tank-specific DST supernates are compatible with tank-specific SST wastes. It s to include calculations to determine waste compositions and assessments of those compositions. This information will be located in Addendum XX. (Note: revise and include in the DST permit for consistency with the SST permit).
73. The Permittees will submit formal tank specific compatibility assessments, for Ecology review and approval, 45 days prior to initiation of retrieval.
74. The Permittees will submit for Ecology review and approval, Waste Stream Profile Sheets. These documents will describe the applicable sections of WAC 173-303-300; Title 40, *Code of Federal Regulations*, Part 761, "Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions" (40 CFR 761); 40 CFR 268, "Land Disposal Restrictions"; and WAC 173-303-140, "Land Disposal Restrictions," and also requires a waste compatibility assessment pursuant to HNF-SD-WM-DQO-001, *Data Quality Objectives*

for Tank Farms Waste Compatibility Program, to meet WAC 173-303-395(1). This information will be located in Addendum XX.

75. The Permittees will ensure that liquid will not be added to an SST for the sole purpose of obtaining a level measurement. However, level data will be obtained on an opportunistic basis when performing flushes or during retrieval activities in the latter stages or at the end of the waste retrieval process. This data will be submitted for Ecology review. This information will be located in Addendum XX.
76. The Permittees will submit for Ecology review and approval, a detailed description(s) of how the volume of solids removed per unit volume of sluicing fluid removed from the tank or per unit of time or transfer will be tracked. This description will include the rationale for selection of units and methods used. This information will be located in Addendum XX.
77. The Permittees will submit for Ecology review and approval, the following information prior to a decision to terminate field retrieval activities:
    b) System performance and efficiency data.
    c) In-tank visual confirmation of tank condition and waste retrieval.
    d) Preliminary volume estimates using tank geometry and in-tank structural features.
    e) Presentation and discussion of alternate system configurations and process modifications to enhance retrieval performance.
    f) Presentation and discussion of residual sample location. Examination of in-tank images to observe/record waste contours and characteristics.
    g) Estimation of waste retrieval performance efficiency and remaining waste volume.
    h) Using performance data to demonstrate that a consistent pattern is present indicating limits of technology have been reached.
    i) Evaluation of waste retrieval performance against system limitations
78. The Permittees will submit for Ecology review and approval, the TFC-ENG-CHEM-P-47, *Single-Shell Tank Retrieval Completion Evaluation* and any associated attachments or the appropriate document. This information will be located in Addendum XX.
79. The Permittees will follow the procedures outlined in the TFC-ENG-CHEM-P-47, *Single-Shell Tank Retrieval Completion Evaluation* (as amended) and associated attachments (or the appropriate documents). Any deviations and or recommend configuration or procedure changes shall be submitted for Ecology review and approval prior to initiation.
80. The Permittees will submit for Ecology review, weekly status retrieval activity reports. These reports will include residual volume estimates and performance parameters. Status reports are continued until waste retrieval operations cease. These status retrieval activity reports maybe submitted via email and will be located in an attachment to Addendum XX.
81. The Permittees will submit for Ecology review and approval, an updated XXX, RPP-23403 and XXX, RPP-PLAN-23827 (or the appropriate documents), to include a detailed description of how residual waste volume will be determined. This description will include calculations to be used. This information will be located in Addendum XX.
82. The Permittees will submit for Ecology review and approval, within 7 days, notification of when the cumulative volume of supernatant liquid being recycled exceeds the estimated quantity of 1,000,000 gal, and for each incremental million gallon quantity recycled. Notification will be submitted via email and documented in an appendix to Addendum XX *(Cumulative Volume Notification Emails)*.
83. The Permittees will ensure that subsequent to the use of supernatant during retrievals, a minimum of three tank heel rinses using a minimum volume of raw water that is three times the estimated residual waste volume will be performed.
84. The Permittees will submit for Ecology review and approval, the updated Sampling and Analysis Plan that governs liquid sampling. This updated SAP will include a detailed description of the procedures for taking a liquid sample of tank specific DST supernatant used for sluicing to verify the ^{99}Tc concentrations do not exceed levels protective of human health and the environment. It will also include a description of the procedures for taking a liquid sample to support corrosion control evaluations and ^{99}Tc concentration concentrations. (Note: revise and include in the DST permit for consistency with the SST permit).

85. The Permittees will ensure that, at the cessation of waste retrieval operations, the tank walls and heel will be flushed to the extent practical with water.
    1) Flush water will not be purposely sprayed on the walls above the maximum level stated in the process control plan.
    2) When performing the tank flushes, the flush water may be used to push some of the residual waste to a convenient sampling location.
    2. a) A sample will be taken on residual wastes after tank flushes.
    3) For each flush, the volume of water added will be metered and recorded.
    4) The flush liquid will be pumped to a minimum heel following each flush addition.
    5) ENRAF level gauge reading taken during final tank flushes will be used to support final tank residual waste volume measurements.
86. Liquids retrieved during final tank flushes shall be transferred to the same DST receiving tank as received the tank specific SST wastes. (Note: revise and include in the DST permit for consistency with the SST permit).
87. The Permittees will submit for Ecology review and approval an updated SST Closure Plan to include a detailed schedule for the waste retrieval or liquid addition activities for each specific SST tank. This schedule will be submitted within 45 days prior to retrieval or addition of any liquids to any tank. The schedule will be located in Addendum XX. Modifications to the schedule will be in accordance with WAC 173-303-830. DOE previously agreed to do sampling and analysis for waste compatibility or during final rinses. WAC 173-303-610 also requires a closure schedule. (Note: revise and include in the DST permit for consistency with the SST permit).
88. The Permittees will submit for Ecology review and approval, waste compatibility analyses for inter-tank transfers for the DST supernates tank, the SST retrieval tank, and the DST receiving tank (should the DST receiving tank be different from the DST supernates tank). This information will be consistent with Condition(s) XX and will be located in Addendum XX. (Note: revise and include in the DST permit for consistency with the SST permit).
89. The Permittees will submit for Ecology review and approval, in a tank specific Process Control Plan, waste retrieval technologies to be employed for tank specific retrievals.
90. The Permittees will submit for Ecology review and approval, in a tank specific Process Control Plan, any aboveground batch receiver vessel(s). These vessel(s) will be added to the SST Part A ancillary equipment list.
91. The Permittees will ensure the WRS will be designed to will be designed to retrieve as much waste from the tank as technically possible with waste residues not to exceed 360 ft^3 or the limit of technology, whichever is less in accordance with the requirements of HFFACO Milestone M-45-00
92. The Permittees will submit for Ecology review and approval, in a tank specific Process Control Plan, a waste retrieval system (WRS) design package to include, but not limited to , PFDs, Flowsheets, and Final Design drawings for all components of the WRS.
    1) All components of the WRS will be considered as ancillary equipment. Final disposal of used WRS equipment (including HIHTLs) will be in accordance with WAC 173-303.
93. The Permittees will submit for Ecology review and approval, in a tank specific Process Control Plan, a detailed description(s) of the WRS design functions and requirements for all components of the WRS.
94. The Permittees will ensure and certify by an IQRPE, 'existing buried waste transfer lines routed to the SST system have been isolated to prevent the inadvertent transfer of waste or intrusion of water into the tanks. Following waste retrieval activities, new transfer lines and auxiliary equipment will be flushed pursuant to Condition XXX, and disposed in accordance with Condition XXX
95. The Permittees will ensure, should any new transfer lines, ancillary equipment, or structure's flushes not be directed to the receiver DST or returned to the retrieval tank, the tank to which this waste is sent will have a compatibility analysis performed prior to acceptance of such waste flushes. (Note: revise and include in the DST permit for consistency with the SST permit).
96. The Permittees will limit all post retrieval liquids, from ancillary equipment, returned to the retrieval tank to 20 gallons or less. Deviations from the 20 gallon or less limit will be submitted for Ecology review and approval prior to initiation of any actions, and in accordance with WAC 173-303-830. Include a permit condition/section for post retrieval activities.
97. Should the permittee elect to re-use in-tank equipment, they must ensure that any decontamination liquids remaining in the retrieval tank is less than 20 gallons. Use of such equipment will be managed in accordance with TFC-OPS-WM-C-10, *Contaminated Equipment Management Practices or equivalent document.*

