SITEWIDE CATEGORICAL EXCLUSION FOR SITE CHARACTERIZATION AND ENVIRONMENTAL MONITORING, PACIFIC NORTHWEST NATIONAL LABORATORY SITE, RICHLAND, WASHINGTON

Proposed Action:

The U.S. Department of Energy (DOE) Pacific Northwest Site Office (PNSO) proposes to conduct site characterization and environmental monitoring activities.

Location of Action:

The proposed action would occur on and near the Pacific Northwest National Laboratory (PNNL) Site and at other sites in the State of Washington.

Description of the Proposed Action:

The proposed action would include a variety of non-intrusive and intrusive characterization and monitoring activities conducted in support of purposes such as environmental surveillance, remediation, research, construction, and sampling.

Examples of non-intrusive activities include:

- Geophysical techniques such as electro-magnetic surveys, site surveying and mapping, ground penetrating radar surveys, seismic monitoring, telemetry, and borehole spectral gamma logging.
- Radiological and chemical methods such as gamma scintillation, thermoluminescent dosimetry, soil gas surveys, x-ray fluorescence, radiological surveys, and sampling, transport, and analysis of environmental samples.
- Meteorological and physical data gathering techniques such as 1) monitoring air emissions, the climate, ambient air, river stages, transects, and flow measurements, 2) assessing potential wind-energy resources, and 3) sampling surface water.
- Cultural resource surveys such as facility inspections, field surveys, and inventory of cultural resources.
- Biological resource surveys such as field surveys and inventory of biological resources.

Examples of intrusive activities include:

- Geophysical techniques such as installing groundwater and vadose zone wells, bore holes, and test pits and conducting groundwater tracer tests.
- Physical techniques such as installing piezometers, instrument clusters, lysimeters, and temporary support trailers.
- Meteorological techniques such as installing and operating weather stations, meteorological towers, and other instruments.
- Sampling and characterization of environmental media, contaminants, and waste streams.

- Cultural resource techniques such as installing exploratory test pits and trenches, collecting and curing artifacts, and conducting core and auger tests.
- Biological-resource techniques such as sampling plants and collecting wildlife, conducted under applicable state and Federal collection permits.

All activities must meet environmentally protective requirements. The following mechanisms and restrictions would be implemented to verify compliance:

1. Any excavation would comply with PNNL excavation permit requirements, which outline requirements to avoid underground utilities, protect cultural and biological resources, and implement excavation safety requirements.
2. Wells, test pits, and boreholes would be installed in accordance with requirements in Washington Administration Code (WAC) 173-160, *Minimum Standards for Construction and Maintenance of Wells.*
3. If necessary, collection permits would be obtained prior to project initiation. Collecting biota would proceed in accordance with permits issued by local, state, and federal agencies. Examples of permits that might be necessary include Washington Department of Fish and Wildlife scientific collection permits and permits issued by the U.S. Fish and Wildlife Service (USFWS) to collect migratory birds.

Biological and Cultural Resources:

It is not likely that site characterization and environmental monitoring activities would result in adverse impacts to sensitive biological or cultural resources. However, when special project circumstances warrant it, biological and cultural resource reviews would be conducted to assure that impacts to sensitive resources are avoided and minimized.

Biological resource reviews would assure that impacts to sensitive biological resources are avoided. These reviews would identify the occurrence of federal and state protected species in the project area such as avian species protected under the Migratory Bird Treaty Act (MBTA); plant and animal species protected under the Endangered Species Act (ESA), including candidates for such protection; and species listed as threatened or endangered by the state of Washington. Resource review recommendations would be followed to assure there are no adverse impacts to sensitive species and resources.

Cultural resource reviews would assure that impacts to sensitive cultural resources are avoided. Impact avoidance and mitigative measures would be implemented as stipulated by the resource review. Tagged historic artifacts would not be damaged. If consultation with the State Historic Preservation Office and/or affected tribes is deemed necessary, it would be initiated before project implementation.

