DOE/PNSO GUIDE 11

Revision 2

PACIFIC NORTHWEST SITE OFFICE CULTURAL AND BIOLOGICAL RESOURCES MANAGEMENT PLAN

SEPTEMBER 2008

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Clearance Approval Michael J. Weis, Manager	Date	Release Approval (stamp)

Summary

The U.S. Department of Energy (DOE) Pacific Northwest Site Office (PNSO) has prepared the PNSO Cultural and Biological Resources Management Plan (CBRMP) in response to the direction and guidance provided in DOE Policy 141.1, "Department of Energy Management of Cultural Resources," and guidance in DOE Order 450.1 relative to protecting and managing cultural and biological resources. The management plan applies to the PNNL Site, a parcel of approximately 350 acres administered by PNSO, located near Richland, Washington. PNSO has a stewardship responsibility for the culturally and biologically important resources that may be sited on its lands.

The PNSO CBRMP describes the approach for PNSO to meet the stewardship responsibilities and will be integrated with Hanford Site documents that also address the protection of the natural environment. This approach allows PNSO to take advantage of the existing Hanford Site practices and to respond to input from the review process. The Hanford Site documents that will be followed and adhered to as part of this integrated approach are:

- the 1999 Record of Decision for the *Final Hanford Comprehensive Land Use Plan* (CLUP) *Environmental Impact Statement* – The CLUP establishes DOE's expectations and policies regarding land-use management and protection.
- the *Hanford Cultural Resources Management Plan*, issued as part of the implementation of the CLUP to provide guidance and strategies for protecting cultural resources
- the *Hanford Site Biological Resources Management Plan*, which provides guidance and recommendations for protecting important biological resources and habitats
- the *Hanford Site Biological Resources Mitigation Strategy*, which describes the recommended process to ensure that DOE missions are accomplished without significant impacts to important biological resources.

Most of the land that PNSO now administers was surveyed previously for cultural and biological resources in support of past proposals and projects. Several cultural resources of note have been identified, including an historic irrigation canal known as the Richland Irrigation Canal (45BN1125) and two sensitive tribal-related sites (45BN1426 and 45BN028/104). The habitats found on the property include mature shrub-steppe communities and a narrow riparian zone along the Columbia River shoreline, which are classified as priority habitats by Washington State.

The CBRMP describes the goals, methods, and procedures to be used by PNSO in managing cultural and biological resources. The biological and cultural settings of PNSO-managed lands are then described, as are previous cultural and biological accomplishments. Finally, the CBRMP also defines the roles and responsibilities of program participants; the drivers, such as regulations; and the types of activities that require cultural and biological resource considerations.

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Abbreviations and Acronyms

ACHP	Advisory Council on Historic Preservation
AIRFA	*American Indian Religious Freedom Act*
ARPA	*Archaeological Resources Protection Act of 1979*
CBRMP	Cultural and Biological Resources Management Plan
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
CLUP	Comprehensive Land Use Plan
CFR	U.S. Code of Federal Regulations
DAHP	Washington State Department of Archaeology and Historic Preservation
DOE	U.S. Department of Energy
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EM	(DOE) Office of Environmental Management
EMSL	William R. Wiley Environmental Molecular Science Laboratory
EPA	U.S. Environmental Protection Agency
ESA	*Endangered Species Act of 1973*
MOA	Memorandum of Agreement
NAGPRA	*Native American Graves Protection and Repatriation Act*
NEPA	*National Environmental Policy Act of 1969*
NHPA	*National Historic Preservation Act of 1966*
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
PNNL	Pacific Northwest National Laboratory
PNSO	(DOE) Pacific Northwest Site Office
PSF	Physical Sciences Facility
QA	quality assurance
QAP	quality assurance program
RL	(DOE) Richland Operations Office
SC	(DOE) Office of Science
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife

Glossary

Advisory Council on Historic Preservation (ACHP)	An independent federal agency responsible for administering the protective provisions of the *National Historic Preservation Act of 1966* (NHPA). The Advisory Council is responsible for reviewing the historic preservation policies and programs of all federal agencies and recommending methods to improve the effectiveness, coordination, and consistency of those policies and programs with the intent of the NHPA.
biological diversity (biodiversity)	The variety of life and its processes, including the variety in genes, species, ecosystems, and the ecological processes that connect everything in ecosystems. As used here, specifically excludes artificial diversity (i.e., those biotic elements added through direct manipulation by humans).
biological resource	A biological species, population, species assemblage, habitat, community, or ecosystem.
biotic	Pertaining to any aspect of living components.
buffer area	Restricted access property that has provided separation between DOE operations and the Site boundary since the 1940s. It will continue to provide separation for DOE operations.
building	A structure created to shelter any form of human activity such as a house, barn, church, hotel, or similar structure. May refer to a historically related complex such as a courthouse and jail or a house and barn (36 CFR Part 60).
candidate species (federal)	A species for which there is sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list it as endangered or threatened but issuance of the proposed rule is precluded (i.e., by other listing activity or lack of funding) (previously defined as candidate category 1).
candidate species (state)	Wildlife species under review by the Washington Department of Fish and Wildlife for possible listing as endangered, threatened, or sensitive.
categorical exclusion	A category of actions as defined in the DOE NEPA implementing procedures (10 CFR Part 1021) for which neither an environmental assessment nor an environmental impact statement typically is required.
consultation	The process of seeking, discussing, and considering the views of other participants in good faith in arriving at solutions and alternatives.

cultural resources	A collective term applicable to 1) prehistoric and historic archaeological sites and artifacts designating past Native American utilization of the PNNL Site; 2) historic archaeological sites and artifacts indicating post–Euro-American activities relating to the pre-Hanford period; 3) Manhattan Project and Cold War era buildings, structures, and artifacts; 4) landscapes, sites, and plants and animals of cultural value to the Native American community; and 5) landscapes, sites, and materials of traditional cultural value to non-Native Americans.
cultural/biological resource review	A review of proposed project locations to consider potential project impacts to cultural resources, historic properties, and native plants and animals.
district	A geographically definable area, urban or rural, that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history (36 CFR Part 60).
ecoregion	A continuous geographic area in which the environmental complex, produced by climate, topography, and soil, is sufficiently uniform to develop characteristic potential major vegetative communities.
ecosystem	A complete interacting system of organisms and their environment, or a naturally occurring, self-maintaining system of biotic and abiotic interacting parts that are self-organized into biophysical and social components and are linked to each other by exchanges of energy, matter, and information.
ecosystem management	A process that integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term.
endangered species	Any species in danger of extinction throughout all or a significant portion of its range.
former candidate (federal)	A species previously identified as appropriate to list (whether or not a proposed rule to list was ever published in the *Federal Register*) or a species for which information at one time indicated that proposing to list it as endangered or threatened was possibly appropriate, but for which sufficient information on biological vulnerability and threat(s) were not available to support a proposed rule to list.
habitat	The combination of biotic and abiotic components that provides the ecological support system for plant or animal populations.
Hanford Cultural Resources Laboratory	Established by the DOE as part of the Hanford Site Cultural Resources Program in 1987. It is part of Pacific Northwest National Laboratory, which is operated by Battelle Memorial Institute for DOE under Contract DE-AC05-76RL01830.

Hanford Reach National Monument	Created on June 9, 2000, by a proclamation signed by President Clinton under authority of the *Antiquities Act of 1906*, the monument includes ~195,000 acres of contiguous federally owned land making up a portion of the Hanford Site. The four principal components of the monument are the Fitzner/Eberhardt Arid Lands Ecology Reserve, the Saddle Mountain National Wildlife Refuge, land along the Columbia River corridor, and the Hanford Dune Field. The U.S. Fish and Wildlife Service will manage lands under permits with RL. The remainder of the monument will be managed by DOE in consultation with the U.S. Department of the Interior.
historic context	An organization format that groups historic properties that share similarities of time, theme, and geography. Historic contexts are linked to actual resources and used by public and private agencies and organizations to develop management plans based upon actual resource needs and information (DOE 1989, p. 7).
historic preservation	Identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance, research, interpretation, conservation, education, and training related to the preservation of historic properties owned or controlled by federal agencies (*National Historic Preservation Act of 1966*, Section 110).
historic property	Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains related to and located within such properties. *Eligible for inclusion in the National Register* includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria.
interested person, party or stakeholder	Those organizations and individuals concerned with the effects of an undertaking on historic properties.
inventory	The process of collecting initial information concerning the occurrence and status of specific biological resources.
late-successional shrub-steppe	Habitat characterized by a relatively constant plant species composition and by large shrubs (usually big sagebrush) whose canopy cover is relatively stable in the absence of a disturbance.
Memorandum of Agreement (MOA)	The document that records the terms and conditions agreed upon to resolve the adverse effects of an undertaking upon the historic properties (36 CFR Part 800).

mitigation	A series of prioritized actions that, when achieved in full, ensures project impacts will result in no net loss of habitat value or wildlife populations. The sequence of mitigation actions proceeds from the highest to lowest priority as follows: 1) avoid the impact altogether, 2) minimize the impact, 3) rectify the impact by restoring the affected environment, and 4) compensate for the impact by replacing or providing substitute resources or environments. Mitigation actions are applicable for potential impacts to biological resources of concern as a result of proposed Hanford Site activities. The degree to which mitigation actions are conducted is commensurate with the value of the resource and the amount of impact to that resource.
mitigation (replacement) ratio	The ratio of the area over which mitigation measures are applied to the area receiving adverse impacts. The calculation of an appropriate ratio (and any adjustments made to the ratio because of time delays in accomplishing mitigation or other factors) ensures that the lost habitat value and not simply the lost acreage is replaced.
mitigation threshold level	The amount of habitat value reduction or potential species population impact that will trigger the requirements for rectification and/or compensatory mitigation.
monitoring	The process of collecting information to evaluate if objective and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned. Specifically for mitigation: the collection of specific types of data to determine if the goals and objectives of project-specific mitigation or the mitigation bank are met.
National Register of Historic Places	Maintained by the Secretary of the Interior, the list includes districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture established under Section 101 of the NHPA.
National Register listing criteria	The criteria established by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register of Historic Places (36 CFR Part 60).
native	A species, plant community type, or habitat whose presence in an area is due to natural processes and not because of direct human manipulation. Native biotic elements and natural processes contribute to biological diversity.
non-native	A species, plant community type, or habitat that has been introduced or modified because of human actions. Non-native biotic elements or human-dependent processes contribute to artificial diversity. Non-native species may be referred to also as introduced or exotic species.
plant community	All the plant populations occurring in a shared habitat or environment.

priority habitat A habitat designated by the Washington Department of Fish and Wildlife as having unique or significant value to many wildlife species. A priority habitat may be described by a unique vegetation type, dominant plant species of primary importance to fish and wildlife, successional stage, or specific habitat element (e.g., talus slopes) of key value to fish and wildlife.

protection "The act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property" (*The Secretary of Interior's Standards for the Treatment of Historic Properties*, 36 CFR Part 68).

riparian The transition zone between aquatic (specifically flowing water) and terrestrial ecosystems, within which plants are dependent on a perpetual source of water.

sensitive species (state) A species native to the state of Washington that is vulnerable or declining and likely to become endangered or threatened without active management or the removal of threats.

shrub-steppe Plant communities consisting of one or more layers of perennial grass above which there rises a conspicuous but discontinuous layer of shrubs. Communities with bitterbrush (*Purshia tridentata*), big sagebrush (*Artemisia tridentata*), and perhaps threetip sagebrush (*A. tripartita*) illustrate shrub-steppe physiognomy in Washington.

site The location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historical or archaeological value regardless of the value of any existing structure (36 CFR Part 60).