98. Above-grade re-used retrieval equipment will be managed in accordance with TFC-OPS-WM-C-10, *Contaminated Equipment Management Practices or equivalent document.*
99. The use of HIHTL will be managed in accordance with RPP-12711, *Temporary Waste Transfer Line Management Program Plan or equivalent document.* and in accordance with comment 'Condition 64.1.'
100. The Permittees will ensure and certify by an IQRPE that risers, pits, and/or caissons associated with specific SST tanks have been isolated to prevent intrusion(s) of wastes or water.
101. The Permittees will submit for Ecology review and approval, all SST system construction review documentation(s). For all new SST System equipment, a written integrity assessment, reviewed and certified by an IQRPE, attesting that the transfer-related equipment and associated transfer lines are suitable for use during waste retrieval operations will be prepared in accordance with WAC 173-303-640, will be submitted for Ecology review and approval. The IQRPE assessments will be comply with RPP-16922, *Environmental Specification Requirements*, latest revision, Section 13.0, *IQRPE Assessment Need and Permitting Decision Logic.* This information will be located in Addendum XX.
102. The Permittees will submit for Ecology review and approval, tank specific maps identifying the location of drywells to be monitored during retrieval. This information will be located in Addendum XX.
103. The Permittees will submit for Ecology review and approval OSD-T-151-00031, *Operating Specifications for Tank Farm Leak Detection and Single-Shell Tank Intrusion Detection*, Latest Revision, CH2M HILL Hanford Group, Inc., Richland, Washington *or equivalent document.* Any changes to procedures will be submitted in accordance with WAC 173-303-830.
104. Operating status needs to be defined. It is suggested that operational status terminates upon initiation of any pre-retrieval preparations actions. At this point, final status closure standards of WAC 173-303-610/640 are applied.
105. The Permittees will submit tank specific Preliminary Isolation Evaluations documents, including associated support documentation (e.g., plot plans, drawings, etc) in a TWRWP. Any changes to procedures will be submitted in accordance with WAC 173-303-830.
106. The Permittees will submit for Ecology review and approval an appendix(s) to the SST System Closure Plan which describes in detail tank-specific isolation or removal of in-tank retrieval and /or previous operations equipment (e.g., mobile retrieval equipment, tape measures, debris [bricks]). These items will be included in the compliance schedule and subject to WAC 173-303-830 process.
107. The Permittees will submit for Ecology review and approval an appendix(s) to the SST System Closure Plan which describes in detail tank-specific isolation or removal pipelines (e.g. inter-tank, other waste transfer pipelines, etc.) and ancillary equipment (e.g., sumps, pumps, etc.) associated with the SST System. These items will be included in the compliance schedule and subject to WAC 173-303-830 process.
108. The Permittees will conduct post-retrieval intrusion monitoring will be done in accordance with OSD-T-151-00031, *Operating Specifications for Tank Farm Leak Detection and Single-Shell Tank Intrusion Detection*, Latest Revision, CH2M HILL Hanford Group, Inc., Richland, Washington or the appropriate document. Any changes to procedures will be submitted in accordance with WAC 173-303-830.
109. The Permittees will submit for Ecology review and approval a permit modification to update the tank(s)-specific Closure Plan(s) to incorporate post-retrieval monitoring requirements. This modification will include a detailed description of intrusion monitoring [from all sources] and soil/vadose zone monitoring and it is subject to WAC 173-303-830 process.
110. The Permittees will submit for Ecology review and approval a schedule for post-retrieval WMA(s) final risk assessment(s).
111. The Permittees will submit for Ecology review and approval a permit modification to update the tank(s)-specific and WMA s Closure Plan(s) to incorporate disposition of Unplanned Releases (UPRs). it is subject to WAC 173-303-830 process.
112. The permittee, in addition to retrieval activities outlined in tank specific TWRWPs, will apply where appropriate "lessons learned" from previous tank retrievals. This includes but is not limited to, the following:
    j) Equipment materials are compatible with the environmental conditions of their intended application.
    k) Use of adequate temperature controls (e.g., heat tracing, air conditioning) to ensure equipment performs as designed.
    l) Selection of radiation resistance sealants and gaskets

m) Cold test all fluid connections and components before deployment to ensure leak tightness.
n) Incorporate features to flush components that transport slurries to prevent/correct blockages. Design the features to operate with minimal changes to the system and operator intervention.
o) Design systems to facilitate maintenance and support functions while incorporating safety and ALARA features.
p) Provide access to instrumentation and other components requiring servicing and maintenance that does not require breaching the confinement system.
q) Simplify system control screens to maximize operator efficiency and recognition of key operational parameters/data.
r) Incorporate features to unplug piping systems in the event of a line blockage.
s) Conduct comprehensive field walk-downs before system design to validate design assumptions and document as-found field conditions.
t) Identify and specify equipment shipping, handling, and lifting requirements to facilitate safe and efficient handling and deployment of equipment.
u) Conduct comprehensive post-shipping inspections to identify equipment damage and defects.
v) Minimize the use of threaded joints in equipment design.
w) Identify and obtain all spare parts required for system maintenance and for equipment repairs for anticipated failures.

The YN ERWM program requests the following changes to the draft T-Plant Complex Permit:
General comments:

1. This facility has similar issues as the CWC, WRAP, & other LLBG operating units. Review comments for these units and edit/revise the T-Plant facility permit as necessary to comply with WAC 173-303 requirements as indicated and requested in the CWC, WRAP, & other LLBG operating units.
2. Modify the Permit condition (III.9.0.4.d) to reflect compliance with Building and Structural Specialty and Fire Code requirements and Secondary Containment volumes.

The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trenches 31 & 34 permit:

SEPA General Comments:

1. Project description indicates actions in violation of WAC 173-303 Dangerous Waste regulations for in-trench treatment and placement of liquids in a landfill in violations of Land Disposal Restrictions (LDRs).
2. MDNS for this TSD unit emphasizes the need for the over-all SEPA determination to be at least a MDNF rather than a DNS.

Fact Sheet General Comments:

1. Revise/delete text supporting 'in-trench treatment or placement of liquids within landfill'. This text is not in compliance with WAC 173-303-140(4)-Dangerous Waste regulations.
2. Revise/delete text in Permit conditions supporting placement of [storing] containers next to trenches. This text is not in compliance with WAC 173-303-140(4)-Dangerous Waste regulations. WAC 173-303-630 regulations would apply. Permit would to allow a non-compliant RCRA design in-lieu of building a compliant storage facility.
3. Revise Groundwater monitoring section to state a groundwater monitoring plan will be in compliance with WAC 173-303-645 and -610.
4. Groundwater section has text describing submittal of a workplan for characterization which are not included in the Permit conditions.

Permit Conditions General Comments: See specific Addenda comments in addition to General Permit comments.

1. Revise the Part A form to include all trenches as subject to Dangerous Waste Regulations until such time that characterization (including actively digging up waste to be able to conduct sampling) demonstrates it is <u>not</u> RCRA waste.

   With the first submittal of the Part A for interim status in 1985, the U. S. Department of Energy (DOE) declared the process codes and capacities, dangerous waste codes, and unit boundaries for the Low Level Burial Grounds (LLBG). As a RCRA Treatment, Storage, and Disposal (TSD) facility, hazardous waste became regulated under Washington's Hazardous Waste Management Act, Chapter 70.105 of the Regulatory Code of Washington (RCW). RCW 70.105.109 provides that: "The Department of Ecology may regulate all hazardous wastes, including those composed of both radioactive and hazardous components, to the extent it is not preempted by federal law." The waiver of sovereign immunity, 42 U.S. Code (U.S.C.) paragraph 6961(a) states in pertinent part as follows: "Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal and management in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges... The United States hereby expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement (including, but not limited to, any injunctive relief, administrative order or civil or administrative penalty or fine referred to the in the preceding sentence, or reasonable service charge)." The wording of the waiver located at 42 U.S.C. paragraph 6961 was amended, of course, in the Federal Facilities Compliance Act of 1992. However, the operative language of the waiver -- " [e]ach department. ..of the Federal Government... shall be subject to, and comply with, all ... State requirements" - has been in the statute since 1978.
   At issues are whether or not any new information gathered (without actual characterization) will substantiate the claims of non-use, and the closure of a sub-portion (i.e. the 'unused trenches') of a subunit (i.e. the LLMW Burial Grounds TSD) independent and to different closure standards of the rest of the facility (i.e. the entire Hanford Facility under the RCRA permit).

2. Remove all references to acceptance of Off-site Waste at LLBG Trenches 31 & 34. (e.g., Section J.3.2.5.1 Delete statement *In some cases, the conformance issue will result from receiving an off-site shipment, manifested pursuant to Permit, Condition II.N.2 or WAC 173-303-370 that is damaged or otherwise presents a hazard and cannot be transported.*) Off-site wastes should not be permitted to be buried on the Hanford site

until a cumulative Risk Assessment indicates there will be no exceedances of groundwater cleanup standards. Include a Permit condition indicating as such.

