



## AGENDA

### NSSAB FULL BOARD MEETING AND WORKSHOP

Atomic Testing Museum, Frank Roberts Auditorium  
755 East Flamingo Road, Las Vegas, NV 89119

**September 14, 2011**

- |                          |  |  |
|--------------------------|--|--|
| <b>4:00 PM - 4:05 PM</b> | <b>Open Meeting / Agenda Review</b>  | <b>Denise Rupp</b> , Facilitator   |
| <b>4:05 PM - 4:10 PM</b> | <b>Chair's Opening Remarks</b> <ul style="list-style-type: none"><li>▪ Agenda approval</li></ul>   | <b>Walt Wegst</b> , Chair  |
| <b>4:10 PM - 4:20 PM</b> | <b>DOE Updates</b> <ul style="list-style-type: none"><li>▪ Membership</li><li>▪ Student Liaison update</li><li>▪ State of Nevada Notifications (July, August and September)</li></ul>  | <b>Kelly Snyder</b> , DOE DDFO   |
| <b>4:20 PM - 5:10 PM</b> | <b>FY 2011 Wrap Up and FY 2012 Look Ahead</b> <ul style="list-style-type: none"><li>▪ FY 2011 NSSAB Work Plan Status</li><li>▪ Waste Management</li><li>▪ Industrial Site</li><li>▪ Soils</li><li>▪ Groundwater Characterization</li></ul>   | <b>Rob Boehlecke</b> , DOE<br><b>Jhon Carilli</b> , DOE<br><b>Rob Boehlecke</b> , DOE<br><b>Rob Boehlecke</b> , DOE<br><b>Bill Wilborn</b> , DOE |
| <b>5:10 PM - 5:35 PM</b> | <b>NSSAB Business</b> <ul style="list-style-type: none"><li>▪ SWEIS Committee Update</li><li>▪ Transportation Working Group Update</li></ul>   | <b>Michael Voegele</b> , Committee Co-Chair<br><b>Kathy Bienenstein</b> , Vice-Chair   |
| <b>5:35 PM - 5:55 PM</b> | <b>EM SSAB Update</b> <ul style="list-style-type: none"><li>▪ EM SSAB Chairs Video Conference - Oct 20<ul style="list-style-type: none"><li>▪ Topics, Accomplishment and Major Activity Discussion</li><li>▪ Participation</li></ul></li><li>▪ Approval of EM SSAB Chairs Recommendations from June 2011</li></ul> | <b>Walt Wegst</b> , Chair  |
| <b>5:55 PM - 6:00 PM</b> | <b>Public Comment</b>  | <b>Denise Rupp</b> , Facilitator   |

<b>6:00 PM - 6:05 PM</b>	<b>FY 2012 Chair/Vice-Chair Election</b>	<b>Denise Rupp, Facilitator</b>
<b>6:05 PM - 6:25 PM</b>	<b>Break</b>	
<b>6:25 PM - 7:40 PM</b>	<b>FY 2012 Work Plan Development</b>	<b>Denise Rupp, Facilitator</b>
6:25 PM - 6:50 PM	▪ DOE Proposed Work Plan Tasks and Discussion	<b>Kelly Snyder, DDFO</b>
6:50 PM - 7:00 PM	▪ Other NSSAB Task Input	<b>Denise Rupp, Facilitator</b>
7:00 PM - 7:10 PM	▪ Work Plan Voting	
7:10 PM - 7:20 PM	▪ Break	
7:20 PM - 7:40 PM	▪ Final Work Plan Task Selection and Recommendation Letter to DOE	
<b>7:40 PM - 7:45 PM</b>	<b>FY 2012 Chair/Vice-Chair Election Results</b>	<b>Denise Rupp, Facilitator</b>
<b>7:45 PM - 8:00 PM</b>	<b>FY 2012 Meetings</b>	<b>Denise Rupp, Facilitator</b>
	▪ Approval of Proposed Schedule	
	▪ Addition of Standing Liaison Agenda Item	
	▪ NSSAB Member Orientation - October 5, 1-5 pm 755 E. Flamingo Rd	
	▪ Next Full Board Meeting - October 12, 5 pm Las Vegas Country Club - 3000 Joe W. Brown Blvd.	
	▪ NNSS Tour - October 19, Full Day	
<b>8:00 PM - 8:05 PM</b>	<b>Meeting Wrap-up/Adjournment</b>	<b>Denise Rupp, Facilitator</b>

## NSSAB MEETING ATTENDANCE

### Full Board Meetings

FY 2011

October 2010 through September 2011

									Maximum
Name	11/10/10	1/12/11	2/16/11	3/16/11	5/11/11	6/8/11	9/14/11		Terms Limit
Kathleen Bienenstein	✓	E	✓	✓	✓	✓	✓		2014
Donna Hruska	✓	✓	✓	✓	✓	✓	✓		2016
Robert Johnson	✓	✓	✓	✓	E	✓	✓		2012
John McGrail	✓	✓	✓	✓	U	✓	✓		2014
Gregory Minden	✓	✓	✓	✓	✓	✓	✓		2016
Michael Moore	✓	E	✓	✓	E	✓	✓		2016
Harry Mortenson	U	U	RS						2016
Hal Sullivan	✓	✓	✓	U	RS				2012
Michael Voegele	✓	✓	✓	✓	✓	E	✓		2016
Jim Weeks	✓	✓	✓	✓	✓	✓	✓		2012
Walt Wegst	✓	✓	✓	✓	✓	✓	✓		2012
<b>Key:</b>									
	✓ = Present								
	E = Excused    U = Unexcused								
	RM = Removed    RS = Resigned								
	Term Limit								

## Public Notification of Corrective Actions

June 30, 2011

Las Vegas, Nevada

The Department of Energy (DOE) will be submitting the following Corrective Action Unit (CAU) final Corrective Action Decision Documents (CADDs), CADD/Corrective Action Plans (CAPs), CADD/Closure Reports (CRs), or Streamlined Approach for Environmental Restoration (SAFER) Work Plans, proposing closure-in-place to the Nevada Division of Environmental Protection (NDEP), during the next 60 days. These documents will recommend a closure-in-place strategy in which engineering and/or administrative controls will be used to close the sites although contamination remains.

When submitting these documents to NDEP, copies will be supplied to the Las Vegas and Carson City Public Reading Facilities for review. Copies may be requested by contacting the office of Public Affairs at [publicaffairs@nv.doe.gov](mailto:publicaffairs@nv.doe.gov). Submit comments regarding a decision document to Tim Murphy (NDEP) at [TMurphy@ndep.nv.gov](mailto:TMurphy@ndep.nv.gov) within 30 days of the document's release. Public Reading Facility addresses are listed below.

CAU Number	CAU Description	Document	Approximate Submittal Date
98	Frenchman Flat	CADD/CAP Rev1	07/14/11
374	Area 20 Schooner Unit Crater	CADD/CR	07/15/11
375	Area 30 Buggy Unit Craters	CADD/CR	08/31/11
574	Neptune	SAFER	08/25/11

### *Site Information for CAU 98, Frenchman Flat*

**Location:** Area 5 and Area 11

**CAU Brief History:** Frenchman Flat was used for 10 underground nuclear tests between 1965 and 1971.

**Contaminants of Concern:** Not yet identified

**Type of Corrective Action Taking Place:** Closure in Place

### *Site Information for CAU 374, Area 20 Schooner Unit Crater*

**Location:** Area 18 and Area 20

**CAU Brief History:** Schooner and Danny Boy craters and fallout plumes from plowshare and weapons-effects tests and also three individual drum CASs.

