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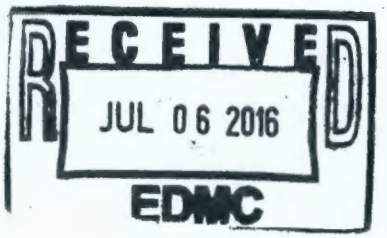
June 30, 2016 16-NWP-116

Mr. Ray J. Corey, Assistant Manager
for the River and Plateau
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN A5-11
Richland, Washington 99352




Re: 200-SW-2 Radioactive Landfills Group Operable Unit RCRA Facility Investigation/ Corrective Measures Study/Remedial Investigation/ Feasibility Study Work Plan, DOE/RL-2004-60, Revision 1 0100532

References: See page 2

Dear Mr. Corey:

On May 26, 2016, the Department of Ecology (Ecology) received Letter16-AMRP-0186 with an attached Review Comment Record for the *200-SW-2 Radioactive Landfills Group Operable Unit RCRA Facility Investigation/ Corrective Measures Study/Remedial Investigation/ Feasibility Study Work Plan,* DOE/RL-2004-60, Revision 1, Draft B.

On June 9, 2016, Ecology received Letter 16-AMRP-0197 with the submitted *200-SW-2 Radioactive Landfills Group Operable Unit RCRA Facility Investigation/ Corrective Measures Study/Remedial Investigation/ Feasibility Study Work Plan*, DOE/RL-2004-60, Revision 1 (Work Plan).

Ecology hereby notifies the United States Department of Energy - Richland Operations Office (USDOE-RL) that we will consider the Work Plan to be complete when the enclosed modifications to the Work Plan are incorporated.

Under The Tri-Party Agreement Action Plan, Section 9.2.1 and Figure 9-1, USDOE-RL should, within 30 days, either incorporate the comments and issue a final document, or initiate dispute resolution.

Additional descriptions of the proposed modifications are listed on page 2.

1. EPA's ProUCL software, Version 5.1 or later, shall be used to calculate an exposure point concentration (EPC). In addition to parametric and detect data sets, ProUCL has the capacity to process nonparametric and nondetect data (e.g., Kaplan-Meier estimates, Chebyshev methods). Ecology recommends that the highest 95% UCL suggested by ProUCL output, be used as the EPC.

   In cases where a 95% UCL cannot be calculated or is not suggested by ProUCL, EPC may default to the sample maximum. The maximum should not be used simply because it exceeds a 95% UCL. EPA has previously stated, "It is important to note, however, that defaulting to the maximum observed concentration may not be protective when sample sizes are very small because the observed maximum may be smaller than the population mean" (OSWER 9285.6-10). Whenever possible, Ecology prefers collection and evaluation of larger data sets (n>10 samples). Finally, in terms of confidence level, only 95% UCLs are recommended in order to avoid unreasonably low EPCs (90% UCL) or high EPCs (99% UCL).

2. Concerning the use of Conditional Point of Compliance (POC) for direct contact, USDOE-RL is allowed to evaluate and propose a Conditional POC for ecological risk [WAC 173-340-7490(4)(a)]. However, Ecology will make decisions based on state regulation which requires a POC for direct contact of 15 feet [WAC 173-303-740(6)].

If there are any questions, please contact me at eber461@ecy.wa.gov or (509) 372-7906.

Sincerely,

P. Elis Eberlein
Waste Management Section Acting Project Manager
Nuclear Waste Program

ee/jvs
Enclosure

References: Letter 16-AMRP-0186, dated May 26, 2016 from R. J. Corey, USDOE-RL to A. K. Smith, Ecology, "200-SW-2 Radioactive Landfills Group Operable Unit RCRA Facility Investigation/ Corrective Measures Study/Remedial Investigation/ Feasibility Study Work Plan, DOE/RL-2004-60, Revision 1, Draft B, Comment Responses"

Letter 16-AMRP-0197, dated June 09, 2016 from R. J. Corey, USDOE-RL to A. K. Smith "200-SW-2 Radioactive Landfills Group Operable Unit RCRA Facility Investigation/ Corrective Measures Study/Remedial Investigation/ Feasibility Study Work Plan, DOE/RL-2004-60, Revision 1"

cc: See page 3

cc electronic w/enc:
Dennis Faulk, EPA
Jim Hansen, DOE-RL
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Michael Cline, DOE-RL
Jane Borghese, CHPRC
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USDOE-RL Correspondence Control
Environmental Portal
Hanford Facility Operating Record

cc w/enc:
Rod Skeen, CTUIR
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Rex Buck, Wanapum
Russell Jim, YN
Steve Hudson, HAB
Administrative Record (200-SW-2)
NWP Central File

cc w/o enc:
NWP Reader File

- The basis for the decision will be developed in the first FS, but all OUs will need to justify the decision. The subsequent OU discussions will reference the first and include an overview of similarities and differences between the first and subsequent OUs to ensure the approach is justified.