3. Edit the Definition Section of the Permit to state that all references to offsite waste in the permit are limited specifically to those defined in the Definition Section.
4. Edit to include permit condition(s) requiring use of the *observational approach* rather than the analogous site approach form of characterization.
   - There are multiple burial grounds where there is no knowledge of inventory, and others where the information is very limited. The amount of current and planned characterization should be discussed along with consideration of the condition of the material in the trenches and with considerations for treatment.
   - Process records are reasonably good; it is possible to create disposal volume estimates; however the chemical constituent information is not as reliable because the contaminants of concern were not tracked.
   - DOE has said there needs to be an investigation to address whether there is any liquid waste in the solid waste burial grounds and where it might be found. Include a permit condition to require this to be done.
   - In the past, there have been issues with completeness of the burial ground inventory, including inputs from laboratory chemistry and off-site waste.
   - Washington State regulations require enough characterization to know what is in the trenches and the extent and nature of current contamination in the soil column. These requirements cannot be met with surface studies and review of the inadequate historical records.
5. Edit to include permit condition(s) requiring surface geophysical and radiological surveys to help delineate the trenches, partial exhumation of the trenches to allow evaluation of the risk of the waste on a container by container basis, and selective removal of high-risk items, and allowing low to no risk items to remain.
6. Include permit condition(s) for the management/treatment of any *retrievably stored waste*. The storage requirements at 40 CFR 268.50, incorporated by reference by WAC 173-303-140, prohibit storage in lieu of treatment.
7. Revise/delete text in the Permit conditions supporting 'in-trench treatment or placement of liquids within landfill'. This text is not in compliance with WAC 173-303-665-Dangerous Waste regulations.
8. Revise/delete text in Permit conditions supporting placement of [storing] containers next to trenches. This text is not in compliance with WAC 173-303-140(4)-Dangerous Waste regulations. WAC 173-303-630 regulations would apply. Permit would to allow a non-compliant RCRA design in-lieu of building a compliant storage facility [e.g. CWC]. Include a permit condition requiring construction of a Container Storage area compliant with WAC 173-303-630.
9. Include a permit condition requiring a modification per WAC 173-3036-830 to the waste acceptance criteria for these trenches (and require this permit condition in all LLBG units) prior to acceptance of waste constituents not listed in the waste acceptance criteria.
10. Include permit conditions requiring modifications to the waste acceptance criteria for specific waste streams or mitigation measures to subject to WAC 173-303-830 process.
11. Include permit condition(s) requiring the Waste Analysis Plan & Sampling and Analysis Plan and criteria for waste acceptance at the LLBG be informed by the results of the Risk Budget Tool. Require impacts from nearby waste sites/ trenches to bound cumulative impacts to groundwater in the model used in the Risk Budget Tool.
12. Include permit conditions) requiring the most current revision of HNF-EDC-05-27427, *Sampling and Analysis Plan (SAP) for Trenches 31 and 34 of the 218-W-5 Burial Ground, 9/2005* as an attachment to the Groundwater Monitoring Addendum D and ensure it complies with WAC 173-303 requirements for sampling and analysis plan. Include a permit condition for statistically based sampling design and unfiltered sampling for SAPs.
13. Edit to include permit condition(s) requiring vadose zone monitoring. The SWBGs have the potential to release high levels of soil gases and chemicals. Vadose zone monitoring can be used to detect such releases before they reach groundwater.
14. Include/revise a Permit condition(s) requiring monitoring of the entire 40 miles of unlined trenches. The monitoring system should include contaminants of concern associated with nearby operable units and the associated groundwater unit(s).
15. Include permit condition(s) requiring on-going groundwater well evaluation and deepening of wells as the groundwater level drops. More information on the sub-surface geology is needed as the monitoring wells are no longer valid because there is no groundwater for some of these wells.

16. Edit/include a Permit condition(s) to require a groundwater monitoring plan in compliance with WAC 173-303-645,-610, -600, and -665. Include a permit condition(s) requiring the identification of the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Identify dangerous constituents (including lead and mercury), concentration limits, point of compliance, compliance period (at a minimum, it should be specified to be the entire time the permit is in effect – 10 years), and other general groundwater monitoring requirements.
    - Ecology letter to DOE dated July 9, 2012 clearly indicates there are changes needed to the SAP. At a minimum, the SAP should be revised to incorporate these changes.
    - The claim that there is no reason to believe that there are releases affecting groundwater is at odds with the minimal monitoring data. In the 200-West Area, LLBGs 218-W-4C, 218-W-4B, 218-W-4A, 218-W-11, 218-W-1, and 218-W-2 form an elongated cluster oriented in a north-south direction. Two wells located approximately down gradient of 218-W-4B and the northern extreme of 218W-4C had high total organic carbon and elevated total organic halide readings in February 2008 and August 2008 (wells are checked biannually). These elevated readings were reanalyzed, confirmed, and a groundwater quality assessment plan was written and submitted to the Washington State Department of Ecology (Ecology).
    - Statement in Addendum D, Section 2.5: *No new wells are currently planned for LLWMA-3 until the impact of the expanded 200-ZP-1 Groundwater Operable Unit (OU) pump-and-treat system is known.* This is in conflict with other Addenda and the TPA schedule (needed new RCRA well installation was indicated for FY 2015).
17. Ecology is making presumptive decisions. Additional information and reference to 200-SW-2 OU document included in permit but these documents are not finalized. Permit is based on results of as of yet finalized document(s). Workplan for 200-SW-2 OU is not due for submittal to Ecology until sometime in 2014.
18. *Intended Life* is not defined; provide estimated operational life and post-closure in years. Provide data from modeling to ensure reasonable post-closure monitoring requirements can be met. Addendum C.1 states the planned *operational of Trenches 31 &34 is 20 years.* These trenches are beyond their *Intended Life* as stated in Section C.2.4 and should be undergoing closure.
19. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. *PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984*, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued. Addendum J states a contingency plan was written for this permit already.
20. Edit Permit to include conditions addressing discovery of any *anomalies* and regulatory path forward under WAC 173-303.
21. Landfill Cap: Final Engineering Design is a WAC 173-303-610 and -665. This should have been submitted with the Part B Application and included in the permit.

Specific Comments on Addenda (**NOTE:** There are requested Permit conditions are included within Addendum comments.):

Addendum B:

General: Reader has difficulty in identifying the waste acceptance criterion. Required elements are difficult to track. Edit sections to clearly identify what are the major criteria (e.g., compliance with LDRs; no free liquids; what number of chemical and physical screening anticipated for each separate waste stream and how single container waste steams will be dealt with, etc.). Include text to reflect new permit conditions for modifications to the waste acceptance criteria for specific waste streams or mitigation measures. Include all modifications to the waste acceptance criteria is subject to WAC 173-303-830 process.

1. Revise/delete text supporting storage of wastes awaiting final disposal. LDRs prohibit storage and placement of wastes in landfills without meeting treatment standards or for the purpose of 'storage'.
2. Edit to include statement that no off-site wastes will be accepted or placed in Trenches 31 & 34.
3. Revise/delete text supporting storage of [or staging of] containers next to trenches on storage pads. Develop appropriate requirements for a WAC 173-303-630 compliant Container Storage area.
4. Include a permit condition requiring submittal of a corrective action plan (CAP) that clearly states the reason for the conformance issues resulting in a waste container not meeting the LLBG Trenches 31 & 34 waste

acceptance criteria and describes the actions required to prevent the recurrence and corrective actions to be taken.

5. Include a permit condition requiring waste analysis contained in documented studies on the generator's waste is based on representative and appropriate sampling and testing methods per WAC 173-303-110. Edit Section B.2.1 to include evaluation of such sampling data as part of the pre-shipment review. Edit Section B.2.1.3 to include this as needed to confirm the sufficiency and reliability of the "knowledge" used for the waste profile.
6. Include permit condition treatment to meet LDR standards as part of the 'pre-shipment review process.
7. Include position name and training requirements for the "witness qualified to determine that waste meets LLBG Trenches 31 & 4 waste acceptance criteria" [Section B.2.2.2.2].
8. Include permit condition requiring compliance with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

Specific:

1. Delete from Section B.1.1.1: *Management of the waste containers and other forms at or near the mixed waste trenches will not constitute land disposal (per the definition of that term in WAC 173-303-140(3) (b) until the contractor completes treatment and verification that satisfies the land disposal restriction treatment regulations.* This is not authorized by the Dangerous Waste regulations for Landfills or Containers. This explanation is a deviation of the definition of "Land disposal" [WAC 173-303-140(3) (b)]. "Management of waste containers and other forms" as described is not in compliance with LDRs.
2. Edit Section B.1.1.1 text: *When waste is received for disposal in LLBG Trenches 31 & 34, waste receipts will be checked for waste compatibility with the liner, to ensure that the waste meets the liner waste acceptance criteria. Tests will be done in accordance with EPA Method 9090A* to include sentence: A waste constituent not listed in the waste acceptance criteria will not be accepted into the LLBG Trenches 31 & 34 until a permit modification per WAC 173-303-830/840 has been approved.
3. Edit Section B.1.1.1: Include requirements for compliance with WAC 173-303-140(4)(b)(iii) for containers and bulk wastes. Include requirements for compliance with WAC 173-303-180.
4. Edit Section B.1.1.1.1: Wastes may not be stored or staged or placed in the LLBG without meeting LDR treatment standards and WAC 173-303-630 requirements.
5. Edit Section B.1.1.1.2.1: Identify the "associated waste storage units" and ensure they are in compliance with WAC 173-303-630 requirements. Qualify that *waste not previously accepted at SWOC TSD units* must comply with LDRs, WAC 170-303-200, WAC 173-303-300, WAC 173-303-630 requirements.
6. Edit Section B.1.1.1.2.2: Include requirement of compliance with WAC 173-303-300(2)(a)(i thru iv) to confirm the sufficiency and reliability of the "knowledge."
7. Edit Section B.1.1.1.2.3: Include the responsible person who does review physical screening frequency, determines corrective actions, or resolves waste acceptance issue for WRP.
8. Edit Section B.1.1.1.2.4: Edit text to more clearly state the minimum percentage(s) of those containers subjected to chemical screening by field and/or laboratory analysis. Provide basis for percentages.
9. Edit Section B.1.1.1.2.6: Edit text to also include that discrepancies must be reconciled within 15 days in compliance with WAC 173-303-370(4)(b).
10. Delete Section B.1.1.1.2.7: WAC 173-303-300(2) analysis of wastes. What is provided in the Initial Physical Screening Frequency Determination section is barely adequate. Maintain physical screening rates as indicated in Section B.1.1.1.2.4.
11. Edit Section B.1.2 to include text that only LDR compliant waste will be managed [disposed] in Trench 31 & 34. [see previous comments regarding placement of; storage of; or staging of non-compliant LDR wastes in trenches or on associated waste storage pads].
12. Edit Section B.2.1 to include evaluation of sampling data as part of the pre-shipment review. Include information required in Section B.2.1.3 as required. This will ensure the validity and support statement that the pre-shipment review consists of the waste stream approval and waste shipment approval process.
13. Edit Section B.2.1.1 and Figure B.3 to include statement: *Waste that cannot be accepted at the LLBG Trenches 31 & 34 or at an alternative SWOC TSD unit shall be returned to the Generator.*
14. Edit Section B.2.1.2 to include under waste description the quantity [volume] of the wastes [include differentiating the wastes] to ensure validity of waste descriptions.
15. Edit Section B.2.1.2 to include a new section describing the process of how and who is the responsible person for determining when any of the waste containers will be physically and/or chemically screened.
16. Edit Section B.2.1.3; (3) to include *detailed chemical, physical, and/or biological analysis of waste* to confirm the sufficiency and reliability of the "knowledge" used for the waste profile.

