

**START****Oregon**

November 30, 1994

DEPARTMENT OF  
ENERGY

Ms. Pam Innis  
 U.S. Environmental Protection Agency  
 712 Swift Avenue, Suite 5  
 Richland, WA 99352



Dear Ms. Innis:

Oregon has worked closely with the Hanford Natural Resource Trustees to review the Remedial Investigation/Feasibility Study (RI/FS) and Tri-Party proposal for the Environmental Restoration Disposal Facility (ERDF). Due to time constraints, the Trustees were not able to produce a single unified comment document.

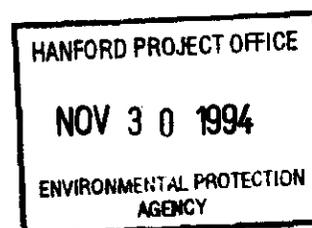
Oregons comments are attached. If you have questions related to these comments, please contact Dirk Dunning at (503) 378-3187.

Sincerely,

Mary Lou Blazek, Manager  
 Nuclear Waste Program

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**Oregon Department of Energy  
Detailed comments on the  
Remedial Investigation/Feasibility Study (RI/FS)  
for the Environmental Restoration Disposal Facility (ERDF)**

**General**

Environmental and public health threats from the radioactive and hazardous materials exist in the 100 Areas of the Hanford site. Oregon supports early work to reduce these threats. The process used by the Tri-Parties to resolve these threats is inadequate.

We are troubled by many aspects of the planning, siting, engineering and consultation process used by the Tri-Parties for the Environmental Restoration and Disposal Facility (ERDF). The siting of the ERDF facility was based predominantly on engineering needs and expediencies. The siting process gave little consideration or weight to Tribal Treaty guaranteed rights. The siting process failed to consider the impacts of disposal or support facilities, borrow material areas, or transport routes. Critical habitat, species of concern, ecosystems, or areas designated as important for preservation were also inadequately considered.

The ERDF facility is proposed to be sited in the last of the high quality shrub steppe habitat. This habitat is home to at least eleven species of special concern. Washington State identified this habitat to be of particular importance for preservation.

The Natural Resource Trustees were not formally notified and consulted for the planned activities as required by the Comprehensive Environmental Response, Compensation and Liability Act. When the Trustees learned of the Tri-Parties plans, we requested the Tri-Parties present their plans to, and consult with the Trustees. The presentation by the Tri-Parties raised even more serious questions about the siting process.

The Trustees suggested it might be necessary for the Tri-Parties to reopen the siting process. The Tri-Parties responded that reopening the siting process would delay opening of ERDF and cleanup of the 100 Areas by two years. It also could jeopardize funding of Hanford cleanup by Congress.

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We cannot encourage the destruction of a large area of rare habitat needed by the Loggerhead Shrike, the Sage Sparrow, the Whiptail Snake and eight other species of concern.

In our role as Trustee, we cannot endorse the Tri-Parties' plans. At the same time, we cannot reasonably oppose the ERDF facility without placing other habitat and human health in further jeopardy. The U.S. Department of Energy (USDOE), Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) must make Trustees an active part of all planning which could result in impacts to the ecosystems and species at Hanford.

#### **Detailed Comments:**

##### ***Siting***

The process used to site the ERDF is unacceptable. The following are several specific areas where the Remedial Investigation/Feasibility Study (RI/FS) and the Siting Evaluation Report (SER) for ERDF fall short.

The SER is based on an early design assumption of a six square mile site. Only areas with a contiguous six square miles were evaluated in the SER. ERDF as currently proposed will occupy an area of up to 1.6 square miles. The dramatic down sizing of the facility did not result in a re-evaluation of potential sites. This issue is only superficially addressed in the RI/FS's figure 1-3. The figure is limited to the Hanford Future Site Uses Working Group (HFSUWG) "exclusive" zone and assumes large tracts of land are unusable. The figure has no accompanying explanation or references.

The SER does not allow for consideration of areas placed in reserve for other purposes. The Tank Waste Remediation System (TWRS) plans place off limits three large areas. Only one of these will be needed for TWRS. The siting of facilities must be coordinated.

