Memorandums of Understanding Between the Department of Energy and the Buckman Direct Diversion Board Regarding Water Quality Monitoring and Surface Water Protection

Northern New Mexico Citizen's Advisory Board Combined Committee Meeting

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April 27, 2016

ENVIRONMENTAL MANAGEMENT
SAFETY ❖ PERFORMANCE ❖ CLEANUP ❖ CLOSURE

Presentation Overview

- History
- Memorandums of Understanding between the Department of Energy (DOE) and the Buckman Direct Diversion Board (BDDB)
- Surface Water Protection – Defense in Depth

History

- **Commitments to the BDDB to address LANL contamination of water resources in Santa Fe County**
  - 2007 BDDB requested DOE action on six items
  - 2009 DOE funded BDDB to retain independent peer review regarding matters of LANL-origin contamination of public drinking water resources
  - 2010 Memorandum of Understanding (MOU) between DOE and the BDDB Regarding Water Quality Monitoring (5 year agreement)
  - 2015 MOU between DOE and the BDDB Regarding Water Quality Monitoring (3 year agreement with possible extension of 3 years)
- **Consent Order Measures**
  - Sediment control within Los Alamos and Pueblo Canyon Watersheds (2008 Interim Measures within LA/P Canyons)
  - Annual monitoring and reporting on sediment transport mitigation within Los Alamos and Pueblo Canyons (2010 forward)
- **Governor Martinez's priorities for LANL**
  - Disposition of transuranic waste from LANL
  - Protection of groundwater and surface water

DOE/BDDB Memorandums of Understanding

- **Determine whether LANL legacy contaminants from LA/P Canyons into the Rio Grande warrant operational constraints for diversion at the BDD intake**
- **Executed a 5-year term MOU in 2010 followed with a 3-year term MOU in 2015 (with optional extension of 3-years)**
- **MOU Agreement Principles**
  - *LA/P Canyon Early Notification Gaging System (ENS)*
  - *LA/P Canyon Storm Water Quality Sampling System*
  - *Rio Grande at BDD Project location Sampling Program*
  - *Rio Grande Contaminant Fate Analysis (2010) and TREAT Study (2015)*
  - *Data Sharing and Annual Analysis Reporting (2015)*
  - *Biannual Reviews*

LA/Pueblo Canyon Early Notification System (ENS)

- **Provide real time stream flow in LA/P Canyons to BDD Project**
  - Constructed gage stations E060.1, E050.1 and E109.9 within LA/Pueblo Canyons (under 2010 MOU); equipped with flow measurement capabilities, real-time conveyance of stream-flow data and automated stormwater samplers
  - Measure flows between 1 and 350 cubic feet per second (cfs) and capable of low flow trigger stage of 5 cfs
  - Transmittal of rain gage data in the LA Canyon watershed
  - Redundant flow measurement capabilities at E050.1 and E060.1
  - E109.9 destroyed in September 2013 storm flows
  - Upgraded E050.1 and E060.1 to include camera capabilities to confirm real-time flow events, added gage station E062 for visual verification of flows down stream of LA/P confluence and E099 flow data from Guaje Canyon (under 2015 MOU)
  - DOE funded and maintained

LA/P Canyon Stormwater Quality Sampling System

- **Provide water-quality contaminant sampling data from flow events (same for both 2010 and 2015 MOUs)**
  - E050.1, E060.1 and former E109.9 samplers capable of collecting samples from flows greater than 5 cfs
  - Analyte list is generally consistent with, but contains negotiated changes to, the NMED approved LA/P Canyons Sediment Transport Monitoring Plan/s for stormwater monitoring
  - DOE funded and maintained

TREAT Study (2015 MOU) and RIO Grande CFA (2010 MOU)

- **TREAT Study (The Removal Efficiency and Assessment of Treatments) -** *Examine treatment efficiency of conventional and advanced treatments at BDD with respect to contaminants to help BDD determine operational criteria for diversion from the Rio Grande*
  - Continuation of Rio Grande Contaminant Fate Analysis (CFA) started under 2010 MOU
  - BDD Board funded
- **Rio Grande Contaminant Fate Analysis (CFA) –** *DOE funded for a one year period radiological analytes for monthly composite samples from flow weighted daily sampling from three process locations*
  - Raw Rio Grande water at the BDD Project location
  - Sediment return line of the BDD Project and
  - Finished water produced by BDD Project Water Treatment Plant

