



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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November 13, 2008

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**EDMC**

Mr. Matthew S. McCormick, Assistant Manager  
Richland Operations Office  
United States Department of Energy  
P.O. Box 550, MSIN: A5-11  
Richland, Washington 99352

Re: Clarification of Requirements for Closing Land-Based Treatment, Storage Disposal Units (TSD) in the 200-CS-1 Operable Units (OU)

Reference: Whitepaper submitted via email, dated September 8, 2008, from B. Charboneau, UDSOE-RL, to J. Price, Ecology, "Regulatory Analysis of the Applicability of TSD Closure Requirements to Pre-Existing Contamination"

Dear Mr. McCormack,

The United States Department of Energy-Richland (USDOE-RL) informally submitted the enclosed white paper (reference) addressing the applicability of TSD closure for land-based TSD units in the 200 CS-1 OUs. USDOE-RL submitted the white paper in response to the Department of Ecology's 2-point proposal that:

1. Requested draft permit modifications and updated TSD closure plans.
2. Suggested USDOE-RL develop a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) action memorandum to address risk assessment for radionuclides and the National Environmental Policy Act.

We are not transmitting formal comments on the white paper, but we disagree with the white paper in the following respects:

- The white paper incorrectly uses Ecology guidance on "pre-existing contamination" as relevant to closure of TSDs at the Hanford site. Ecology does not acknowledge "pre-existing contamination" at the Hanford Site except for contamination from lead-arsenic pesticides applied to orchards prior to 1943. Therefore, this Ecology guidance would not apply except at areas of former orchards along the Columbia River.

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- The white paper asserts a real difference among Hazardous Waste Management Act (HWMA) closure performance standards, HWMA corrective action requirements, and requirements for CERCLA remedial action objectives. This assertion is both philosophically inconsistent with the Hanford Tri-Party Agreement and factually incorrect.
- The white paper implies less stringent cleanup levels under an industrial land use than under closure performance standards. This is incorrect. Neither soil cleanup levels to protect groundwater nor ecological protection requirements depend on a land use planning decision. These two cleanup requirements are typically more stringent than cleanup levels to protect humans from direct contact with waste.

We met with USDOE-RL on September 25, 2008, and discussed the white paper. It was determined that the agencies should proceed with 200 CS-1 TSDs in accordance with Ecology's 2-point proposal. Ecology will continue to prepare closure chapters for these units and will include them in the Hanford Facility Dangerous Waste Permit scheduled for issuance in early 2009.

If there are any questions, contact John Price at 509-372-7921 or Brenda Jentzen at 509-372-7912.

Sincerely,

Jane Hedges  
by 

Jane A. Hedges  
Program Manager  
Nuclear Waste Program

jp  
Enclosure

cc w/enc:

Stuart Harris, CTUIR  
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Susan Leckband, HAB  
Ken Niles, ODOE  
Administrative Record: 200 CS-1  
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## Regulatory Analysis of the Applicability of TSD Closure Requirements to Pre-Existing Contamination

### Conclusion:

TSD waste site closure requirements are not applicable to pre-existing contamination. Pre-existing contamination (pre-RCRA and pre-RCRA permit based on the effective date of regulation) cleanup is controlled by CERCLA or potentially RCRA Corrective Action. Chemicals that were not treated, stored or disposed during a permitted operation of the TSD unit are not subject to the TSD closure requirements.

### Analysis:

TSD unit closure requirements are not applicable to disposal activities or releases that occurred prior to the relevant effective date of RCRA or RCRA TSD permitting regulation<sup>1</sup>. Disposal/releases that occurred prior to RCRA or RCRA TSD permitting are subject to CERCLA or potentially RCRA Corrective Action<sup>2</sup>. There can be a significant difference between the RCRA TSD closure requirements and RCRA Corrective Action requirements. For RCRA TSD clean closure, the contaminant cleanup levels for soil concentrations are the numeric cleanup levels calculated using unrestricted use exposure assumptions according to the MTCA regulation, Chapter 173-340 WAC. Another option for closing a land-based TSD unit is by capping and monitoring groundwater. For CERCLA and RCRA Corrective Action, cleanup levels are set based on a risk analysis that uses the reasonably anticipated future land use. DOE has designated the future land use for several areas of the Central Plateau as industrial-exclusive using the NEPA process.

