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*U.S. Department of Energy*  
**Status of Legacy UMTRCA  
Sites in the Navajo Nation  
and New Mexico**

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November 3, 2009



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# UMTRCA Sites in the Navajo Nation Managed by LM

- LM currently manages four UMTRCA sites in the Navajo Nation
  - Mexican Hat, Utah
  - Monument Valley, Arizona
  - Shiprock, New Mexico
  - Tuba City, Arizona



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# UMTRCA Sites in New Mexico Managed by LM

- LM currently manages four UMTRCA sites in New Mexico
  - Ambrosia Lake
  - Bluewater
  - L-Bar
  - Shiprock
- Three more UMTRCA sites will transition to LM for long-term custody and care after all reclamation goals have been met and monitoring requirements have been established
  - Ambrosia Lake West (Rio Algom)
  - Church Rock (UNC)
  - Grants (Homestake)

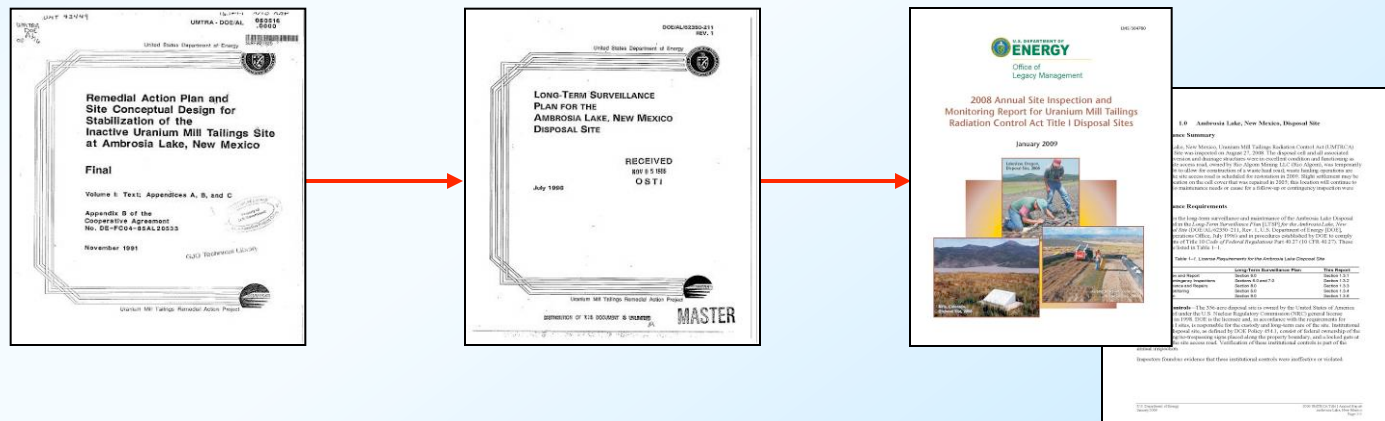


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# Status of Activities

- LTS&M activities in the Navajo Nation and New Mexico
- Five-year plan commitments to address impacts on uranium contamination in the Navajo Nation
- LM technical support, cooperation, and coordination with the Navajo Nation
- LM technical support, cooperation, and coordination with NMED



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# Status – Surveillance and Maintenance of DOE Sites in the Navajo Nation and New Mexico

- Routine surveillance and maintenance responsibilities include the following activities to ensure protectiveness of public health and the environment at former mill sites
  - Conduct annual site inspections to verify cell performance
  - Perform groundwater treatment and monitoring and other actions as required
  - Repair site features as needed
  - Maintain site security
  - Prepare an annual compliance report (<http://www.LM.doe.gov>)
  - Coordinate with state, federal, and tribal entities and the public

# Status – Surveillance and Maintenance of DOE Sites in the Navajo Nation and New Mexico (continued)

## Summary of LTS&M Activities

LTS&M Activity	Ambrosia Lake	Bluewater	L-Bar	Mexican Hat	Monument Valley	Shiprock	Tuba City
Groundwater treatment					X (pilot)	X	X
Annual inspection	X	X	X	X		X	X
Site maintenance	X	X	X (on-site erosion repair)	X		X	X
Water sampling and analysis	Every 3 years, last fall 2007	Every 3 years, last fall 2007	Every 3 years, last fall 2007		Semi-annual, last June 2009	Semi-annual, last Sept. 2009	Semi-annual, last Aug. 2009