**Contaminants of Concern:** Radiological contamination from the tests

**Type of Corrective Action Taking Place:** Through a CADD/CR, the drums were removed and properly disposed and the craters were closed-in-place with Use Restrictions.

### *Site Information for CAU 375, Area 30 Buggy Unit Craters*

**Location:** Area 25 and Area 30

**CAU Brief History:** TCA – Remnants of nuclear rocket motor testing. Buggy – Remnants of underground nuclear detonation.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Closure in Place and Use Restrictions

### *Site Information for CAU 574, Neptune*

**Location:** Area 12

**CAU Brief History:** CAU consists of two CASs (NEPTUNE and BLANCA [modification in progress]). NEPTUNE was a safety experiment in C-Tunnel, which breached the ceiling of the tunnel, and vented. Blanca was a weapons related experiment in E-Tunnel, and vented out the face of the mesa.

**Contaminants of Concern:** Radiological Isotopes

**Type of Corrective Action Taking Place:** Through a SAFER Plan, the sites will be closed-in-place, and Use Restrictions will be implemented where necessary.

**Southern Nevada Public Reading Facility**  
c/o Nuclear Testing Archive  
775 East Flamingo Road  
Las Vegas, NV 89119

**Northern Nevada Public Reading Facility**  
Nevada State Library and Archives  
100 N. Stewart Street  
Carson City, NV 89701-4285

The following is a list of all documents submitted to the Public Reading Facilities during June 2011. Attached are the Executive Summaries for the following documents.

<b>CAU Number</b>	<b>CAU Description</b>	<b>Document</b>
367	Area 10 Sedan, Ess and Uncle Unit Craters	CADD/CR
539	Areas 25 and 26 Railroad Tracks	CR
544	Cellars, Mud Pits, and Oil Spills	CR
562	Waste Systems	CAP
566	Engine Maintenance, Assembly and Disassembly (EMAD) Compound	CR

## Executive Summary for CAU 367 CADD/CR

This Corrective Action Decision Document/Closure Report has been prepared for Corrective Action Unit (CAU) 367, Area 10 Sedan, Ess and Uncle Unit Craters, located within Area 10 at the Nevada National Security Site, Nevada, in accordance with the *Federal Facility Agreement and Consent Order* (FFACO). Corrective Action Unit 367 comprises four corrective action sites (CASs):

- 10-09-03, Mud Pit
- 10-45-01, U-10h Crater (Sedan)
- 10-45-02, Ess Crater Site
- 10-45-03, Uncle Crater Site

The purpose of this Corrective Action Decision Document/Closure Report is to provide justification and documentation of the corrective actions and site closure activities implemented at CAU 367. A corrective action of closure in place with use restrictions was completed at each of the three crater CASs (10-45-01, 10-45-02, and 10-45-03); corrective actions were not required at CAS 10-09-03. In addition, a limited soil removal corrective action was conducted at the location of a potential source material release. Based on completion of these correction actions, no additional corrective action is required at CAU 367, and site closure is considered complete. Corrective action investigation (CAI) activities were performed from February 2010 through March 2011, as set forth in the *Corrective Action Investigation Plan for Corrective Action Unit 367: Area 10 Sedan, Ess and Uncle Unit Craters, Nevada Test Site, Nevada*.

The approach for the CAI was divided into two facets: investigation of the primary release of radionuclides, and investigation of non-test or other releases (e.g., migration in washes and potential source material). Based on the proximity of the Uncle, Ess, and Sedan craters, the impact of the Sedan test on the fallout deposited from the two earlier tests, and aerial radiological surveys, the CAU 367 investigation was designed to study the releases from the three crater CASs as one combined release (primary release). Corrective Action Site 10-09-03, Mud Pit, consists of two mud pits identified at CAU 367. The mud pits are considered non-test releases or other releases and were investigated independent of the three crater CASs. The purpose of the CAI was to fulfill data needs as defined during the data quality objective (DQO) process. The CAU 367 dataset of investigation results was evaluated based on a data quality assessment. This assessment demonstrated the dataset is complete and acceptable for use in fulfilling the DQO data needs.

Analytes detected during the CAI were evaluated against final action levels (FALs) established in this document. For the primary release, radiological doses exceeding the FAL of 25 millirem per year were not found to be present in the surface or shallow subsurface soil outside the default contamination boundary. However, it was assumed that radionuclides are present in subsurface media within each of the three craters (Sedan, Ess, and Uncle) due to prompt injection of radionuclides from the tests. Based on the assumption of radiological dose exceeding the FAL, corrective actions were undertaken that consisted of implementing a use restriction and posting warning signs at each crater CAS. These use restrictions were recorded in the FFACO database; the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) Facility Information Management System; and the NNSA/NSO CAU/CAS files.

With regard to other releases, no contaminants of concern were identified at the mud pits or any of the other release locations, with one exception. Potential source material in the form of lead was found at one location. A corrective action of clean closure was implemented at this location, and verification samples indicated that no further action is necessary.

Therefore, NNSA/NSO provides the following recommendations:

- A Notice of Completion to NNSA/NSO is requested from the Nevada Division of Environmental Protection for closure of CAU 367.
- Corrective Action Unit 367 should be promoted from Appendix III to Appendix IV of the FFACO.

## Executive Summary for CAU 539 CR

This Closure Report (CR) presents information supporting the closure of Corrective Action Unit (CAU) 539: Areas 25 and 26 Railroad Tracks, Nevada National Security Site, Nevada. This CR complies with the requirements of the *Federal Facility Agreement and Consent Order* (FFACO) that was agreed to by the State of Nevada; U.S. Department of Energy (DOE), Environmental Management; U.S. Department of Defense; and DOE, Legacy Management. The corrective action sites (CASs) within CAU 539 are located within Areas 25 and 26 of the Nevada National Security Site. Corrective Action Unit 539 comprises the following CASs:

- 25-99-21, Area 25 Railroad Tracks
- 26-99-05, Area 26 Railroad Tracks

The purpose of this CR is to provide documentation supporting the completed corrective actions and provide data confirming that the closure objectives for CASs within CAU 539 were met. To achieve this, the following actions were performed:

- Reviewed documentation on historical and current site conditions, including the concentration and extent of contamination.
- Conducted radiological walkover surveys of railroad tracks in both Areas 25 and 26.
- Collected ballast and soil samples and calculated internal dose estimates for radiological releases.
- Collected *in situ* thermoluminescent dosimeter measurements and calculated external dose estimates for radiological releases.
- Removed lead bricks as potential source material (PSM) and collected verification samples.
- Implemented corrective actions as necessary to protect human health and the environment.
- Properly disposed of corrective action and investigation wastes.
- Implemented an FFACO use restriction (UR) for radiological contamination at CAS 25-99-21. The approved UR form and map are provided in [Appendix F](#) and will be filed in the DOE, National Nuclear Security Administration Nevada Site Office (NNSA/NSO), Facility Information Management System; the FFACO database; and the NNSA/NSO CAU/CAS files.

