

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: Box Canyon Subsurface Applied Research Site Cleanup

SECTION B. Project Description and Purpose:

Idaho National Laboratory's (INL's) Subsurface Applied Research Site is located on the north rim of Box Canyon on the Big Lost River 3.35 miles southeast of Butte City, Idaho on land managed by the Bureau of Land Management (BLM). Access to the site is from a gravel road off of Highway 20/26 near mile marker 251 and a two-track road that leads to the canyon rim (see Figures 1 and 2). Initial research at this location was part of the Buried Waste Integrated Demonstration Program and was associated with a monolithic confinement technology demonstration. The project was described in Environmental Checklist OFF-93-040, and an Environmental Assessment and FONSI were issued by the BLM in 1994 (EA number ID-030-4-14, January 1994).

A number of research projects—including basalt characterization studies, evaluation of fractures and liquid transport in fractured rock, pressure grouting of fractured basalt, and chaotic-dynamic models for fractured rock vadose zone investigations and remediation design—also took place at the Subsurface Applied Research Site, and detailed geological, lithological, hydrogeological, and environmental investigations were performed. More than 50 vertical and slanted wells and boreholes (3 - 22.9 m) equipped with hundreds of tensiometers, suction lysimeters, and electrical and time-domain resistivity probes have been placed at the site. The purpose of the wells and boreholes was to determine geological properties, therefore, they were excluded from well drilling permit requirements. The site was left in its current configuration in 2003 in anticipation of future research. However, future research at the Subsurface Applied Research Site is no longer anticipated, and the site needs to be closed.

The proposed action would 1) remove and dispose of all surface material associated with research at the site (e.g., plastic piping, wood, metal, instrumentation, metal rock anchors, etc.), 2) cut well casings (6-12 inches below ground surface if possible or at ground surface if not), 3) grout wells and boreholes, 4) break up and dispose of the concrete infiltration tank, and 5) replace soil in disturbed areas. The cleanup site is less than one acre in size (approximately 30 ft. x 30 ft.), and proposed activities are not anticipated to disturb the canyon walls or the bed of the Big Lost River.

A complete inventory of wells and boreholes at the site would be completed and would include the type of well, type of casing (if there is a casing), diameter and depth of casing, and depth of each well/borehole. Each well would be plotted by personnel from the Hydrogeologic Data Repository.

Decommissioning of wells and boreholes would be completed following guidelines established by the Idaho Department of Water Resources (IDWR). Wires, tubing, and instrumentation would be removed from the wells and boreholes when possible, and casings would be cut 6-12" below ground surface when possible. If cutting casings below the ground surface is not possible, the casings will be cut at ground level. Each well or borehole would be filled with an approved material identified in IDAPA 37.03.09. Wells would be decommissioned in a manner to prevent discharge of waste or contamination to ground water. The proposed action would not discharge any excess grout into the Big Lost River streambed, and all residual surface grout would be removed from the site.

Figure 1. Transportation routes to the Subsurface Applied Research Site



Figure 2. Location of the Subsurface Applied Research Site along the Big Lost River



SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Fugitive dust may be generated from driving trucks and equipment on dirt roads, removing the concrete containment structure, and placing soil or gravel during site cleanup.

Discharging to Surface-, Storm-, or Ground Water

Box Canyon is a section of the Big Lost River and is considered waters of the U.S. Cleanup activities will not disturb the stream bed or the canyon walls, and the disturbed area is expected to be less than one acre (approx. 30 ft. x 30 ft. area). Well and borehole grouting activities will not discharge any excess grout into the Big Lost River streambed, and all residual surface grout will be removed from the site.

Disturbing Cultural or Biological Resources

Proposed activities have the potential to disturb biological and cultural resources.

Generating and Managing Waste

Concrete, grout, plastic piping, wood, and scrap metal waste would be generated.

Releasing Contaminants

Chemicals used during project activities include grout for well/borehole abandonment and fuel for equipment. Grouting activities will not discharge any grout to the Big Lost River streambed. Equipment will be fueled at INL and not at the project site.

Using, Reusing, and Conserving Natural Resources

Materials suitable for recycle would be diverted from landfill disposal when practicable.

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

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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: 10 CFR 1021, Appendix B to subpart D, items B1.28 "Placing a facility in an environmentally safe condition."

Bureau of Land Management Idaho Falls Field Office Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) Id-030-4-14, January 1994.

Justification: Project activities described in this EC are consistent with 10 CFR 1021, Appendix B to Subpart D, item B1.28, "Minor activities that are required to place a facility in an environmentally safe condition where there is no proposed use for the facility. These activities would include, but are not limited to, reducing surface contamination, and removing materials, equipment or waste (such as final defueling of a reactor, where there are adequate existing facilities for the treatment, storage, or disposal of the materials, equipment or waste). These activities would not include conditioning, treatment, or processing of spent nuclear fuel, high-level waste, or special nuclear materials.

The EA and FONSI Id-030-4-14 analyzed site closure. Mitigation Measure 6 in the EA and FONSI states, "Once the drilling and monitoring project is completed, all drill casings will be cut off at the surface, and all non-grouted holes will be filled to the surface or plugged with 3 feet of cement at the surface."

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

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on: 4/17/2017