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Mitigation Action Plan for the Expansion of the Sanitary Effluent Reclamation Facility and Environmental Restoration of Reach S-2 of Sandia Canyon at Los Alamos National Laboratory, Los Alamos, Los Alamos, New Mexico

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico

August 24, 2010

Mitigation Action Plan
for the Expansion of the Sanitary Effluent Reclamation Facility and Environmental Restoration of Reach S-2 of Sandia Canyon at Los Alamos National Laboratory, Los Alamos, Los Alamos, New Mexico

Background Information: The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) has issued a Finding of No Significant Impact for the Environmental Assessment (EA) (*Environmental Assessment for the Expansion of the Sanitary Effluent Reclamation Facility and Environmental Restoration of Reach S-2 of Sandia Canyon at Los Alamos National Laboratory, Los Alamos, New Mexico,* (DOE/EA-1736), on a proposal to expand the size and operational capacity of the Sanitary Effluent Reclamation Facility (SERF), and for possible environmental restoration action measures that may be taken within reach S-2 of Sandia Canyon at Los Alamos National Laboratory (LANL). Based on the analysis of potential environmental impacts presented in the EA, neither the construction or operation of the expanded SERF considered in the two action alternatives for that facility (namely, the Partial Reuse and the Total Reuse Alternatives), nor the environmental restoration action measures considered in the two action alternatives for reach S-2 of Sandia Canyon (namely, the Stabilization in Place with Long-term Monitoring and the Removal with Off-site Disposal Alternatives) would have significant environmental impacts. This conclusion is explained in the FONSI issued on August 24, 2010.

As described in the subject EA, the SERF facility would be expanded physically to accommodate additional wastewater treatment equipment, new storage tanks would be installed, as would additional piping to deliver wastewater for treatment and to redistribute the treated wastewater for reuse at appropriate LANL facilities. Additionally, appropriate environmental restoration action measures will be determined by the State of New Mexico's Environment Department (NMED) under the provisions of the 2005 Compliance Order on Consent for LANL cleanup to address legacy contamination present in the upper reach of Sandia Canyon. The actions determined to be needed by NMED for the reach S-2 area would be implemented by the DOE and may consist of any of the actions analyzed in the EA, from taking no actions except long-term monitoring of the site conditions, to stabilization in place with long-term monitoring, or complete soil removal with off-site disposal. The potential environmental restoration action measures implemented could also consist of any combination or degree of these actions as well. To facilitate and implement the action measures, DOE would need to store equipment and supplies at sites it determines to be appropriate for lay-down work areas; may need to construct access roads or enhance existing roads to move heavy machinery into place; and may need to implement various engineering activities in a phased approach over various portions of reach S-2. Additionally, NMED could require action taken in the canyon be implemented in phases or at certain times of the year to enhance the contaminant stabilization process or address other specific site issues. The implementation of adaptive resource management practices and

continual site monitoring in Sandia Canyon would be coordinated to mitigate potentially adverse environmental effects.

Environmental Effects: The impact analysis provided in the EA indicates that potential beneficial or adverse effects of the subject SERF project and the environmental restoration action measures would be minimal under normal conditions. The EA description of alternatives and the analysis of environmental effects, however, include the recognition of certain provisions that would effectively mitigate potential adverse effects that could result either directly, indirectly or cumulatively from implementing the subject activities.

Possible adverse environmental effects on natural resources present in and near reach S-2 of Sandia Canyon are as follows:

(1) effects on potential habitat of Federally threatened or endangered species, such as the Mexican spotted owl;
(2) effects on wildlife, birds, and game animal use of the canyon area;
(3) effects on wetland conditions and vegetation;
(4) effects on surface and groundwater quality; and
(5) effects on cultural resources or Traditional Cultural Properties located in or near the project or environmental restoration work sites.