17. Edit Section B.2.2 Verification: Include text requiring treatment to meet LDR standards as part of the 'pre-shipment review' & verification process.
18. Edit Section B.2.2.1 to include text requiring submittal of a corrective action plan (CAP) that clearly states the reason for the conformance issues resulting in a waste container not meeting the LLBG Trenches 31 & 34 waste acceptance criteria and describes the actions required to prevent the recurrence and corrective actions to be taken.
19. Edit Section B.2.2.2.3: Require a minimum of 20% physical screening frequency. Clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. State this frequency is per each waste stream and not collectively.
20. Edit Section B.2.2.2.3: See comment #9 on maintaining initial screening frequency.
21. Edit Section B.2.2.2.4 to include position title and training requirements for 'delegated representative.'
22. Edit Section B.2.2.3 to include quantitative evaluations in addition to qualitative testing [It is a part of the Waste Shipment Approval Process.]. Include tests for polycyclic aromatic hydrocarbons (PAH). Edit Table B.1 to include PAHs.
23. Edit B.2.2.3.1 to clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. State this frequency is per each waste stream and not collectively.
24. Edit Section B.2.2.4 to include statement that tests will demonstrate compliance with WAC 173-303-090 requirements. Include statement that "*a procedures document*" for Trenches 31 & 34 that define the basis for selecting screening tests will be provided to Ecology for review and approval and attached as an Addendum to the WAP Addendum B. Include permit condition to require this submittal within 30 days of permit approval.
25. Edit Section B.2.2.3.1 to include basis of choice of only 20% of containers being chemically screened. Clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same.
26. Edit Section 2.2.4 to include statement that changes to sampling methods requires a permit modification per WAC 173-303-830/840 requirements.
27. Edit Section B.2.2.3.2 to qualify exemptions for asbestos and hazardous debris. For both, state require designation that waste doesn't also contain something else.
28. Edit Section B.2.2.5 to include statement requiring consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
29. Edit Section B.2.2.5.1as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites during the process [including the NDE process].
30. Edit Section B.2.2.5.2 as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites during the process.
31. Edit Section B.2.3.3 to include that discrepancies (i.e., 'conformance issues") must be reconciled within 15 days in compliance with WAC 173-303-370(4)(b) [see previous comments on *Verification*]
32. Section B.2.4: See comments on Section B.1.1.1.2.6
33. Edit Section 2.5bullet #5: Edit 2nd sentence to state: *The container will be dispositioned by returning it to the generator for a detailed chemical, physical, and/or biological analysis of waste.* The current LLBG container storage pads are not in compliance with WAC 173-303-630 requirements and a discrepant container does <u>not</u> meet LDR standards for placement on these pads.
34. Edit Section B.2.5 3rd bullet to include details of separate spill containment area for segregated containers. Include requirements for secondary containment.
35. Edit Section B.2.5 5th bullet to delete reference to use of LLBG container storage pads and state compliance with WAC 173-303-630.
36. Edit Section B.2.5 7th bullet to state compliance with WAC 173-303-630 requirements.
37. Edit Section B.2.5 8th bullet to state schedule for discrepancy resolution will be within 15 days.
38. Edit Section B.2.6 to include statement that any Sampling and Analysis Plan shall comply with WAC 173-303-830/840 modification process. Include permit condition requiring submittal per WAC 173-303-830/840 process.
39. Edit Section B.2.6 to include the following SAP requirements:

- Any changes to the SAP regarding addition or elimination of COCs are subject to the WAC 173-303-830/840 modification process (including public reviews).
- Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites
- Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
- The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
- Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
- Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
- Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-*303-300(5)(c)]*
- A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
    - Data Collection Strategy section including, but not limited to, the following:
    - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
    - A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
    - Sampling section which shall include or describe, and reference or cite:
    - Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
    - Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
    - Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
    - Methods for, or specification of, measuring all necessary ancillary data;
    - Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
    - Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
    - Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
    - Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
    - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
    - Calibration of field devices (as applicable);
    - Collection of replicate samples;
    - Submission of field-biased blanks, where appropriate;
    - Potential interferences present at the facility;
    - Field equipment listing and sample containers;
    - Sampling order; and,

- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
- Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
- Method blank(s);
- Laboratory control sample(s);
- Calibration check sample(s);
- Replicate sample(s);
- Matrix-spiked sample(s);
- "Blind" quality control;
- Control charts;
- Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
  - Sampling or field measurement raw data;
  - Laboratory analysis identification (ID) number;
  - Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
  - Unsorted validated and invalidated data;
  - Results for each medium and each constituent monitored;
  - Data reduction for statistical analysis;
  - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
  - Summary data.

- Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
- Displays of sampling location and sampling grid;
- Identification of boundaries of sampling area and areas where more data is required;
- Displays of concentrations of contamination at each sampling location;
- Displays of geographical extent of contamination;
- Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
- Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
- Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the Trenches 31 & 34 Facility permit.

40. Edit Section B.2.7 to include requirements for a *detailed chemical, physical, and/or biological analysis of waste* to confirm the sufficiency and reliability of the "knowledge" used for the waste profile.
41. Edit Section B.2.8.5 to state container storage locations will comply with WAC 173-303-630 requirements prior to placement of said container.
42. Edit Section B.2.9 to clarify location for storage of physical newly generated wastes.
43. Edit Section B.4.5: Delete reference to II.E, for QA/QC; require consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.
44. Edit Section B.5.2 to include example of laboratory inspection checklist.
45. Edit Section B.5.3 to identify position of and qualifications of personnel performing reviews.
46. Edit Section B.7.1 to require 20% minimum of physical & chemical screening frequencies for verification. Clarify that the "20%" should only be applied to where it is absolutely known that the material inside the drums is exactly the same.
47. Edit Section B.7.3 to identify position of and qualifications of personnel performing certification of LDR treatment. Edit to include disposition process of LDR waste which does not meet the applicable treatment standards.

Addendum C:

General:

1. Revise/delete text supporting placement of [storing] containers next to trenches on an asphalt pad. Develop appropriate requirements for a WAC 173-303-630 compliant Container Storage area.
2. Use of precipitation data recorded from 1947 to 1969 is used to calculate Peak Flow for the 25 year, 24 hour precipitation depth of 4.0 centimeters. The use of outdated information is unwarranted. Recalculate using data which includes recent storm events and update permit Addendum C.
3. Edit Addendum C to include the following from Addendum F : F.2.1.1 Unloading Operations as needed:
   - Methods used to prevent releases during unloading operations depend on waste form (e.g., containerized or bulk).

     The methods employed are as follows:

     1. Containers shall be inspected for damage before being unloaded from the transport vehicle.
     2. Containerized waste shall be handled by appropriate equipment (e.g., forklift or crane) during unloading.
     3. Path from loading area to storage area shall be clear of obstructions.
     4. Containers and bulk waste shall not be unloaded with winds in excess of 15 miles (24 kilometers) per 5 hours.

5. Bulk waste shall be handled in a manner to ensure that dispersal does not occur (e.g., use of fixatives while placing bulk waste in trenches and air monitoring).