Categorical Exclusion to Be Applied:

As the proposed action is to conduct site characterization and environmental monitoring, the following CX as listed in the DOE National Environmental Policy Act of 1969 (NEPA) implementing procedures, 10 CFR 1021, would apply:

B3.1 Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities. Specific activities include, but are not limited to:

(a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, and radar, and temperature gradient) geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing;

(b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools);

(c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells;

(d) Aquifer and underground reservoir response testing;

(e) Installation and operation of ambient air monitoring equipment;

(f) Sampling and characterization of water, soil, rock or contaminants (such as drilling, using truck or mobile-scale equipment, and modification, use, and plugging of boreholes;

(g) Sampling and characterization of water effluents, air emissions, or solid waste streams;

(h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);

(i) Sampling of flora and fauna; and

(g) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Eligibility Criteria:

The proposed activity meets the eligibility criteria of 10 CFR 1021.410(b) because the proposed action does not have any extraordinary circumstances that might affect the significance of the environmental effects, is not connected to other actions with potentially significant impacts [40 CFR 1508.25(a)(1)], is not related to other actions with individually insignificant but cumulatively significant impacts [40 CFR 1508.27(b)(7)], and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during EIS preparation.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed below:

INTEGRAL ELEMENTS, 10 CFR 1021, SUBPART D, APPENDIX B (1)-(5)	
WOULD THE PROPOSED ACTION:	**EVALUATION:**
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	The proposed action would not threaten a violation of regulations or DOE or executive orders.
Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities?	No waste management facilities would be constructed under this CX. Any generated waste would be managed in accordance with applicable regulations in existing facilities. Waste disposal pathways are identified prior to generating waste and waste generation is minimized.
Disturb hazardous substances, pollutants, or contaminants that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No preexisting hazardous substances, pollutants, or contaminants would be disturbed in a manner that results in uncontrolled or unpermitted releases.
Have the potential to cause significant impacts on environmentally sensitive resources., including, but not limited, to: • protected historic/archaeological resources • protected biological resources and habitat • jurisdictional wetlands, 100-year floodplains • Federal- or state-designated parks and wildlife refuges, wilderness areas, wild and scenic rivers, national monuments, marine sanctuaries, national natural landmarks, and scenic areas.	No environmentally sensitive resources would be adversely affected. Resource reviews would be conducted for special circumstances. Refer to the Biological and Cultural Resources section for details regarding the application of cultural and biological resource reviews. The proposed action would not adversely affect floodplains, wetlands regulated under the Clean Water Act, national monuments or other specially designated areas, prime agricultural lands, or special sources of water.
Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species?	The proposed action would not involve the use of genetically engineered organisms, synthetic biology, governmentally designated noxious weeds or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements.

Checklist Summarizing Environmental Impacts: The following checklist summarizes environmental impacts that were considered when preparing this CX determination. Answers to relevant questions are explained in detail in the text following the checklist.

	Would the proposed action:	YES	NO
1	Result in more than minimal air impacts?	X	
2	Increase offsite radiation dose measurably?		X
3	Require a radiological work permit?	X	
4	Cause more than a minor or temporary increase in noise level?		X
5	Discharge any liquids to the environment?	X	
6	Require a Spill Prevention Control and Countermeasures plan?		X
7	Require an excavation permit (e.g., for test pits, wells, utility installation)?	X	
8	Disturb an undeveloped area?	X	
9	Use carcinogens, hazardous, or toxic chemicals/materials?	X	
10	Involve hazardous, radioactive, polychlorinated biphenyl, or asbestos waste?	X	
11	Require environmental permits?	X	

Explanations:

1. There might be temporary and localized air emissions as well as dust and fumes from equipment associated with site characterization and monitoring activities. Any air emissions generated would be minimized as necessary by using water applications or other emission controls. Air emissions would be compliant with applicable permits, local, state, and federal regulations, DOE orders, and PNNL guidelines.