Site Preservation Officer The DOE individual responsible for managing the DOE historic preservation program and coordinating all preservation activities for DOE.

species of concern A species identified by a federal or state agency via law, regulation, or policy as deserving management attention; that is, any federal endangered, threatened, proposed, or candidate species; any species covered under the *Migratory Bird Treaty Act*; any additional species identified as endangered, threatened, sensitive, or monitored in Washington State (or in Oregon when that species occurs in the Columbia Basin Ecoregion portion of Oregon); plus any additional species identified by the Washington Department of Fish and Wildlife as a priority species.

State Historic Preservation Officer (SHPO) The official appointed or designated pursuant to Section 101(b)(1) of the *National Historic Preservation Act of 1966* to administer the State Historic Preservation Program, or a representative designated to act for the State Historic Preservation Officer (36 CFR Part 800).

stewardship	The act of making decisions, performing activities, taking actions, and fulfilling responsibilities and/or agreements associated with being a proactive caretaker or custodian. *Stewardship responsibility* implies that duties will be executed in an ethical, socially acceptable, and legal manner.
terrestrial	Pertaining to the land.
threatened species	Any species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
traditional cultural place	A place associated with cultural practices or beliefs of a living community that 1) are rooted in that community's history and 2) are important in maintaining the continuing cultural identity of that community (NHPA Section 110).
tribe	An Indian band, nation, or other Native American group or community that attaches religious or cultural importance to the area of the PNNL Site. Tribes that have identified such an attachment include the Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Colville Reservation, the Wanapum, and the Yakama Nation.
undertaking	A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency. Undertakings include new and continuing projects, activities, or programs and any of their elements not previously considered under NHPA Section 106 (36 CFR Part 800).
wetlands	Areas that under typical circumstances have hydrophytic vegetation, hydric soils, and wetland hydrology.

1.0 Introduction

The U.S. Department of Energy (DOE) Pacific Northwest Site Office (PNSO) was created in 2003 to oversee and manage the DOE contract for the Pacific Northwest National Laboratory (PNNL) in Richland, Washington (Figure 1.1). In this capacity, PNSO is responsible for ensuring that all PNNL activities conducted on the PNNL Site comply with applicable laws, policies, and DOE Orders.

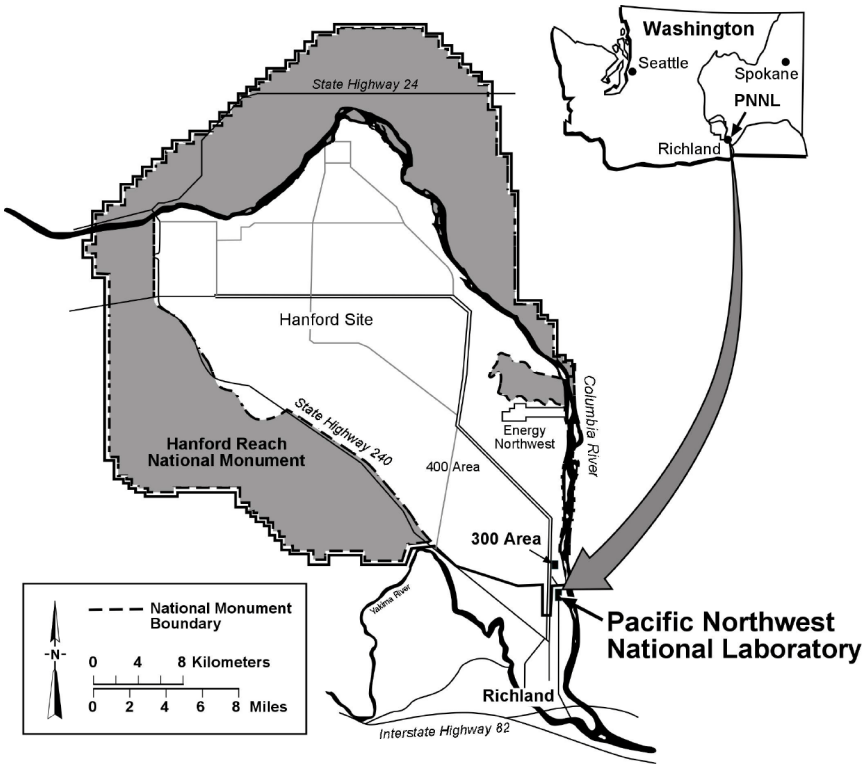

Figure 1.1. Location of Pacific Northwest National Laboratory in Washington State

In August 2004, approximately 130 acres of land in the southernmost portion of the Hanford Site were reassigned from the DOE Office of Environmental Management (EM) to the DOE Office of Science (SC) (Roberson 2004). Soon thereafter, 230 additional acres adjacent to the 130 acres were reassigned from EM to PNSO to further expand the PNNL Site (Rispoli 2007). The purpose of the reassignments was to establish a federal PNNL Site (Figure 1.2) that would support SC's long-term goals of a continuing science and technology mission at PNNL. Both of these land reassignments were accomplished under *National Environmental Policy Act* Categorical Exclusions.

These two reassignments allowed the creation of an Office of Science PNNL Site and added clarity to the difference in missions between EM and SC. SC focuses on the PNNL missions to strengthen scientific foundations for innovation; increase energy capacity and reduce dependence on imported oil; prevent and counter terrorism and proliferation of weapons of mass destruction; and reduce environmental effects of human activity and create sustainable systems. EM continues to focus on Hanford cleanup and closure.

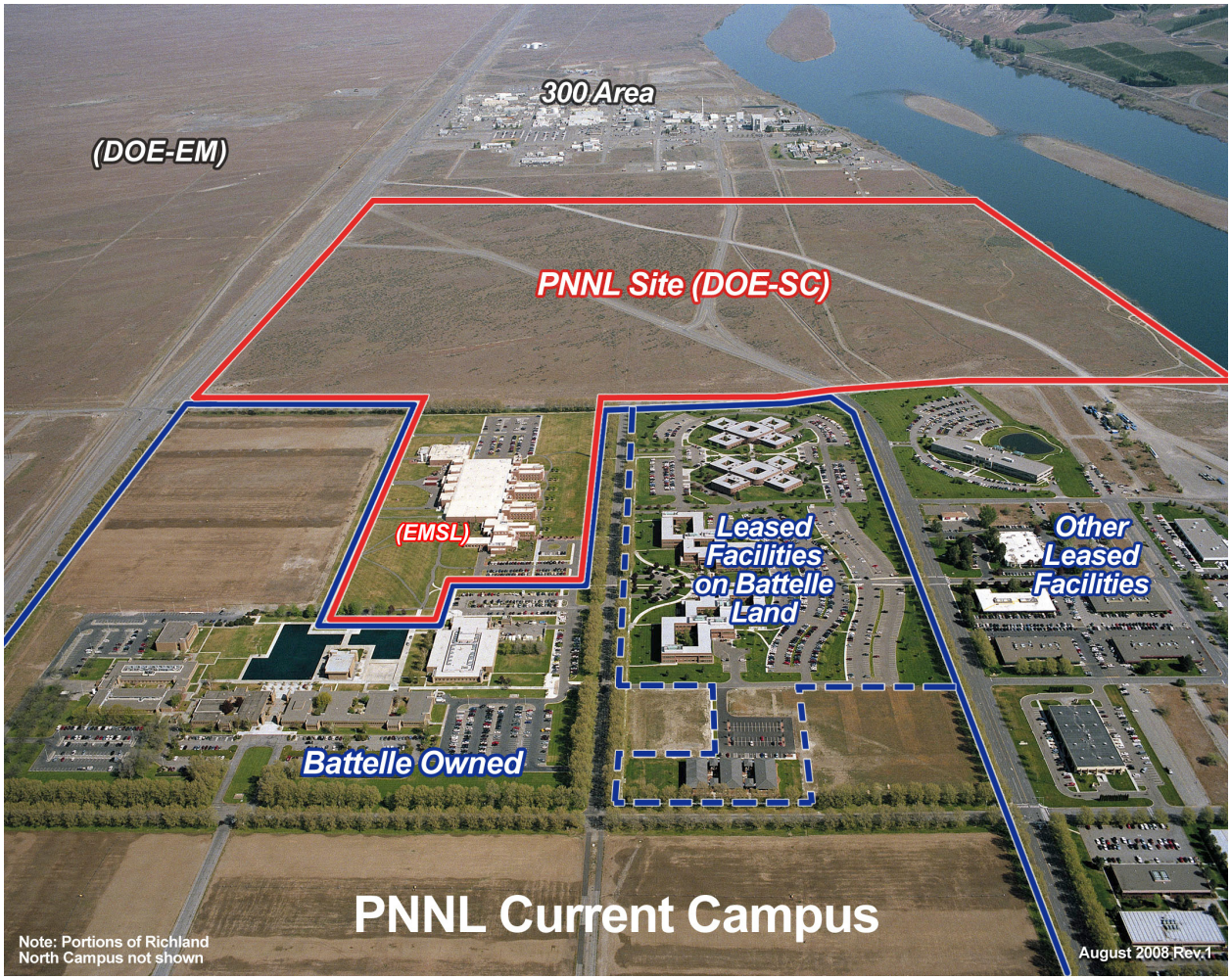

Figure 1.2. Oblique Aerial Photograph Showing the Location of the Pacific Northwest National Laboratory Site

There is currently one existing research facility, the W.R. Wiley Environmental Molecular Sciences Laboratory (EMSL), on a 30-acre parcel of the PNNL Site. In addition, construction began in 2007 on the Physical Sciences Facility (PSF) located across Horn Rapids Road, north of EMSL. Prior to construction, an Environmental Assessment was completed (PNSO 2007). A portion of the PNNL Site is designated as a buffer area. This area has served as a buffer to provide separation between DOE operation areas and the Site boundary since the 1940s, and it is expected to continue to provide a buffer for DOE operations. No construction or other ground-disturbing activity is planned for the buffer area, and a portion of the buffer area will continue to be protected under a Preservation land-use.

Although operational authority for the PNNL Site was reassigned from EM to PNSO, PNSO intends to abide by Hanford Site documents that address the protection of the natural environment. These documents are:

- the 1999 Record of Decision for the *Final Hanford Comprehensive Land Use Plan (CLUP) Environmental Impact Statement* (EIS) – The CLUP establishes DOE's expectations and policies regarding land-use management and protection.

- the *Hanford Cultural Resources Management Plan*, issued as a part of the implementation of the CLUP to provide guidance and strategies for protecting cultural resources
- the *Hanford Site Biological Resources Management Plan*, which provides guidance and recommendations for protecting important biological resources and habitats
- the *Hanford Site Biological Resources Mitigation Strategy*, which describes the recommended process to ensure that DOE missions are accomplished without significant impacts to important biological resources.

In coordination with the Richland Operations Office (RL), PNSO intends to cooperate with tribes with historical and legal ties to Hanford to address the protection of biological and cultural resources. Cooperation will include technical-level interactions and government-to-government interactions as appropriate. Interactions will promote a cooperative management spirit and focus on DOE decisions and activities that involve potential impacts to cultural and biological resources to ensure that tribal interests, concerns, and expectations are considered.

1.1 Objectives of the PNSO Cultural and Biological Resources Management Plan

The PNSO Cultural and Biological Resources Management Plan (CBRMP) was prepared as required by DOE Policy 141.1, *Department of Energy Management of Cultural Resources*.

The purpose of the PNSO CBRMP is to identify the actions that will be taken to ensure that important cultural and biological resources are protected. While the PNNL Site is small (350 acres) and there are generally few ground-disturbing activities related to the science mission, PNSO recognizes that the Native American resources located on the PNNL Site are significant and important to area tribes. For this reason, the plan was prepared to meet the following objectives:

- Provide for protection and management of biological resources at the PNNL Site.
- Identify actions that will be taken to make sure that the prehistoric sites located at the PNNL Site will be protected from impacts made possible by unauthorized public use.
- Identify actions that will be taken to verify that the ethnohistoric cemetery at the PNNL Site will be protected from inappropriate access and impacts.
- Provide details concerning the annual monitoring activities at the prehistoric site and cemetery, which are conducted to identify any potential impacts at the sites.