Specific:

1. Edit Section C.1.2: Revise/delete text supporting placement of [storing] containers next to trenches on an asphalt pad. Include text to clarify the Container Storage area will be compliant with WAC 173-303-630-Dangerous Waste regulations for use and management of containers. As drafted, the permit would allow a non-compliant RCRA design in-lieu of building a compliant storage facility.
2. Edit Section C.1.3: Revise text to include details to ensure that all of WAC 173-303-830 requirements are met. Provide details of database tracking system; location of database; provide electronic link for public access records.
3. Edit Section C.2.1: Revise text to include details of how compliance with WAC 173-303-140(2) will be met prior to storage or disposal (i.e., upon initial receipt).
4. Edit Section C.2.1: Revise text to include the details of how compliance with requirements of WAC 173-303-140(4)(b)(iii) & (iv) will be met.
5. Edit Section C.2.1: Revise text to include the details of how compliance with requirements of WAC 173-303-630(5)(a), (b), and (c) will be met.
6. Edit Section C.2.1.2: Revise text to include reference to WAC 173-303-630(6) requirements being met in Addendum XXX.
7. Edit Section C.2.1.3: Revise text to include required sampling regardless of absence of visual indicators to ensure compliance with WAC 173-303-071(kk)(iii).
8. Edit Section C.2.13: Revise/delete text on discussion on containment systems for LLBG Trenches 31&34 with regards to container management. Containers and their management are subject to the requirements of WAC 173-303-630.
9. Edit Section C.2.1.2 & C.2.3: Revise text to include reference to WAC 173-303-630(8), (9), and (10) requirements being met in Addenda B & H.
10. Edit Section C.2.2: Revise text to include reference to WAC 173-303-140(4)(b)(iii) also required to be met. Edit Addendum B as necessary to include this requirement.
11. Edit Section C.2.4.2: Edit to include specific compliance with WAC 173-303-630 (2),(3),(4),(5),(6),(8),(9), and (10) under WAC 173-303-200.
12. Edit Section C.2.4.2: Delete statement that "*Once the temporary or final cap is placed over the trench, the high-capacity pump would be shut down.*" In compliance with WAC 173-303-665(2)(i) and -665(6), the leachate system must be maintained during the active and post-closure care period.
13. Edit Section C.3: Edit entire text to reflect current conditions, etc, not future situations. Revise to include 'as built drawings' to support calculations and determination of Action Leak Rate in Addendum C.1.
14. Revise Section C.3 to include details of how the Liner System Engineering Analysis and Environmental Assessment has been demonstrated to not be affected by loads; stresses from installation or construction or operations; settlement; subsidence; uplift; internal and external pressure gradients; and/or the maximum quantity of waste, cover, and post-closure land use.
15. Edit Section C.3: Edit text to include also reference to compliance with WAC 173-303-665(4) requirements. Include text and a permit condition to ensure minimal use of water for dust suppression.
16. Edit Section C.3.5: Delete statement that "*A waste constituent not listed in the waste acceptance criteria can be accepted into the LLBG Trenches 31 & 34, provided the 9090A test results or other analytical data provided, demonstrates the waste constituent is compatible with the liner.*" This statement is not in compliance with the Dangerous Waste regulations-WAC 173-303. Include a permit condition requiring a modification per WAC 173-3036-830/840 to the waste acceptance criteria for these trenches (and require this permit condition in all LLBG units) prior to acceptance of waste constituents not listed in the waste acceptance criteria. LDR standards have to be met prior to placement of waste in the trenches.
17. Edit Section 4.3: Edit statement that "This is expected to occur infrequently; however inspections will be conducted within seven days after significant storm events," to read as follows: This is expected to occur infrequently; however inspections will be conducted weekly and after storms in compliance with WAC 173-303-630(4)(b)."
18. Edit Section 4.1.2: Use of precipitation data recorded from 1947 to 1969 is used to calculate Peak Flow for the 25 year, 24 hour precipitation depth of 4.0 centimeters. The use of outdated information is unwarranted. Recalculate using data which includes recent storm events and update Addendum C.

Addendum E:

1. Edit and revise first sentence in Section E.1, line 5 as follows: Delete *Refer to Permit Attachment 3, Security.* State: "Security for the LLBG – Trenches 31 & 34 will comply with Permit Attachment 3, Security."
2. Edit permit condition III.17.E.1 to include "The Permittees will comply with the requirements of Permit Attachment 3.
3. There is nothing in Addendum E which demonstrates compliance with WAC 173-303-330 has been met (e.g., How is the public to know whether there is a requirement for annual review of the training provided per WAC 173-303-330(2)(b)). As this information was submitted with the application, it should have been attached to this Addendum.

Addendum F:

1. Edit include reference to Addendum C as needed to support Section F.2.1.1 Unloading Operations.
2. Edit following statement in Section F.2.1.1: *Waste may be staged at the waste unloading area no longer than necessary for placement into the trench; however, waste might be left in place overnight (e.g., should the daily operational shift end or weather conditions preclude movement) before waste is placed into the trench.* To include statement that such waste will not be stage at the unloading area beyond 90 days and all contaminated waste awaiting disposal (including bulk waste) shall configured in a manner to ensure that dispersal does not occur (e.g., use of fixatives while placing bulk waste in trenches and air monitoring).
3. Edit Section F.2.2 Runoff statement that *surface liquid evaporates* to read; "Surface liquids are anticipated to evaporate."
4. Edit Section F.2.3 Water Supplies to include statement that there will be minimal use of water for dust suppression.
5. Edit Addendum F to include reference link to Waste Acceptance Criteria.

Addendum G:

1. Include title and hotlink to reference for public access to document: Refer to the LLBG, Trenches 31 & 34 Dangerous Waste Training Plan for a complete description of coursework in each training category.
2. Revise Training Matrix as follows to include closure requirements and groundwater monitoring requirements:

Training Category*							
Permit Attachment 5 Training Category	General Hanford Facility training	Contingency Plan training	Emergency Coordinator training	Operations & Closure Training			
Low-Level Burial Grounds – Trenches 31 & 34	Orientation Program	Emergency Response (contingency plan)	Emergency Coordinator training	General Waste Management	Container Management	Landfill	Ground Water Monitoring
Job title/position							
Regulatory Compliance Staff	X	X		X	X	X	X
Nuclear Chemical Operator	X	X		X	X	X	
Environmental Compliance Officer	X			X			
Operations Supervisor	X	X	X	X	X	X	
Non-Resident Waste Service Provider	X			X	X		
Non-Resident Sampler	X			X			
Field Groundwater Sampler	X	X		X			X
• Groundwater		X					X

well security & maintenance.							
• Equipment type [e.g., pumps, monitoring & sampling equipment], operational procedures and equipment maintenance.		X					X
• Collecting, packaging & shipping of samples to field & off-site labs (including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering).		X					X
• Chain of custody							X
Surveillance Personnel	X	X		X	X	X	X
• Security inspections		X					
• Surface inspections		X					
• Benchmark inspections		X					
• Groundwater Well inspections		X					X
• Inspection of erosion damage & vegetative		X					X

cover.							
• Replacement procedures for emergency & monitoring equipment		X					X
Well installation activities	X	X		X		X	X

Addendum H:

General: Addendum H requires an overall rewrite to be in compliance with the Dangerous Waste regulations of WAC 173-303.

- Addendum H does not satisfy all requirements of WAC 173-303-806(4)(xiii). The Part B Application requires submittal of a Closure Plan and Post Closure Plan which complies with WAC 173-303-610(3) and -610(8). Specific requirements of WAC 173-303-665(6), WAC 173-303-630(10), and WAC 173-303-806(4)(h)(v), must also be met.
- Consideration of "Options" does not demonstrate compliance with Dangerous Waste regulations –WAC 173-303-610(3) & (8) requirements. Missing information, but are not limited to, a detailed description of the final cover to be established and its expected performance; detailed description of steps needed to remove or decontaminate all dangerous waste residues and contaminated containment system components, equipment, structures and soils, including methods for sampling and testing of surrounding soils and criteria for determining the extent of decontamination required to satisfy the closure performance standards. Simple statements do not meet compliance.
- Soil Closure Performance Standards under WAC 173-303-610(2) [i.e., MTCA Method B cleanup values] are required to be identified by Ecology and included in the Permit.
- Estimates of the maximum inventory of dangerous wastes over the active life of the facility are given in process design capacities rather than actual inventory of dangerous wastes which is the requirements
- Required closure schedule missing; estimates of the time required to treat or dispose of all dangerous waste inventory and of the time required to place a final cover must be included. CERCLA actions under HFFACO should be integrated with the Permit rather than vice-a versa.
- Section discussing ancillary equipment and its decontamination is confusing [H.5]. Ancillary equipment has not been defined in the permit. Include within the permit the specific location and details of this equipment and its secondary equipment, and instrumentation, etc, to provide justification that it does meet the definition of 'debris.' Otherwise it must be managed according to the appropriate WAC 173-303-610 closure requirement (i.e., piping per WAC 173-303-640(8) for example the leachate tanks.)
- Section discussing contaminated soils is confusing [H.5.1]. Delete following statement: *If approved by Ecology, this could allow waste that falls below specific health based levels to be disposed of without treatment.* LDR standards apply at the point of generation and these could still remain and would require treatment.

Addendum I:

General: Delete references throughout to *operating organization*. WAC 173-303- inspection requirements state responsibility for facility inspections remains with the owner and the operator. Edit to reflect this language.

Specific:

1. Edit Section I.1: Edit statement "*Abnormal conditions identified by inspections must be corrected on a schedule that prevents hazards to personnel, the public, and the environment as determined by a solid waste operations supervisor,*" as follows: The owner or operator must remedy any problems revealed by the inspection(s) on a schedule that prevents hazards to personnel, the public, and the environment.
2. Edit Section I.1.1 to include example of inspection checklist.
3. Edit Section I.1.1.1 to include compliance with II.X.1.d specific items to be included in the inspections.