The northwest corner of the 200 West area was not considered because it was placed in reserve for a potential National Low Level and Mixed Waste Repository. This is completely unacceptable. Siting of a national repository on the Hanford site should not be considered until siting for all Hanford needs is done. Hanford uses must be given first priority over uses from off site. It is particularly

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unacceptable that ERDF be sited in an area of such important habitat when another similar disposal facility is reserving space in an area of lower habitat value which is entirely within the fence line of the 200 West area.

The HFSUWG placed a high priority on limiting waste management activities to within the fence line of the 200 areas, and only expanding into the area between the 200 areas if there was not enough room inside the fence line.

The SER uses as one of its central assumptions the HFSUWG recommendation to "Use the Central Plateau wisely for waste management." However the SER does not address another recommendation of the HFSUWG to "Do no harm during cleanup or with new development." Included in that finding is a statement that "habitat should be protected as cleanup and future development proceeds."

Habitat was only summarily considered in the SER's Site Selection section. The SER lays out seven criteria derived from USDOE orders. Habitat is discussed briefly in the Site Acceptability and Potential Consequences section and Site 3 is found to be the least desirable. Within the site evaluation, sites are only qualitatively compared. No attempt is made to rank or weigh the seven criteria. While habitat quality varies greatly between the sites, other criteria such as Topography and Geology do not significantly differ. In order to properly compare the criteria, and in order to integrate and follow the National Environmental Policy Act (NEPA) requirements, the criteria should be addressed in proportion to their potential significance.

### ***ERDF Ecological Risk Assessment Evaluation***

The goal of the ERDF baseline risk assessment is to evaluate the likelihood that adverse ecological effects may occur if organisms are exposed to contaminants that may be disposed in the facility. The goal of baseline risk assessment per 40 CFR 300.430(e)(2)(i)(G) is to characterize current and likely future ecological risks attributable to releases of contaminants, especially when sensitive habitats and critical habitats of species protected under the Endangered Species Act (ESA) may be impacted. Several aspects of the ERDF ecological risk assessment should have been performed differently, including:

- 1) In general, the ERDF risk assessment should have been conducted consistent with the Hanford Site Risk Assessment Methodology (HSRM).

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For ERDF, it appears that portions of the Risk Assessment (RA) are not complete.

- 2) Problem formulation should examine the nature of the contamination for potentially impacted habitats and/or ecosystems. The ERDF RA indicates that this assessment does not evaluate impacts to populations or the ecosystem. Rather, it assesses one ecological receptor, the great basin pocket mouse. For this type of risk assessment, it may be more appropriate to assess two or three receptors at the tropic level. Further, the RI/FS states that it does not use the pocket mouse as a surrogate for any other receptor.
- 3) Problem formulation should examine the chemical, physical and radionuclide stressors, which would result in changes to natural conditions, such as habitat alteration. This risk assessment does not attempt to assess the physical conditions.
- 4) Problem formulation should examine indirect as well as direct effects associated with the release of contaminants. The ERDF RA does not attempt to address the indirect effects from contaminants.
- 5) Problem formulation should identify ecosystems potentially at risk, including critical and sensitive habitats located on, adjacent to, or near the hazardous substance release site of interest. The ERDF RA does not acknowledge that mature shrub is a priority habitat for several candidate species that could potentially be impacted either directly or indirectly.
- 6) Endpoint selection may not be adequate. Since there are candidate species to be considered, a second type of indicator species should have been assessed.
- 7) The Risk Summary is not clear. It should pull the components of the assessment together into a meaningful discussion of ecological significance, including the nature and magnitude of the effects; spatial and temporal patterns of the effects, and potential recovery. The magnitude of these effects are not clear. There is an indication there would be significant risk to the environment based primarily on heavy metal concentrations and potential hazards to wildlife receptors by ingestion. It does not discuss potential recovery due to the impacts.

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### ***Contaminant Fate and Transport***

Section 4.1.1 describes the conceptual model used. It describes the mechanisms *"controlling contaminant fate and transport in the vadose zone are highly coupled, unsteady, and non-linear. Furthermore, the hydrogeologic strata are heterogeneous and anisotropic."* It then describes the conceptual model as assuming *"the media are homogeneous and isotropic", "the flow is plug flow in both the vadose zone and saturated zone", and constituent release from ERDF is controlled by either solubility or partitioning between the waste and pore water."*

The conceptual model bears little or no relation to the actual conditions. There is no explanation given for not considering either distillation effects in the vadose zone or parametric pumping of the contaminants in the soil column. Distillation effects may be important below the Caliche layer. Parametric pumping may be important for some species due to daily air pressure variations (barometric pumping).