1.2 History of Land Use Prior to 1944 at the PNNL Site

Prior to the arrival of the Euro-Americans, the PNNL Site was occupied by Native Americans who have ancestral ties to Mid-Columbia tribes. Native American presence is documented by the presence of a prehistoric village and cemetery at the PNNL Site. These sites likely date to the last 3,000 years, but it is entirely possible that older sites exist. The area appears to have fallen into disuse prior to the modern era, as the ethnohistoric cemetery was not identified by Wanapum elders during the 1950s.

Historical activity at the PNNL Site began in the early 1900s when farming communities expanded with the construction of large-scale irrigation projects. One such canal, a lateral of the Richland Canal, passed through what is now the PNNL Site, transporting water to the small community of Fruitvale, located where the 300 Area of the Hanford Site is today. Other historic activity is indicated by the presence of historic trash dumps and isolated concrete features; evidence indicates, however, that no farms were located where the PNNL Site lies today.

1.3 Organization of the Document

The organization of the PNSO Cultural and Biological Resources Management Plan is as follows:

- Section 2 describes the goals of the management plan.
- Section 3 provides an overview of the existing conditions on the PNNL Site, including the known cultural and biological resources, their cultural and ecological context, and the existing and proposed facilities.
- Section 4 describes PNSO program administration and applicable procedures to ensure compliance with applicable biological, cultural, and historic resource requirements.
- Section 5 describes methods to be used by PNSO to review projects for cultural and biological impacts and monitor conditions of important resources on the PNNL Site.
- Section 6 contains references cited in the text of the management plan.
- Appendix A provides a summary of the applicable guidance and legal requirements governing the protection of cultural and biological resources.
- Appendix B documents the reassignment of programmatic control over a parcel of land from the DOE Office of Environmental Management to the DOE Office of Science.
- Appendix C provides a copy of the Memorandum of Agreement between DOE and the Washington State Historic Preservation Officer related to the historic Richland Irrigation Canal on the PNNL Site.

2.0 Cultural and Biological Resources Management Goals

Effective resource management requires resource monitoring for status and trends and impact assessment and management. PNSO will manage the resources at the PNNL Site as required by applicable laws, regulations, and DOE Orders to protect cultural and biological resources, to evaluate the potential for such resources to be adversely affected by DOE activities, and to conduct such activities in a manner that ensures the long-term maintenance and restoration of such resources.

The DOE policies and management guidelines state that DOE sites and program offices will:

- Act to preserve and restore the resources under its stewardship as valuable national resources.
- Verify that resource values are considered by all programs in all actions conducted on PNSO's behalf, consistent with applicable tribal treaties, laws, and regulations.
- Endeavor to enhance an awareness of and appreciation in DOE managers, employees, and contractors for resource values and their preservation, restoration, and enhancement.
- Integrate resource management goals and administrative procedures into relevant program- and project-level activities to avoid or minimize potential adverse impacts to biological and cultural resources.
- Integrate biological and cultural resource information into land and facility use plans to make sure that broad-scale land-use planning and specific site-selection decisions consider cultural and biological resource values, apply ecosystem management principles, and avoid or minimize cumulative impacts to these resources.

The PNSO resource management goals are summarized as follows:

- Comply with tribal treaties, federal and state laws, Executive Orders, and DOE policies ("Maintain Compliance").
- Protect the integrity of the cultural and biological resources under PNSO control ("Protect Integrity of the Resources").
- Verify that tribal and stakeholder expectations are understood and considered in DOE decision making involving resources of interest ("Understand Tribal and Stakeholder Expectations").

2.1 Maintain Compliance

DOE organizations will comply with all applicable requirements in both the cultural and biological areas (Appendix A). PNSO is required by applicable laws, tribal treaties, regulations, and DOE Orders to protect biological and cultural resources, to evaluate the potential for cultural and biological resources to be adversely affected by DOE activities, and to conduct such activities in a manner that ensures the short-term and long-term protection and perpetuation of such resources.

As PNNL research proposals are identified in the future, PNSO environmental protection requirements involve assessment of activities to identify and evaluate any potential environmental consequences. This assessment process requires a thorough understanding of the resources present, the

potential impacts to those resources of a proposed action, and the ultimate consequences of those actions. PNSO will continue to make sure that processes are in place to conduct the appropriate project reviews.

2.2 Protect Integrity of the Resources

Important resources are located on the PNNL Site. PNSO is a steward for these resources and is required to protect the integrity of those resources and to implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources (DOE Order 450.1, Appendix A). PNSO will make sure that processes are in place to monitor and protect important resources on the PNNL Site.

2.3 Understand Tribal and Stakeholder Expectations

Some of the important resources under PNSO control are highly valued by area tribes, historical organizations, and other stakeholders. PNSO will work with area tribes and stakeholders to understand their interests, concerns, and expectations, and will work to accommodate their interests in management of the resources.

2.4 Provide Funding To Support Goals

Cultural and biological services provided by the PNSO cultural and biological resources representative are funded by means of the PNNL operating budget. Evaluation or mitigation activities that may be required due to potential impacts from a specific project will be funded by the project causing the impact.

3.0 Existing Conditions

This section provides an overview of the current conditions on the PNNL Site. Descriptions of the Site's operational context and natural setting are provided, along with the cultural and biological context and known resources. Also included are descriptions of the cultural and biological resource information gathered to date.

3.1 Physical Setting

This section describes the facilities and types of activities overseen by PNSO and the environmental setting of the lands under PNSO oversight (Figure 3.1).

3.1.1 Operational Setting

One facility—the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL)—is located on the southernmost 30 acres of the PNNL Site. Construction of the new Physical Sciences Facility directly north of EMSL was initiated in August 2007.

3.1.1.1 Environmental Molecular Sciences Laboratory

The original location proposed for the EMSL facility was closer to the Columbia River. However, during initial construction in spring 1994, the construction crew uncovered culturally sensitive materials. The Hanford archaeological monitor notified the construction manager, work ceased, and DOE notified the appropriate contacts, including the area tribes. Formal consultation was implemented under the *Native American Graves Protection and Repatriation Act*, and the EMSL facility was constructed on an alternative location south of the Horn Rapids road.

The 30-acre site located within the Richland city limits where EMSL was eventually constructed has been landscaped with drought-tolerant vegetation, grass, and a tree line around the border that provide habitat for migratory birds. EMSL began operations in 1997 and functions as a 200,000-square-foot user facility for visiting scientists and professors from the United States and abroad. EMSL offers an array of scientific resources, including those associated with synthesis, characterization, theory and modeling, dynamical properties, and environmental testing relevant to a wide range of environmentally related issues and topics at the molecular level. Research activities are conducted primarily inside EMSL, and there is minimal impact to existing natural resources from those processes.

3.1.1.2 Physical Sciences Facility

The DOE Office of Science is constructing the Physical Sciences Facility (PSF) using funding provided by SC, the DOE National Nuclear Security Administration, and the Department of Homeland Security. The PSF construction site consists of approximately 50 acres within a 100-acre parcel of land situated within the Richland city limits. The property is bounded by Stevens Drive on the west, Horn Rapids Road on the south, and George Washington Way to the north and east. DOE also will continue to maintain property to the north and east of the construction site as a buffer area for DOE operations. The combined construction site and buffer area include about 320 acres, which extend from Stevens Drive on the west to the Columbia River on the east and from Horn Rapids Road on the south to a line running

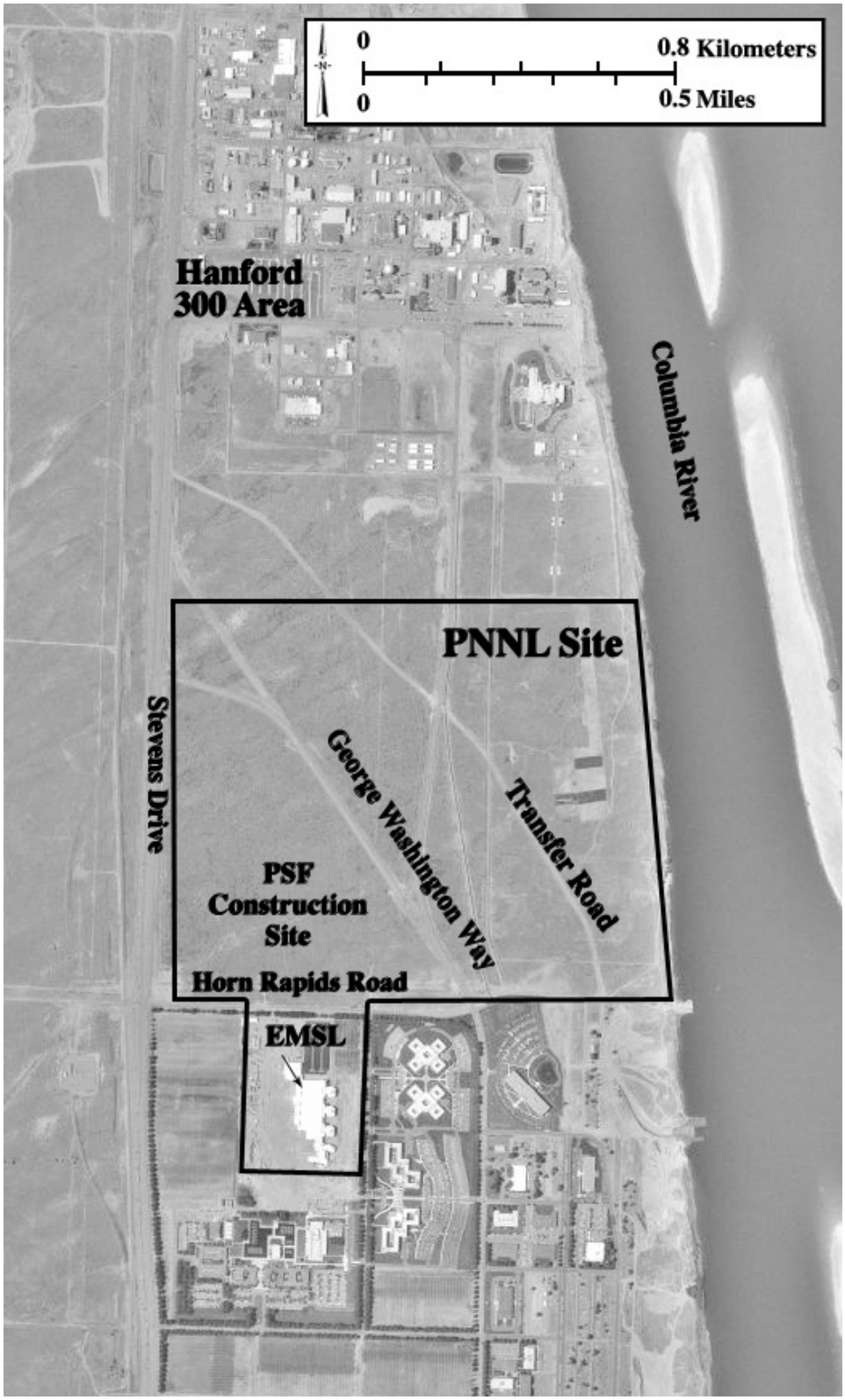

Figure 3.1. Areas Under Pacific Northwest Site Office Oversight (PNNL Site)

east–west approximately 3,500 feet north of Horn Rapids Road. On January 29, 2007, PNSO issued a Final Environmental Assessment and Finding of No Significant Impact that addressed the construction and operation of the PSF.

