



HANFORD NATURAL RESOURCE TRUSTEE COUNCIL



COUNCIL MEMBERS & REPRESENTATIVES:

U.S. Department of the Interior
U.S. Fish and Wildlife Service
Tammy Ash – Chair

Nez Perce Tribe
Jack Bell – Vice Chair

Confederated Tribes of the Umatilla Indian Reservation
Barbara Harper

U.S. Department of Energy
Thomas Post

State of Oregon
Department of Energy
Paul Shaffer

State of Washington
Department of Ecology
Nancy Uziemblo

Yakama Nation
Leah Aleck

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Troy Baker
(Non-voting)

December 22, 2014

TO: Stacy Charboneau, U.S. Department of Energy,
Richland Operations Office

RE: Fiscal Year 2014 Activity and Accomplishment Report

I am pleased to transmit the enclosed Fiscal Year 2014 (FY2014) Activity and Accomplishment Report on behalf of the Hanford Natural Resource Trustee Council (HNRTC).

This report summarizes the Hanford Natural Resource Damage Assessment (NRDA) activities and accomplishments for FY 2014. The report is organized by the key work breakdown structure elements that were established for planning, budgeting and scheduling the Hanford NRDA project and subsequent progress reporting. These elements include Assessment Planning, Injury and Service Loss Studies, Restoration Planning, Technical Analysis, Project Management, Information Management and Administration.

Please contact me if you have questions regarding this report, or if you need additional information.

Sincerely,

Tammy Ash
Chair, Hanford Natural Resource Trustee Council

Enclosure

cc: HNRTC Senior Trustees

FY 2014 Hanford Natural Resource Damage Assessment

Activity and Accomplishment Report

Summary

This report provides a summary of the Hanford Natural Resource Damage Assessment (NRDA) activities and accomplishments during FY 2014. The report is organized by the key work breakdown structure (WBS) elements that were established for planning, budgeting and scheduling the Hanford NRDA project and subsequent progress reporting. These elements include Assessment Planning, Injury and Service Loss Studies, Restoration Planning, Technical Analysis, Project Management, Information Management and Administration. See Figure 1 for the project WBS.

Hanford NRDA work in FY 2014 was focused primarily on continuation of injury studies initiated in prior years and planning for implementation of the Injury Assessment Plan (IAP) with a goal of completing injury assessment and preparing a Restoration Plan by 2024. Planning efforts resulted in the completion of a Project Execution Plan (PEP). The PEP defines the overall work scope, schedule, and budget for the Hanford injury assessment and establishes the means to execute, monitor, and control the project in a disciplined manner. The PEP is a “living document” that will be updated annually based on actual budgets and new information gained from the injury assessment process. Actual funding over the last few years has been less than requested which has constrained the assessment process.

The Hanford Natural Resource Trustee Council (Council) has prioritized the list of studies from the IAP, with several potentially targeted for initiation in the near term (FY 2015 – FY 2016), depending on funding availability. Implementation of the IAP is a dynamic, iterative process and the list of studies is subject to change as additional data becomes available during the injury assessment process.

Initial injury studies are in various stages of completion. A final report summarizing results of a Groundwater Contaminant Plume Mapping study has been drafted by the contractor (USGS) and a Mussel Toxicity Study (also being conducted by USGS) continued in FY 2014. A significant accomplishment during the year was to compare contaminant concentrations in soils, sediments and surface water to literature-based injury thresholds. The effort utilized a substantial amount of existing data, comparing Hanford Contaminants of Concern (COC) concentrations to thresholds in literature and identifying data gaps which will aid the Council in prioritizing and focusing future studies and data collection efforts. Three Tribal service loss studies have been approved by the Council and all three will be underway in FY 2015.

A NRDA early restoration workshop was conducted in Richland in June with a goal to gain lessons learned from experience at other NRDA sites. Specific objectives of the workshop were to understand effective and efficient injury assessments based on successes and lessons learned from selected case studies and understand early restoration process development by focusing on what early restoration is what it means, and how it fits within the NRDA process.

The Council continued to meet on a monthly basis to plan, organize, implement, and direct Hanford NRDA activities. Technical Work Groups (TWGs) also met on a regular basis to assist in study development, oversee studies, review environmental/contaminant release data, and make recommendations to the Council. Each TWG prepared, and the Council approved, updated five year work plans providing a prioritized list of tasks, task descriptions, and sequencing information for TWG work.

A proposal from DOE's Mission Support Contractor for developing and implementing a comprehensive data management system (DMS) was approved and is expected to be implemented in FY 2015 after a prolonged 2 year procurement effort. A contract for setting up and maintaining the Council Administrative Record (AR) is also expected to be put in place in FY 2015.