Annual Data Analysis and Reporting

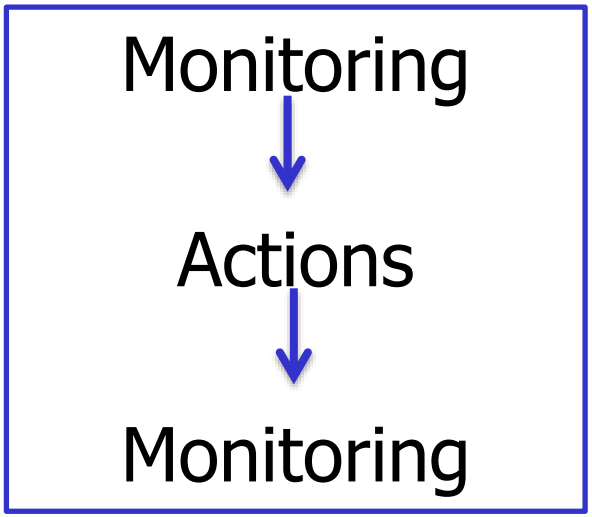
- **BDD staff to prepare annual report on the analysis of the data collected under 2015 MOU**
  - DOE provide input and comments to BDD report by May 31 of each year
  - BDD Board evaluate water quality monitoring results and TREAT data and make determination on operational parameters or criteria on whether or when to cease diverting from the Rio Grande
  - BDD Board to fund

Biannual Reviews

- **Review functioning of the ENS and sampling programs under the MOUs**
  - November and April meetings
  - Modifications consistent with changes to the NMED approved annual monitoring plans for LA/P Canyons sediment mitigation project; requires both parties consent
  - Other technical reviews/meetings held as needed

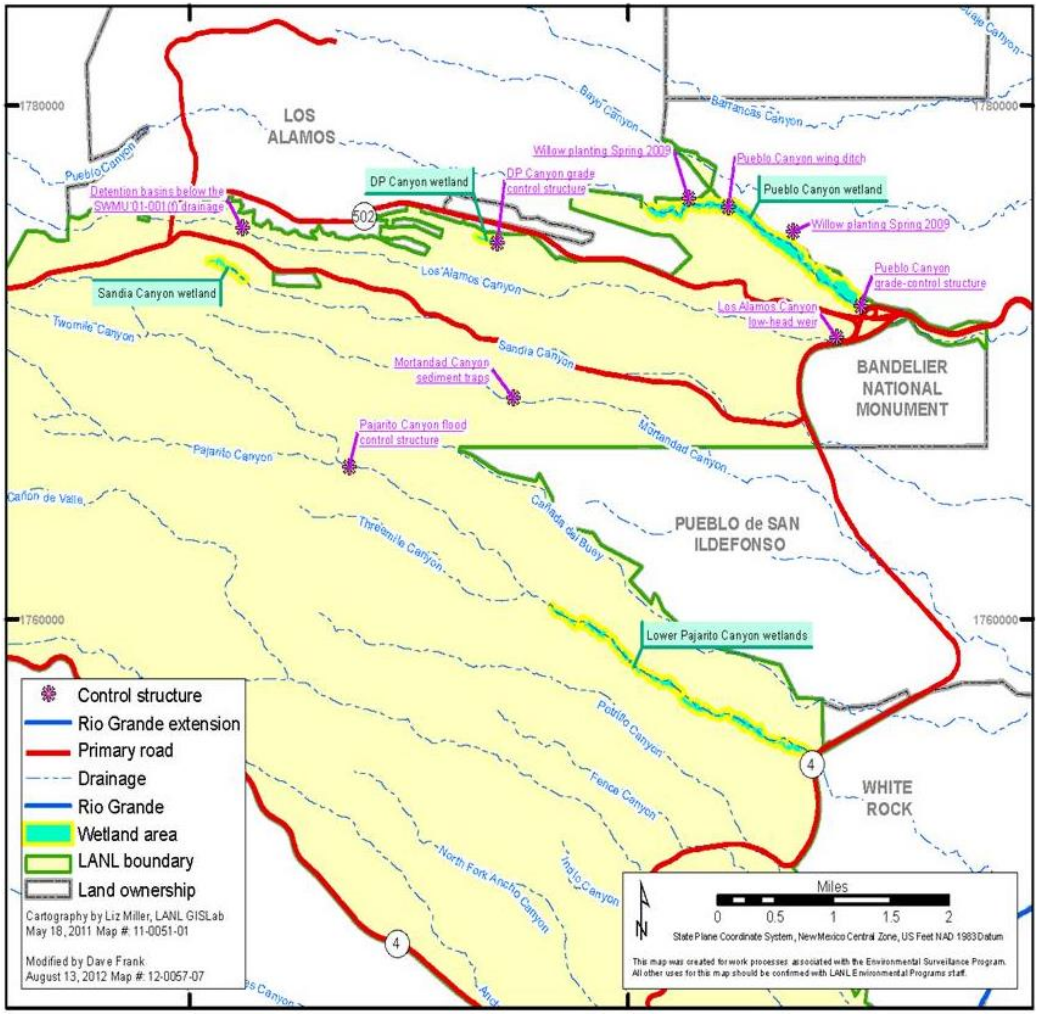
Surface Water Protection – Defense in Depth