The PSF is to be constructed in phases over a 20-year span. The initial phase will be a complex of five functional research facilities: Materials Sciences and Technology Laboratory, Radiation Detection Laboratory, Underground Laboratory, Ultra-Trace Laboratory, and the Large Detector Laboratory. Construction of the initial phase began in summer 2007 and is scheduled to be completed in 2010.

3.1.1.3 Navy Reactor Compartment Transport Route

A segment of the transport route for decommissioned U.S. Navy reactor compartments follows existing graveled and paved roads on the Hanford Site and passes through the PNNL Site in a culturally sensitive area. The transport of Navy reactor compartments along this route began in 1986 when the Hanford Site began receiving defueled submarine and cruiser compartments for disposal in the 218-E-12B Low-Level Burial Ground Trench 94 in the 200 East Area. In September 2006, the Navy began transporting much heavier Ohio Class compartments. The transport route required road improvements to support the heavier loads; the improvements were reviewed for cultural resource sensitivities under HCRC# 2006-600-006B (Prendergast-Kennedy 2006). PNSO will continue to coordinate with RL staff about activities involving the transport route.

3.1.2 Environmental Setting

The environmental setting of the PNNL Site includes relatively undisturbed lands, slightly disturbed lands, and heavily disturbed lands. Heavily disturbed lands for the most part are associated with the present and planned facilities that are or will be landscaped. Slightly disturbed lands include roadsides, farming-related disturbances, and gravel pads surrounding groundwater wells. The remainder of the PNNL Site supports native shrub-steppe vegetation on the uplands and a narrow strip of riparian vegetation along the Columbia River shoreline.

3.1.2.1 Subsurface

The PNNL Site lies above a gentle syncline formed by the intersection of the Yakima Fold Belt and the un-deformed eastern Columbia Basin. The uppermost basalt flow belongs to the Ice Harbor member of the Saddle Mountains basalt. Overlying sediment layers are relatively thin, consisting of Ringold Formation and Hanford formation sediments. These sediment layers are predominantly coarse sandy alluvial deposits mantled by wind-blown sand.

The unconfined water table generally is found in the Ringold Formation at a depth of 30 to 62 feet below ground surface. Fluctuations in the Columbia River flow affect the groundwater levels at the site. The groundwater is influenced also by artificial recharge associated with the city of Richland's North Richland recharge basins (approximately 2 miles south of the PNNL Site) and nearby irrigated farming. Water is pumped from the Columbia River to the recharge basins and subsequently pumped from nearby wells. This system is used by the city of Richland as a backup filtration system for city water. Because an excess of water is pumped into the recharge basins, a hydraulic mound is created in the water table, which helps to reduce the potential for groundwater flow from DOE operations on the Hanford Site into this area.

3.1.2.2 Habitat and Wildlife

The PNNL Site is in the lowest and most arid portion of the Columbia Basin Ecoregion. Soils of the PNNL Site are primarily sandy. Plant communities found on the site are dominated primarily by big sagebrush (*Artemisia tridentata*) and perennial bunchgrasses. Some portions of the sagebrush stands also have a significant cover of cheatgrass (*Bromus tectorum*). Antelope bitterbrush (*Purshia tridentata*) and gray and green rabbitbrush (*Ericameria nauseosa* and *Chrysothamnus viscidiflorus,* respectively), are common shrubs co-occurring with big sagebrush. The most common perennial bunchgrass in the area is Sandberg's bluegrass (*Poa secunda*), but several stands of the native needle-and-thread grass (*Hesperostipa comata*) dominate sandy swales within the area, and Indian rice-grass (*Achnathrum hymenoides)* also is represented in several sandy areas growing with antelope bitterbrush. Common native forb species include Carey's balsamroot (*Balsamorhiza careyana*), long-leaved phlox (*Phlox longifolia*), yarrow (*Achillea millefolium*), and daisy fleabane (*Erigeron* spp.). Turpentine springparsley (*Cymopterus terebinthinus*) also often occurs on sandy soils dominated by this community type. Species diversity may be lower in this community type than in communities found in the surrounding foothills. Several tribes have identified food and medicinal plant species within the habitat.

In addition to shrub-steppe upland communities, a narrow riparian community exists along the Columbia River shoreline on the eastern part of the PNNL Site. Riparian vegetation is limited in extent, with narrow bands or buffers near the water consisting of a number of forbs, grasses, sedges, reeds, rushes, cattails, and deciduous trees and shrubs. A cluster of trees near a day use/fishing area is dominated by poplars (*Populus* spp.), and white mulberry (*Morus alba*) is sparsely scattered along the shoreline. Shrub willows (*Salix exigua*) and wild rose (*Rosa woodsii*) are common shrubs in the riparian band downstream of the 300 Area.

Both shrub-steppe and riparian habitats are listed by the Washington Department of Fish and Wildlife (WDFW) as priority habitats for the state and, as such, are considered to be priorities for management and conservation (WDFW 2004). *Priority habitats* are those habitat types or elements with unique or significant value to a diverse assemblage of species (WDFW 2007).

Sagebrush-steppe communities support a variety of wildlife, including several Washington State species of concern (Table 3.1).

Table 3.1. Wildlife Species of Concern That Potentially Occur on Sagebrush-Steppe Lands Administered by PNSO

Animal	Genus and Species	Federal Status	State Status[(a)]
Black-tailed jackrabbit	*Lepus californicus*		Candidate
Burrowing owl	*Athene cunicularia*	Species of Concern	Candidate
Loggerhead shrike	*Lanius ludovicianus*	Species of Concern	Candidate
Northern sagebrush lizard	*Sceloporus graciosus*	Species of Concern	Candidate
Townsend ground squirrel	*Spermophilus townsendii*	Species of Concern	Candidate
Sage sparrow	*Amphispiza belli*		Candidate

(a) Candidate species are those fish and wildlife species that the Washington Department of Fish and Wildlife will review for possible listing as State Endangered, Threatened, or Sensitive.

Riparian habitats along the Columbia River in Washington support a diverse assemblage of wildlife. The area managed by PNSO extending from a point south of the 300 Area along the river shore to the

barge docking facility consists of multilayered trees, shrubs, and herbaceous species. The area may be an occasional day perch for wintering bald eagles (*Haliaeetus leucocephalus*), and the riparian zone along with the upland area is used as a territory for nesting osprey (*Pandion haliaetus*). A large number of migratory bird species, such as western kingbirds (*Tyrannus verticalis*) and Bullock's orioles (*Icterus bullockii*), use riparian trees and shrubs for nesting habitat. Many migratory bird species use the riparian habitats for resting and feeding during the spring and fall migration. Several plant species of concern potentially may occur along the shoreline, including persistentsepal yellowcress (*Rorippa columbiae*), lowland toothcup (*Rotala ramosior*), and grand redstem (*Ammania robusta*).

3.1.2.3 Cultural Resources

More than 8,000 years of prehistoric human activity in this largely arid environment of the middle Columbia River region have left a number of archaeological sites along the river shores. Throughout most of the region, hydroelectric development, agricultural activities, and construction have destroyed or covered most of these sites. However, because the public is excluded, archaeological sites present on the PNNL Site have experienced less destruction. Much of the PNNL Site has been surveyed previously for cultural resources, and 22 places of historical and cultural interest have been documented. These sites and their status with respect to the National Register of Historic Places are identified in Table 3.2.

Of particular significance are Native American sensitive cultural sites near the Columbia River. These sites are listed on the Washington State Heritage Register as part of the Hanford South Archaeological District. One particular site has been found to be of great importance to the Native Americans and is fenced to limit all access.

Of the sites listed in Table 3.2, sites 45BN1426, 45BN028/104, 45BN029, and 45BN105 will be monitored every year by a qualified archaeologist with tribal participation to ensure that they are not being adversely impacted. No action is required for the other sites listed.

Table 3.2. Cultural Resources on and near the PNNL Site

Count	Temporary Number	Permanent Number	Site Description	National Register Evaluation Status	General Location
1	HT-2001-017	45BN1426	Fenced Wanapum cemetery	Unevaluated	Inside cemetery fence
2	HT-95-332	45BN1117	Historic debris scatter	Unevaluated	Buffer area[(a)]
3	HT-95-333	45BN1116	Historic debris scatter	Unevaluated	Buffer area[(a)] and inside cemetery fence
4	HT-94-001 (H3-439)	45BN1126	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; not destroyed
5	HT-94-002 (H3-440)		Historic debris scatter	Determined to be not eligible	Inside PSF construction area; not destroyed
6	HT-94-003 (H3-441)	45BN1127	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; not destroyed
7	HT-94-004 (H3-442)	45BN1128	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; destroyed
8	HT-94-017 (H3-438)		Pile of cobbles, boulders, and pieces of ceramic pipe near the intersection of two old dirt roads	Determined to be not eligible	Inside PSF construction area; destroyed
9	HT-91-071 (H3-046)	45BN1134	Historic debris scatter	Unevaluated	Buffer area[(a)] and inside cemetery fence
10	HT-94-018 Feature I (H3-021)	45BN1125	Segment I of the Richland Irrigation Canal	Determined eligible. Physical Sciences Facility construction destroyed most of the site. Impact was mitigated through development of an MOA with the SHPO.	Inside PSF construction area; destroyed
11	HT-89-016 (H3-443)	45BN1129	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; destroyed
12	HT-89-017 (H3-444)	45BN1130	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; destroyed

Table 3.2. (contd)

Count	Temporary Number	Permanent Number	Site Description	National Register Evaluation Status	Location
13		45BN028/104	Pre-contact village site	Likely eligible, but not formally evaluated to the National Register. Is part of Hanford South Archaeo-logical District which is listed on the Washington State Heritage Register.	Buffer area[(a)]
14		45BN105	Pre-contact site	Likely eligible, but not formally evaluated to the National Register. Is part of Hanford South Archaeo-logical District which is listed on the Washington State Heritage Register.	Buffer area[(a)]
15	HT-2004-002	45BN1363	Historic debris scatter	Determined to be not eligible	Inside PSF construction area; destroyed
16	HI-94-002	45BN641	Pre-contact isolate (cobble tool)	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Inside cemetery fence
17	HI-94-015	45BN511	Pre-contact isolate (lithic flake)	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Inside PSF construction area; destroyed
18	HI-95-138		Historic isolate	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Buffer area[(a)]

Table 3.2. (contd)

Count	Temporary Number	Permanent Number	Site Description	National Register Evaluation Status	Location
19	HI-95-139		Historic isolate	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Buffer area[(a)]
20	HI-95-142		Historic isolate	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Buffer area[(a)]
21	HI-95-143		Historic isolate	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Inside cemetery fence
22	HI-95-144		Historic isolate	Not eligible. Isolates are typically not considered to be eligible for the National Register.	Buffer area[(a)]

(a) Restricted access property that has provided separation between DOE operations and the Site boundary since the 1940s. It will continue to provide separation
for DOE operations.

3.1.2.4 Contamination

A part of the PNNL Site is included in two *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA; 42 USC 9601 et seq.) operable units. One operable unit (300-FF-5) addresses groundwater contamination, and the other (300-FF-2) addresses surface-area contamination. The operable units are part of the "Hanford 300 Area" National Priorities List site per 40 CFR Part 300, listed on November 3, 1989. Under the Tri-Party Agreement (Ecology et al. 1989), waste sites were grouped into "operable units" based on geographic proximity or similarity of waste-disposal history.