There is no data provided to justify the model selected as being in any way representative of the actual conditions. There is no analysis or data provided to show bounding conditions exist which would allow the use of such a simplified model. The only explanation given for the over simplification of the model is the statement *"Instead, a spreadsheet model was developed based on the conceptual model of the site"...*

### ***Mitigation***

Mitigation for impacts to natural resources is required under several Statutes. ERDF is part of a series of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substance response actions, and as such, restoration of natural resources injured by the construction and operation of ERDF is required under CERCLA Natural Resource Damage Assessment (NRDA) provisions. NEPA requires agencies preparing Environmental Impact Statements (EISs) to address appropriate mitigation measures (40 CFR 1502.14f, 1502.16h, 1505.2d, and 1508.25b). USDOE regulations also require a mitigation plan be developed (10 CFR part 1021.331). Finally, USDOE, as a federal land manager, has stewardship responsibilities for natural resources.

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Mitigation under both CERCLA and NEPA includes, in order of preference:

- a) Avoiding the impact altogether by not taking a certain action or parts of an action;
- b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- c) Rectifying the impact by repairing, rehabilitating, or restoring the affected natural resources;
- d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- e) Compensating for the impact by replacing or providing substitute resources.

The ERDF siting process did not consider impacts to habitat, and those impacts were not avoided or minimized. Compensatory mitigation for habitat destruction must be provided.

The RI/FS identifies development of a mitigation evaluation (page 9-31) but contains no commitment to actually perform mitigation for habitat destroyed by the proposed project. USDOE must fully commit to mitigating for habitat destruction in both the RI/FS and in the Record of Decision (ROD) to ensure funding will be appropriated and guaranteed for implementation of the mitigation actions. We recommend preparation and submission of a mitigation evaluation and implementation plan be identified as an enforceable interim Tri-Party Agreement (TPA) milestone.

The RI/FS identifies habitat removal as an irreversible and irretrievable commitment of resources. We recommend that any identification of on-site natural resources commitments as irreversible and irretrievable commitments should include mitigation, repair, or replacement in full. The habitat impacts associated with the McGee Ranch borrow site are not well documented in the RI/FS. Because a borrow site for basalt has not yet been identified, these habitat impacts cannot be documented. This lack of information will be an impediment to creating an adequate mitigation evaluation. The RI/FS is deficient in not identifying the basalt borrow site and specifying mitigation measures.

The mitigation evaluation should be developed concurrently with this environmental planning process and comprise an integral part of it. The benefits of mitigation planning early in the planning process include a more efficient and cost effective cleanup. We are concerned that delaying development of the

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mitigation evaluation until after the ROD is signed may result in an ineffective plan which is not supported by adequate funding, staffing or support.

The ERDF RI/FS mentions the Hanford sitewide mitigation plan, but does not clarify whether mitigation for NRDA impacts will occur as part of the sitewide plan or as a project specific plan. The sitewide mitigation plan is in an early draft stage. We supports the sitewide mitigation plan as the most effective method to protect, preserve, and enhance habitat and other natural resource values, and supports ensuring ERDF mitigation measures are consistent with the sitewide plan. However, if the sitewide plan does not go forward, the ERDF mitigation plan must compensate for natural resource impacts as an independent plan.

If USDOE chooses to address ERDF mitigation under the sitewide plan before the sitewide plan has received official sanction, a legally binding commitment between USDOE and the Trustees will be required prior to issuance of the ROD to ensure ERDF mitigation. Even though a sitewide mitigation plan for the Hanford site is being developed, this does not remove the need to conduct site-specific analysis to determine mitigation needs and requirements for individual projects. The October 26 draft of the plan states that it is not intended to provide specifications and procedures on conducting habitat improvements or protection for specific projects.

Mitigation for adversely impacted resources must be based not only on the amount of habitat lost, but also on habitat quality and value. For example, linear disturbances such as the proposed rail line will fragment blocks of habitat. Figure 9-1 shows two substantial blocks of habitat will be fragmented by the rail line; between the north border of the proposed ERDF site and route 3, and between the north border of the 200 West Area and route 11A. Linear fragmentation of shrub steppe habitat allows the spread of noxious weeds into relatively pristine or intact habitats. Other more subtle impacts may also occur.