From November 29, 2010, through May 2, 2011, closure activities were performed as set forth in the *Streamlined Approach for Environmental Restoration (SAFER) Plan for Corrective Action Unit 539: Areas 25 and 26 Railroad Tracks, Nevada Test Site, Nevada*. The purposes of the activities as defined during the data quality objectives process were as follows:

- Determine whether contaminants of concern (COCs) are present.
- If COCs are present, determine their nature and extent, implement appropriate corrective actions, and properly dispose of wastes.

Analytes detected during the closure activities were evaluated against final action levels (FALs) to determine COCs for CAU 539. Assessment of the data generated from closure activities revealed the following:

- At CAS 26-99-05, the total effective dose for radiological releases did not exceed the FAL of 25 millirem per Industrial Area year. Potential source material in the form of lead bricks was found at three locations. A corrective action of clean closure was implemented at these locations, and verification samples indicated that no further action is necessary.
- At CAS 25-99-21, the total effective dose for radiological releases exceeds the FAL of 25 millirem per Industrial Area year. Potential source material in the form of lead bricks was found at eight locations. A corrective action was implemented by removing the lead bricks and soil above FALs at these locations, and verification samples indicated that no further action is necessary. Pieces of debris with high radioactivity were identified as PSM and remain within the CAS boundary. A corrective action of closure in place with a UR was implemented at this CAS because closure activities showed evidence of remaining soil contamination and radioactive PSM. Future land use will be restricted from surface and intrusive activities.

Closure activities generated waste streams consisting of industrial solid waste, recyclable materials, low-level radioactive waste, and mixed low-level radioactive waste. Wastes were disposed of in the appropriate onsite landfills.

The NNSA/NSO provides the following recommendations:

- Clean closure is required at CAS 26-99-05.
- Closure in place is required at CAS 25-99-21.
- A UR is required at CAS 25-99-21.
- A Notice of Completion to the NNSA/NSO is requested from the Nevada Division of Environmental Protection for closure of CAU 539.
- Corrective Action Unit 539 should be moved from Appendix III to Appendix IV of the FFACO.

## Executive Summary for CAU 544 CR

This Closure Report (CR) presents information supporting the closure of Corrective Action Unit (CAU) 544: Cellars, Mud Pits, and Oil Spills, Nevada National Security Site, Nevada. This CR complies with the requirements of the *Federal Facility Agreement and Consent Order* that was agreed to by the State of Nevada; U.S. Department of Energy (DOE), Environmental Management; U.S. Department of Defense; and DOE, Legacy Management. The corrective action sites (CASs) within CAU 544 are located within Areas 2, 7, 9, 10, 12, 19, and 20 of the Nevada National Security Site. Corrective Action Unit 544 comprises the following CASs:

- 02-37-08, Cellar & Mud Pit
- 02-37-09, Cellar & Mud Pit
- 07-09-01, Mud Pit
- 09-09-46, U-9itsx20 PS #1A Mud Pit
- 10-09-01, Mud Pit
- 12-09-03, Mud Pit
- 19-09-01, Mud Pits (2)
- 19-09-03, Mud Pit
- 19-09-04, Mud Pit
- 19-25-01, Oil Spill
- 19-99-06, Waste Spill
- 20-09-01, Mud Pits (2)
- 20-09-02, Mud Pit
- 20-09-03, Mud Pit
- 20-09-04, Mud Pits (2)
- 20-09-06, Mud Pit
- 20-09-07, Mud Pit
- 20-09-10, Mud Pit
- 20-25-04, Oil Spills
- 20-25-05, Oil Spills

The purpose of this CR is to provide documentation supporting the completed corrective actions and data confirming that the closure objectives for CASs within CAU 544 were met. To achieve this, the following actions were performed:

- Review the current site conditions, including the concentration and extent of contamination.
- Implement any corrective actions necessary to protect human health and the environment.
- Properly dispose of corrective action and investigation wastes.
- Document Notice of Completion and closure of CAU 544 issued by the Nevada Division of Environmental Protection.

From December 7, 2010, through April 4, 2011, closure activities were performed as set forth in the *Streamlined Approach for Environmental Restoration (SAFER) Plan for Corrective Action Unit 544: Cellars, Mud Pits, and Oil Spills, Nevada Test Site, Nevada*. The purposes of the activities as defined during the data quality objectives process were as follows:

- Determine whether contaminants of concern (COCs) are present.
- If COCs are present, determine their nature and extent, implement appropriate corrective actions, and properly dispose of wastes.

Analytes detected during the closure activities were evaluated against final action levels (FALs) to determine COCs for CAU 544. Initial assessment of the data generated from closure activities indicated that the FALs were exceeded at CAS 19-25-01 for benzo(a)pyrene in three samples due to sensitivity issues. These samples were diluted during sample preparation, resulting in elevated detection limits that were greater than their corresponding FALs. A second round of sampling was conducted at this CAS, and valid results meeting the data quality indicator for sensitivity were obtained for benzo(a)pyrene in 14 other samples. Because benzo(a)pyrene was not detected in these additional samples, there is no reason to suspect that this contaminant is present in soil at CAS 19-25-01. A use restriction (UR) will be implemented at CAS 20-25-04 because sampling could not be conducted due to safety concerns regarding the potential crater area. Therefore, it is assumed that COCs are present in the soil at this CAS. No further action is necessary at the CASs where no contaminants of potential concern were found above preliminary action levels and at the mud pit CASs that meet the criteria of the *Mud Pit Risk-Based Strategy Closure Report*.

The DOE, National Nuclear Security Administration Nevada Site Office, provides the following recommendations:

- No further corrective action is required at the following CASs:
  - 02-37-08
  - 02-37-09
  - 07-09-01
  - 09-09-46
  - 10-09-01
  - 12-09-03
  - 19-09-01
  - 19-09-03
  - 19-09-04
  - 19-25-01
  - 19-99-06
  - 20-09-01
  - 20-09-02
  - 20-09-03
  - 20-09-04
  - 20-09-06
  - 20-09-07
  - 20-09-10
  - 20-25-05
- A UR is required at CAS 20-25-04.
- A Notice of Completion to the DOE, National Nuclear Security Administration Nevada Site Office, is requested from the Nevada Division of Environmental Protection for closure of CAU 544.
- Corrective Action Unit 544 should be moved from Appendix III to Appendix IV of the *Federal Facility Agreement and Consent Order*.

## Executive Summary for CAU 562 CAP

This Corrective Action Plan has been prepared for Corrective Action Unit (CAU) 562, Waste Systems, in accordance with the *Federal Facility Agreement and Consent Order* (1996; as amended March 2010). CAU 562 consists of 13 Corrective Action Sites (CASs) located in Areas 2, 23, and 25 of the Nevada National Security Site.

Site characterization activities were performed in 2009 and 2010, and the results are presented in Appendix A of the Corrective Action Decision Document for CAU 562 (U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office, 2010). The scope of work required to implement the recommended closure alternatives is summarized below.