# Status – Five-Year Plan Commitments to Address Impacts on Uranium Contamination in the Navajo Nation

- Continued groundwater treatment at Tuba City, Arizona, and Shiprock, New Mexico
- Continued LTS&M activities
- Progress toward characterization and remediation of site located across Highway 160 from the former mill site outside Tuba City, Arizona
  - Funding provided to the Navajo Nation for remediation via a Cooperative Agreement
  - DOE will support cleanup planning and action as requested by the Navajo Nation and will verify that cleanup is completed

# Status – LM Technical Support, Cooperation, and Coordination with the Navajo Nation

## ■ LM continues to:

- Provide funds for Navajo Nation participation in all site activities per our Cooperative Agreement (includes additional funds for new wells near Tuba City to address concerns about groundwater contamination they suspect originates at the DOE UMTRCA site near Tuba City)
- Supply technical expertise to the Indian Health Service and Bureau of Indian Affairs, as requested
- Collaborate with the Navajo Nation on status and issues surrounding the UMTRCA Title II, NRC-licensed, Church Rock mill tailings and associated mine site under remediation through EPA Superfund authority





# Status – LM Technical Support, Cooperation, and Coordination with the Navajo Nation

- LM continues to: (continued)
  - Hold regular quarterly meetings, as they have since 1988, with Navajo UMTRCA program and Navajo EPA staff to discuss groundwater remedies
  - Provide groundwater monitoring data, annual treatment system performance reports, and annual site inspection reports, along with a number of special study reports to evaluate alternative treatment technologies
  - Maintain continuous involvement of Navajo UMTRCA staff through the Cooperative Agreement in site management and surveillance and maintenance
  - Sponsor periodic field trips for students and faculty of the Diné College to UMTRCA sites and has arranged for class visits at several campuses



# Status – LM Technical Support, Cooperation, and Coordination with NMED

- LM entering a Cooperative Agreement with the state of New Mexico to ensure that LM's former uranium mill sites do not pose risks to human health and the environment
- NMED may comment on the draft LTS&M plans that guide post-closure care of LM sites
- This agreement will support NMED staff participation in inspections and review of monitoring data
- LM will coordinate activities with NMED and respond to their concerns and recommendations
- LM will allocate approximately \$470,000 to support NMED in performing these activities over the next 5 years



## Status – LM Technical Support, Cooperation, and Coordination with NMED (continued)

- LM is currently responsible for two former uranium mill sites near Grants, New Mexico—Ambrosia Lake and Bluewater
- LM manages UMTRCA sites to ensure protection of public health and the environment according to long-term surveillance plans approved by the U.S. Nuclear Regulatory Commission
- Regional groundwater quality is degraded by uranium deposits, mines, and mills
- LM must demonstrate that its sites are not degrading regional groundwater
- Groundwater monitoring results indicate that no NRC approved ACLs are exceeded at any Point-of-Compliance