3. Although not expected, it is possible that some environmental sampling and monitoring might occur within Radiological Control Areas. Activities would be performed in compliance with as low as reasonably achievable principles, applicable state and federal regulations, DOE Orders, and PNNL guidelines. The radiation received by workers during the performance of activities would be administratively controlled below DOE limits as defined in 10 CFR 835.202(a). Under normal circumstances, those limits control individual radiation exposure to below an annual effective dose equivalent of 5 rem.

5. Well development, maintenance, and sampling might require purging of groundwater. Depending upon the location of the well, purge water would be discharged to the ground or contained for treatment in accordance with applicable environmental requirements. During monitoring activities, there might be minor quantities of liquid effluents, for example, sampling cleanup rinse water. Effluents would be managed in accordance with applicable local, state, and federal regulations, PNNL requirements and best management practices.

7. Intrusive characterization and monitoring activities might require an excavation permit. Stipulations in the excavation permit to minimize potential impacts to safety and the environment would be followed.

8. Although unlikely, it is possible that a temporary building, pad, or trailer might be erected in support of site monitoring or environmental characterization. A temporary building, pad, or trailer might be sited on land that is not previously disturbed. If sited on or if it causes impacts to sensitive species or their habitats, such as old-growth sagebrush, additional NEPA would be required. Additional NEPA review would also be required for modification or construction of temporary buildings or pads on the Hanford Reach National Monument; within ¼-mile of the Columbia River; other sensitive environments, including wetlands, 100-year floodplains, critical habitats, and areas of traditional cultural properties or properties of historic, archeological, or architectural significance.

9. Proposed activities might involve use of carcinogens, hazardous and/or toxic chemicals and materials. For example, certain research or excavation equipment might contain or require the use of chemicals such as antifreeze, hydraulic fluids, or fuel. In addition, outdoor research activities might require the use of cleaning solvents and other potentially toxic substances. Project inventories would be maintained at the lowest practicable levels, and chemical wastes would be recycled, neutralized, or regenerated if possible. Product substitution (use of less toxic chemicals in place of more toxic chemicals) would be considered where reasonable. In addition, modifications of existing laboratory rooms could generate minor amounts of debris and excess equipment. These materials would be recycled, re-used, or excessed for other uses to the extent practical.

10. Intrusive characterization and sampling efforts might generate hazardous or possibly radioactive waste (should sampling be conducted in a contaminated area). If unrecyclable, such wastes would either be returned to the client or characterized, handled, packaged, transported, treated, stored, and/or disposed of in existing Hanford Site or offsite treatment, storage, and disposal facilities in accordance with applicable local, state, and federal regulations, DOE Orders and guidelines.

11. Although not expected during most activities, the following types of permits and notifications might be required for some of the site characterization and environmental monitoring activities conducted under this:

    - Notifications or approvals might be required from the Benton Clean Air Authority to use a temporary and portable air pollution source, e.g., equipment using internal combustion engines such as excavation equipment and portable electric generators.
    - Notifications and well construction reports might be required from the Washington State Department of Ecology (Ecology) to meet the minimum standards for construction and maintenance of any resource protection and geotechnical wells needed for site characterization and environmental monitoring.
    - Well registration might be required from Ecology for the injection of any fluid (for example, tracers) into the subsurface via an underground injection control well per the requirements of WAC 173-218.
    - Any discharge of water or wastewater to ground, including the discharge of purge water during well construction, must be reviewed before being discharged to determine if it meets Washington State Groundwater Quality

Criteria, if it requires permitting under Washington State Waste Discharge regulations (WAC 173-216), and/or if it meets applicable purge water discharge requirements.

- Work in wetlands might require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers.

Compliance Action:

I have determined that the proposed action satisfies the DOE NEPA eligibility criteria and integral elements, does not pose extraordinary circumstances, and meets the requirements for the CX referenced above. Therefore, using the authority delegated to me by DOE Order 451.1B, Change 2, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation.

Signature: _____ **Date:** 11/28/11

Theresa L. Aldridge
PNSO NEPA Compliance Officer

cc: JA Stegen, PNNL