Groundwater under the northern part of the PNNL Site is a part of the Hanford 300-FF-5 Operable Unit and is monitored routinely through nine groundwater monitoring wells in the PNNL Site. The Hanford groundwater monitoring report (Hartman et al. 2007) indicates that four contaminants (uranium, tritium, cis-1,2-dichloroethene, and nitrate) are found at levels that exceed drinking water standards in parts of the operable unit. Beneath the PNNL Site, those contaminants either were not detectable or were present in concentrations well below drinking water standards, except for nitrate, which exceeded drinking water standards. The nitrate plume underlying the PNNL Site and much of north Richland originates from offsite and is not identified as a contaminant of concern for the 300-FF-5 Operable Unit. The selected remedy in the 300-FF-5 interim Record of Decision (EPA 1996) and subsequent Explanation of Significant Difference (EPA 2000) requires continued groundwater monitoring and the maintenance of institutional controls to restrict groundwater use.

A part of the PNNL Site is currently considered to be a part of the Hanford 300-FF-2 Operable Unit. In the late 1990s, site characterization efforts found vestiges of petroleum hydrocarbons, irrigation canals, and recent debris (windblown garbage, porcelain china, battery cores, cans, and glass). After a site evaluation, EPA issued a CERCLA interim Record of Decision (EPA 2001) that concluded that the PNNL Site areas require no further remedial action under CERCLA.

3.2 Resource Accomplishments to Date

Most of the cultural and biological work conducted on the PNNL Site was completed for individual proposals and projects before the land was reassigned from RL to PNSO (Appendix B). These efforts are described in this section, and surveyed areas are presented in Figure 3.2.

3.2.1 Preparation of Historic Contexts

Historic contexts for the general Hanford area were prepared by RL in the 1990s. Of relevance to the PNNL Site are the historic contexts for Native American pre-contact and ethno-historic eras, the farming era, and the Manhattan Project and Cold War era (DOE-RL 1996). A brief summary of these contexts is provided here. For additional details, refer to the *Hanford Cultural Resources Management Plan* (DOE-RL 2003b).

Hanford's cultural resources are diverse, ranging from early pre-contact times to the atomic age. The area contains an extensive record of human occupation documenting a series of overlapping cultural landscapes stretching back thousands of years, each layer of which tells the story of how people have utilized the landscape. Three distinct landscapes are defined—the Native American Cultural Landscape, the Early Settlers and Farming Landscape, and the Manhattan Project and Cold War Era Cultural Landscape.

Figure 3.2. Extent of Cultural Resource Surveys in and near the PNNL Site – July 2008

The Native American Cultural Landscape includes a rich record of archaeological sites associated with pre-contact and ethnographic use of the Hanford Site. Native Americans have lived in and around the present-day site for thousands of years. More than 8,000 years of pre-contact human activity have left extensive archaeological deposits along the Columbia River and, to a lesser degree, the off-river interior. Sacred and ceremonial areas, such as mountains and rivers where food and medicinal plants are gathered, are dispersed across the landscape. Native American descendents of the area's original inhabitants continue to use this landscape to access traditional resources and places. These descendants include

members of the Wanapum, Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Colville Reservation.

Resources relating to western settlement and agriculture largely characterize the Early Settlers and Farming Landscape. Early travelers, predominantly of European descent, began passing through the area in the early 1800s. It was not until the late 19th and early 20th centuries, however, that the area was intensively settled. During this period, settlers farmed and raised livestock, mined, and built settlements along the Columbia River. Historic archaeological resources mark the locations where gold mining, stock raising, farming, and natural gas drilling took place from the 1850s to 1943. The early settlers' history at the Hanford Site came to an abrupt end in 1943, when the federal government condemned the land for the war effort. Farming residents were given only 30 days to vacate the land on which many had lived for decades.

The Manhattan Project and Cold War Era Landscape rapidly transformed the Hanford Site from an isolated agricultural region to a military industrial complex dedicated to the production of plutonium eventually used in the first atomic bombs. Today, work at the Hanford Site is focused on cleaning up the residual wastes from plutonium production. Because of the importance of its national defense mission to world history, Hanford's Manhattan Project and Cold War Era Cultural Landscape is critical for historical interpretation of this period on a national scale. B Reactor, where the plutonium for the atom bomb was made; the 300 Area, where nuclear research and fuel fabrication was conducted; and the 200 Areas, where the plutonium was processed, are but a few of the historic remains from the Manhattan Project and Cold War landscape. DOE identified a National Register-eligible Hanford Site Manhattan Project and Cold War Era Historic District that serves to organize and delineate the evaluation and mitigation of Hanford's plutonium-production built environment.

3.2.2 Preparation of Biological Contexts

The PNNL Site lies within the Columbia Basin (Plateau) Ecoregion, which is influenced by the arid climate found in eastern Washington. This ecoregion is characterized by vegetation and wildlife adapted to hot summers, cold winters, and low precipitation. The vegetation of the ecoregion is described as shrub-steppe dominated by various species of sagebrush and bunchgrasses. Lichens and mosses growing on the soil surface, often referred to as *microbiotic* or *cryptogamic crust*, provide protection from soil and water erosion where soils remain undisturbed.

The Columbia Basin (Plateau) Ecoregion historically included more than 14.8 million acres of steppe and shrub-steppe vegetation across most of central and southeastern Washington, as well as portions of north-central Oregon. Much of this land has been developed for agriculture, industry, and other purposes. In the early 1800s, the dominant vascular plants in the area were big sagebrush underlain by perennial bunchgrasses and forbs. With the advent of Euro-American settlement, livestock grazing and agricultural production contributed to colonization by non-native plant species that currently dominate portions of the landscape.

The PNNL Site includes both upland shrub-steppe and riparian/wetland habitat. Riparian habitat occurs along bodies of water and is inhabited by plants requiring more water than that provided by precipitation. Wetlands are areas where some open water is present, and soils and associated vegetation reflect the presence of water.

A more extensive discussion of biological contexts can be found in the *Hanford Site Biological Resources Management Plan* (DOE-RL 2001).

3.2.3 Surveys

Cultural and biological surveys conducted on the PNNL Site can be assigned to two major activities:

- construction of the EMSL facility during the mid 1990s, including the original planned location and the existing EMSL location
- construction of the PSF, currently under way.

3.2.3.1 Environmental Molecular Sciences Laboratory Surveys

Prior to construction of EMSL, surveys were conducted of the original proposed site adjacent to the Columbia River and of the alternative locations (Chatters and Gard 1992). During initial construction activities on the original site, there was an inadvertent discovery of human remains, and work stopped. Over the next year, during discussions with Native American tribes and DOE, the concept of cooperative management was applied to resolve numerous issues concerning the discovery and related revegetation project.

The EMSL facility construction was then directed to one of the alternative locations. In 1994, DOE evaluated potential environmental impacts of facility construction on the current site (where the facility was eventually constructed) in a NEPA Environmental Assessment (DOE/EA-0959). As a result, DOE issued a Finding of No Significant Impact on July 7, 1994. A biological resources review was conducted in support of the NEPA review (Brandt 1994). In April 1994, a PNNL biologist conducted a field assessment of the current EMSL site. The site was planted in alfalfa, and the perimeter of the field was dominated by weedy species such as Russian thistle, cheatgrass, and prickly lettuce as well as planted ornamental trees such as sycamores. Long-billed curlews were observed and were known to be frequently present on the site. The open alfalfa field provided foraging habitat for this species. Overall, the EMSL site was determined to provide limited use to wildlife because of the monoculture aspect of the alfalfa field and the regular cuttings for hay that destroyed any nests and young that might have been present.

A cultural resource review report for the current EMSL site was issued on May 5, 1994 (Nickens 1992). Cultural resource surveys and explorations (test pits, soil-depth probing, ground-penetrating radar tests, soil conductivity tests, geophysical test boreholes) of the EMSL site were conducted in 1993. These investigations showed that the EMSL site had been modified by numerous activities, such as installation of an irrigation canal, farming activities, and the construction of Camp Hanford. These surveys provided a high level of confidence that the EMSL construction activities would not impact sensitive cultural resources. Monitoring by cultural resources staff during excavation confirmed these results; no sensitive cultural materials were discovered.

Numerous smaller reviews for EMSL expansions and upgrades have been conducted over the years, and no sensitive cultural resources have been identified. It is recognized that this does not mean that sensitive cultural resources are not present.

3.2.3.2 Physical Sciences Facility Surveys

The PSF construction site was the subject of several project-related biological surveys (2003-2006) and a more comprehensive survey in April 2006 to support eventual construction of the PSF (Sackschewsky 2006). The surveys found that the PNNL Site potentially provides habitat for a variety of wildlife, including migratory bird species of concern such as burrowing owls (*Athene cuniculara*), sage sparrow (*Amphispiza belli*), and loggerhead shrike (*Lanius ludovicianus*) as well as other wildlife species of concern. Data from these surveys and descriptions of the habitat on the PSF construction site are found in Appendix A of the Environmental Assessment (DOE/EA-1562) for construction and operation of the PSF. No plant or animal species protected under the *Endangered Species Act* (ESA), candidates for such protection, or species listed by the Washington State government as threatened or endangered were observed in the vicinity of the PSF construction area.

Development of the entire PSF construction site would result in the loss of approximately 64 acres of mature sagebrush steppe, primarily in the area north of the historic Richland Irrigation Canal. The PSF construction will be located largely in the area south of the irrigation canal, and the disturbance to shrub-steppe habitat will be reduced.

PNSO completed a cultural resources review (Prendergast-Kennedy 2004) for the PSF construction site in December 2004. The results of the records and literature review conducted by staff at PNNL were documented and distributed to tribes and other stakeholders. The results indicated that the undertaking will not have an adverse effect on historic properties, with the exception of one resource—the Richland Irrigation Canal (H3-21). A Memorandum of Agreement (MOA) was developed to address the adverse effects. The terms and actions in the MOA (Appendix C) have been satisfied and were submitted to and accepted by the Washington State Department of Archeology and Historic Preservation (DAHP 2007). In addition, PNNL and PNSO developed an interpretive flier to communicate the history and significance of the Richland Irrigation Canal (PNNL 2007).

3.2.4 Development of Protective Measures for Culturally Sensitive Areas

One culturally sensitive area was fenced in the mid 1990s to help limit access to the area. Cultural resource monitoring of the site is conducted annually. In response to continued degradation of an adjacent area by recreationists, DOE closed access by installing Jersey barriers across the road, and tribal representatives conducted a cleanup operation before the land reassignment. In 2007, PNSO repaired the fence around the culturally sensitive area and placed a more extensive barrier across an unimproved road that was used for unauthorized access. Improved signs were installed to unequivocally inform employees and citizens that unauthorized access is not allowed. Improvement has been observed. Small impacts in other areas have been noted and will continue to be addressed by both cultural resource and security staff on a case-by-case basis.

4.0 Resource Management Administration and Procedures

This section describes the PNSO administration and procedures to ensure compliance with applicable biological, cultural, and historic resource requirements.

4.1 Administration

The implementation of the PNSO *Cultural and Biological Resources Management Plan* by the PNSO Program Coordinator is supported by PNSO, PNNL, the DOE Office of Science Integrated Service Center technical staff, and DOE-Headquarters staff and is implemented in compliance with DOE policy.

4.1.1 DOE Staffing

The Federal Preservation Officer, DOE Office of History, provides coordination among the various DOE organizations and technical assistance as necessary. Other assistance is provided through the Office of Science Integrated Service Center.

4.1.2 PNSO Staffing

The PNSO Operations Division has the lead for ensuring compliance with this plan, DOE policy, and applicable requirements. Oversight of the PNSO program is assigned to the PNSO cultural and biological resources representative, who coordinates with RL to address the protection of biological and cultural resources. The PNSO Laboratory Stewardship Division provides support as necessary. Technical support is provided by cultural and biological resources professionals on staff at PNNL.

4.1.3 Quality Assurance

Each DOE organization must develop and implement a quality assurance program (QAP). DOE Order 414.1C is applicable to all Site Office personnel. The *Pacific Northwest Site Office (PNSO) Quality Assurance Program Description (QAPD),* developed in accordance with DOE Order 414.1C, describes the method by which QA will be implemented and quality achieved within PNSO.