#### 1.3.2.5 Human Health and Ecological Depth Point of Compliance

- FSs will present an alternative that will evaluate compliance with human health (direct contact) and ecological PRGs at the standard point of compliance of 4.6 m (15 ft). DOE may also choose to perform an analysis in the first Inner Area FS to evaluate a conditional point of compliance at 3 m (10 ft) below ground surface (bgs) for ~~direct contact and~~ ecological protection. The resulting decision will serve as the basis for the justification for the remainder of the OUs in the Inner Area.
  - The basis for the decision will be developed in the first FS, but all OUs will need to justify the decision. The subsequent OU discussions will reference the first evaluation and include an overview of similarities and differences between the first and subsequent OUs to ensure the approach is justified.
- Unlike in the River Corridor, engineered structures and/or mass of contamination will not be removed unless it is a risk management decision.

#### 1.3.2.6 Regulatory Strategies

- Similar site approaches can be used with proper analysis and use of available information, data, and process knowledge.
- Characterization strategies will consider multiple remedial technologies, risk reduction, regulatory requirements, and cost avoidance. The observational approach can also be a valid strategy where removal, treatment, and disposal (RTD) is appropriate.
- The regulatory agencies are willing to consider a plug-in approach. They generally believe that it applies primarily to RTD sites but could be applied to other potential remedies if justified.
- Post-ROD characterization (meaning limited pre-ROD characterization) is a valid approach but may result in interim action RODs.

## 1.4 Integration with Other Activities

To facilitate consistent remedial decisions across the Central Plateau Inner Area, the Tri-Parties modified the TPA (Ecology et al., 1989a) in 2010 to restructure Central Plateau remediation activities. Restructuring included consolidating some of the Inner Area waste sites into geographical area-based OUs, resulting in the creation of the 200-EA-1 OU and the 200-WA-1 OU. An additional OU, 200-DV-1, was created to include waste sites in the Inner Area with deep vadose zone (DVZ) contamination. On the Central Plateau, the DVZ is defined as the region below the practical depth of surface remedy influence (e.g., shallow excavation or barriers) and above the regional aquifer. The Tri-Parties created the 200-DV-1 OU to support investigation and remedy selection for this challenging type of DVZ waste site.

Figure 1-5 illustrates the CERCLA OUs that are currently assigned in the Central Plateau Inner Area. The existing groundwater OUs in the Central Plateau remained unchanged.

**Table 3-6. Hanford Site Soil Background Concentrations**

| Analyte Name | Analyte Class | Units | 90th Percentile Background Value | Maximum Background Value | Source of Background Value |
|---|---|---|---|---|---|

Sources:

ECF-HANFORD-11-0038, *Soil Background for Interim Use at the Hanford Site.*

DOE/RL-92-24, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes.*

DOE/RL-96-12, 1996, *Hanford Site Background: Part 2, Soil Background for Radionuclides.*

* Background values listed for anthropogenic radionuclides are only for shallow soils (less than 4.6 m [15 ft] below ground surface). A background value of zero applies to soil concentrations collected from deeper soils.

Analytes that are not related to Hanford Site waste or will not contribute significantly to human health risks are not carried into a quantitative risk assessment. The analytes include (1) radionuclides with a half-life less than 3 years; (2) essential nutrients; (3) soil physical property measurements; and (4) background or naturally occurring radionuclides such as potassium-40, thorium-232 and daughters, and radium-226 and daughters. This approach is the same used for the River Corridor OUs.

Applicable quantitative risks will not be assessed for analytes without appropriate toxicity values. Rather, analytes without toxicity values will be discussed qualitatively as part of the risk characterization.

### 3.8.1.4 Exposure Assessment

The exposure assessment will address (1) methods for developing EPCs in soil, and (2) methods for calculating concentrations in air from EPCs in soil using EPA screening models.

#### Development of Exposure Point Concentrations in Soil

Spatial exposure areas will be defined, and sampling and analytical data will be grouped for calculating EPCs considering factors such as the nature and extent of contamination and process knowledge. Depths in soil will be identified for grouping samples based on the characterization strategy. In general, soil samples collected from small waste sites will be grouped into a single exposure area, while soil samples from large waste sites (e.g., ponds) may be separated into more than one exposure area.

Where sufficient data are available, EPA ProUCL software will be used to calculate EPCs, which will be the 95 percent upper confidence limit (UCL) of the average. ~~As described in EPA ProUCL guidance (EPA/600/R-07/038, 2010, *ProUCL Version 4.00.05 User Guide (Draft)*), if all recommended methods to calculate the UCL provide a value that exceeds the maximum concentration, then the maximum concentration in an exposure area will be used as the EPC. The flowchart developed for deriving EPCs in the BRAs for River Corridor OUs will be incorporated into the Central Plateau risk assessment to provide added details. Additional discussion will be provided in the uncertainty assessment when ProUCL calculates a 95 percent UCL that is greater than the maximum detected concentration and the maximum detected value is used. The discussion will provide sufficient information about the frequency of occurrence for ProUCL to produce such values, the reasons behind the calculation of such values, and the ramifications for remedial decisions based on the selected EPC and the calculated UCL values.~~

#### Development of Exposure Point Concentrations in Air from Soil

Particulate emission factors for wind-blown dust and volatilization factors for VOCs (when appropriate) will be calculated in accordance with EPA guidance (OSWER 9355.4-24, *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*).