TA03

ENTERED

TO: Georgia Cleverly, OOTS

FROM: John Kieling, HWB

DATE: July 30, 2010

RE: #3274ER HWB and DOE OB Comments on the Draft 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, July 2010.

General Comments:

All environmental restoration activities conducted at AOC C-00-007, reach S-2 (wetland), shall be conducted under the direction of the March 1, 2005 Order on Consent (Order). With respect to the proposed environmental restoration activities at the wetland, NMED will require the Stabilization in Place with Long-Term Monitoring option. Regarding the proposed SERF alternatives, NMED prefers the Partial Reuse option, which is capable of delivering sufficient water to the wetland so that the health and stability of the wetland are maintained. In addition, the chemistry of the SERF effluent must be compatible with the physico-chemical characteristics of contaminants and associated sediments present in reach S-2, so that these contaminants remain stabilized within the wetland. An Interim Measures work plan will be required for corrective action at the wetland.

Regulations:

If new piping, infrastructure, and/or other buildings are part of the project's design. Federal Clean Water Act Regulations need to be adhered too. Any new pipeline crossings of Canyons may require that the Laboratory acquire a 404 (dredge and fill) permit along with a 401 certification from the State of New Mexico that the project will not cause any water quality standards violation. In addition, if 1 acre or more is disturbed during the course of the project, LANL/LANS is required to submit a Notice of Intent (NOI) with the Environmental Protection Agency (EPA) and a Stormwater Pollution Prevention Plan (SWPPP) must be written and approved before any ground breaking occurs. Best Management Practices (BMP) and other stormwater controls must be maximized in order to prevent materials or sediment from flowing off the site. As of February 1, 2010, any permitted construction sites of 20 acres or greater, must meet EPA's New Effluent Limitations Guidelines and Standards for new regulatory requirements of 280 NTU from its stormwater discharges. Projects requiring an individual permit (e.g., a sensitive watershed or large controversial plan) must be in compliance with new non-numeric requirements that include:

- Increased performance standards on sediment and erosion control,
- Immediate soil stabilization of disturbed lands; stringent controls on discharges from dewatering activities,
- Increased measures to minimizing the discharge of pollutants,
- Prohibiting the discharge of concrete washouts, construction materials, fuels, and soaps and solvents from vehicle washing, and

- Draining contained waters at a pond surface instead of within the water column and releases are to occur.

Infrastructure and Spills/Discharges:

During the past nine months alone (Through June 10, 2009), there have been 14 spills/discharges reported to NMED from the area that encompasses Technical Area 3 (TA-3). Of the 14 reported discharges to the Emergency Spill Hotline as required by §20.6.2.1203 NMAC of the Water Quality Control Commission, 3 have amounts, that as of the date of these comments, have an amount yet to be determined (TBD). Of the 11 spills/discharges that have been reported, the total amounts are of excess of 1.2 million gallons of potable, re-use water, or sprinklers and/or fire protection water, have been discharged. Given the possible increased pressures, loads, and flows that maybe placed on the TAs already aged and leaking infrastructure, rehabilitation of the areas infrastructure needs to be considered during this proposed project and EA, especially when considering that addition of pumps and potential additional pressures on the areas pipelines in the partial reuse and total reuse alternatives.

Stormwater in Sandia Canyon and S-2:

Regardless of the environmental restoration alternative chosen, discharges of PCBs above the screening level will occur from the wetlands during storm water runoff periods. The primary cause is the high volume of runoff from all the impermeable surfaces in TA-3 (parking lots, roads and rooftops) which erode and mobilize any contaminants left in reach S-2.
Run-on into reach S-2 from the many impervious parking lots and structures near and above Sandia Canyon is a major consideration that needs to be addressed in this environmental assessment of reach S-2. Reduction of the hydrograph and velocities of the stormwater entering the Canyon would help stabilize reach S-2 and would prevent mobilization of contaminated sediments in the reach. The dependence upon a weir to capture contaminated sediment is not reasonable especially when the mobilization of contaminants could largely be prevented with structural and non-structural BMPs. Only a combination of storm water run-on reduction and contaminated sediment detention can result in the storm water quality improvements needed.

Best Management Practices that need to be considered above S-2 in Sandia Canyon:

<u>Retention and/or Detention Basins</u>

There are many locations (e.g., north tributary of Sandia Canyon, tributaries from Sigma Mesa) where detention or retention basins could be installed to hold first flush storm water runoff and dampen the hydrograph in reach S-2. The reduction in peak flows in reach S-2 would reduce contaminant mobilization from reach S-2 and reduce off-site contaminant transport.

