

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Reducing Uncertainty in Radionuclide Transport Prediction Using Multiple Environmental Tracers – University of Montana

SECTION B. Project Description

The University of Montana, in collaboration with Sandia National Laboratory, proposes to use observations of multiple environmental tracers to improve predictions of radionuclide reactive-transport in a shallow alluvial aquifer discharge to the Little Wind River near Riverton, Wyoming. The project will utilize recent theoretical developments considering the use of environmental tracers, and advances in high-performance reactive flow and transport models, to obtain the maximum information on the transport system. Multiple environmental tracers will be sampled with transport information over a wide range of temporal scales. A reactive transport model of U migration will be calibrated directly to the observed tracer concentrations, contaminant concentrations, as well as hydraulic data.

SECTION C. Environmental Aspects / Potential Sources of Impact

Water/Well Use – A small amount (~5L) of water will be pumped from sampling wells. These wells are sampled regularly by the Department of Energy (DOE) for environmental monitoring. The volume of well water discharged to the surface will be small.

Work Within a Floodplain – The wells are located along the Little Wind River floodplain. The file area is an existing DOE monitoring site. Care will be taken to only sample when flood waters have receded and the soil is not wet. Sampling and access will occur along existing roads and pathways.

Interaction with Wildlife/Habitat – The site is pasture land owned by the Northern Arapahoe Tribe. Permission has been sought and granted for sampling by the principal investigator. A small chance exists of wildlife interaction at the field site; thus, care will be taken to minimize any disturbance to wildlife.

SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: 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, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not “connected” nor “related” (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: 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 development.

Justification: The activity consists of university-scale research activities used to incorporate observed tracer concentrations directly into reactive transport models as calibration targets.

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 08/03/2018