# Status – LM Technical Support, Cooperation, and Coordination with NMED (continued)

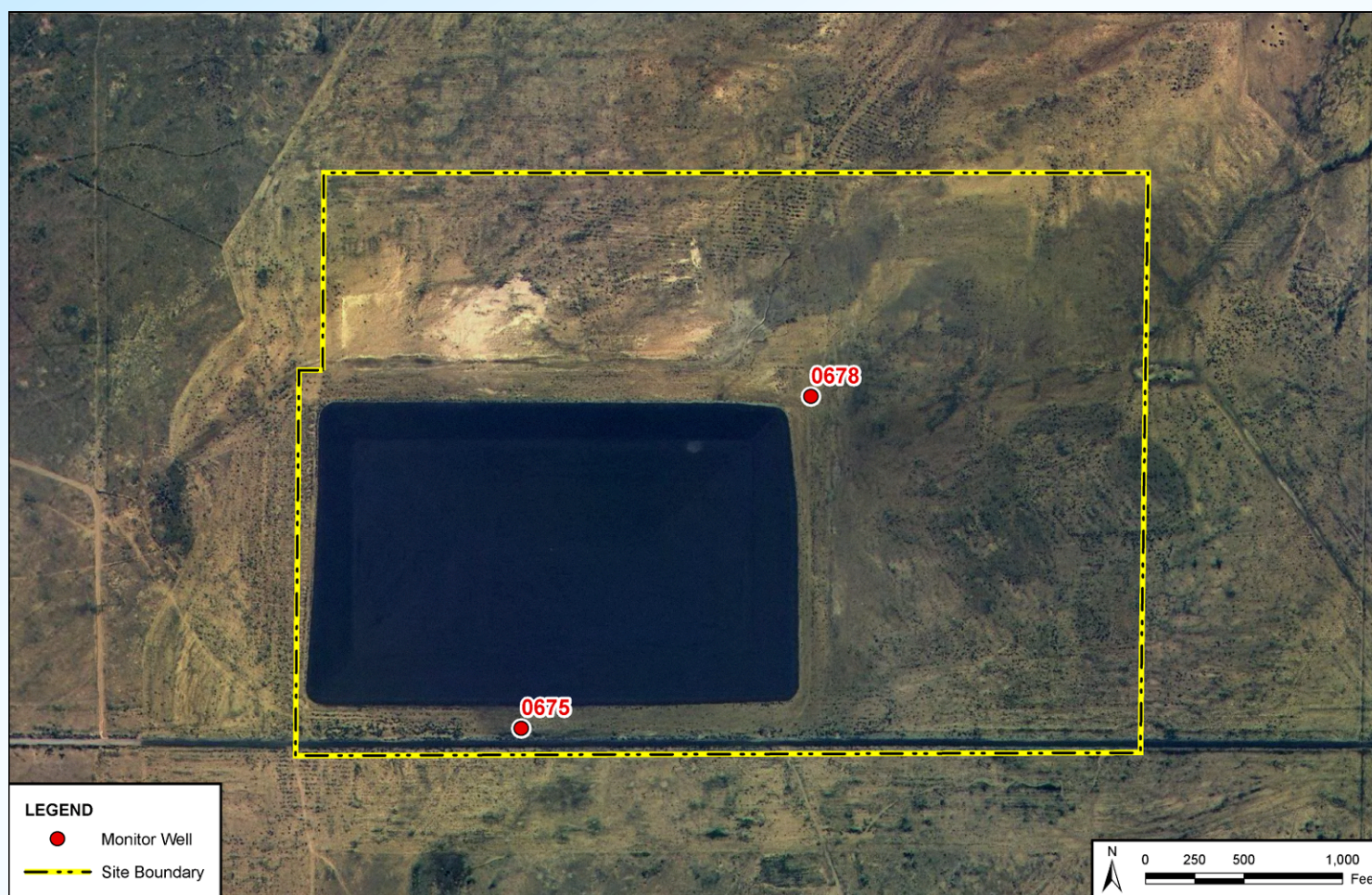
## ■ Groundwater remedy

- NRC approves all standards
- Ambrosia Lake – supplemental standards based on limited use
- Bluewater – ACLs for molybdenum, selenium, and uranium
- If ACLs are not exceeded at the point-of-compliance (POC) wells, maximum concentration levels should not be exceeded at the site boundary, the point of exposure
- If an ACL is exceeded in a POC well, then point-of-exposure (POE) wells located near the site boundary along the groundwater flow path will be sampled