<u>Vegetative Buffers:</u>

Vegetated buffers are areas of natural or established vegetation maintained to protect the water quality of neighboring areas. Buffer zones slow stormwater runoff, provide an area where runoff can permeate the soil, contribute to ground water recharge, and filter sediment. Slowing runoff also helps to prevent soil erosion. All existing vegetative buffers need to be maintained and protected from being disturbed in order for them to provide velocity control, infiltration, reduction of the hydrograph and erosion control.

Swales:

In the context of BMPS to improve water quality, the term swale (a.k.a. grassed channel, dry swale, wet swale, biofilter, or bioswale) refers to a vegetated, open-channel management practices designed specifically to treat and attenuate stormwater runoff for a specified water quality volume. As stormwater runoff flows along these channels, it is treated through vegetation slowing the water to allow sedimentation, filtering through a subsoil matrix, and/or infiltration into the underlying soils. Variations of the grassed swale include the grassed channel, dry swale, and wet swale. The specific design features and methods of treatment differ in each of these designs, but all are improvements on the traditional drainage ditch. These designs incorporate modified geometry and other features for use of the swale as a treatment and conveyance practice.

Stormceptor® or "Like" System:

The Stormceptor® System is a stormwater separator that efficiently removes sediment and hydrocarbons from stormwater run-off, and stores the pollutants for safe and easy removal. Designed to treat 85% - 95% of annual runoff, Stormceptor® captures stormwater runoff pollution at the source. Stormceptor® effectively captures high percentages of Total Suspended Solids (TSS) and Total Petroleum Hydrocarbons (TPH) in stormwater runoff.
The Stormceptor® System is an ideal solution for treating run-off from parking lots. The pre-cast concrete construction is pre-engineered for traffic loading for all vehicle applications. The Stormceptor® is easily assembled and installed as part of the storm sewer system during new construction. Additionally, Stormceptor®'s vertical orientation is ideal for installation in retrofit applications.

While most commonly implemented as a stand alone device, Stormceptor® can also be used as part of a treatment train approach. Stormceptor® helps reduce the maintenance burden and improve the performance of ponds, wetlands, infiltration systems, and other conventional BMPs. Spilled hydrocarbons and contaminated sediments are captured in the upstream Stormceptor®, before reaching natural structures, allowing for easier maintenance and clean up.

Green Infrastructure:

Environmental Benefits:

- Reduces flooding: Increasing infiltration, evapotranspiration, and storage where precipitation falls will reduce runoff and flooding.
- Improves water quality: Reducing runoff and allowing runoff to be treated by soils and vegetation will reduce pollutant loads to receiving water bodies.
- Provides habitat: Native and drought-adapted plants that thrive on infrequent precipitation can provide habitat for native birds and insects.
- Reduces the urban heat island effect:

In many areas of the arid and semi-arid West, impervious cover, and engineered conveyance systems reduce the amount of precipitation that enters the groundwater store. Green infrastructure practices that reduce impervious cover and enhance infiltration can increase the flow of water to the groundwater.

Porous Pavement:

Like vegetative buffers, porous pavement should be considered along the up-gradient western end of the project adjacent to the impervious areas in order to reduce run-on to Sandia Canyon. Porous pavement is a permeable pavement surface with an underlying stone reservoir that temporarily stores surface runoff before infiltrating into the subsoil. This porous surface replaces traditional pavement, allowing parking lot runoff to infiltrate directly into the soil and receive water quality treatment. There are several pavement options, including porous asphalt, pervious concrete, and grass pavers. Porous asphalt and pervious concrete appear the same as traditional pavement from the surface, but are manufactured without "fine" materials, and incorporate void spaces to allow infiltration. Other alternative paving surfaces can help reduce the runoff from paved areas but do not incorporate the stone trench for temporary storage below the pavement.

Specific Comments:

1. Section 1.1, Introduction, page 1, paragraph 3:

The erosion of sediment along the stream channel has no relevance to the acceleration of contaminants toward the regional aquifer. The rate of infiltration and recharge to the regional aquifer is the primary factor controlling vertical contaminant transport.

2. Section 2.6, Proposed Action Alternatives for the Expanded Serf, Page 20 & 4.2.2.2 Water Resources and Appendix B Mitigation Plan:

Straw Bales are not considered as a valid for sediment and erosion control Best Management Practice (BMP) in New Mexico. In some cases, straw bails maybe used as an emergency BMP. Please strike "straw bails" from the document.

