

Date: March 14, 1995  
To: 100 Area Operable Unit Managers  
Subject: 1995 Hanford Natural Resource Trustee Council Values for the 100 Area

As a follow up to earlier meetings and discussions with 100 Area Operable Unit Managers, the staff participants of the Hanford Natural Resource Trustee Council (NRTC) have collectively developed natural resource values for the 100 Area. The NRTC believes that a fair consideration of these values will enable the Tri-Parties to develop a more efficient, more ecologically sound, and less costly remediation process in the total cleanup of Hanford. Additionally, by identifying these natural resource values, the Tri-Parties will have timely information that will aid them in the decision-making process.

The attached list of natural resource values are those the NRTC has adopted and considers significant. The NRTC would like these values considered when the Tri-Parties prepare cleanup documents, develop strategies, and implement remedial actions. The NRTC would like to thank the 100 Area Managers for the opportunity to share these values and look forward to continuing what has been a productive and cooperative working relationship.

Sincerely,

The Hanford Natural Resource Trustees

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## 1995 HANFORD NATURAL RESOURCE TRUSTEE COUNCIL VALUES FOR THE 100 AREA

### Groundwater Protection

Multiple contaminated groundwater plumes occur at Hanford. The presence of contaminated groundwater poses significant issues for possible future land use, as well as representing a current and future threat to the Columbia River and the life that it supports. The NRTC proposes the following considerations be made when evaluating remedial options and developing planning documents with respect to the 100 Area:

- If "no action" is being considered as the selected remedial alternative, the risk assessment should demonstrate that risk to aquatic species and ecosystems is not significantly greater than under other alternatives.
- Risk assessment for contaminants in groundwater discharging into the river should consider the following types of cumulative impacts:
  - additive or synergistic impacts from exposure to multiple contaminants
  - additive exposure from multiple contaminated groundwater plumes
  - bioaccumulation in aquatic organisms and biomagnification in the food chain
  - accumulation of contaminants in downstream depositional areas over time
- Concentrations of contaminants in groundwater should be such that they are protective of organisms exposed prior to dilution by river water (e.g., sediment-associated organisms such as interstitial invertebrates, and salmon eggs and alevins).
- Risk assessment should take into account potential climate changes, potential increase in precipitation and associated larger groundwater discharges, and failure of institutional controls over river flows.

### Ecological Risk Assessment

Ecological risk assessment plays a role in several components of the CERCLA process. In the Remedial Investigation (RI), the ecological risk assessment is used to assess baseline risks at the site. These are the risks associated with current or future contamination conditions in the absence of remediation. If it is determined in the RI that the site is to be remediated, an ecological risk assessment is performed to evaluate the effects of the remedial action alternatives in the Feasibility Study (FS). An ecological risk assessment also should be done after remediation has occurred. This ecological risk assessment would determine the efficacy of the remedial action, validate the risk assessment methodology, and evaluate the extent of residual impacts to the environment. The NRTC proposes the following be considered when scoping and planning ecological risk assessments for the 100 Areas:

- The Hanford Natural Resource Trustees expect to be involved in the development and evaluation of ecological risk assessments.
- It is essential that an ecological risk assessment 100 Area wide be done.
- The risk assessment should account for exposure impacts that may occur in the future.

- The risk assessment should develop an appropriate conceptual model of the waste site(s) considering spatial scale that are representative of the processes and receptors associated with the site that result in risks.
- A risk assessment should be based on multiple terrestrial and aquatic species, using salmon as one of the endpoints.
- A risk assessment should be based on multiple contaminants and exposure pathways, and it should account for the effects at different trophic levels.
- The 1 RAD per day screening criterion should be critically evaluated and, unless it can be shown to be protective, a more defensible criterion must be developed and used.
- A risk assessment must take into account catastrophic flooding.
- Site specific data should be collected to support appropriate species and exposure models (i.e., using toxicity and uptake data specifically applicable).
- A risk assessment should provide information such that remedial alternatives may be distinguished on the basis of risk.
- If contaminants are left on site, a risk assessment for the remedy selected must be updated at least every 5 years to reassess the remedy's effectiveness.