Addendum J:

1. Edit Section J.3.2.5.1 Delete statement *In some cases, the conformance issue will result from receiving an off-site shipment, manifested pursuant to Permit, Condition II.N.2 or WAC 173-303-370 that is damaged or otherwise presents a hazard and cannot be transported.* Furthermore, nothing in Condition II.N.2 deals with the issues presented in this section (J.3.2.5.1-conformance issues; damaged off-site shipments. Permit Attachment 4, Hanford Emergency Management Plan (DOE/RL-94-02) section 1.3.4 does not address this issue either. Off-site wastes should not be permitted to be buried on the Hanford site until a cumulative Risk Assessment indicates there will be no exceedances of groundwater cleanup standards.
2. Edit to also include WAC 173-303-145 as a requirement in statement: J.3.2.5 Hazardous Material, Dangerous and or Mixed Waste Spill NOTE: *For response to leaks or spills and disposition of leaking or unfit-for-use tank systems, requirements under WAC 173-303-640(7) and WAC 173-303-145 will be met.*

The YN ERWM program requests the following changes to the draft Low-Level Burial Grounds Trench 94 permit:

SEPA General Comments:

1. FEIS for this TSD unit emphasizes the need for the over-all SEPA determination to be at least a MDNF rather than a DNS.

Fact Sheet General Comments:

1. Revise Groundwater monitoring section to state a groundwater monitoring plan will be in compliance with WAC 173-303-645 and -610.
2. Groundwater section has text describing submittal of characterization information which is not included in the Permit conditions.

Permit Conditions General Comments:

1. Edit/include a Permit condition(s) to require a groundwater monitoring plan in compliance with WAC 173-303-645,-610, -600, and -665. Include a permit condition(s) requiring the identification of the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Identify dangerous constituents (including lead and mercury), concentration limits, point of compliance, compliance period (at a minimum, it should be specified to be the entire time the permit is in effect – 10 years), and other general groundwater monitoring requirements.
2. Edit and include a Permit condition, utilizing Omnibus Authority under WAC 173-303-815 requiring characterization of the vadose zone beneath the trench (Section C.2, "Releases From Trench 94," projects there will be no lead leachate until 600 to 2,000 years. The projection is that it will take hundreds of thousands of years for the lead to reach the Columbia River. Provide details of modeling used to determine how it arrived at "hundreds of thousands of years. Ecology needs data to project movement through the vadose zone and predict when lead will reach the groundwater.).
3. Edit and include a Permit condition requiring on-going groundwater well evaluation and deepening wells as the groundwater level drops.
4. Edit to revise the Inspection requirements to ensure that the Permittee can demonstrate its ability to maintain oversight of the trenches for the duration of operations.
5. Edit and include a Permit condition requiring at a minimum, installation of four additional groundwater monitoring wells (two upstream and two downstream).
6. Include permit condition(s) requiring the Waste Analysis Plan & Sampling and Analysis Plan and criteria for waste acceptance at the LLBG be informed by the results of the Risk Budget Tool. Require impacts from nearby waste sites/ trenches to bound cumulative impacts to groundwater in the model used in the Risk Budget Tool.
7. Include Permit condition to ensure corrective actions to be taken in the event of leaching of contamination from Trench 94 into the groundwater (e.g. The permit admits that lead from Trench 94 is expected to contaminate the Columbia River. Addendum C Section 3.2.1, Containment states that the lifetime of the outer container holding the lead is 500 years for the older reactors, 750 for the newer reactors and an estimated 1,500 to 2,000 years for the newest reactors (These numbers are rounded off for general discussion purposes.) The obvious conclusion is that between 500 and 2,000 years, at least 5,000 metric tons of lead will be exposed to the environment and will be subject to movement into the vadose zone and into the groundwater beneath Trench 94.)
8. Include a permit condition requiring a modification per WAC 173-3036-830 to the waste acceptance criteria for Trench 94 (and require this permit condition in all LLBG units) prior to acceptance of waste constituents not listed in the waste acceptance criteria.
9. Include text to reflect new permit conditions for modifications to the waste acceptance criteria for specific waste streams or mitigation measures. Include all modifications to the waste acceptance criteria are subject to WAC 173-303-830/840 process.
10. Include permit condition requiring compliance with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

The YN ERWM program requests the following changes to the Waste Encapsulating Storage Facility (WESF) draft permit:

General comments:

1. Include specific and detailed Permit conditions requiring annual physical assessment of the soundness of this facility under WAC 173-303-815(2) authority.
2. Bring WESF into RCRA compliance by moving the capsules into dry cask storage and close the facility in compliance with WAC 173-303-610(3). Include permit conditions to ensure compliance with WAC 173-303-610.
3. Include a Permit condition bounding the acceptance of additional waste at WESF, due to the fact that WESF is currently at capacity and cannot handle additional waste volume.

The YN ERWM program requests the following changes to the draft Waste Receiving and Processing Facility (WRAP) permit:

General comments:

1. Modify the WRAP Permit condition (III.7.0.4.b) to reflect compliance with Building and Structural Specialty and Fire Code requirements and Secondary Containment volumes.
2. Include a Permit condition requiring characterization of all waste streams processed in the WRAP facility.
3. Include/revise a Permit condition to include the function of the WRAP facility is to package TRU waste for shipment to WIPP, and that mixed waste can have TRU components and be identified as mixed TRU waste or MTW.
4. Include a Permit condition or revise the WAP to include a detailed list document of the criteria and the methodology for determination of the presence of liquids in the wastes.
5. Include, revise a Permit condition to include criteria on how to obtain representative samples from a drum containing multiple containers of waste which lack identified/associated process information.
6. Include/revise a Permit condition for the following concerns or revise the Sections B.1.1.1; B.1.1.1.2 ; B.1.1.1.2.2 ; B.2.1.3.1 ; B.2.1.1.3.1; B.2.1.3.3; B.7.3 (of the WRAP Facility Waste Analysis Plan:
    a. Clarify the range of dangerous chemicals and the various methods of chemical screening.
    b. Clarify how people on the evaluations committee determine what to sample and which sample methods to use.
    c. Require the Permittee to clearly identify the range of dangerous chemicals and the various waste streams within the packages to be in compliance with the Dangerous Waste Regulations.
    d. Clearly identify who has the responsibility to designate the waste to certify that it meets LDR standards.
    e. Clarify that the "20% rule" should only be applied to where it is absolutely known that the material inside the drums is exactly the same. Require sampling of 20% of drums.
    f. Clarify the representativeness of the drum sampling from a package on the top of a drum and the packages located near the bottom of the drum.
    g. Include treatment of peroxides, oxidizers, sulfides, cyanides, and halogenated organic carbon in addition to grouting.
7. Include/revise Permit conditions for issues similarly identified in the CWC, LLBG, and T-Plant draft permits [see specific comments for these other units].

The YN ERWM program requests the following changes to the draft Waste Treatment and Immobilization Plant Unit:

General Comments:

1. Revise/include a Permit condition that defines the criteria and standards to be used to identify and evaluate chemical and radiological constituent hazards that could occur at the WTP facility. Include a Permit condition requiring hazard analysis to be performed early in the process, rather than just prior to receipt of waste, to support necessary design change or mitigation.
2. Revise/include a Permit condition requiring response planning for criticality and natural phenomenon (e.g. Cascadia seismic events) that addresses both the direct and indirect effects from major events.
3. Revise/include a Permit condition requiring contingency planning for suffocating CO2 release events from the cooling systems. Ecology should revise/include a Permit condition with specific actions to ensure that CO2 fire extinguishers are not used on or near high voltage equipment, or in areas that are or may become "confined spaces".
4. Revise/include a Permit condition requiring contingency planning for response to the damages and difficulties associated with volcanic events (e.g., Highly abrasive ash infiltration into operating spaces resulting secondarily in failure of exit safety equipment to perform).
5. Revise the Emergency Management Plan to reflect and ensure compliance with new WTP conditions as described in the above advice points for the WTP facility. Ecology should revise Permit conditions requiring compliance with Waste Acceptance Criteria and Section 1 Introduction and Addendum B1 to more accurately reflect the NRC's provisional position on reclassification of ILAW waste as incidental to reprocessing. The NRC has yet to make a determination for Hanford.
6. Do not defer or delegate authority for RCRA actions to external processes and documents. Include detail standards, requirements, methods and frequencies as permit conditions. Append all referenced versions of documents to the permit with active hyperlinks to the referenced section(s). Some referenced documents appear to be missing from the permit. Examples: Addendum B-1
    a. Waste Treatment Plant Quality Assurance Project Plan for the Waste Analysis Plan, Rev. 0.;
    b. 24590-WTP-RPT-MGT-04-001, Rev. 0,Regulatory Data Quality Objectives Optimization Report; and
    c. RPT-W375LV-EN00002, as amended, Approach to Immobilized Hanford Tank Waste Land Disposal Restrictions Compliance
7. Update Permit conditions III.10.C.2.n.i through .iv to reflect current dates/future dates.
8. Revise/include a Permit condition to ensure that Tank Wastes are immobilized in a durable waste form with performance at least equivalent to glass for the entire waste form, and to ensure proper characterization of tank wastes. The Board supports vitrification of wastes and opposes alternate waste forms unless their performances can be shown to be at least "as good as glass" (including secondary waste streams - see HAB Advice #258).
9. Revise/include a Permit condition to ensure the facility's design is based on sound engineering principles and according to applicable regulations. Include a Permit condition to ensure all necessary testing or studies are performed well in advance of when data is needed for design and construction (see HAB Advice #258).
10. Revise/include a Permit condition to ensure WTP supporting facilities operate as intended throughout the operational life of the WTP facility while also performing their respective operations of support for other Hanford facilities (e.g. 242-A Evaporator).
11. Include/revise a Permit(s) condition(s) to require that all engineering drawings included in the permit be stamped by a registered professional engineer [WAC173-303-640].
12. Include/revise a Permit(s) condition(s)to require the Permittee(DOE) to demonstrate that the plant design is technically functional, especially in the case of technical issues identified by the Defense Nuclear Facility Safety Board and/or by Ecology staff related to:
    a. Mixing (especially for non-Newtonian fluids)
    b. Particle settling (especially for criticality control, but also for heavy metals – lead, chromium, nickel …)
    c. Hydrogen gas generation and deflagration
    d. Erosion and corrosion.
13. Include/revise a Permit(s) condition(s) to ensure that plant systems and all facility vessel designs contain provisions to accomplish clean closure in accordance with WAC 173-303-610 & WAC 173-303-640.
14. Revise/include a Permit(s) condition(s) to ensure the emergency plans include an assessment of various modes of systems failures and their impacts on the emergency plans (e.g. common, cascade, sequential, parallel and other modes; age related failures through erosion, wear, corrosion, etc.).