3. Section 3.3.1.2 Surface Water; Reach S-2, Page 39:

Limiting the discussion of surface water samples to those collected by LANL in 2008 significantly understates the magnitude of the exceedances of the PCB screening level in Sandia Canyon. A RACER database query shows that 74% (32 of 43 storm water samples) collected by LANL using the Aroclor method from 2002 to 2007 detected Aroclor 1260 above the screening level and 56% (24 of 43 of the same storm water samples) detected Aroclor 1254 above the screening level. NMED collected 25 samples from 2005 through 2009 using high resolution congener methods and 100% of those results exceeded the screening level.

Sandia Canyon is listed as impaired in NMED's 2010-2012 State of New Mexico CWA 303(d)/§305(b)Integrated List and Report and the data set used to assess Sandia Canyon lists 66 storm water samples collected by LANL and NMED from 2004 through 2008 that exceeded the screening level.

Please discuss the ramifications of the 303(d) listing and how each option will or will not assure meeting any future Total Maximum Daily Load for PCBs developed in response to the listing.

4. Section 3.3.2.1, SERF, page 40, paragraph 1:

To date, no deep drilling has occurred beneath or in the vicinity of reach S-2; therefore, the statement that the regional aquifer beneath S-2 is separated by 1,100 ft of unsaturated tuff and sediments is based on an assumption, not direct evidence.

5. Section 3.3.3.1, Surface Water, Paragraph 4 After Bullets, Page 35:

Please specify that the numeric limitations being phased in by the U.S. Environmental Protection Agency at 20 acres by August 1, 2011 and 10 acres on February 1, 2014 are for turbidity only and are based of a numeric limitation of 280 NTUs (nephelometric turbidity units).

6. Section 4.1.2.2, Water Resources, pages 59 – 60:

If implemented correctly, the Partial Reuse Alternative could have a positive impact on contaminant transport to the regional aquifer. If the rates of discharge from the SERF to the wetland are managed and controlled properly so that the wetland remains healthy and stable and that surface-water flow downstream of the wetland ceases before reaching the infiltration zone, then the overall effect would (potentially) be the curtailment of the contaminant-transport pathway to the regional aquifer. Therefore, the Partial Reuse Alternative would be the option preferred by NMED.

7. Section 4.1.2.2, Water Resources, page 59, paragraph 3:

To date, no deep drilling has occurred beneath or in the vicinity of SERF or S-2; therefore, the statement that no perched-intermediate groundwater has been identified beneath either the SERF or S-2 is based an assumption.

Section 4.1.2.3 Ecological Resources, Paragraph 7, Page 61 and Appendix B, Mitigation Plan: Under EPA's current NPDES (National Pollution Discharge Elimination System) General Construction Permit (GCP) requires that "re-seeding of disturbed areas with native seed mix" of areas of 1 acre or greater achieve not **50% of vegetation coverage,** but an uniform (e.g. evenly distributed, without large bare areas) perennial vegetative cover with a density of **70 percent of the native background vegetative** cover for the area before disturbance

8. Section 4.1.3.2, Water Resources pages 65 - 66:

In addition to what is described in this section, the Total Reuse Alternative would have a significant impact on alluvial and perched-intermediate aquifers present in the mid-reach area of Sandia Canyon. The alluvial and perched-intermediate aquifers beneath this reach are most likely recharged by present-day TA-3 effluent discharges that infiltrate to canyon-bottom sediments and to deeper hydrostratigraphic units, i.e., permeable basalt, as represented by monitoring wells SCI-1 and SCI-2. Therefore, if surface-water flows are appreciably diminished, as would be the case for this alternative, then these aquifers could become smaller in size and/or ephemeral, or even cease to exist. This condition would also halt a major driving mechanism for recharge to the regional aquifer.

9. Section 4.2, ENVIRONMENTAL RESTORATION ALTERNATIVES FOR REACH S-2, pages 68 - 78:

It is not clear as to whether impacts or effects from the three environmental restoration alternatives, as stated in this section, are dependent or independent of the two SERF alternatives or the No Action alternative. For example, the impacts to water resources from implementing the Removal and Off-site Disposal Alternative could be significantly different, depending on which SERF alternative was applied. The section is unclear regarding an interplay between SERF alternatives and environmental restoration alternatives.