- **Resource Protection at LANL – A Multi-Pronged Approach**



- *Implementation of mitigation*
- *Monitor performance of mitigation actions*
- *Monitoring data used to identify potential issues*
- *Implement additional mitigation efforts as needed*
- *Annual performance monitoring reports*
- *Monitoring data available through INTELLUS to provide transparency and accessibility to environmental monitoring data from in and around LANL*

Surface Water Protection Watershed Scale



Stormwater Management in LA/Pueblo Canyons

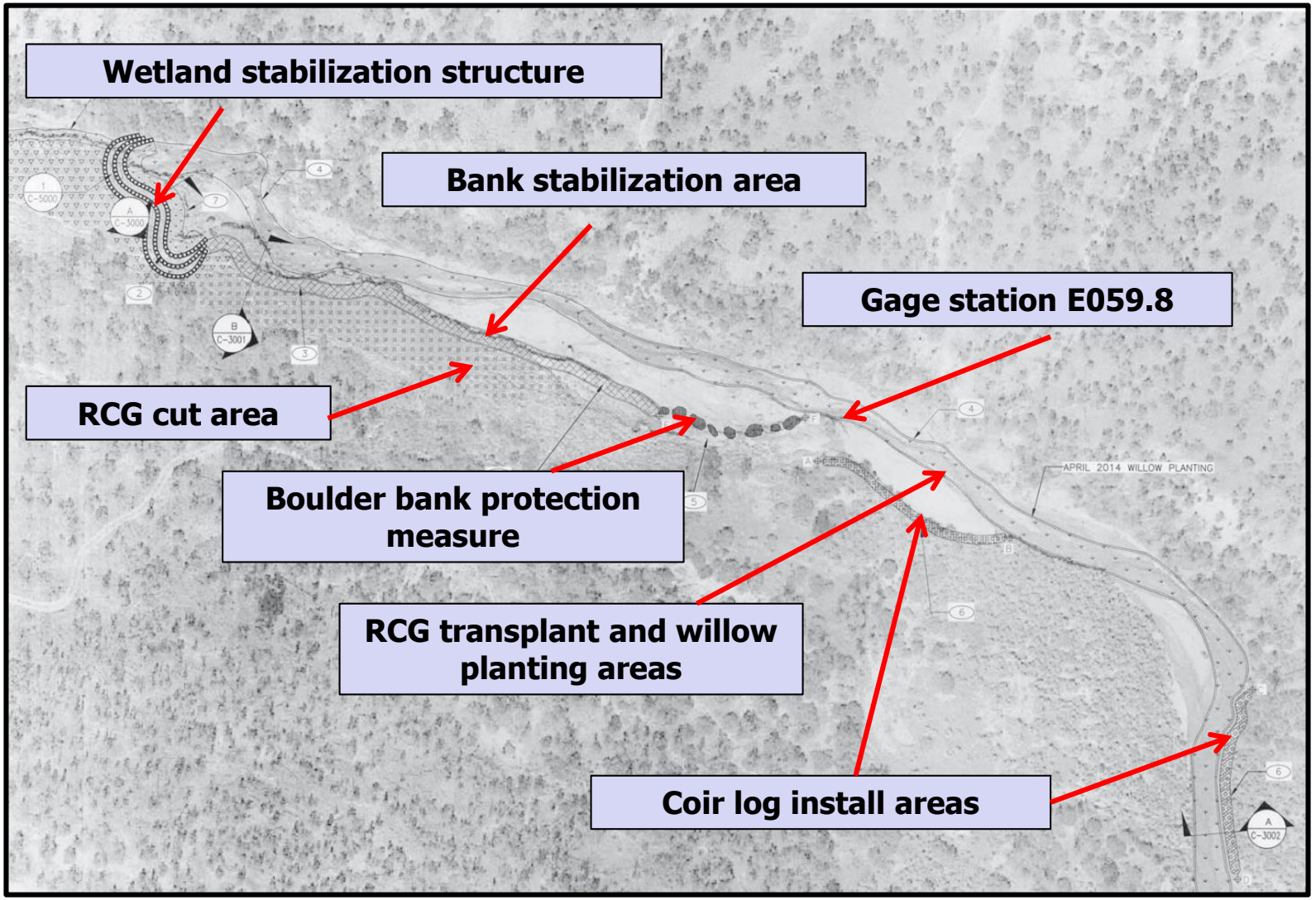
- *Sediment retention*
- *Willow plantings*
- *Wetland stabilization*

