

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: ERDC MNPP Soil Sampling

SECTION B. Project Description and Purpose:

In cooperation with Idaho National Laboratory (INL) and the Georgia Technical Research Institute, the US Army Engineer Research and Development Center (ERDC) is analyzing soil composition from locations around the world to provide a soil taxonomic approach for developing a finite set of soil types from the perspective of neutron induced soil activation that could occur from operating a generic microreactor. The information obtained from this effort is anticipated to benefit a variety of government agencies and industry partners interested in designing and operating future microreactor concepts. The proposed action is not associated with any specific microreactor application, but is instead part of the previously mentioned research efforts.

To support this effort, the US Army ERDC proposes to conduct in situ soil testing and collect soil samples from the INL Site at the Critical Infrastructure Test Range Complex (CITRC) for analysis. Table 1 below describes the mass requirements for the planned soil samples to be collected for laboratory analysis. Specific sample locations will be determined based on a visual survey of the area. The sample locations need to be relatively flat, contain minimal vegetation, free of standing water, contain minimal loose debris (e.g. gravel, pebbles), and not be located in an area where seasonal water flows. In situ soil sampling will include inserting measuring/sampling equipment (e.g. moisture meter, thermometer, soil probe) into the sample location up to a depth of twelve inches. In addition, the proposed action would evaluate soil compaction beneath Pad C. This requires using a 1-inch drill bit to drill through about 2- inches of asphalt then inserting a soil probe about 12 inches into the soil to take measurements on the pad and replacing the asphalt. Up to 20 samples will be collected in a grid pattern with roughly 100 feet between sample locations. Due to the abundance of cultural artifacts at the CITRC facility, sampling personnel will be escorted by a cultural resources management representative. Ground disturbing activities require a cultural review prior to any field work.

Unconfined compression testing (Data may be available from site investigation report)	>1 kg
Mineralogical	<10 g
Water retention	1-2 kg
Particle Size Distribution (PSD)	500 g per test
Synthetic Precipitation Leaching Proc. (SPLP)	~ 50 g
Metals testing	<10 g
Total carbon	<10 g
Radioisotope identification	1-2 kg

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

N/A

Discharging to Surface-, Storm-, or Ground Water

N/A

Disturbing Cultural or Biological Resources

The CITRC area is known for having an abundance of cultural artifacts. All personnel should be briefed prior to any activities that are conducted in these culturally sensitive areas. Additionally, a brief training may be required for the soil sampling personnel. Figure 1 below shows an especially sensitive area for cultural resources adjacent to buildings Power Burst Facility (PBF)-622 and -623. The area depicted is excluded from all ground disturbance activities such as off-road vehicles, soil sampling, and foot traffic.

The use of off-road vehicles, including ATVs, off paved areas, or road shoulders at any time will require review and approval from the INL Cultural Resources Management (CRM). Written approval will be obtained prior to field activities involving ground disturbance. Cultural reviews must be conducted

for all proposed soil disturbances. If cultural artifacts or bones are unexpectedly encountered during soil disturbance or off-road travel, activities must be halted or re-directed and the INL Cultural Resources office must be notified.

Figure 1: Restricted area at CITRC



Use of vehicles, including all-terrain vehicles (ATVs), off paved areas and road shoulders during the Nesting Bird season will require a Nesting Bird survey no more than two weeks prior to beginning the exercise. Use of vehicles, including ATVs, off paved areas or road shoulders at any time will require review and approval from Biological personnel.

Generating and Managing Waste

The anticipated waste streams would include any material used during the sampling event which may include sample bottles, wipes, sampling tools, and PPE. No hazardous waste is expected to be generated. WGS will be notified of waste generated and provide a pathway for disposal.

Releasing Contaminants

N/A

Using, Reusing, and Conserving Natural Resources

All applicable waste would be diverted from disposal in the landfill when possible. Program personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible.

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: National Environmental Policy Act (NEPA) Implementing Procedures, Final Rule, 10 CFR 1021, Appendix B to Subpart D, Categorical Exclusions B3.1 "Site characterization and environmental monitoring" and B3.6 "Small-scale research and development, laboratory operations, and pilot projects."

DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

Justification: The proposed action fits within the classes of actions listed in 10 CFR 1021 Appendix B to Subpart D, items B3.1, "Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and abandonment 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 not have the potential to cause significant impacts from 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 salt water and freshwater. See B3.16 of this appendix for salt water and freshwater activities.) Specific activities include, but are not limited to:

- (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, 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 or fauna; and
- (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7."

And,

B3.6, "Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Jason L. Anderson, DOE-ID NEPA Compliance Officer on: 07/07/2021