Function of the Mitigation Action Plan: This Mitigation Action Plan (MAP) contains mitigation and monitoring commitments related both to the construction activities and enhanced operation of SERF, and for environmental restoration action measures within reach S-2 of Sandia Canyon that will be selected by the NMED and implemented by DOE. Adaptive resource management practices[1] incorporated into LANL's Environmental Management System (EMS) Action Plans will serve to integrate the impacts of the two actions as they apply to the natural resources present within Sandia Canyon and nearby locations. The commitments made in this MAP are designed to mitigate any adverse environmental consequences (even though they are not significant) associated with the expanded SERF and the environmental restoration action measures as these are implemented, and as direct, indirect and cumulative impacts from these actions occur over time to the resources in the upper end of Sandia Canyon. Adaptive resource management practices are applied to projects or programs across the design, management, implementation, and monitoring stages to systematically check impact assumptions as the actions progress; changes may be made to the activities to ensure the efficacy of the mitigation techniques in an iterative fashion.

[1] Adaptive resource management practices are structured, iterative processes aimed at evaluating results and adjusting actions based on what has been learned, providing feedback between system monitoring and decisions, characterization of system uncertainty though multi-model interface, and embracing risk and uncertainty as a way of building understanding. These practices are particularly applicable for systems in which learning via experimentation is impractical.

Mitigation Action Plan Annual Reporting: Although the text of this MAP is included as Appendix B of the subject EA, it is also being issued as a stand-alone document to facilitate its implementation. After issuance, the mitigation measures committed to by this MAP will be folded into the overarching *2008 Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory (DOE/EIS 0380) Mitigation Action Plan (SWEIS MAP).* Annual reporting of the mitigation activities taken and their implementation status, as well as their effectiveness for accomplishing the intended mitigation of adverse effects, will be met through publication as a part of the SWEIS MAP status reports and the MAP Annual Report (MAPAR), or other annual reporting documents with prior NNSA approval (such as the annual LANL Environmental Surveillance Report or the SWEIS Yearbook[2]). As details of specific mitigation activities required for these subject activities are further developed, or as additional mitigation actions are identified as being necessary, the SWEIS MAP will be updated accordingly. NNSA may amend the SWEIS MAP at any time to address changing needs or in response to changing site conditions.

This MAP and related SWEIS documentation, including the subject EA, will be made available at the following Websites:

- http://nepa.energy.gov/mitigation_action_plans.htm
- http://www.doeal.gov/laso/NEPADocuments.aspx
- http://www.lanl.gov/environment/risk/

Responsible Parties: The NNSA, Los Alamos Site Office Manager will have the overall responsibility for insuring the adequate and timely completion of all activities associated with this MAP. The LANL Principal Associate Director for Operations and Business, as a Los Alamos National Security, LLC (also known as LANS, which is the current management and operations contractor for LANL) representative, will be responsible for the overall work assignments for conducting the mitigation measures performed by LANS personnel (or sub-contractors) and conducting project-specific activities identified for each SERF and environmental restoration action measure. This responsibility includes certain data collection, monitoring activities, and other actions that may be split between LANL Associate Directors and/or Divisions. NMED will direct DOE and LANS, or will concur on actions they take to investigate and potentially remediate contaminant movement or cleanup in the Sandia Canyon; DOE will implement corrective action measures as required and deemed necessary.

Mitigation Activities: The mitigation activities identified in the following table address all phases of the project, from planning and design, through construction, and into facility operation as appropriate. As some mitigation activities are applicable to more than one phase of the SERF project or the environmental restoration action measures, the tasks associated with each activity may be implemented in an iterative fashion over time at the discretion of the responsible parties.

[2] The SWEIS MAP annual report is presented as part of the LANL SWEIS Yearbook, which is posted on-line each year at the following Website: http://www.lanl.gov/environment/nepa/sweis.shtml?1

As mitigation activities are completed and deemed fully successful in meeting the mitigation goals, the activities shall be identified as closed. The NNSA may initiate certain mitigation measures or required permitting actions in advance of the project or environmental restoration action measures, as appropriate. As the subject activities progress from planning, through construction, operations, or close-out activities, additional laws and mitigation measures may be triggered during any phase of the work (such as, if cultural resources are encountered during land excavation; or if federally protected threatened or endangered species move into the work site area or if species become listed for protection and must, therefore, be taken into consideration). DOE and NNSA recognize the obligation to comply with such laws and other requirements although they may not specifically be referenced in the following table.