- **CAS 02-26-11, Lead Shot**, will be clean closed by removing shot.
- **CAS 02-44-02, Paint Spills and French Drain**, will be clean closed by removing paint and contaminated soil. As a best management practice (BMP), asbestos tile will be removed.
- **CAS 02-59-01, Septic System**, will be clean closed by removing septic tank contents. As a BMP, the septic tank will be removed.
- **CAS 02-60-01, Concrete Drain**, contains no contaminants of concern (COCs) above action levels. No further action is required; however, as a BMP, the concrete drain will be removed.
- **CAS 02-60-02, French Drain**, was clean closed. Corrective actions were completed during corrective action investigation activities. As a BMP, the drain grates and drain pipe will be removed.
- **CAS 02-60-03, Steam Cleaning Drain**, will be clean closed by removing contaminated soil. As a BMP, the steam cleaning sump grate and outfall pipe will be removed.
- **CAS 02-60-04, French Drain**, was clean closed. Corrective actions were completed during corrective action investigation activities.
- **CAS 02-60-05, French Drain**, will be clean closed by removing contaminated soil.
- **CAS 02-60-06, French Drain**, contains no COCs above action levels. No further action is required.
- **CAS 02-60-07, French Drain**, requires no further action. The french drain identified in historical documentation was not located during corrective action investigation activities.
- **CAS 23-60-01, Mud Trap Drain and Outfall**, will be clean closed by removing sediment from the mud trap. As a BMP, the mud trap and outfall pipe will be removed.
- **CAS 23-99-06, Grease Trap**, will be clean closed by removing sediment from the grease trap and backfilling the grease trap with grout.
- **CAS 25-60-04, Building 3123 Outfalls**, will be clean closed by removing contaminated soil and the sludge-containing outfall pipe.

## Executive Summary for CAU 566 CR

This Closure Report (CR) presents information supporting the closure of Corrective Action Unit (CAU) 566: EMAD Compound, Nevada National Security Site, Nevada. This CR complies with the requirements of the *Federal Facility Agreement and Consent Order* that was agreed to by the State of Nevada; U.S. Department of Energy (DOE), Environmental Management; U.S. Department of Defense; and DOE, Legacy Management. Corrective Action Unit 566 comprises Corrective Action Site (CAS) 25-99-20, EMAD Compound, located within Area 25 of the Nevada National Security Site.

The purpose of this CR is to provide documentation supporting the completed corrective actions and provide data confirming that the closure objectives for CAU 566 were met. To achieve this, the following actions were performed:

- Review the current site conditions, including the concentration and extent of contamination.
- Implement any corrective actions necessary to protect human health and the environment.
- Properly dispose of corrective action and investigation wastes.
- Document Notice of Completion and closure of CAU 566 issued by the Nevada Division of Environmental Protection.

From October 2010 through May 2011, closure activities were performed as set forth in the *Streamlined Approach for Environmental Restoration Plan for CAU 566: EMAD Compound, Nevada National Security Site, Nevada*. The purposes of the activities as defined during the data quality objectives process were as follows:

- Determine whether contaminants of concern (COCs) are present.
- If COCs are present, determine their nature and extent, implement appropriate corrective actions, and properly dispose of wastes.

Analytes detected during the closure activities were evaluated against final action levels (FALs) to determine COCs for CAU 566. Assessment of the data from collected soil samples, and from radiological and visual surveys of the site, indicates the FALs were exceeded for polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and radioactivity.

The PCBs (Aroclor 1254 and 1260) were detected in samples exceeding the FAL at the electrical substations and at varying concentrations throughout the EMAD Compound. Due to the discovery of PCBs at multiple locations outside the immediate area surrounding the substations, the conceptual site model was revised to include two sources for the PCB contamination at CAU 566. The source of the PCB contamination at CAU 566 could be partially due to spills or releases from the PCB-containing transformers; however, the contamination outside the immediate areas of the substations is likely due to historical application of PCB-containing oil for soil stabilization, dust suppression, and/or the importing of PCB-contaminated soil. Aroclors 1221, 1232, 1242, 1248, and 1268 failed the sensitivity criteria (for seven samples) defined in the CAU 566 Streamlined Approach for Environmental Restoration Plan. Because it could not be determined that these contaminants are present below their corresponding FALs, it was conservatively assumed they are COCs.

Benzo(a)pyrene was detected above the FAL in one sample near the transformer pad at the southeast substation. Except for this sample, all other SVOCs were detected at concentrations below their respective FALs. However, the sampling of hydrocarbon-stained soil under the two 120-ton locomotives failed the sensitivity criteria for several SVOCs. Because it could not be determined that

these contaminants are present below their corresponding FALs, it was conservatively assumed these contaminants are COCs.

Corrective actions were implemented to remove the following:

- Radiologically contaminated soil assumed greater than FAL at two locations
- Radiologically contaminated soil assumed greater than FAL with lead shot
- PCB-contaminated soil
- Radiologically contaminated filters and equipment
- Fuels, lubricants, engine coolants, and oils
- Lead debris
- Electrical and lighting components assumed to be potential source materials, including
  - fluorescent light bulbs
  - mercury switches (thermostats)
  - circuit boards
  - PCB-containing ballasts

Closure of CAU 566 was achieved through a combination of removal activities and closure in place. Corrective actions to remove COCs, and known and assumed potential source materials, were implemented as was practical. The PCBs remaining at the site are bounded laterally, but not vertically, within CAS 25-99-20 based upon step-out sampling; the sources (e.g., PCB transformer oils, diesel fuel from locomotive reservoirs) have been removed; the practice of the application of PCB-containing oils for soil stabilization has ceased; and the COCs are not readily mobile in the environment. Closure in place is necessary, and future land use of the site will be restricted from intrusive activities. This will effectively eliminate inadvertent contact by humans with the contaminated media.

The DOE, National Nuclear Security Administration Nevada Site Office, provides the following recommendations:

- No further corrective action is required at CAS 25-99-20.
- Closure in place of CAS 25-99-20.
- A use restriction is required at CAU 566.
- A Notice of Completion to the DOE, National Nuclear Security Administration Nevada Site Office, is requested from the Nevada Division of Environmental Protection for closure of CAU 566.
- Corrective Action Unit 566 should be moved from Appendix III to Appendix IV of the *Federal Facility Agreement and Consent Order*.

## Public Notification of Corrective Actions

July 28, 2011  
Las Vegas, Nevada

The Department of Energy (DOE) will be submitting the following Corrective Action Unit (CAU) final Corrective Action Decision Documents (CADDs), CADD/Corrective Action Plans (CAPs), CADD/Closure Reports (CRs), or Streamlined Approach for Environmental Restoration (SAFER) Work Plans, proposing closure-in-place to the Nevada Division of Environmental Protection (NDEP), during the next 60 days. These documents will recommend a closure-in-place strategy in which engineering and/or administrative controls will be used to close the sites although contamination remains.

When submitting these documents to NDEP, copies will be supplied to the Las Vegas and Carson City Public Reading Facilities for review. Copies may be requested by contacting the office of Public Affairs at [publicaffairs@nv.doe.gov](mailto:publicaffairs@nv.doe.gov). Submit comments regarding a decision document to Tim Murphy (NDEP) at [TMurphy@ndep.nv.gov](mailto:TMurphy@ndep.nv.gov) within 30 days of the document's release. Public Reading Facility addresses are listed below.