15. Include/revise a Permit(s) condition(s) to require equivalent capabilities for each "train of equipment (e.g. Melter off-gas treatment system)" whenever/where ever multiple parallel trains exist in the facilities.

The YN ERWM program requests the following changes to the draft 216-S-10 Pond & Ditch permit:

SEPA: The DNS appears to be based on an old non-compliant GW monitoring plan for an interim status facility. All TSD units are subject to final status regulations on the Hanford site. Indication of submittal of a required closure plan under M-037-11 does not meet WAC 173-303-610(3) regulation. It is a milestone for completion of closure work, not submission of a closure plan. The determination should be a MDNS at the minimum and permit conditions written to reflect mitigation.

General comments on Fact Sheet:

1. Statements inconsistent with data and lead the reader to believe there are no threats or potential threats yet data indicates differently.
1. Statements in the Fact Sheet inconsistent with the Dangerous Waste Regulations WAC 173-303-610 requirements for closure details to be in the permit [e.g. contingency plans are a requirement of closure]. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't yet exist.
2. Incorrect use of Wavier [variance] to closure regulations (WAC 173-303-610(4)(b).
3. Basis for permit conditions rather than identified as requirements under the Dangerous Waste regulations is incorrectly stated as coming from CERCLA & TPA Milestone requirements
4. No list of other applicable laws discussed.

Permit Conditions General Comments:

1. All required information to write a Permit should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums. PPC 9524.1984(01) COMPLIANCE SCHEDULES IN RCRA PERMITS OCT 5 1984, an EPA memorandum on compliance schedules, states a compliance schedule cannot be used to allow a facility additional time to provide Part B application information after the permit is issued.
2. No Performance Standards included in permit. Required by WAC 173-303-283.
3. The use of the words 'Ecology may accept' does not meet the requirements to have closure details, etc in the permit, there is no defined regulatory authority/pathway to do this, as stated, permit does not comply with DW Closure WAC 173-303-610 requirements; prospective agreement of acceptance of CERCLA work meeting RCRA closure requirements; CERCLA documents don't exist yet;
4. No closure plan(s) in the new RCRA permit(s); use of the Corrective Action/Record of Decision (CAD/ROD) approach to integrate Treatment Storage and Disposal Facility (TSD) closure with CERCLA for the Central Plateau TSD units and delay of development of closure plan/contingency plans/post-closure plans until after remedy selections does not ensure compliance with the Dangerous Waste Regulations [WAC 173-303].
5. Nothing in permit identifying required clean closure of or excavation of near-surface soil and remove any associated pipelines or structures (ancillary equipment) [WAC 173-303-610].
6. Edit all hyper-links to include entire citation referenced (e.g. WAC 173-303-815(2)(b)(i)] is hyper-linked and not the necessary (2) portion). U nit Description implying closure actions to be done under a CERCLA work plan authority rather than the RCRA permit.
7. Radionuclides are not regulated under Dangerous Waste Regulations at WAC 173-303. Instead they are regulated under CERCLA regulations at 40 CFR 300. However, Ecology should ensure that anticipated remedial actions for radioactive constituents shall be consistent with the closure activities required under WAC 173-303.

Permit Conditions Specific Comments:

1. V.14.B.1: Revise V.14.B.1 to state closure in accordance with Permit Condition V.14.A. Revise all permit conditions and Addenda to include the required information according to WAC 173-303-806 & -610. Reference to closure actions under non-existent CERCLA document violates Dangerous Waste closure regulation requirements to have these details in an approved Closure Plan. Required by WAC 173-303-610(3). Delete current V.14.B.1: Conditions for submittal of documents which were or should have been included in the Permit Application in accordance with DW closure requirements. Additionally, as required by WAC 173-303-806 & -610, Closure plans must include details of actions [e.g. complete designs of landfill covers]. Furthermore, the Permittees aren't the ones who have made the determination that the unit can't meet clean closure standards, Ecology makes permitting decisions

2. V.14.B.1.a: Questionable need for permit condition V.14.B.1.a. –requirement for a cultural and biological report. When the SEPA checklist was submitted with the permit application, this should have been a part of the submittal. If not, Ecology should have indicated so in their decision and called out a MDNS. Delete condition and revise SEPA determination. Include mitigations within Permit conditions.
3. V.14.B.2: Permit lacks a compliance schedule in accordance with -610 closure regulations. Incorrect application of WAC 173-303-815(3)(b) compliance schedules; see General Comment #1 above.
4. V.14.B.3 & 4: No Performance Standards included in permit. Required by WAC 173-303-283. Revise as follows: Closure of a RCRA TSD facility is described in these Dangerous Waste Regulations under WAC 173-303-610. WAC 173-303-610(2)(b)(i) requires for soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), chapter 173-340 WAC, as now or hereafter amended. Primarily, these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate (industrial use land).
   To ensure compliance with the Dangerous Waste Regulations, include the following closure performance standards for contaminated soils:
   - Closure performance standards for soils will satisfy the most stringent (lowest) of: [WAC 173-303-610(3)(a)(v)]
   - Direct contact consistent with WAC 173-340-900 (Table 745-1),
   - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4),
   - Protection of ecological receptors achieved through one of the following methods:
     1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
     2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-1), or
     3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.
5. V.14.B.5 & 6 & 7: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update the Addenda to ensure compliance.
6. V.14.B.8 & 9: While acceptable, they are incomplete and should be included in the permit per the requirements of WAC 173-303-610 as a part of the required Closure Plan. In addition, include the following as required in the Sampling and Analysis Plan (SAP), to be located in Addendum B and ensure consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites]:
   - Documentation of the necessary quantity and quality of data for each decision for which sampling and analysis may be required pursuant to conditions of this Chapter. [WAC 173-303-300(1)]
   - The parameters for which each environmental media sample will be analyzed and the rationale for selecting these parameters and the frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current. [WAC 173-303-300(5)(a)]
   - Procedures for how non-detects, and any tentatively identified compounds which may be reported with laboratory analytical results will be assessed and/or used for decision-making purposes, and to identify any contaminants in addition to those already identified for which establishment of closure performance standards may be warranted. [WAC 173-303-300(5)(a)]
   - Analytical methods, including field measurements, which will be used for analysis of environmental media samples. [WAC 173-303-300(5)(b)]
   - Methods of obtaining representative samples of soils for all sampling and analysis which may be required pursuant to WAC 173-303-110 requirements and consistent with the requirements specified in WAC 173-340-810 and WAC 173-340-820. [WAC 173-303-300(5)(c)]
   - A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined. Each QA/QC plan shall contain a Data Quality Assurance Plan which includes the following:
     - Data Collection Strategy section including, but not limited to, the following:
     - A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,

- A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
- Sampling section which shall include or describe, and reference or cite:
- Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
- Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
- Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
- Scope and application of the procedure;
- Sample matrix;
- Potential interferences;
- Precision and accuracy of the methodology; and,
- Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;

- Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
  - Method blank(s);
  - Laboratory control sample(s);
  - Calibration check sample(s);
  - Replicate sample(s);
  - Matrix-spiked sample(s);
  - "Blind" quality control;
  - Control charts;
  - Surrogate samples;

- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f). This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
  - A data record including the following:
  - Unique sample or field measurement code;
  - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
    Sampling or field measurement raw data;
    Laboratory analysis identification (ID) number;
    Result of analysis (e.g., concentration);
  - Tabular displays, as appropriate, illustrating:
    - Unsorted validated and invalidated data;
    - Results for each medium and each constituent monitored;
    - Data reduction for statistical analysis;
    - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
    - Summary data.
  - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
    - Displays of sampling location and sampling grid;
    - Identification of boundaries of sampling area and areas where more data is required;
    - Displays of concentrations of contamination at each sampling location;
    - Displays of geographical extent of contamination;
    - Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
    - Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
    - Identification of features affecting intramedia transport and identification of potential receptors;

- All data obtained pursuant to this Permit should be made available to Ecology within forty-five (45) days of receipt by the Permittees, or after completion of QA/QC activities, if applicable. If Ecology agrees that data will be obtained on a routine basis for a particular unit, the Permittees shall only be required to provide notification of data availability within forty-five (45) days of first availability, along with a statement as to expected frequency of future data. If routine data is not acquired at the stated expected frequency, the Permittees shall notify Ecology within thirty (30) days with an explanation and revision, if applicable. A new permit condition should be written to ensure this notification requirement shall also apply to any other information obtained from activities conducted, or data obtained, that may influence activities pursuant to the 216-S-10 permit.