4.1.4 PNSO Cultural Resource Facilities

Cultural resource facilities are found at PNNL. Facilities include a secure records-holding area, a secure artifact storage area, computerized databases, and a geographical information system. A more extensive description of cultural resource facilities can be found in the *Hanford Cultural Resources Management Plan* (DOE-RL 2003b).

PNSO currently maintains no collections, and none is envisioned. Procedures in the *Hanford Cultural Resources Management Plan* will be followed if collections ever are made.

PNSO uses Hanford's electronic database system called STEWARD.[1] STEWARD (Version 1.0) currently has two components: a set of electronic database files (Microsoft Access) and an analytical tool, a geographic information system (ArcView/ArcInfo). The STEWARD database component consists of three forms: the Cultural Resource Compliance Tracking form, the Cultural Resource Survey form, and the Cultural Site and Isolate form.

Security for STEWARD is of utmost importance because of the confidential/sensitive nature of cultural site locations. The system currently exists on a protected project share with controlled access. Different levels of users can be established, such as read-only and read-and-write (full) access. All data stored on the project share are backed up daily.

4.1.5 PNSO Biological Resource Facilities

Biological resource facilities are found at PNNL. These include:

- voucher collections of plants and wildlife
- computerized databases and geographic information systems documenting species occurrence and habitat distribution
- survey equipment, including Global Positioning System receivers and software.

A more extensive description of biological resource facilities can be found in the *Hanford Site Biological Resources Management Plan* (DOE-RL 2001).

4.1.6 Consultation with the Washington State Department of Archaeology and Historic Preservation

As a federal agency, DOE is responsible for compliance with the *National Historic Preservation Act* Section 106 review process, working closely with the Washington State Department of Archaeology and Historic Preservation (DAHP) and the federal Advisory Council on Historic Preservation (ACHP). The PNSO staff will maintain continuing contact with DAHP staff to ensure that the DAHP is notified of PNSO undertakings and that all projects are reviewed in a timely manner.

4.1.7 Professional Qualifications of Personnel Completing Archaeological Review

All supervisory personnel completing archaeological field investigations will meet the requirements established in the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61, Appendix A) or other standards that are deemed to be otherwise qualified by the Washington State DAHP.

4.1.8 Professional Qualifications of Personnel Completing Biological Review

All supervisory personnel completing biological field investigations will meet the position requirements established by the U.S. Geological Survey Biological Division for Wildlife Biologists or Ecologists.

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[1] STEWARD is described in the *Stewardship Informational Systems Long-Term Database Project Plan* prepared by the Hanford Cultural Resources Laboratory in FY 2001.

4.1.9 Outreach

Under the *Endangered Species Act*, consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) is required if an action may affect a listed species or critical habitat. Biological resource reviews are conducted to make sure that PNSO activities comply with the consultation requirements.

Under the *National Historic Preservation Act*, consultation with federal, state, and local agencies, as well as Native American tribes and other private individuals, regarding proposed activities also is required when appropriate. In addition, under the *Archeological Resources Protection Act*, each federal land manager shall establish a program to increase public awareness of the significance of the archaeological resources located on public lands and tribal lands and the need to protect such resources. General PNSO outreach efforts are coordinated with RL. PNSO intends to cooperate with tribes with historical and legal ties to Hanford to address the protection of biological and cultural resources. Cooperation will include technical-level interactions and government-to-government interactions as appropriate. Interactions will promote a cooperative management spirit and focus on DOE decisions and activities that involve potential impacts to cultural resources to assure that tribal interests, concerns, and expectations are considered.

4.2 Protection Procedures

Protection of resources is addressed through two avenues: 1) review and evaluation of project activities that potentially could impact important resources and 2) annual monitoring of important resources to assess and document the status of the resources and the associated protective access barriers. Procedures related to impact assessment and management are described here.

Cultural and biological resource reviews are required for all projects and activities that are 1) funded by DOE or 2) occur on the PNNL Site and involve any of the following:

- surface disturbance of land (e.g., drilling, excavating, vegetation clearing)
- modifications to prominent land forms (e.g., shoreline)
- disturbance (including noise or harassment) of plants, wildlife, or their habitat
- modifications of DOE buildings, including abandoned buildings
- alteration of tagged historic artifacts
- deactivation or decommissioning of DOE buildings
- siting decisions for buildings and facilities.

Detailed procedures for protection of cultural and biological resources are provided through the PNNL Standards-Based Management System subject areas.

5.0 Cultural and Biological Resources Management Methodology

This section describes the methods that will be used by PNSO in managing the cultural and biological resources under its oversight. The process for identifying and initiating assessment and review of the potential impacts associated with project activities is outlined in Section 4.

5.1 Cultural Resource Management Methods

All methods used in PNSO cultural resource management activities will be in accordance with the requirements identified by the Washington State DAHP (http://dahp.wa.gov/). The primary methods that are expected to be pertinent on the PNNL Site are provided below. Additional details are found in the *Hanford Cultural Resources Management Plan* (DOE-RL 2003b).

The majority of cultural resource efforts anticipated by PNSO in the future are associated with monitoring of culturally sensitive resources. Monitoring will occur annually and will be scheduled in coordination with cultural resource staff from area tribes. Monitoring will involve on-the-ground inspection of important areas, documentation of changes since the previous site visit, and an e-mail report to the PNSO cultural resource coordinator within 5 working days of the field visit. Copies will be provided to the Washington State DAHP and affected tribes.

Procedures in the *Hanford Cultural Resources Management Plan* (DOE-RL 2003b) will be followed for other potentially pertinent issues, such as the inadvertent discovery of human remains, how resource protection is integrated into fire protection and emergency response efforts, and database management.

5.2 Biological Resource Management Methods

Protection of species of concern and their habitats on the PNNL Site is central to effective resource management. This requires maintaining an up-to-date database on species known to use the area and the status of those species with regard to federal and state species protection laws. Annual survey and monitoring for species of concern will be conducted to provide up-to-date information regarding the presence or absence of key species of concern and to identify and map any invasive species on the site. Resources of concern include those categories of species or their habitats identified under the DOE NEPA implementing procedures as well as Washington State candidate, sensitive, and monitor species. Additionally, migratory birds, floodplains, wetlands, and other unique habitats are considered resources of concern. Biological survey methods will be prescribed by the nature of the assessment and will use accepted methods (e.g., pedestrian surveys by qualified biologists at the appropriate season). All information collected will be spatially referenced and archived in geographical information system and database files for retrieval, review, and reporting. Additional details are found in the *Hanford Site Biological Resources Management Plan* (DOE-RL 2001).

The objectives of the biological resource review for project activities are to:

- Assess and document the potential for proposed projects to adversely impact biological resources of concern.
- Retain the documentation in a format that can be reviewed by PNSO or stakeholders.

Biological compliance staff will use the results of the field surveys to evaluate the potential impacts of proposed projects on species or habitats of concern. Impacts to species of concern are assumed to arise primarily from direct mortality, habitat loss (reproductive, cover/roosting, foraging habitat), nest or den destruction, or disturbance during nesting/reproduction/foraging (e.g., visual or noise impacts causing disruption of nesting). To be useful, field data must be obtained at the biologically appropriate times of year (i.e., the period when the species of concern can be expected to be present and in an identifiable condition).

Coordination and consultation with federal and Washington State biological resource management agencies with regard to impact assessment and management are integral to successful resource management and protection. Procedures for coordination and consultation with agencies will follow those outlined by the agencies and by DOE through its regulations on interagency consultation and cooperation. Consultations will be initiated as required under the *Endangered Species Act* and as needed to facilitate impact analyses and to define mitigation needs. Mitigation activities will follow the *Hanford Site Biological Resources Mitigation Strategy* (DOE-RL 2003b).

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Appendix A – Applicable Guidance and Requirements for Protection of Cultural and Biological Resources

Appendix A – Applicable Guidance and Requirements for Protection of Cultural and Biological Resources

A.1 Requirements for Cultural Resources

Applicable requirements for evaluation of cultural resource impacts include the following federal laws:

- *National Historic Preservation Act of 1966* (16 U.S.C. 470)
- *Historic Sites Act of 1935* (16 U.S.C. 461-467)
- *National Environmental Policy Act*
- *Archeological and Historic Preservation Act of 1974* (16 U.S.C. 469)
- *Archeological Resources Protection Act of 1979* (16 U.S.C. 470aa-47011)
- *Native American Graves Protection and Repatriation Act of 1990* (25 U.S.C. 3001)
- *Protection of Natural and Historic Features on Military Installations Act of 1993*
- Executive Order 11593, "Protection and Enhancement of the Cultural Environment," 13 May 1971

***National Historic Preservation Act of 1966* (16 U.S.C. 470)**

For federal agencies, the most important regulation governing the management of cultural resources is the *National Historic Preservation Act* (NHPA) of 1966, 16 U.S.C. 470. The NHPA, and its amendments, establish historic preservation as a national policy and defines it as the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects which are significant in American history, architecture, archeology, or engineering. The Act also expands the National Register of Historic Places (NRHP) to include resources of state and local significance, and establishes the Advisory Council on Historic Preservation (Council) as an independent federal agency. The Amendments of 1980 and 1992 direct the Secretary of the Interior to establish guidelines for nationally significant properties, curation of artifacts, documentation of historic properties, and preservation of federally owned historic sites. They also require designation of a Federal Historic Preservation Officer (FHPO) in each federal agency; authorize the inclusion of historic preservation costs; and authorize the withholding of sensitive data on historic properties when necessary. Section 110 of the NHPA requires federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP. Section 110 also requires federal agencies to preserve and use historic buildings "to the maximum extent feasible," and to have in place Section 106 compliance procedures. Consultation with other federal, state, and local agencies, as well as Native Hawaiian/Alaskan organizations, American Indian tribes, and other "private individuals" regarding these activities is also required when appropriate.

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties, and allows the Council a reasonable opportunity to comment on proposed undertakings that could affect historic properties. It also outlines legislative requirements and review processes that federal agencies are expected to use in considering the effects of proposed undertakings on historic properties listed or eligible for listing in the NRHP.

***Historic Sites Act of 1935* (16 U.S.C. 461-467)**

When enacted, the primary goal of the *Historic Sites Act (HSA) of 1935* was to provide for the establishment and maintenance of historic sites. Furthermore, the HSA was enacted to provide for the preservation of historic buildings, sites, objects, and antiquities of national significance. It also provides a list of specific National Historic Sites. The Secretary of the Interior, through the National Park Service (NPS), has the authority to secure data relating to historic and archeological sites; make surveys of sites and buildings to determine those that are significant to the United States; acquire, reconstruct and manage historic properties; and develop educational programs to inform the public of historic and prehistoric sites. In addition, the NPS administers the National Historic Landmarks Program on behalf of the Secretary of the Interior.

***National Environmental Policy Act* (42 U.S.C. 4321)**

The *National Environmental Policy Act* (NEPA) requires all federal agencies to consider the environmental impacts of their projects as part of the federal planning process. For major federal actions, federal agencies are required to prepare an Environmental Impact Statement that includes possible impacts of the project on archeological and historic properties and natural resources. The Department of the Interior, Advisory Council on Historic Preservation, and appropriate federal, state, and local agencies, may be consulted during the process.

***Archeological and Historic Preservation Act of 1974* (16 U.S.C. 469)**

The *Archeological and Historic Preservation Act* (AHPA) requires preservation of significant historic and archeological data affected by any federal or federally-related land modification activity. The AHPA authorizes the expenditure of up to one percent of project costs to be allocated to archeological survey and data recovery within the project area.