CAU Number	CAU Description	Document	Approximate Submittal Date
365	Baneberry Contamination Area	CADD/CR	09/30/11
375	Area 30 Buggy Unit Craters	CADD/CR	08/31/11
547	Miscellaneous Contaminated Waste Sets	CADD/CAP	09/30/11
574	Neptune	SAFER Plan	09/30/11

### *Site Information for CAU 365, Baneberry Contamination Area*

**Location:** Area 8

**CAU Brief History:** Release of radionuclides from the underground Baneberry test in 1970 which vented.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Closure in Place with Use Restrictions

### *Site Information for CAU 375, Area 30 Buggy Unit Craters*

**Location:** Areas 25 and 30

**CAU Brief History:** TCA – Remnants of nuclear rocket motor testing. Buggy – Remnants of underground nuclear detonation.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Closure in Place and Use Restrictions

### *Site Information for CAU 547, Miscellaneous Contaminated Waste Sites*

**Location:** Areas 2, 3, and 9

**CAU Brief History:** Plutonium contaminated piping resulting from Safety Tests that will be closed in place.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Through a CADD/CAP, Closure in Place with a Use Restriction at all three locations

### *Site Information for CAU 574, Neptune*

**Location:** Area 12

**CAU Brief History:** CAU consists of two CASs (NEPTUNE and BLANCA [modification in progress]). NEPTUNE was a safety experiment in C-Tunnel, which breached the ceiling of the tunnel, and vented. Blanca was a weapons related experiment in E-Tunnel, and vented out the face of the mesa.

**Contaminants of Concern:** Radiological Isotopes

**Type of Corrective Action Taking Place:** Through a SAFER Plan, the sites will be closed-in-place, and Use Restrictions will be implemented where necessary.

**Southern Nevada Public Reading Facility**  
**c/o Nuclear Testing Archive**  
**775 East Flamingo Road**  
**Las Vegas, NV 89119**

**Northern Nevada Public Reading Facility**  
**Nevada State Library and Archives**  
**100 N. Stewart Street**  
**Carson City, NV 89701-4285**

The following is a list of all documents submitted to the Public Reading Facilities during July 2011. Attached are the Executive Summaries for the following documents.

<b>CAU Number</b>	<b>CAU Description</b>	<b>Document</b>
98	Frenchman Flat	CADD/CAP, Rev 1
374	Area 20 Schooner Unit Crater	CADD/CR

## **Executive Summary for CAU 98 CADD/CAP, Rev 1**

This Corrective Action Decision Document (CADD)/Corrective Action Plan (CAP) has been prepared for Corrective Action Unit (CAU) 98, Frenchman Flat, Nevada National Security Site (NNSS), Nevada. This work was performed as part of the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) Underground Test Area (UGTA) Sub-Project in accordance with the *Federal Facility Agreement and Consent Order* (FFACO).

This CADD/CAP is a part of the corrective action process described in the FFACO. It follows the Corrective Action Investigation (CAI) stage, which results in development of a set of contaminant boundary forecasts produced from groundwater flow and contaminant transport modeling of the Frenchman Flat CAU. The Frenchman Flat CAU is located in the southeastern portion of the NNSS and comprises 10 underground nuclear tests. The tests were conducted between 1965 and 1971 and resulted in the release of radionuclides in the subsurface in the vicinity of the test cavities.

Two important aspects of the corrective action process are presented within this CADD/CAP. The CADD portion describes the results of the Frenchman Flat CAU data-collection and modeling activities completed during the CAI stage. The corrective action objectives and the actions recommended to meet the objectives are also described. The CAP portion describes the corrective action implementation plan. The CAP begins with the presentation of CAU regulatory boundary objectives and initial use restriction boundaries that are identified and negotiated by NNSA/NSO and the Nevada Division of Environmental Protection (NDEP). The CAP also presents the model evaluation process designed to build confidence that the flow and contaminant transport modeling results can be used for the regulatory decisions required for CAU closure.

The UGTA strategy assumes that active remediation is not feasible with current technology. As a result, the corrective action is based on a combination of characterization and modeling studies, monitoring, and institutional controls. The strategy is implemented through a four-stage approach that comprises the following: (1) Corrective Action Investigation Plan (CAIP), (2) CAI, (3) CADD/CAP, and (4) Closure Report (CR) stages.

The first two stages of the strategy have been completed for the Frenchman Flat CAU. A value of information analysis and a CAIP were developed during the CAIP stage. During the CAI stage, a CAIP addendum was developed, and the activities proposed in the CAIP and addendum were completed. These activities included hydrogeologic investigation of the underground testing areas, aquifer testing, isotopic and geochemistry-based investigations, and integrated geophysical investigations. After these investigations, a groundwater flow and contaminant transport model was developed to forecast contaminant boundaries that enclose areas potentially exceeding the *Safe Drinking Water Act* radiological standards at any time within 1,000 years. An external peer review of the groundwater flow and contaminant transport model was completed, and the model was accepted by NDEP to allow advancement to the CADD/CAP stage.

The CADD/CAP stage focuses on model evaluation to ensure that existing models provide adequate guidance for the regulatory decisions regarding monitoring and institutional controls. Data-collection activities are identified and implemented to address key uncertainties in the flow and contaminant transport models. During the CR stage, final use restriction boundaries and CAU regulatory boundaries are negotiated and established; a long-term closure monitoring program is developed and implemented; and the approaches and policies for institutional controls are initiated.

The model evaluation process described in this plan consists of an iterative series of five steps designed to build confidence in the site conceptual model and model forecasts. These steps are

designed to identify data-collection activities (Step 1), document the data-collection activities in the CADD/CAP (Step 2), and perform the activities (Step 3). The new data are then assessed; the model is refined, if necessary; the modeling results are evaluated; and a model evaluation report is prepared (Step 4). The assessments are made by the modeling team and presented to the pre-emptive review committee. The decision is made by the modeling team with the assistance of the pre-emptive review committee and concurrence of NNSA/NSO to continue data and model assessment/refinement, recommend additional data collection, or recommend advancing to the CR stage. A recommendation to advance to the CR stage is based on whether the model is considered to be sufficiently reliable for designing a monitoring system and developing effective institutional controls. The decision to advance to the CR stage or to return to step 1 of the process is then made by NDEP (Step 5).

The data-collection and evaluation activities identified for the first iteration of the model evaluation process for the Frenchman Flat CAU include drilling and testing two model-evaluation wells; performing ground magnetic surveys; developing and implementing a water-level measurement program in Frenchman Flat; evaluating the geologic and hydrologic data; and refining the groundwater flow and transport model, if necessary.

## Executive Summary for CAU 374 CADD/CR

This Corrective Action Decision Document/Closure Report has been prepared for Corrective Action Unit (CAU) 374, Area 20 Schooner Unit Crater, located within Areas 18 and 20 at the Nevada National Security Site, Nevada, in accordance with the *Federal Facility Agreement and Consent Order* (FFACO). Corrective Action Unit 374 comprises five corrective action sites (CASs):

- 18-22-05, Drum
- 18-22-06, Drums (20)
- 18-22-08, Drum
- 18-23-01, Danny Boy Contamination Area
- 20-45-03, U-20u Crater (Schooner)

The purpose of this Corrective Action Decision Document/Closure Report is to provide justification and documentation supporting the recommendation that no further corrective action is needed for CAU 374 based on the implementation of corrective actions. The corrective action of closure in place with administrative controls was implemented at CASs 18-23-01 and 20-45-03, and a corrective action of removing potential source material (PSM) was conducted at CAS 20-45-03. The other CASs require no further action; however, best management practices of removing PSM and drums at CAS 18-22-06, and removing drums at CAS 18-22-08 were performed. Corrective action investigation (CAI) activities were performed from May 4 through October 6, 2010, as set forth in the *Corrective Action Investigation Plan for Corrective Action Unit 374: Area 20 Schooner Unit Crater, Nevada Test Site, Nevada*.