Similarly, the value of McGee Ranch as a habitat corridor between Hanford and the Yakima Training Center, two large areas of relatively undisturbed shrub steppe habitat, must be assessed and mitigated for. As the borrow site for basalt barrier material has not yet been identified, it is not clear what additional habitat values may need to be considered.

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Mitigation for habitat loss requires long term planning.

1. Native seeds and nursery stock are very limited. There will be competition for available stocks from other Hanford and non-Hanford projects. To make this volume of material available in a timely manner, planning and propagation should start as soon as possible.
2. USDOE should begin immediately to develop the needed nurseries and seed stocks to allow this habitat restoration/improvement to occur as soon as possible. We suggest USDOE develop a long term contract for the construction and management of a native species nursery to provide revegetation material on a sitewide basis.
3. Ensuring revegetation success is crucial to the successful mitigation of habitat values. Monitoring of the mitigation site for a minimum of 10 years is recommended, and funding should be identified to support this effort.

### ***Irreversible and Irretrievable Commitment of Resources***

In section 9.3.17 the RI/FS makes a sweeping claim for irreversible and irretrievable commitment of resources. This claim abrogates USDOEs duties as a Trustee and as a land and resource Steward. Additionally, this claim may be invalid because:

1. The siting process for ERDF failed to consider reasonable alternatives. The original facility size was predicated on a simple shallow burial. This did not comply with USDOE orders, or with prior guidance from the Future Site Use Working Group. When public demands caused the Tri-Parties to change the design of the facility and reduced its area from six square miles to 1.6 square miles, siting was not reconsidered.
2. The siting process relies on treating ERDF as a CERCLA facility. It is not clear this is allowable. The wastes intended to be placed in this facility are from remote sites in the 100 Areas. Based on guidance in CERCLA, it appears ERDF should have been sited using a full NEPA process rather than the CERCLA RI/FS process, including licensing under the Atomic Energy Act.

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3. The CERCLA RI/FS process used for ERDF is significantly different from the NEPA process. The public involvement process was inadequate and judicial review is not allowed.
4. USDOE is required under CERCLA and DOE orders to mitigate for ecological damage. The irreversible and irretrievable claim is very broad. The mitigation measures identified in the RI/FS are all future actions with no detail provided and no detailed plans provided.

USDOE should at a minimum commit to:

1. Minimize the ecological harm done at ERDF, at the borrow material sources and along the transport routes to each of these locations.
2. Replace the destroyed habitat with sufficient new or upgraded existing habitat adjoining the remaining high shrub steppe habitat to offset the harm done.
3. Work closely with Trustees from the earliest moment on future projects to avoid these problems and to protect and preserve the remaining habitat.
4. A comprehensive process to protect species of concern and habitat at Hanford.

Since the Tribes and Trustees were not allowed to participate in the important siting decisions for ERDF, we cannot be bound by USDOE's decision to commit the resources at ERDF, the borrow sites or the transportation corridors.

CERCLA section 107(f) exempts a Potentially Responsible Party from Natural Resource Damages if the damages are identified as an irreversible and irretrievable commitment of resources in an EIS or comparable planning document and if other conditions are met. This provision assumes the EIS (or comparable analysis) was performed properly. As the single most important decision concerning ERDF (siting) was made without our participation, we cannot state that the commitment of resources was properly performed. It is true that an RI/FS process typically handles such decisions less rigorously than an EIS. As such, an RI/FS is not a comparable environmental analysis without considerable modification.

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***Waste Acceptance***

The radioactive and hazardous wastes from the 100 Area cleanup will continue to pose a threat to people and the ecosystem for so long as they remain dangerous. Many of the radioactive materials released in the 100 Areas have extremely long half-lives. Many of the hazardous materials are extremely persistent.

The waste acceptance criteria for ERDF must minimize the amount of very long lived radioactive or persistent toxic materials disposed into ERDF.

Closure of ERDF must protect the Tribal Treaty rights of the Confederated Tribes and Bands of the Yakama Indian Nation, the Confederated Tribes of the Umatilla Reservation and the Nez Perce Tribe.