***Archeological Resources Protection Act of 1979* (16 U.S.C. 470aa-47011)**

The *Archeological Resources Protection Act* (ARPA) protects archeological resources on public and Native American lands and incorporates most provisions of the Antiquities Act of 1906. The ARPA establishes a permit application procedure for the excavation and removal of archeological resources located on these lands, and provides for criminal penalties for the excavation, removal, damage, sale, exchange, purchase, or transportation of these archeological materials unless such activity is carried out under a permit issued by the authority of the Act. It also considerably strengthens preservation and archeological protection by instituting civil and criminal penalties for illegal use and destruction of resources on sites on public and Native American lands. Amendments added in 1988 strengthened the original Act by lowering the limit of felony violation of the act to $500 worth of damage to archeological sites, and prohibiting the attempt to damage a site. These Amendments also require federal agencies to develop public awareness programs, and to improve communication and the exchange of information between all interested parties for more effective preservation efforts.

***Native American Graves Protection and Repatriation Act of 1990* (25 U.S.C. 3001)**

The *Native American Graves Protection and Repatriation Act* (NAGPRA) describes the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with regard to

human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they can demonstrate lineal descent or cultural affiliation. NAGPRA affirms the right of such individuals or groups to decide disposition or take possession of such items. It also requires each federal agency and museum receiving federal funding to inventory human remains and associated funerary objects, and to provide culturally affiliated tribes with the inventory and a summary of its collections of other cultural items. A tribe having cultural affiliation may request repatriation of human remains and funerary objects. NAGPRA also protects Native American burial sites and controls the removal of human remains, funerary objects, sacred objects, and items of cultural patrimony on federal and tribal lands. It also provides for criminal penalties in the event of illegal trafficking in human remains and cultural items.

A.2 Requirements for Biological Resources

Applicable requirements for evaluation of biological resource impacts include the following federal laws and executive orders:

- *Endangered Species Act*
- *National Environmental Policy Act*
- *Migratory Bird Treaty Act*
- *Bald and Golden Eagle Protection Act*
- *Comprehensive Environmental Response, Compensation, and Liability Act*
- *Resource Conservation and Recovery Act*
- *Clean Water Act*
- *Sikes Act*
- *Magnuson-Stevens Fishery Conservation and Management Act.*
- Executive Order 13112, "Invasive Species"
- Executive Order 13186, "Responsibility of Federal Agencies to Protect Migratory Birds"
- Executive Order 11990, "Protection of Wetlands"
- Executive Order 11988, "Floodplain Management."

Pertinent regulations that implement these laws include those promulgated by the regulatory agencies with responsibility for enforcement, as well as guidelines promulgated by DOE defining DOE responsibilities under NEPA (10 CFR 1021) and other federal executive orders and DOE Orders. The key factors of these laws as they apply to the biological resource review process are described briefly here.

Endangered Species Act

The *Endangered Species Act* (ESA) provides for the designation and protection of wildlife, fish, and plant species that are in danger of becoming extinct because of natural or human-made factors and the conservation of the ecosystems upon which they depend. Under Section 7 of the ESA, federal agencies are required to evaluate actions that they perform, fund, or permit, to determine if any species listed as endangered or threatened at 50 CFR 17.11 and 50 CFR 17.12 may be affected by the proposed action. Consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) is required if the action may affect a listed species. The biological resource review process is the primary means by which DOE determines if any listed species may be affected by a proposed action.

National Environmental Policy Act

As stated in the implementing regulations of the *National Environmental Policy Act* (NEPA), "The NEPA process is intended to help public officials make decisions that are based on an understanding of environmental consequences, and take actions that protect, restore, and enhance the environment" (40 CFR 1500.1c).

Executive Order 11514, "Protection and Enhancement of Environmental Quality," and Executive Order 11991, "Relating to Protection and Enhancement of Environmental Quality," further define the role of federal agencies in implementing NEPA. Executive Order 11514 establishes that federal agencies shall "Monitor, evaluate, and control on a continuing basis their agencies' activities so as to protect and enhance the quality of the environment. Such activities shall include those directed to controlling pollution and enhancing the environment and those designed to accomplish other program objectives which may affect the quality of the environment." Executive Order 11991 requires federal agencies to "...comply with the (NEPA) regulations issued by the Council (on Environmental Quality) except where such compliance would be inconsistent with statutory requirements."

Proper application of the NEPA process requires a thorough understanding of the resources present, the potential impacts to those resources of a proposed action, and the ultimate consequences of those actions. Biological resources are one of many resource areas considered under NEPA, and the biological resource review process provides the basic biological information needed to determine if adverse impacts to biological resources may occur due to a proposed project and, thus, provides important information directly to the NEPA decision-making process. The process helps to ensure that a proposed action meets the basic assumptions of no adverse impacts underlying a categorical exclusion if a more comprehensive NEPA analysis is not planned.

Migratory Bird Treaty Act

The *Migratory Bird Treaty Act* (MBTA) makes it illegal to take, capture, or kill any migratory bird, or to take any part, nest, or egg of any such birds, included in the terms of the conventions (covered species are listed at 50 CFR 17.13). The biological resource review process aids in compliance with the MBTA by identifying species that are present and thus could be affected by a proposed action at a specific site.

Executive Order 13186

Executive Order 13186, "Responsibility of Federal Agencies to Protect Migratory Birds," further clarified federal agency responsibilities under the MBTA and other regulations by requiring, among other things, that they "identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors." The biological resource review process is the primary means by which DOE is able to determine whether unintentional take is likely and the potential effects of such take.

Bald and Golden Eagle Protection Act

The *Bald and Golden Eagle Protection Act* (BGEPA) makes it illegal to take (i.e., pursue, wound, kill, molest, or disturb), as applicable, any bald or golden eagle, or any part, nest, or egg of these eagles. The biological resource review process provides assurance that a proposed action will not adversely affect bald or golden eagles.

Comprehensive Environmental Response, Compensation, and Liability Act

The primary purpose of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA or Super Fund) is to provide for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment, as well as the cleanup of inactive hazardous waste disposal sites.

Section 107(f) of CERCLA identifies and defines natural resource trustees. Trustees are authorized to act in the public interest in regard to natural resources. The CERCLA process requires evaluation of natural resources, including biological resources, on the Site and in the area potentially affected by the release. The biological resource review process is the means by which resources that may be injured by a cleanup action are identified; the evaluation of injuries due to contaminant release will likely be performed separately. Additionally, the CERCLA planning and evaluation process can be used in place of a NEPA evaluation; in those cases, the biological resource review supports the CERCLA process in the same way that it would support a NEPA review.

Resource Conservation and Recovery Act

The primary purpose of the *Resource Conservation and Recovery Act* (RCRA) is to ensure the safe and environmentally acceptable management of solid wastes. RCRA outlines the framework of national programs to achieve environmentally sound management of both hazardous and non-hazardous wastes. Waste site operation activities and RCRA compliance activities may have significant adverse impacts to biota. RCRA activities must comply with other federal statutes that do not deal directly with control and abatement of solid waste or hazardous waste disposal—for example, NHPA and ESA. The biological resource review process provides data in direct support of RCRA permits, helps to ensure that RCRA activities are not adversely affecting biota and that these activities are in compliance with other applicable laws.

Clean Water Act

Section 404 of the *Clean Water Act* (CWA) authorizes the U.S. Army Corps of Engineers to issue permits for the discharge into or dredging of wetlands (33 CFR 320, et seq.). The U.S. Environmental Protection Agency (EPA) guidelines (40 CFR 230) require that potential impacts on physical, chemical, and biological characteristics of the aquatic systems be considered in the permit process. The biological resource review process allows DOE to determine if any wetlands may be affected by a proposed action.

Sikes Act

The *Sikes Act* (Public Law 86-797) originally provided for cooperation by the U.S. Department of the Interior and the U.S. Department of Defense with state agencies in "planning, development, maintenance and coordination of wildlife, fish and game conservation and rehabilitation" on military reservations

throughout the United States. An amendment (Public Law 93-452) in 1974 authorized conservation and rehabilitation programs on lands managed by DOE, National Aeronautics and Space Administration, U.S. Forest Service, and Bureau of Land Management. These programs are carried out in cooperation with the states by the Secretary of the Interior. Information required to support effective interagency cooperation is obtained, in part, via the biological resource review process.

Magnuson-Stevens Fishery Conservation and Management Act

Federal agencies are obligated, under Section 305(b)(2) of the *Magnuson-Stevens Act* (MSA) and its implementing regulations (50 CFR 600, Subpart K), to consult with the NMFS regarding actions that are authorized, funded, or undertaken by those agencies, that may adversely affect Essential Fish Habitat (EFH). The MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The purpose of the procedures is to promote the protection of EFH in the review of federal and state actions that may adversely affect EFH. Activities in or near the Columbia River may affect EFH for anadromous salmonids. The biological resource review process helps to identify EFH resources and contributes to the evaluation of impacts to EFH.

Executive Order 13112

Executive Order 13112, "Invasive Species," requires all executive agencies to identify actions that may affect the status of invasive species; prevent the introduction of such species; detect, monitor, and control populations of invasive species; restore native species and habitats that have been invaded; and conduct research on the prevention and control of invasive species. Additionally, executive agencies are prohibited from authorizing or funding activities that are likely to cause or promote the introduction or spread of invasive species (unless the benefit of such an action clearly outweighs the potential harm from the invasive species). The biological resource review process provides information on the locations of invasive species populations and helps to identify situations that lead to the establishment or spread of invasive species.

Executive Orders 11988 and 11990

Executive Order 11990, "Protection of Wetlands," and Executive Order 11988, "Floodplain Management," require federal agencies to minimize the loss or degradation of wetlands on federal lands and account for floodplain management when developing water- and land-use plans, respectively. The DOE implements the requirements of these two executive orders via 10 CFR 1022, "Compliance with Floodplain and Wetlands Environmental Review Requirements." It is DOE policy to 1) restore and preserve natural and beneficial values served by floodplains; 2) minimize the destruction, loss, or degradation of wetlands; and 3) preserve and enhance the natural and beneficial value of wetlands. As with the wetland provisions of the *Clean Water Act*, the biological resource review process helps to identify wetlands and floodplains within a proposed project area and helps to identify the impacts of the proposed action to those wetlands and floodplains.

DOE Order 450.1 – Environmental Protection Program

One of the objectives of DOE Order 450.1 is to "implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources," and this Order requires that DOE sites "meet or exceed compliance with applicable environmental, public health, and resource

protection laws, regulations, and DOE requirements." This Order specifically spells out "protection of other natural resources including biota." The biological resource review process directly supports the implementation of this Order by identifying resources that may be affected by Site activities and that therefore may be in need of protection.

Appendix B – Reassignment of Land from EM to SC

Appendix B – Reassignment of Land from EM to SC

Department of Energy
Washington, DC 20585

July 14, 2004

MEMORANDUM FOR RAYMOND L. ORBACH
DIRECTOR, OFFICE OF SCIENCE

FROM: JESSIE HILL ROBERSON
ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: ACTION: Accept the Reassignment of Programmatic Control of a Parcel of Hanford Site Real Property

ISSUE: The Department of Energy (DOE) goals for Hanford site closure and Pacific Northwest National Laboratory (PNNL) science and technology role are in potential conflict. While there has been mutual value in dual Hanford missions in the past, we currently have an opportunity to strengthen the focus of both missions by physically separating PNNL from the Hanford site.

BACKGROUND: PNNL is an outgrowth of the Hanford site history associated with many years of science and technology originating with the Manhattan Project. As the Department's defense production mission began to diminish in the 1960s, the establishment of a laboratory was pursued to diversify the regional economy. The laboratory has been successful in evolving into a DOE Office of Science (SC) multi-program national laboratory.