Ensuring protection of Buckman source water

- *MOUs with BDD*
- *Extensive monitoring -LANL*
- *Monitoring support – BDD*
- *Early Notification System*
- *Biannual technical meetings*

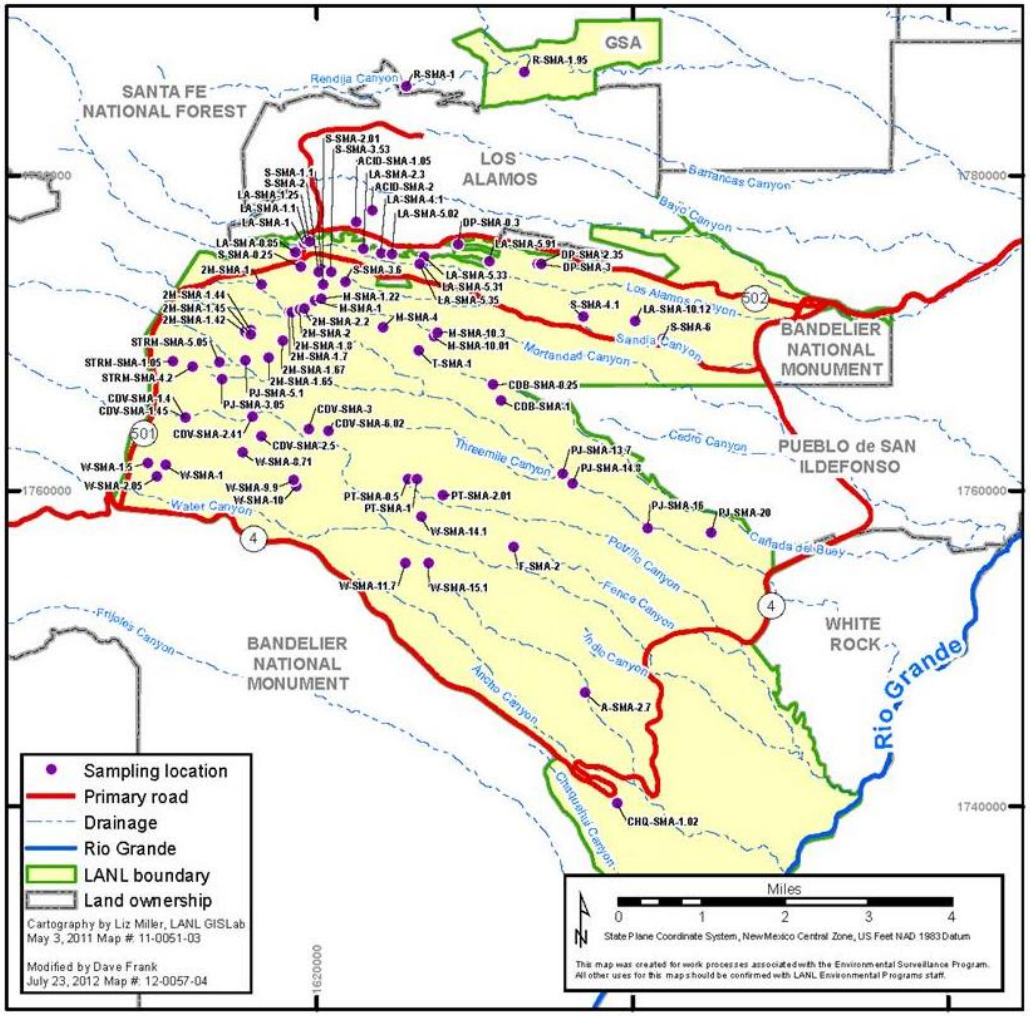
Mitigation Efforts During First MOU

Mitigation Efforts During Current MOU



Mitigation Efforts During Current MOU continued

Surface Water Protection Small-Scale Sites



Stormwater management under the EPA Individual Permit

- *Run-on and runoff controls at over 400 SWMU/AOCs sites to reduce erosion and contaminant transport*
- *Cleanups of potential source areas under Consent Order*
- *Monitoring to evaluate effectiveness of controls and cleanups*
- *Monitoring data used to trigger upgraded controls*

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Relation of Storm Water Protection to Buckman Diversion