

Hanford Second Five-Year Review  
 Summary of EPA's Protectiveness Determinations  
 May 2007

<b>Area</b>	<b>Final Protectiveness Determination as provided by DOE or amended by EPA</b>	<b>Protectiveness Statement</b> DOE: Language with this heading is language taken from <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i> . This is language that EPA concurs with.  EPA: Language with this heading is language written by EPA to clarify or replace protectiveness statements from <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i> .
<b>100 Area</b> Soil Operable Units: 100-BC-1 100-BC-2 100-DR-1 100-DR-2 100-FR-1 100-FR-2 100-HR-1 100-HR-2 100-IU-2 100-IU-6 100-KR-1 100-KR-2 100-NR-1	Deferred until River Corridor Baseline Risk Assessment has been completed	EPA: Protectiveness determinations of the remedies at the 100 Area Source (soil) operable units cannot be made at this time until further information is obtained.  For the 100 Area source (soil) operable units cleanup has occurred, or is ongoing, under RODs for interim actions. Institutional controls currently assure protection of human health. There is currently no outward evidence of ecological harm; however, DOE is conducting a risk assessment to determine if there are any residual risks that have not been adequately addressed by the interim actions at these sites. The determination of protectiveness for human health and the environment for these operable units is being deferred until information from the River Corridor Baseline Risk Assessment can be evaluated. An addendum to <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i> containing the revised protectiveness statements shall be submitted to EPA by February 15, 2008 in accordance with Action 1-3.

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Groundwater Operable Units: 100-HR-3 100-KR-4	Will be protective once the remedy is completed	EPA: EPA expects that the selected remedies of source control, pump-and-treat, and chemical reduction will be protective when fully implemented. It is recognized that improvements are necessary to the pump-and-treat remedy to expand the capacity and area of coverage, and such improvements are being implemented. Similarly, all of the sources of chromium have not yet been identified and remediated, however that work is being done in accordance with TPA milestone M-016-53.  Institutional controls currently assure protection of human health. A qualitative risk assessment completed at these sites showed that the only current unacceptable risk for ecological receptors was from chromium.
Groundwater Operable Unit: 100-NR-2	Not protective	DOE: For the 100-NR-2 Groundwater Operable Unit, the remedial action objectives for the strontium-90 contaminant in the groundwater established in the ROD are not being met. Data show that strontium-90 concentrations at the shoreline have not been reduced by the pump-and-treat system. Alternative remedies are being investigated and work has been initiated on a field treatability test during 2006. Institutional controls are in place to prevent use of the groundwater. Therefore, for this operable unit, the remedy (pump-and-treat) is not considered to be protective in the short term.  EPA: A permeable reactive barrier utilizing apatite sequestration is being constructed at 100-N in accordance with Action 6-1 and existing TPA milestone M-016-14A. A draft CERCLA proposed plan will be submitted by 8/31/2008 in accordance with existing milestone M-016-14B. Implementation of the selected final remedy will provide protectiveness.

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<b>200 Area</b> Soil Operable Units: 200-PW-1 through PW-6 200-CW-1 through CW-5 200-SC-1 200-CS-1 200-LW-1 & LW-2 200-MW-1 200-TW-1 & TW-2 200-IS-1 200-UR-1 200-ST-1 200-SW-1 and SW-2 200-UW-1	Protectiveness deferred until RI/FS process is complete and a ROD is issued	DOE: For the 200 Area Source (soil) Operable Units, final remedies have not yet been selected or implemented; therefore, protectiveness determinations cannot be made. For removal actions that have been initiated or completed, it is anticipated that the results will be consistent with the final remedies selected through the remedial investigation/feasibility study and ROD processes. Protectiveness of those remedies will be evaluated in future five-year reviews.  EPA: Existing TPA Milestones require completion of RI/FS work for these operable units. Milestone M-15-00 requires completion of the RI/FS (or RFI/CMS) process for all operable units.

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Groundwater Operable Units: 200-PO-1 200-PW-1	Protectiveness deferred until RI/FS process is complete and a ROD is issued	EPA: For the 200 Area groundwater operable units, final remedies have not yet been selected or implemented; therefore, protectiveness determinations cannot be made. Existing TPA Milestones require completion of RI/FS work for these operable units. Milestone M-15-00 requires completion of the RI/FS (or RFI/CMS) process for all operable units.
Groundwater Operable Units: 200-ZP-1 200-UP-1	Protective in the short-term	EPA: RODs for interim actions at these operable units addressed only risks posed to humans. Human exposure is currently limited with the use of institutional controls. There are no complete exposure pathways for human or ecological receptors at this time. The remedy is considered protective in the short-term.  Final remedies will need to be selected to address long-term protectiveness. A proposed plan for 200-ZP-1 will be submitted to EPA in accordance with existing TPA Milestone M-15-48B. A proposed plan for 200-UP-1 will be submitted to Ecology in accordance with existing TPA Milestone M-15-17A.

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<b>300 Area</b> Soil Operable Units: 300-FF-1 300-FF-2	Deferred until River Corridor Baseline Risk Assessment has been completed	<p>DOE: Language with this heading is language taken from <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i>. This is language that EPA concurs with.</p> <p>EPA: Language with this heading is language written by EPA to clarify or replace protectiveness statements from <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i>.</p> <p>EPA: Protectiveness determinations of the remedies at the 300 Area source (soil) operable units cannot be made at this time until further information is obtained.</p> <p>The final remedy has been completed at the 300-FF-1 operable unit under a Record of Decision (ROD). At the 300-FF-2 operable unit the cleanup is ongoing under a ROD for interim actions. Institutional controls currently assure protection of human health. There is currently no outward evidence of ecological harm; however, DOE is conducting a risk assessment to determine if there are any residual risks that have not been adequately addressed by the interim actions at these sites. The determination of protectiveness for human health and the environment for these operable units is being deferred until information from the River Corridor Baseline Risk Assessment can be evaluated. An addendum to <i>The Second CERCLA Five-Year Review Report for the Hanford Site</i> containing the revised protectiveness statements shall be submitted to EPA by February 15, 2008 in accordance with Action 1-3.</p>
Groundwater Operable Unit: 300-FF-5	Not Protective	DOE: For 300-FF-5 Groundwater Operable Unit, the selected remedy of monitored attenuation for the uranium contaminant in the groundwater is not achieving the remedial action objectives established in the ROD. However, institutional controls are in place to prevent human consumption of the groundwater. For this operable unit the remedy is not considered protective. Followup actions are necessary to determine long-term protectiveness because remedial action objectives are not expected to be met. The remedial actions and remedial action objectives are being re-evaluated.

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<b><u>1100 Area</u></b> Soil Operable Unit: 1100-EM-1	Protective	DOE: The remedies selected for the operable units in the 1100 Area NPL site have been completed and the remedial action objectives established in the final ROD have been achieved. These remedies are protective of human health and the environment. The 1100 Area site has been deleted from the NPL.
Soil Operable Units: 1100-EM-2 1100-EM-3 1100-IU-1	Protective	DOE: The remedies selected for the operable units in the 1100 Area NPL site have been completed and the remedial action objectives established in the final ROD have been achieved. These remedies are protective of human health and the environment. The 1100 Area site has been deleted from the NPL.  EPA: The remedial actions allow for unrestricted use and unlimited exposure at the 1100-EM-2, 1100-EM-3, and 1100-IU-1 operable units. No additional information has come to light to question the remedy selected in the Record of Decision.