# Ambrosia Lake Disposal Site Monitor Well Locations

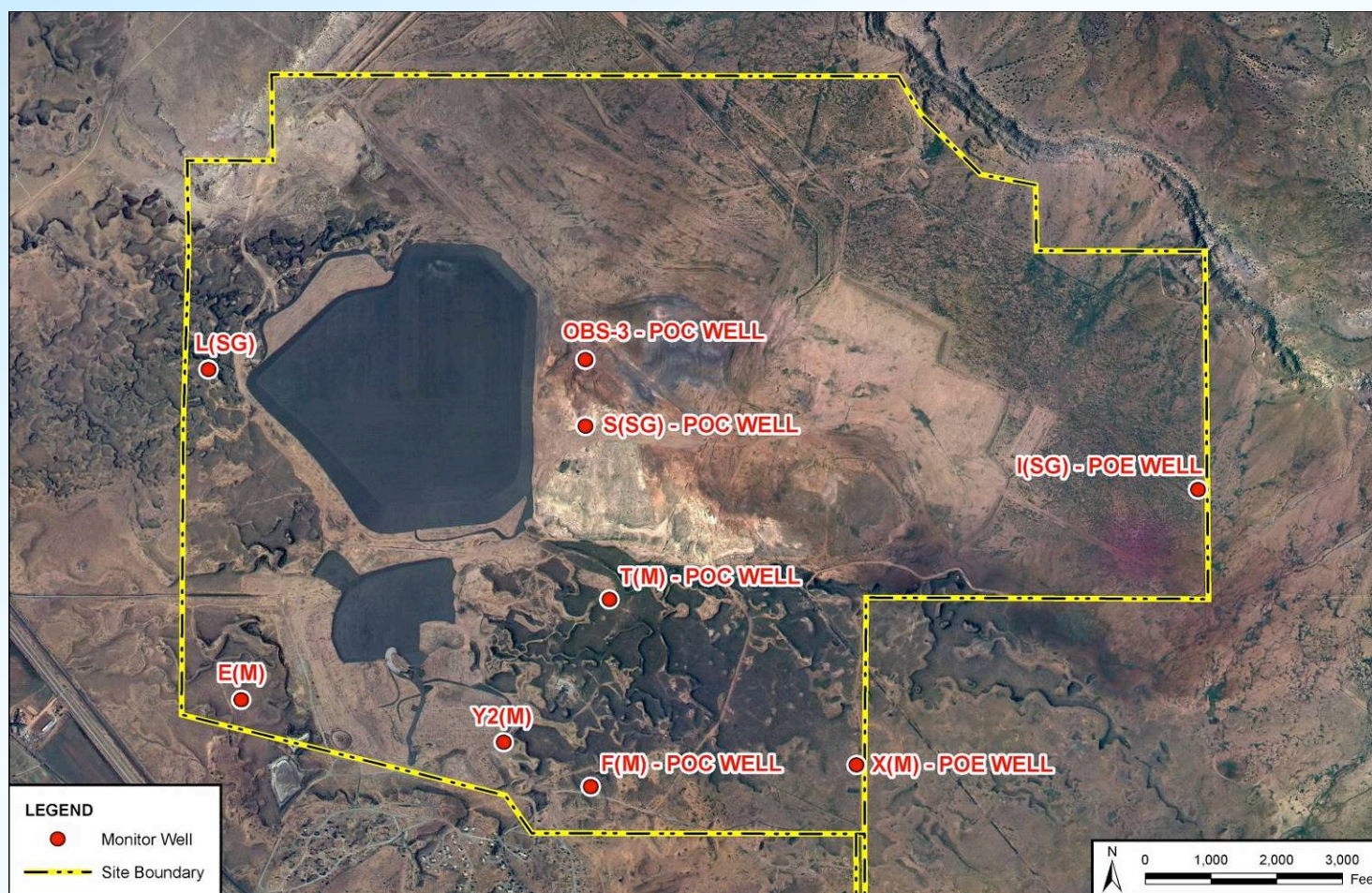


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# Bluewater Disposal Site Monitor Well Locations



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# Status – LM Technical Support, Cooperation, and Coordination with NMED (continued)

- NMED regional groundwater quality investigation
  - Assisted NMED collecting groundwater samples and allowed samplers unescorted site access
  - Provided NMED all available groundwater data for both sites
  - Conducted additional groundwater sampling for nitrate
  - Provided a map and well completion logs for all existing and decommissioned LM monitor wells
  - Provided well completion logs generated from ARCO data



Ambrosia Lake Disposal Site



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# Status – NMED Regional Groundwater Quality Investigation (continued)

- Provided lists of all site-related LM documents
- Conducting evaluation of hydrogeology and groundwater geochemistry
- Plan to install:
  - Several new shallow monitor wells in the alluvium at the Ambrosia Lake site in fall 2009
  - Four new monitor wells at the Bluewater site in spring 2010



Bluewater Disposal Site



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# Status –LM Technical Support, Cooperation, and Coordination with NMED

## ■ New issues

- Overall project plan for Highway 160 site remediation is in negotiation
- The Navajo Nation has filed a motion seeking to intervene in the El Paso Natural Gas lawsuit, which raises RCRA and UMTRCA claims; the UMTRCA claims in the EPNG suit have been dismissed, although that decision is under appeal
- Received NRC comments on draft Cooperative Agreement with NMED