The approach for the CAI was divided into two facets: investigating the primary release of radionuclides and investigating other releases (migration in washes and chemical releases). The purpose of the CAI was to fulfill data needs as defined during the data quality objective (DQO) process. The CAU 374 dataset of investigation results was evaluated based on the data quality indicator parameters. This evaluation demonstrated the dataset is acceptable for use in fulfilling the DQO data needs.

Analytes detected during the CAI were evaluated against final action levels (FALs) established in this document. Radiological doses exceeding the FAL of 25 millirem per year were found to be present in the surface soil that was sampled. It is assumed that radionuclide levels present in subsurface media within the craters and ejecta fields (default contamination boundaries) at the Danny Boy and Schooner sites exceed the FAL. It is also assumed that PSM in the form of lead-acid batteries at Schooner exceeds the FAL. Therefore, corrective actions were undertaken that consist of removing PSM, where present, and implementing a use restriction and posting warning signs at the Danny Boy and Schooner sites. These use restrictions were recorded in the FFACO database; the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) Facility Information Management System; and the NNSA/NSO CAU/CAS files.

Therefore, NNSA/NSO provides the following recommendations:

- No further corrective actions are necessary for CAU 374.
- A Notice of Completion to NNSA/NSO is requested from the Nevada Division of Environmental Protection for closure of CAU 374.
- Corrective Action Unit 374 should be moved from Appendix III to Appendix IV of the FFACO.

## Public Notification of Corrective Actions

August 31, 2011  
Las Vegas, Nevada

The Department of Energy (DOE) will be submitting the following Corrective Action Unit (CAU) final Corrective Action Decision Documents (CADDs), CADD/Corrective Action Plans (CAPs), CADD/Closure Reports (CRs), or Streamlined Approach for Environmental Restoration (SAFER) Work Plans, proposing closure-in-place to the Nevada Division of Environmental Protection (NDEP), during the next 60 days. These documents will recommend a closure-in-place strategy in which engineering and/or administrative controls will be used to close the sites although contamination remains.

When submitting these documents to NDEP, copies will be supplied to the Las Vegas and Carson City Public Reading Facilities for review. Copies may be requested by contacting the office of Public Affairs at [publicaffairs@nv.doe.gov](mailto:publicaffairs@nv.doe.gov). Submit comments regarding a decision document to Tim Murphy (NDEP) at [TMurphy@ndep.nv.gov](mailto:TMurphy@ndep.nv.gov) within 30 days of the document's release. Public Reading Facility addresses are listed below.

CAU Number	CAU Description	Document	Approximate Submittal Date
365	Baneberry Contamination Area	CADD/CR	09/30/11
547	Miscellaneous Contaminated Waste Sets	CADD/CAP	09/30/11

### *Site Information for CAU 365, Baneberry Contamination Area*

**Location:** Area 8

**CAU Brief History:** Release of radionuclides from the underground Baneberry test in 1970 which vented.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Closure in Place with Use Restrictions

### *Site Information for CAU 547, Miscellaneous Contaminated Waste Sites*

**Location:** Areas 2, 3, and 9

**CAU Brief History:** Plutonium contaminated piping resulting from Safety Tests that will be closed in place.

**Contaminants of Concern:** Radionuclides

**Type of Corrective Action Taking Place:** Through a CADD/CAP, Closure in Place with a Use Restriction at all three locations

### **Southern Nevada Public Reading Facility**

c/o Nuclear Testing Archive

775 East Flamingo Road

Las Vegas, NV 89119

### **Northern Nevada Public Reading Facility**

Nevada State Library and Archives

100 N. Stewart Street

Carson City, NV 89701-4285

The following is a list of all documents submitted to the Public Reading Facilities during August 2011. Attached are the Executive Summaries for the following documents.

CAU Number	CAU Description	Document
104	Area 7 Yucca Flat Atmospheric Test Sites	Corrective Action Investigation Plan (CAIP)
106	Areas 5, 11 Frenchman Flat Atmospheric Sites	CAIP, Rev. 1
375	Area 30 Buggy Unit Craters	CADD/CR
574	Neptune	SAFER Plan

## **Executive Summary for CAU 104 CAIP**

Corrective Action Unit (CAU) 104 is located in Area 7 of the Nevada National Security Site, which is approximately 65 miles northwest of Las Vegas, Nevada. Corrective Action Unit 104 comprises the 15 corrective action sites (CASs) listed below:

- 07-23-03, Atmospheric Test Site T-7C
- 07-23-04, Atmospheric Test Site T7-1
- 07-23-05, Atmospheric Test Site
- 07-23-06, Atmospheric Test Site T7-5a
- 07-23-07, Atmospheric Test Site - Dog (T-S)
- 07-23-08, Atmospheric Test Site - Baker (T-S)
- 07-23-09, Atmospheric Test Site - Charlie (T-S)
- 07-23-10, Atmospheric Test Site - Dixie
- 07-23-11, Atmospheric Test Site - Dixie
- 07-23-12, Atmospheric Test Site - Charlie (Bus)
- 07-23-13, Atmospheric Test Site - Baker (Buster)
- 07-23-14, Atmospheric Test Site - Ruth
- 07-23-15, Atmospheric Test Site T7-4
- 07-23-16, Atmospheric Test Site B7-b
- 07-23-17, Atmospheric Test Site - Climax

These sites are being investigated because existing information on the nature and extent of potential contamination is insufficient to evaluate and recommend corrective action alternatives (CAAs). Additional information will be obtained by conducting a corrective action investigation before evaluating CAAs and selecting the appropriate corrective action for each CAS. The results of the field investigation will support a defensible evaluation of viable CAAs that will be presented in the Corrective Action Decision Document.

The sites will be investigated based on the data quality objectives (DQOs) developed on April 28, 2011, by representatives of the Nevada Division of Environmental Protection and the U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Site Office. The DQO process was used to identify and define the type, amount, and quality of data needed to develop and evaluate appropriate corrective actions for CAU 104.

The releases at CAU 104 consist of surface-deposited radionuclides from 30 atmospheric nuclear tests. The presence and nature of contamination at CAU 104 will be evaluated based on information collected from a field investigation. Radiological contamination will be evaluated based on a comparison of the total effective dose (TED) to the dose-based final action level (FAL). The presence of TED exceeding the FAL is considered a radiological contaminant of concern (COC). Anything identified as a COC will require corrective action. The TED will be calculated as the total of separate estimates of internal and external dose. Results from the analysis of soil samples will be used to calculate internal radiological dose. Thermoluminescent dosimeters will be used to measure external radiological dose.

Based on process knowledge of the releases associated with the nuclear tests and radiological survey information about the location and shape of the resulting contamination plume, it was determined that the releases from the nuclear tests are co-located and will be investigated concurrently. A field investigation will be performed to define areas where TED exceeds the FAL and to determine whether other COCs are present at the site.

The investigation will also collect information to determine the presence and nature of contamination associated with migration and excavation, as well as any potential releases discovered during the investigation.

Appendix A provides a detailed discussion of the DQO methodology and the DQOs specific to each CAS.