7. V.14.C: Delete: To ensure compliance with the Dangerous Waste Regulations, WAC 173-303-610(3) requires this information to be in the issued Permit. Update Addendum H to include this information.
8. V.14.D: To ensure compliance with the Dangerous Waste Regulations, update Permit Addenda B & H to include WAC 173-303-610(3) required information. See comments above.
9. V.14.E.1: Use of an 'Interim Status GW Monitoring plan". All units on the Hanford site are final status.
10. V.14.E.2: Ecology must first determine whether use of Alternative Standard for groundwater monitoring is applicable and meets the needed criteria. Until such time that Ecology has made the determination that STOMP-1D is a validated model per criteria in the Dangerous Waste Regulations, the Ecology is required to incorporate unit specific permits groundwater monitoring into the RCRA Permit in compliance with WAC 173-303-610(2)(b)(i) requirements. Furthermore, there is an incorrect application of MTCA [173-340-410]. If alternative requirements are to be applied, then an enforceable action issued pursuant to MTCA must be done and Ecology is required to incorporate these into the permit at the time of permit issuance [WAC 173-303-646(3)(b) & (c)]. This has not been done.
11. No list of other applicable laws.
12. Difficult to track permitting actions in referenced rather than attached/include documents. A matrix approach whereas the applicable sections of the CERCLA documents are directly included in the permit is more transparent and publicly accessible. Concerns regarding "double jeopardy" are eliminated by including only those sections of the CERCLA documents needed to fulfill RCRA DW permitting requirements and modification process. CERCLA documents could contain a table of contents identifying these area and/or separate chapters for the permit requirements. This would also not be "duplication of efforts" as two separate documents are not necessary.

Addenda: All required information should have been submitted with Permit Application in 2004. Ecology deemed the application complete when in fact the draft permit contradicts this determination. Inconsistency is evident throughout the permit conditions and the addendums.

1. Addendum B: Addendum H cites a Sampling and Analysis Plan outside the permit; regulations require inclusion of this within the permit while permit says "Reserved". Revise Addendum B, Section B.7 Quality Assurance/Quality Control as needed to ensure consistency with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites. The SAP should be consistent with Ecology Publication #09-05-007 Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites. See above comments.
2. Addendum C: Reserved but information was submitted with application and should be included.
3. Addendum D: Discussion within this addendum does not meet the requirements of WAC 173-303 for groundwater monitoring. D is a GW plan for an Interim Status Permitted facility. All facilities on the Hanford site are permitted as Final Status Permitted facilities with different regulatory requirements. The GW plan is not consistent with the DW regulation requirements. The permit should clearly identify the groundwater protection standards that satisfy WAC 173-303-645(4), (5), (6), (7), (8), and (9). Clearly identify dangerous constituents, concentration limits, point of compliance, compliance period, and general groundwater monitoring requirements. Key elements that comprise groundwater protection standards (WAC 173-303-645(3)) are missing. The 200-UP-1 OU should be the groundwater operable unit for this permit.

List of Contaminants of Concern (COC) is short and should **also include** the following: Rational provided: The permittee previously defined contamination at the 216-S-10 Pond & Ditch through remedial investigations (DOE/RL-2004-17, Draft A). The study identified chemical contamination that exceeded closure performance standards (human health direct contact screening levels for soils) for the following dangerous constituents. See DOE/RL-2004-17, Draft A (RI),Pg. ES-6, Table ES-2 & pg 6-8; Table 6-2; DOE/RL-2005-63, Draft A (FS) Pg. 2-35 & Tables 2-8.

- Aroclor-1254.
- Benzo (a) anthracene.
- Benzo (a) pyrene.
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene.
- Bismuth.
- Chrysene.

The permittee also identified the following chemicals as threats or potential threats to human health through the pathway of soil to groundwater and these should also be included on the COC list for sampling. See DOE/RL-2005-63, Draft A, Pg. 2-35 & 2-88, Table 2-8; DOE/RL-2004-17, Draft A, Pg. ES-5, Table ES-1 & pg 6-7; Table 6-1; DOE/RL-2005-64, DRAFT B REISSUE: Pg 4; Table 1.

- Aroclor-1254.
- Arsenic.
- Benzo (a) anthracene.
- Benzo (a) pyrene.
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene.
- Bismuth.
- Chromium (total).
- Chrysene.
- Mercury.
- Methylene chloride.
- Silver.
- Vinyl chloride

The permittee previously found the following contaminants (and these should also be included on the COC list) threatening ecological receptors through the soil pathway in DOE/RL-2004-17, Draft A and two others (DOE/RL-2005-63 and DOE/RL-2005-64, DRAFT B REISSUE. See DOE/RL-2004-17, DRAFT A: Pg 4-164, Table 4-30; DOE/RL-2005-63, DRAFT A: pg 2-35 & pg 2-89; Table 2-8; DOE/RL-2005-64, DRAFT B REISSUE: Pg 4; Table 1.

- Acenaphthene.
- Acetone.
- Aroclor-1254.
- Arsenic
- Bismuth.
- Benzo (a) anthracene.
- Benzo (b) fluoranthene.
- Benzo (ghi) perylene
- Benzo (k) fluoranthene.
- Bis (2-ethylhexyl) phthalate.
- Boron.
- Butylbenzylphthalate.
- Carazole.
- Chrysene.
- Copper.
- Cyanide

- Dibenz [a,h] anthracene
- Dibutylphthalate
- Di-n-butylphthalate.
- Di-n-butylphthaltae.
- Fluoranthene.
- Fluorene.
- Hexavalent chromium.
- Methylene chloride.
- PCBs
- Phenanthrene.
- Pyrene.
- Selenium.
- Silver.
- Sulfate.
- Thallium.
- Toluene.
- Total chromium.
- Vanadium.
- Zinc.

These studies reported radioactive americium, cesium, plutonium, radium, strontium, tritium, and others. They also reported the radioactive contaminants of potential ecological concern, carbon-14, thorium-228, and thorium-230. See DOE/RL-2004-17, DRAFT A, pg. 4-17 & Table 4-35. Previous groundwater monitoring detected constituents above background. The 200-CS-1 feasibility study (DOEIRL-2005-63) also identified constituents with the potential to present a future concern.

Recharge in the area of the 216-S-10 OU is estimated to be between 10-20 mm/y which is significantly less than the value promoted by Ecology (40-50mm/yr). Risk of infiltration and potential for vertical migration of contaminants to groundwater could easily be higher than anticipated.

The "Methods based approach" is not used. Filtered sampling is use instead of non-filtered per regulations. Repairs & replacement of monitoring wells is not described. These actions should be in accordance with WAC 173-160. Any new wells need to be RCRA compliant wells.

4. Addendum E: Reserved but information was submitted with application and should be included. Required by WAC 173-303-310.
5. Addendum F: Reserved but information was submitted with application and should be included. Required by WAC 173-303-340.
6. Addendum G: References an unavailable document rather than including it within this addendum. Information was submitted with application and should be included. Unit specific training requirements are not sufficient for Samplers and should include an annual review in the following areas.
    - Collecting groundwater level data (training will include pump description and operation of the three types of pumps (used by the field personnel), operational procedures for the generators and the pumps used to gather groundwater samples)
    - Collecting packaging, and shipping groundwater samples to field and offsite laboratories, including special requirements for collecting and packaging samples containing volatile organic materials that require acid preservatives or special filtering
    - Sampling and monitoring equipment operation and maintenance
    - Monitoring and reporting on groundwater well security and maintenance
    - Providing sample chain of custody to the laboratory
    - Location, integrity, and inspection of groundwater wells (to include inspection of the cap and casing of each well to ensure that it is locked, pulling and inspecting the pump, brushing the inner walls of the casing and screen, and conducting a down-hole television survey)
    - Erosion damage (around wells and obvious signs of erosion, proper drainage, settlement, and sedimentation)

- Surface inspections (as necessary to identify and correct the effects of settling, subsidence, erosion or other events)
- Vegetative cover condition
- Procedures regarding emergency and monitoring equipment (to include procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment).

7. Addendum H: Information was submitted with application and should be included. If deficient, Ecology should have written permit conditions to rectify concerns or written the closure plan(s) (etc)
8. Addendum I: Should also coordinate and incorporate requirements listed for the 200-UP-1 OU inspection requirements.

Inspection Schedule for the 216-S-10 Pond & Ditch Operable Unit	
Surface Inspections	Quarterly
Security control devices: well caps, and locks	Quarterly
Well condition	Quarterly
Subsurface well condition	3 to 5 years

9. Addendum J: Reserved but information was submitted with application and should be included. Required by WAC 173-303-610
10. Addendum K: Missing