### Key Issue:

For RCRA TSD unit clean closure, it is important to know which contaminants are present due to releases from activities prior to use of the area as a TSD unit and those that are present due to releases from wastes managed in the TSD unit. Contaminants from releases prior to the establishment of the TSD unit are not required to be addressed to

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<sup>1</sup> EPA has defined "active management" as "...disposing of additional hazardous wastes in existing units containing previously disposed wastes (September 1, 1989, 54 FR 36597)" [August 18, 1992, 57 FR 37298]. If the activities at the waste management unit did not meet the definition of active management, then TSD unit standards do not apply. Active management for these disposal units would have occurred if additional wastes were disposed after one of the three effective dates of regulation, depending on the type of waste (hazardous waste 11/19/1980, state-only dangerous waste 3/10/1982, or mixed waste 8/19/1987). [WAC 173-303-040 definition of Active Portion, TPA Appendix A definition of TSD unit, and 1996 letter from WA Attorney General establishing the mixed waste effective date]. For additional information, see also McCoy's RCRA unraveled, ©, Section 14.2.1, "Wastes only regulated if actively managed."

<sup>2</sup> These locations at Hanford are defined as "past practice" waste sites according to the TPA and are subject to the processes of the TPA Action Plan Section 7.0.

achieve clean closure of the unit per Ecology's *Guidance for Clean Closure of Dangerous Waste Units and Facilities*, Publication #94-111, Revised May 2005. Consistent with Ecology's clean closure guidance, only those contaminants associated with waste codes included in the RCRA Part A Permit for the TSD unit and managed in the unit are subject to consideration to accomplish RCRA TSD clean closure numeric cleanup levels.

**RL's understanding of Ecology's position** is that all contaminants present at the waste site must be subject to RCRA TSD Clean Closure numeric cleanup levels.

Example:

For 216-A-29 Ditch, the difference between specific soil preliminary clean up levels per RCRA TSD clean closure requirements and CERCLA remedial action/RCRA corrective action is significant:

Aroclor 1254 - 0.5 mg/kg versus 2.9 mg/kg;  
Vanadium – 560 mg/kg versus 10220 mg/kg; and  
Lead – 250 mg/kg versus 800 mg/kg.

Waste codes for these constituents are not identified in the Part A Permit for the 216-A-29 TSD Unit because no wastes containing these constituents were managed in the unit after the effective date of regulation. These constituents did not come from wastes managed in the TSD unit and do not have to be addressed to achieve RCRA clean closure.

Discussion:

Within the industrial exclusive land use area, three exposure pathways are considered including protection of groundwater (ground surface to groundwater), protection of human health (ground surface to 15 ft below ground surface) and ecological protection (ground surface to 15 ft below ground surface). Each exposure pathway must be addressed as a CERCLA remedial action with RCRA Corrective Action as ARAR or through RCRA TSD Closure. For two of the exposure pathways (i.e., protection of groundwater and ecological protection), the clean up values remain the same independent of whether the clean up is conducted under CERCLA remedial action with RCRA Corrective Action as ARAR or RCRA TSD Clean Closure.

The cleanup value selected for protection of human health is where the clean up standards differ. For 200-CS-I Operable Unit waste sites, the current approach is to calculate the contaminants represented by waste codes included in the RCRA Part A Permit for a specific TSD unit using unrestricted use exposure assumptions according to the MTCA regulation, Chapter 173-340 WAC. For contaminants not represented by a waste codes included in the RCRA Part A Permit, soil concentrations of contaminants at the waste site must be below cleanup levels protective of human health for an industrial scenario. This approach allows RL to achieve RCRA TSD clean closure and remediate the waste site through a single field action that addresses all contaminants appropriately.

See Ecology's clean closure guidance, Section 2.8, Pre-Existing Contamination, (publication #94-111 May 2005) for additional information on deferring pre-existing contamination to the CERCLA remedial action/RCRA corrective action process.

RCRA permit Condition II.Y.2.c requires DOE<sup>3</sup> to either document for each TSD unit activities completed during closure and/or post-closure care that satisfy corrective action OR to identify the remaining corrective action requirements and the schedule under which they will be satisfied. Condition II.Y.2.C further allows DOE to reference the appropriate CPP or RPP process and schedule, if corrective action will be satisfied by work developed and carried out under the HFFACO.

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<sup>3</sup> It is not until the time that DOE submits a certification of closure or certification of completion of post-closure care that corrective action must be accounted for at TSD units, unless an earlier date is agreed upon between Ecology and DOE.