This Corrective Action Investigation Plan has been developed in accordance with the *Federal Facility Agreement and Consent Order* that was agreed to by the State of Nevada; DOE, Environmental Management; U.S. Department of Defense; and DOE, Legacy Management. Under the *Federal Facility Agreement and Consent Order*, this Corrective Action Investigation Plan will be submitted to the Nevada Division of Environmental Protection for approval. Fieldwork will be conducted following approval of the plan.

## **Executive Summary for CAU 106 CAIP Revision 1**

Corrective Action Unit (CAU) 106 is located in Area 5 of the Nevada National Security Site (formerly the Nevada Test Site), which is approximately 65 miles northwest of Las Vegas, Nevada. Corrective Action Unit 106 comprises the four corrective action sites (CASs) listed below:

- 05-20-02, Evaporation Pond
- 05-23-05, Atmospheric Test Site - Able
- 05-45-04, 306 GZ Rad Contaminated Area
- 05-45-05, 307 GZ Rad Contaminated Area

These sites are being investigated because existing information on the nature and extent of potential contamination is insufficient to evaluate and recommend corrective action alternatives (CAAs). Additional information will be obtained by conducting a corrective action investigation before evaluating CAAs and selecting the appropriate corrective action for each CAS. The results of the field investigation will support a defensible evaluation of viable CAAs that will be presented in the Corrective Action Decision Document.

The sites will be investigated based on the data quality objectives (DQOs) developed on January 19, 2010, by representatives of the Nevada Division of Environmental Protection and the U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Site Office. The DQO process was used to identify and define the type, amount, and quality of data needed to develop and evaluate appropriate corrective actions for CAU 106.

The presence and nature of contamination at CAU 106 will be evaluated based on information collected from a field investigation. The CAU includes land areas impacted by the release of radionuclides from groundwater pumping during the Radionuclide Migration study program (CAS 05-20-02), a weapons-related airdrop test (CAS 05-23-05), and unknown support activities at two sites (CAS 05-45-04 and CAS 05-45-05).

The presence and nature of contamination from surface-deposited radiological contamination from CAS 05-23-05, Atmospheric Test Site - Able, and other types of releases (such as migration and excavation as well as any potential releases discovered during the investigation) from the remaining three CASs will be evaluated using soil samples collected from the locations most likely containing contamination, if present.

Appendix A provides a detailed discussion of the DQO methodology and the DQOs specific to each CAS.

The scope of the corrective action investigation for CAU 106 includes the following activities:

- Conduct radiological surveys.
- Collect and submit environmental samples for laboratory analysis to determine internal dose rates and the presence of contaminants of concern.
- If contaminants of concern are present, collect additional samples to define the extent of the contamination and determine the area where the total effective dose at the site exceeds final action levels (i.e., corrective action boundary).

- Collect samples of investigation-derived waste, as needed, for waste management purposes.

This Corrective Action Investigation Plan has been developed in accordance with the *Federal Facility Agreement and Consent Order* that was agreed to by the State of Nevada; DOE, Environmental Management; U.S. Department of Defense; and DOE, Legacy Management. Under the *Federal Facility Agreement and Consent Order*, this Corrective Action Investigation Plan will be submitted to the Nevada Division of Environmental Protection for approval. Fieldwork will be conducted following approval of the plan.

## Executive Summary for CAU 375 CADD/CR

This Corrective Action Decision Document (CADD)/Closure Report (CR) has been prepared for Corrective Action Unit (CAU) 375, Area 30 Buggy Unit Craters, located within Areas 25 and 30 at the Nevada National Security Site, Nevada, in accordance with the *Federal Facility Agreement and Consent Order* (FFACO). Corrective Action Unit 375 comprises three corrective action sites (CASs):

- 25-23-22, Contaminated Soils Site
- 25-34-06, Test Cell A Bunker
- 30-45-01, U-30a, b, c, d, e Craters

The purpose of this CADD/CR is to provide justification and documentation supporting the recommendation that no further corrective action is needed for CAU 375 based on the implementation of corrective action of closure in place with administrative controls at CAS 25-23-22, no further action at CAS 25-34-06, and closure in place with administrative controls and removal of potential source material (PSM) at CAS 30-45-01. Corrective action investigation (CAI) activities were performed from July 28, 2010, through April 4, 2011, as set forth in the *Corrective Action Investigation Plan for Corrective Action Unit 375: Area 30 Buggy Unit Craters*.

The approach for the CAI was divided into two facets: investigation of the primary release of radionuclides, and investigation of other releases (migration in washes and chemical releases). The purpose of the CAI was to fulfill data needs as defined during the data quality objective (DQO) process. The CAU 375 dataset of investigation results was evaluated based on the data quality assessment. This assessment demonstrated the dataset is acceptable for use in fulfilling the DQO data needs.

Investigation results were evaluated against final action levels (FALs) established in this document. A radiological dose FAL of 25 millirem per year was established based on the Remote Work Area exposure scenario (336 hours of annual exposure). Radiological doses exceeding the FAL were assumed to be present within the default contamination boundaries at CASs 25-23-22 and 30-45-01. No contaminants were identified at CAS 25-34-06, and no corrective action is necessary. Potential source material in the form of lead plate, lead-acid batteries, and oil within an abandoned transformer were identified at CAS 30-45-01, and corrective actions were undertaken that consisted of removing the PSM. Use restrictions and warning signs were implemented for the remaining radiological contamination at CASs 25-23-22 and 30-45-01. These use restrictions were recorded in the FFACO database; the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) Facility Information Management System; and the NNSA/NSO CAU/CAS files.

Therefore, NNSA/NSO provides the following recommendations:

- No further corrective actions are necessary for CAU 375.
- A Notice of Completion to NNSA/NSO is requested from the Nevada Division of Environmental Protection for closure of CAU 375.
- Move CAU 375 from Appendix III to Appendix IV of the FFACO.

## **Executive Summary for CAU 574 SAFER Plan**

This Streamlined Approach for Environmental Restoration (SAFER) Plan identifies the activities required for closure of Corrective Action Unit (CAU) 574, Neptune. CAU 574 is included in the *Federal Facility Agreement and Consent Order* (FFACO) (1996 [as amended March 2010]) and consists of the following two Corrective Action Sites (CASs) located in Area 12 of the Nevada National Security Site:

- CAS 12-23-10, U12c.03 Crater (Neptune)
- CAS 12-45-01, U12e.05 Crater (Blanca)

This plan provides the methodology for the field activities that will be performed to gather the necessary information for closure of the two CASs. There is sufficient information and process knowledge regarding the expected nature and extent of potential contaminants to recommend closure of CAU 574 using the SAFER process. Based on historical documentation, personnel interviews, site process knowledge, site visits, photographs, field screening, analytical results, the results of the data quality objective (DQO) process (Section 3.0), and an evaluation of corrective action alternatives (Appendix B), closure in place with administrative controls is the expected closure strategy for CAU 574.

Additional information will be obtained by conducting a field investigation to verify and support the expected closure strategy and provide a defensible recommendation that no further corrective action is necessary. This will be presented in a Closure Report that will be prepared and submitted to the Nevada Division of Environmental Protection (NDEP) for review and approval.

The sites will be investigated based on the DQOs developed on May 23, 2011, by representatives of NDEP; the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office; National Security Technologies, LLC; and Navarro-Intera. The DQO process has been used to identify and define the type, amount, and quality of data needed to determine and implement appropriate corrective actions for CAU 574.