DISCUSSION: Although it will take several more years to accomplish Hanford site closure, current Office of Environmental Management (EM) decisions have the potential to adversely impact PNNL mission capabilities and performance. EM proposes that SC accept the reassignment of programmatic control of a parcel of land on the southern perimeter of the Hanford site for the purpose of establishing a new site for the SC Pacific Northwest Site Office and PNNL. This action will simplify and enable EM to strictly focus on site closure and also provide SC with the opportunity to strengthen the enduring plans for PNNL.

All technical and regulatory information is contained in the attached PNNL Site Land Reassignment Package. The parcel is approximately 130 acres in size. The SC Environmental Molecular Sciences Laboratory (EMSL) is located on 30 acres of the parcel. The remaining 100 acres is undeveloped.

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SENSITIVITIES: SC will be assigned the Cognizant Secretarial Officer responsibilities for the PNNL Site. Determination of appropriate portion of current EM payment in lieu of taxes (PILT) to Benton County, Washington, to be assumed by SC upon reassignment.

POLICY IMPACT: None.

RECOMMENDATION: Approve the reassignment of land, as described in the PNNL Site Land Reassignment Package, from EM to SC to establish a PNNL Site.

Attachment: PNNL Site Land Reassignment Package

APPROVED: _____ FR

DISAPPROVED: _____

DATE: 8/6/04

Department of Energy
Washington, DC 20585

May 24, 2007

2007-003271

MEMORANDUM FOR DR. RAYMOND L. ORBACH
UNDER SECRETARY FOR SCIENCE

THROUGH: DENNIS R. SPURGEON
ACTING UNDER SECRETARY OF ENERGY

FROM: JAMES A. RISPOLI
ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: ACTION: Accept the Reassignment of Programmatic Control of a Parcel of Hanford Site Real Property

ISSUE: To facilitate the acquisition of replacement laboratories at the Pacific Northwest National Laboratory (PNNL) so that the environmental restoration in the Hanford 300 Area may be brought to completion, the Office of Environmental Management (EM) is proposing the reassignment of approximately 220 acres of the southern most portion of Hanford to the Office of Science (SC).

BACKGROUND: In August 2004, approximately 130 acres of Hanford land was reassigned from EM to SC for the purpose of establishing a federal PNNL site separate from the Hanford site. PNNL is in the process of acquiring facilities to replace at least some of the buildings occupied by PNNL in the Hanford 300 Area that are slated for demolition by EM. In evaluating the available PNNL site facility locations, it became obvious the existing area unnecessarily limits and constrains the optional configurations. Additionally, the existing area is likely insufficient to meet future expansion expectations.

SENSITIVITIES: The proposed expansion area includes a section designated as "Preservation" to protect a historic Native American cemetery. As such, Department obligations for its continued protection would need to be sustained by SC. The payment in lieu of taxes will be separated from EM Richland Operations Office (EM-RL) and paid for by SC Pacific Northwest Site Office (SC-PNSO) for the land reassigned to SC. At the site level, SC, PNSO, and

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EM-RL will have to establish an operational agreement on the Naval Reactor Compartment Road, George Washington Way road maintenance, and access to the groundwater monitoring wells within the property.

POLICY IMPACT: None

RECOMMENDATION: Approve the reassignment of land, as described in the PNNL Site Land Reassignment Package from EM to SC to establish a PNNL site.

Attachment

APPROVED: Raymond L. Orbach

DISAPPROVED: _____

DATE: June 8, 2007

CONCURRENCE: MA/Kolb 04/06/07
GC/Beard 05/04/07 w/cmts

Appendix C – Memorandum of Agreement Between the U.S. Department of Energy, Pacific Northwest Site Office, and the Washington State Historic Preservation Officer Regarding the Adverse Effect to the Richland Irrigation Canal

STATE OF WASHINGTON

Department of Archaeology and Historic Preservation

1063 S. Capitol Way, Suite 106 • PO Box 48343 • Olympia, Washington 98504-8343

360) 586-3065 • Fax Number (360) 586-3067

July 23, 2005

Mr. Paul W. Kruger
Department of Energy
Pacific Northwest Site Office
P. O. Box 350, K8-50
Richland, Washington 99352

In future correspondence please refer to:
Log: 012405-01-DOE
Re: MOA, Richland Irrigation Canal, Horn Rapids Road, 300 Area

Dear Mr. Kruger:

Enclosed please find the original copy of the Memorandum of Agreement (MOA) pertaining to the above referenced action in the 300 Area at the Hanford Site (HCRC 2003-300-013). The MOA has been signed by State Historic Preservation Officer (SHPO) Allyson Brooks. I am retaining a copy of the executed document in our files for future reference.

On behalf of the SHPO and DAHP staff, I want to thank you and your staff for your assistance in this effort. As you work to implement the stipulations called for in the MOA, please be sure to contact our office should any questions arise about the various tasks or should any archaeological resources be uncovered during construction. I may be reached at 360-586-3073 or greg.griffith@dahp.wa.gov.

Sincerely,

Gregory Griffith
Deputy State Historic Preservation Officer

Enclosure

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION
Protect the Past, Shape the Future

RECEIVED
JUL 25 2005
DOE-PNSO-CC

MEMORANDUM OF AGREEMENT

BETWEEN THE U.S. DEPARTMENT OF ENERGY, PACIFIC NORTHWEST SITE OFFICE

AND THE WASHINGTON STATE HISTORIC PRESERVATION OFFICER

REGARDING

THE ADVERSE EFFECT TO THE RICHLAND IRRIGATION CANAL (ARCHAEOLOGICAL SITE #H3-21)

WHEREAS the U.S. Department of Energy (DOE), Pacific Northwest Site Office (PNSO) proposes to conduct the Pacific Northwest National Laboratory Capabilities Replacement Laboratories Project ("Project"), to replace laboratory facilities in the 300 Area of the Hanford Site, which has been targeted for aggressive remediation by the DOE Office of Environmental Management to reduce costs and speed cleanup of the Hanford Site; and

WHEREAS PNSO has established the Project's area of potential effects (APE), as defined at 36 CFR 800.16(d), to be the DOE Office of Science triangular land parcel bounded by George Washington Way on the east and north, Stevens Blvd., on the west, and Horn Rapids Road on the south (HCRC#2003-300-013); and

WHEREAS PNSO has determined that the Project will have an adverse effect on the Richland Irrigation Canal (Archaeological Site H3-21) as described in the Cultural Resource Review letter dated December 1, 2004 (attached as Appendix A); and

WHEREAS PNSO has consulted with the Washington State Historic Preservation Officer (SHPO), Wanapum, Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, the Confederated Tribes of the Colville Reservation, Benton County, Hanford-White Bluffs Foundation, East Benton County Historical Society, Franklin County Historical Society, and the Columbia River Exhibition of History, Science, and Technology in accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470 (NHPA), and its implementing regulations (36 CFR 800.6(b)(1)) to resolve the adverse effects of the Project on historic properties; and

NOW, THEREFORE, PNSO and the Washington SHPO agree that prior to PNSO's initiation of ground disturbance PNSO shall assure that the following stipulations are implemented in order to take into account the effects of the Project on historic properties, and that these stipulations shall remain in effect until this MOA expires, is amended or is terminated.

STIPULATIONS

PNSO shall ensure that the following stipulations are implemented:

I. Prior to project implementation, PNSO will prepare thorough documentation of Site H3-21. PNSO shall consult with the SHPO to determine the appropriate mitigation and documentation standard for this effort. Said documentation shall be prepared by a cultural resource professional meeting National Park Service Professional Qualifications as published in 36 CFR 61. An original of the documentation shall be provided to the SHPO with copies provided to other appropriate local and/or regional repositories as designated by the SHPO.

II. PNSO shall work with a local historical organization to prepare interpretive materials of the history and significance of the Richland Irrigation Canal in consultation with the SHPO. If any objects or artifacts are recovered for interpretive use prior to or during construction, that will be done at the discretion of the partnering organization and become their property. PNSO will retain responsibility for the interpretive materials for one year following their production. Long-term telling of the Richland Irrigation Canal ultimately will then become the responsibility of local historical organizations.

III. During Project design and facility construction, PNSO will attempt to retain in place a portion of the H3-21 Richland Irrigation Canal Segment I and incorporate it into the general landscaping of the facility until such time that the area is needed for other purposes. Failure to preserve any portion of the canal will not effect any other sections of this agreement.

IV. **DURATION**

If this agreement or amendments thereto, remains in effect as of February 28, 2009, this agreement shall be automatically terminated. If the parties agree that a new agreement is necessary to the accomplishment of the Project, the parties may re-initiate review of the Project in accordance with 36 CFR 800.

V. **MONITORING AND REPORTING**

On or before March 31 of each year, beginning in March 2006, until PNSO and SHPO agree in writing that the terms of this agreement have been fulfilled or is automatically terminated, PNSO shall prepare and provide an annual report to the SHPO addressing the following topics:

a. Progress in completing interpretive materials for the Richland Irrigation Canal;

b. Any changes that PNSO believes should be made in implementation of this agreement.

VI. DISPUTE RESOLUTION

Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, PNSO shall consult with the objecting party(ies) to resolve the objection. If PNSO determines, within 30 days, that such objection(s) cannot be resolved, PNSO will;

A. Forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council) in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the Council shall review and advise PNSO on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the MOA, will be taken into account by PNSO in reaching a final decision regarding the dispute.

B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, PNSO may render a decision regarding the dispute. In reaching its decision, PNSO will take into account all comments regarding the dispute from the parties to the MOA.

C. PNSO's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. PNSO will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. PNSO's decision will be final.

VII. AMENDMENTS AND NONCOMPLIANCE

If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that the amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VIII, below.

VIII. TERMINATION

The parties to this agreement may determine whether or not this agreement shall continue in effect, be amended, or be terminated. Either party may terminate this agreement for good cause. If this agreement remains in effect as of February 28, 2009, this agreement shall be automatically terminated.

Execution of this MOA by PNSO and the Washington SHPO, and its submission to the Council in accordance with 36 CFR 800.6(b)(1)(iv), shall, pursuant to 36 CFR 800.6(c), be considered to be an agreement with the Council for the purposes of Section 110(l) of NHPA. Execution and submission of this MOA, and implementation of its terms provides

evidence that PNSO has afforded the Council a reasonable opportunity to comment on the Project and its effects on historic properties.

PACIFIC NORTHWEST SITE OFFICE

U.S. Department of Energy

By:_____ Date: 6/14/05

WASHINGTON STATE HISTORIC PRESERVATION OFFICER

By:_____ Date: 6/22/05

Attachment: Appendix A

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

March 20, 2007

Ms Julie Erickson, Acting Manager
Department Of Energy
Pacific Northwest Site Office
P.O. Box 350, K9-42
Richland, Washington 99352

In future correspondence please refer to:
Log: 012405-01-DOE
Property: Richland Irrigation Canal (Site H3-21)
Re: Final Report of Actions on MOA

Dear Ms Erickson:

Thank you for your letter to the Department of Archaeology and Historic Preservation (DAHP) with the Final Report of Actions in fulfillment of the Memorandum of Agreement (MOA) concerning the Richland Irrigation Canal. As you are aware, the canal has been determined to be eligible for listing in the National Register of Historic Places. In response, I concur with report findings that all of the mitigation measures called for in the MOA have been satisfied, including documentation and completion of an interpretive brochure.

Again, thank you for your assistance in fulfilling the terms of the MOA and affording DAHP an opportunity to review and comment on these products. Should you have any questions on issues related to this or other cultural resources at the Hanford Site, please feel free to contact me at 360-586-3073 or greg.griffith@dahp.wa.gov.

Sincerely,

Gregory Griffith
Deputy State Historic Preservation Officer

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION
Protect the Past, Shape the Future

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