1. Assessment Planning

The council continued the ongoing process of reviewing, refining, and prioritizing injury assessment studies. A near term goal is to fund and make substantial progress on studies involving the analysis of existing data by FY 2016.

The Council mapped a preliminary set of Hanford Environmental Information System (HEIS) chemistry information (40+ contaminants of concern) and integrated the information into NOAA's Habitat Equivalency Analysis (HEA) tool. This is a necessary step in proceeding to more in-depth injury quantification activities.

2. Injury and Service Loss Studies

Three injury studies initiated in prior years were at various stages of completion in FY 2014; status is described below. Results of a study to evaluate reliability of groundwater contaminant plumes were drafted and a study of effects of hexavalent chromium and other stressors on native mussels continued through the year. Tribal Service Loss studies will be performed by each of the Hanford tribes; one is underway and two others are in the planning stage. The purpose of the Tribal Lost Services studies is to assess the nature and extent of tribal services that have been lost and are expected to be lost in the future due to natural resource injury associated with Hanford contaminant releases to provide a basis for determining compensable value of such losses. Efforts to analyze and map existing contaminant of concern (COC) data also continued through the year.

a. Evaluation of Hanford Groundwater Contaminant Plume Mapping

This study was initiated in FY 2012, and was performed by the United States Geological Survey (USGS) under a contract with the United States Fish and Wildlife Service (USFWS). The purpose of this study was to evaluate reliability of existing Hanford groundwater plume maps. The USGS independently developed groundwater contaminant plume maps for selected areas of the Hanford site, assessed the uncertainty of the resulting information and provided an initial assessment of the adequacy of existing contaminant plume maps at Hanford for the Trustee needs, by comparing their maps to previously-generated maps from DOE contractors. A draft report was issued for Trustee review, and results have been presented to trustees; based on trustee questions

and comments, a revised, final report is expected in the FY 2015. The plume maps presented in the USGS draft materials appear generally consistent with existing DOE plume maps.

b. Effects of Hexavalent Chromium and Other Stressors on Native Mussels

This study was initiated in FY 2012 and is expected to be completed in FY 2015. The study is being performed by the USGS under a contract with the USFWS. The purpose is to assess the toxicity of hexavalent chromium, alone or with co-stressors, on native mussel species at the Hanford Site. Adverse changes might include acute or chronic toxicity resulting from exposure to hazardous substances in water or sediments.

In this study, hexavalent chromium is being tested alone and in the presence of three co-stressors: temperature, nitrate, and zinc, using acute and chronic (28 day) laboratory bioassays. There was a change in the metal co-stressor initially chosen for study - from uranium to zinc - during 2013. Although uranium is released from the site, it is less likely than zinc to co-occur with hexavalent chromium. Two mussel species - the western pearlshell and fatmucket, were used in the tests. The western pearlshell is the primary focus of studies; it was once abundant in the Hanford Reach, but has been locally extirpated. Because the pearlshell has not previously been cultured or used in laboratory assays, the fatmucket was included in all assays as a backup species in the event tests using the pearlshell could not be successfully performed.

Acute toxicity tests were conducted in the spring of 2013, with chronic tests beginning in late September. Initial results from the acute tests indicate that temperature affects the toxicity of hexavalent chromium in the western pearlshell, although nitrate and zinc did not appear to have a significant effect on hexavalent chromium toxicity. Twenty-eight day chronic mussel toxicity tests were completed by the USGS, but were repeated in 2014 because of technical problems (poor survival of control group) during the initial set of assays. Study results will be delivered to the Trustees in FY2015.

3. Restoration Planning

The Restoration TWG continued to identify, screen and develop potential early restoration projects focused mainly on terrestrial resources. Field visits were conducted to observe habitat conditions at some of the proposed project locations. Criteria for the evaluation of early restoration pilot project sites were refined. As noted earlier, the Restoration TWG took the lead in planning and convening a workshop in June to explore streamlined injury assessments and early restoration based on lessons learned from other NRDA sites across the country. It is anticipated that initial restoration projects will be implemented as pilot sites to help develop and refine the Trustee's technical and logistic capability for ecological restoration.