#### Evaluation of Tradeoffs

The overall goal is to ensure that natural resource evaluations are comprehensive in scope, scientifically sound, and consistent site-wide. Natural resources should be an equally important consideration in the CERCLA planning and decision-making process for cleanup of each operable unit or aggregate area. To date, the focus has been narrowly placed on human health risks. As a consequence, an effective job of balancing natural resource impacts against other considerations (e.g., short-term, long-term, and cumulative impacts, or costs) when making cleanup decisions has not been done. A crucial consideration that should be emphasized is restoring sites to ecological health or sustainability. Evaluations of potential impacts to natural resources and appropriate restoration costs for those natural resources should be included in appropriate documents prepared to meet CERCLA and other regulatory requirements (e.g., NEPA compliance).

The Trustees recognize that tradeoffs will have to be made in cleanup. As such, NRTC believes that a detailed analyses of remedial alternatives must include how each alternative impacts natural resources and the ability to effectively restore those resources. These analyses should include the cost of restoration and a comparative analysis. The NRTC believes that this will aid the 100 Area Managers and the Tri-Parties in their decision making process. The tradeoff analyses should include as factors:

- Detailed evaluations of the ecological risks from direct and indirect exposure to contaminants.
- The ecological risks from exposure to contaminants and the physical disturbance occurring as a result of a removal or remedial action (any of these things could occur to wildlife, to habitat, at the waste site, at the disposal site, or on waste transit routes).
- Detailed comparative analysis of the various remedial alternatives on affected or

potentially affected natural resources, including short- and long-term impacts. It should assess the residual risk remaining from untreated waste or treatment residuals at the conclusion of remedial activities and site restoration, including the potential for recontaminating any fish and wildlife habitat or other natural resources that are on site.

- Emphasize avoiding or minimizing impacts to natural resources and to restoring the resources to healthy conditions.
- Alternatives be assessed for attainment of federal and state ARAR regulations and other laws to restore, protect, and enhance fish and wildlife habitat and other natural resources.
- This criteria should assess the ability of the natural resource restoration activity to be implemented, including costs.
- Human health risks to workers and non-workers balanced against risks to ecology.

### Mitigation Measures

Interim actions must be coordinated to minimize ecological impacts to natural resources including resources that have been restored (i.e., restored resources potentially could be impacted by a removal or remedial action occurring at an adjacent operable unit or waste site). This coordination must include an evaluation of what, when, and how to restore without excessive duplication of effort.

Appropriate mitigation measures should be developed for all interim actions to reduce the likelihood of additional resource impacts arising as a result of a particular remedial or removal action.

- Mitigation should be based on habitat value. Revegetation efforts should focus on using locally derived native plant species.
- The NRTC expect to be involved in the development and evaluation of habitat value methodology.
- Actions that cannot be avoided or minimized should be rectified onsite (i.e., at the waste site) or compensated for offsite (still within the Hanford Reach) as necessary and/or appropriate.
- Actions that cannot be avoided or minimized, rectified or compensated for onsite (still within the Hanford Reach) should be compensated for offsite.
- As interim actions are accomplished, restoration of natural resources at the waste sites should be applied preferentially to those areas that will not have future impacts.
- Treat the riparian corridor (Hanford Reach) as a single ecological unit and apply in-kind compensatory mitigation or restoration of lost services wherever it is most advantageous.
- Mitigation costs must be developed and included in the total cleanup costs. Milestones should be included in the mitigation endpoint.

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**HANFORD NATURAL RESOURCE TRUSTEE  
SIGNATURE PAGE**

Signature indicates concurrence with the following:

Subject: Accompanying memo  
Date: March 14, 1995  
To: 100 Area Operable Unit Managers  
From: The Hanford Natural Resource Trustees

Regarding: 1995 Hanford Natural Resource Trustee Council Values for the  
100 Area

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Date