Affected Environment	Mitigation Action	Purpose	Party Responsible for Implementing	Status
Biological Resources				
• Threatened and Endangered Species potential habitat	All reasonable and prudent measures identified during the informal consultation process with the US Fish and Wildlife Service for these actions will be implemented. These include following the LANL Threatened and Endangered Species Habitat Management Plan restriction on noise generation for the lagoon construction work at TA-60, and using appropriate erosion and runoff controls at all project construction locations, and augmented with other provisions as necessary to address specific site issues as the SERF project and environmental restoration action measures are implemented. Both	To minimize negative impacts to protected species or their prey species, and to avoid disturbances to the successful reproductive cycles of protected species.	LANS	Open

Affected Environment	Mitigation Action	Purpose	Party Responsible for Implementing	Status
	temporary and permanent site lighting will comply with the New Mexico Night Sky Act, and to the extent practicable, will be directed away from the canyon area or potential habitat areas.			
• Game animals and other small mammals and birds	Best Management Practices (BMPs) identified for sensitive species protection and for migratory bird protection at LANL will be followed and may be augmented to address specific site issues as the SERF project and environmental restoration action measures are implemented. After soil disturbing activities have been completed, disturbed sites will be restored with re-contouring and planted with a native seed mix or native vegetation plantings as appropriate. The sites would be monitored and re-seeded as necessary to achieve at least 50 percent vegetative coverage.	To re-establish habitat suitable for grazing and other life-cycle activities quickly to minimize disturbance to migration and use patterns; to avoid reproductive failures for actively nesting bird species.	LANS	Open
• Wetlands	Activities that must be taken within the reach S-2 wetland to effect site contamination stabilization, soil	To minimize negative wetland impact or wetland loss, and to enhance the overall quality of wetland	LASO and LANS	Open

Affected Environment	Mitigation Action	Purpose	Party Responsible for Implementing	Status
	removal, or that are taken to enhance the quality of the wetland hydrologic profile, or conversely, that eliminate essential effluent discharge necessary to support the wetland vegetation, will be mitigated through wetland restoration or enhancement, either on-site or at nearby LANL locations (such as on neighboring lands administered by the Department of the Interior, Department of Agriculture, or belonging to the Pueblos of Santa Clara or San Ildefonso), or through participation in a mitigation bank or in-lieu fee mitigation agreement[3]. Where appropriate, wetland and floodplain best management practices will be followed and may be augmented to address specific site issues as the SERF project and environmental restoration action measures are implemented.	values and functionality. Mitigation will comply with 10CFR Part 1022, Executive Orders 11988 and 11990 (as appropriate) and the Clean Water Act, Section 404.		

[3] Mitigation banks are trust funds established for payment of fees where on-site mitigation is not, or cannot be, implemented. The in-lieu fee is payment made to a mitigation bank in compensation for impacts to water resources. The fee is then used by the managers of the trust to improve or expand water resources in other locations.

Affected Environment	Mitigation Action	Purpose	Party Responsible for Implementing	Status
Surface and Groundwater Quality	Develop and use BMPs (such as silt fencing, straw bales, rock gabions, and steel pilings, or baffle installations) to prevent or lessen the movement of sediments from disturbed areas during construction, or to lessen the movement of contaminated silt during the implementation of environmental remediation action measures, or wetland enhancement activities in Sandia Canyon.	To minimize impacts to the environment associated with stormwater and snow melt runoff or runon, and comply with the NPDES Construction General Permit for Stormwater Discharge.	LASO and LANS	Open
Cultural resources and Traditional Cultural Properties	LANL Cultural Resources Management Plan provisions will be followed and may be augmented to address specific site issues as the SERF project and environmental restoration action measures are implemented. If buried archeological resources, remains, or items of cultural significance are encountered during construction, site activities would cease until their significance was determined by a trained archaeologist and appropriate actions taken. If traditional cultural properties are identified at the SERF	Comply with Section 106 of the National Historic Preservation Act, which requires federal agencies to take into account the effects that federally funded activities and programs have on significant historic properties including cultural and archaeological resources and traditional cultural properties and practices.	LANS and LASO (for consultation with Tribal governments and the State Historic Preservation Officer)	Open

Affected Environment	Mitigation Action	Purpose	Party Responsible for Implementing	Status
	construction site or the reach S-2 environmental restoration site, site activities will cease until appropriate mitigation measures can be determined through consultation with the State Historic Preservation Officer and the involved Tribal government.			

Provisions of this MAP are effective immediately.

August 24th, 2010
MAP Issuance Date

Acting Manager
Los Alamos Site Office