4. Technical Analysis

This element includes work planned and conducted by TWGs. TWGs met on a regular basis to assist in study development, to review and analyze existing Hanford environmental/contaminant data, and to make recommendations to the Council for action. The following is a summary of TWG activities and accomplishments for the year:

- a. Convened discussion by TWG Chairs of the TWG process and relationship between the Council and TWGs. Recommendations were adopted by Council and improvements were made in updating the Council on TWG activities.
- b. Assigned more than 200,000 geographic coordinates to DOE-collected chemical sample data at Hanford. This is a significant accomplishment since it allows older data to be geo-referenced for analyses of historic spatial conditions, is anticipated to avoid millions (or tens of millions) in NRDA costs to re-collect sediment, water, and soil data, and increases the overall rigor of scientific assessment at the Site.
- c. Addressed methods to treat data with low chemical concentrations via a simple technical memo that was nuanced but easy to digest, and saved the Council an estimated \$200K since a future “non-detect” study does not need to be conducted.
- d. NRDA spatial analysts prepared working-level maps and visualizations of contaminant data at the site (more than 20 COCs), including a spatial analysis of COC injury drivers by decade. These data and maps facilitate spatially-explicit technical decisions about potential injury drivers for these COCs.
- e. A sub-group of the Aquatic/Terrestrial TWG evaluated COCs effects concentrations along the standard NRDA continuum: source, pathway, exposure, mode of action, injury and restoration (Zn, Cr, U, As, Tritium, Sb, Cd, TCE, Pb, Pu, Sr, PCBs, [Sb and Mn ongoing]). Focused data interpretations and compiled information on contaminant effects were designed in part, for insertion into a future Council technical memo on the selection of thresholds.
- f. The Aquatic/Terrestrial TWG considered four draft technical deliverables focused on ecotoxicity decision-making provided by Dr. Norm Forsberg (Oregon State University).
- g. The Aquatic/Terrestrial TWG also received and reviewed two white papers – one summarizing status and data for contaminant upwelling studies in the Hanford Reach of the Columbia River, and a second summarizing information for background concentrations of soil metals for eight data sets relevant to the Hanford Site.
- h. Re-focused Human Use/Tribal TWG to limit consideration to Tribal Services based on Tribal interests and near term priorities.

- i. Combined the Source & Pathway TWG with the Ground Water (GW) TWG to allow for better integration and efficiency.
- j. Provided input to DOE for field design of ongoing work to characterize contaminant upwelling in the Columbia River.

5. Project Management

This element includes staffing for the Council, Project Coordination and Trustee Management Oversight. The Council met on a monthly basis to plan and oversee Hanford NRDA activities. The FY 2016 budget request was developed and submitted to US DOE in March, 2014. A key Council objective for FY 2015-16 is to fund and make substantial progress on injury studies focused on analysis of existing data by the end of 2016. Current year funding/costs were reviewed on a routine basis.

Strategic planning which was initiated in FY 2012 resulted in the completion of a Project Execution Plan (PEP) during 2014. The PEP defines the overall work scope, schedule, and budget planned for the Hanford injury assessment over the next 10 years. The PEP is designed to culminate in a Restoration Plan which will quantify damages and outline restoration projects for the Site. The Council may also choose to prepare a "Report of Assessment" that outlines the results of the injury assessment phase.

As part of PEP development, the Council discussed both injury assessment "streamlining" and early resource restoration at a conceptual level. The conceptual discussion provided context for an early restoration workshop that was conducted in June. Objectives of the workshop were to increase understanding of streamlined injury assessment through case studies at other NRDA sites, and to support the early restoration process development at Hanford, including definition of early restoration, understanding debiting and crediting, and assessing how early restoration fits within the NRDA process.

Matt Johnson, CTUIR was chair of the HNRTC for the first half of FY 2014, until he resigned due to a new job. Natalie Swan was vice-chair in FY 2014. Tammy Ash, USFWS, assumed the chair position for the second half of FY 2014 and will continue as chair in FY2015. Jack Bell, NP was elected as vice chair for FY 2015.

The Council re-initiated meetings with the Tri-Party Agreement (TPA) cleanup agencies to discuss subjects of mutual interest and potential integration.

6. Information Management

The purpose of this activity is to implement, operate and maintain a data management system (DMS) as outlined in the Data Management Plan approved by the Council. This includes: (1) implementing, operating and maintaining a DMS according to the Data Management System Conceptual Framework, and (2) providing the following functions: data management; document management;

GIS and non-GIS data stewardship; QA and data access coordination. The goal of this information integration effort is for the selected contractor for this project, Trustees, other DOE contractors, and research organizations to collaboratively develop and maintain a working database for assessing potential injury to natural resources and the services they provide, resulting from releases of hazardous substances from the Hanford Site. A proposal to develop, operate and maintain the DMS was submitted by MSA and award and implementation of the contract is expected early in FY 2015.

A statement of work for a contractor to set up and maintain the Council Administrative Record (AR) was developed and a contract is targeted for award in FY 2015.

7. Administration

A new facilitator and administrative assistant were hired to assist the Trustees in coordinating and conducting Council meetings. Tasks include scheduling meetings, preparing agendas, recording action items, issuing meeting materials, facilitating meetings, overseeing the Council website and supporting the Council in issue resolution. Process improvements have been realized for record keeping and general operations of the Council including planning and operations.

Figure 1 - Hanford NRDA Project Work Breakdown Structure