The following activities will support closure of CAU 574:

- Collect in situ external dose rate measurements using thermoluminescent dosimeters.
- Combine internal and external dose rates to determine whether total effective dose rates exceed the final action level (FAL).
- If contamination exceeds the FAL, define the extent of the contamination exceeding the FAL, establish closure in place as the corrective action, and implement appropriate use restrictions.

This SAFER Plan has been developed in accordance with the FFACO that was agreed to by the State of Nevada; the U.S. Department of Energy, Environmental Management; the U.S. Department of Defense; and the U.S. Department of Energy, Legacy Management. Under the FFACO, this SAFER Plan will be submitted to NDEP for approval. Fieldwork will be conducted following approval of the plan.

# FY 2011 NSSAB Work Plan Status



**Rob Boehlecke**  
Environmental Restoration Project Director  
Nevada Site Office  
September 14, 2011



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

# *Provide comments on the Greater than Class C Waste Environmental Impact Statement*

## Status

- NSSAB provided comments to DOE HQ
- Over 900 individuals comments were received
- EM is currently reviewing these comments and will include the responses in the Final GTCC EIS
- Comments will be taken into consideration as DOE develops preferred alternatives for the disposal of GTCC waste
- DOE HQ anticipates issuing the Final EIS in late 2012, followed by a Report to Congress as required by the Energy Policy Act of 2005
- Before the Department can issue its Record of Decision, feedback must be received from Congress



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Provide recommendation on the closure strategy for Corrective Action Unit (CAU) 106, Frenchman Flat Atmospheric Sites*

## Status

- Item removed from work plan
- Based on results of the investigation, the State of Nevada Division of Environmental Protection (NDEP) and the Nevada Site Office (NSO) agreed to proceed with clean closure (i.e. removal of contaminated soil and debris)
- Corrective actions were completed in June 2011 and the final CADD/CR is expected to be submitted to NDEP in late September



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Provide recommendation on the closure strategy for CAU 372, Cabriolet/Palanquin Unit Craters*

## Status

- NSSAB recommended closure in place with use restrictions based on Remote Area Worker exposure standards
- Consistent with the NSSAB recommendations, NSO implemented the corrective action of closure in place with administrative controls, as stated in the final Corrective Action Decision Document/Closure Report (CADD/CR) submitted to NDEP on May 2, 2011
- NDEP approved the final CADD/CR on May 12, 2011



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Provide recommendation on the closure strategy for CAU 374, Schooner Unit Crater*

## Status

- NSSAB recommended closure in place with use restrictions based on Remote Area Worker exposure standards
- Consistent with the NSSAB recommendations, NSO implemented the corrective action of closure in place with administrative controls, as stated in the final CADD/CR submitted to NDEP on July 13, 2011
- NDEP approved the final CADD/CR on August 5, 2011



**EM** Environmental Management

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*Review and provide recommendation on three  
Corrective Action Sites that include plutonium  
contaminated pipe systems (CAU 547) located in  
Yucca Flat*

Status

- NSSAB recommended closure in place, an independent review of the stability of the soil cover design, and if a method can be found to safely immobilize the plutonium in place, its application would be warranted
- Draft CADD/CAP recommending closure in place submitted to NDEP on July 28, 2011
- NDEP has requested additional detail on the calculations used to determine the amount of material at each site



**EM** Environmental Management

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*Review and provide recommendation on three  
Corrective Action Sites that include plutonium  
contaminated pipe systems (CAU 547) located in  
Yucca Flat  
Status Continued*

- Fieldwork has been initiated with the stockpiling of soil at each site for cover installation
- Closure in place work will proceed at the Mullet site first in late August
- Independent review of closure in place design has been performed
  - No significant design flaws – only minor suggestions to consider
  - Decision made to not apply fixative to inside of pipes based on potential risk to workers



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Review FY 2013 Baseline funding and determine budget prioritization by activity*

## Status

- NSSAB prioritized EM activities as follows: 1) UGTA, 2) Low-Level Waste, 3) Soils, and 4) Industrial Sites
- April 2011 – NSO developed Integrated Priority List (IPL) and presented to EM HQ for review and approval
- May 2011 – NSO received IPL approval and preliminary funding decisions from EM HQ
- June/July 2011 – NSO modified/developed budget narratives for the Office of Management and Budget (HQ) submission
- August 2011 – NSO received final funding targets from EM HQ



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Provide recommendation on the path forward for rail stock located at the EMAD facility (CAU 566)*

## Status

- NSSAB recommended DOE explore financial options for donating the trains to Beatty, NV and move the remaining trains to Test Cell C (close in place location)
- All hazardous materials (fluids, batteries) removed from the two locomotives, two flat cars, and cable spool car during CAU 566 fieldwork (no further action is planned for these items)
- Because hazardous materials (lead) remain within the Engine Installation Vehicle and Manned Control Car, these cars were reassigned to CAU 114 (EMAD)
- All stock remains available for relocation should an economically feasible alternative be identified



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Evaluate if the Nevada Site Office should pursue submitting an application to the State of Nevada for a Mixed Waste Treatment permit*

## Status

- NSSAB provided a letter of support for pursuing an application
- Not yet resolved, no funding available to initiate application



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Review the revised draft FFACO Soils Strategy, (Chapter 4, Appendix 6)*

## Status

- NSSAB reviewed the document and had no recommendations
- The document was approved by NDEP and incorporated into the FFACO in May 2011



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Conduct 2011 membership drive with recruitment beginning January 2011*

## Status

- NSSAB recommended seven individuals for membership
- Five new members were appointed with a start date of October 1



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# *Create and fill Student Liaison position on Full Board*

## Status

- West Career and Technical Academy (Las Vegas high school) has accepted the liaison offer and will work with the NSSAB office to fill the positions



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up and FY 2012 Planned Activities



**Jhon Carilli**

Low-Level Waste Federal Sub-Project Director  
Nevada Site Specific Advisory Board  
September 14, 2011



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

# Waste Management FY 2011 Wrap Up

- Planned: Safely dispose approximately 1.6 million ft<sup>3</sup> of forecasted Low-Level Waste (LLW) and Mixed Low-Level Waste (MLLW)
- Status: Disposed 1.4 million ft<sup>3</sup> as of August 14, 2011 and are on track to dispose 1.8 million ft<sup>3</sup> by September 30, 2011



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up

(continued)

- Planned: Conclude Cell 3 MLLW disposal activities – November 2010
- Status: Closed Cell 3 and began operating Cell 18 under a new Resource Conservation and Recovery Act (RCRA) Permit



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up

(continued)

- New Mixed Waste Disposal Unit
  - Planned: Receive Resource Conservation and Recovery Act Disposal Permit from State of Nevada Division of Environmental Protection (NDEP) - December 2010
  - Status: Received permit December 2010
  - Planned: Begin MLLW disposal
  - Status: First package accepted January 26, 2011



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up

(continued)

- Planned: Complete construction of two new LLW disposal cells – November 2010
- Status: Construction completed December 2010 and waste is being accepted in both cells



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up

(continued)

- Planned: Receive Mixed Waste Storage Unit permit from NDEP – December 2010
- Status: Storage permit received November 2010



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Waste Management FY 2011 Wrap Up

(continued)

- Begin closure of the 92-acre portion of the Area 5 Radioactive Waste Management Site in compliance with NDEP approved Corrective Action Decision Document / Corrective Action Plan
  - Planned: Complete prep work – December 2010
  - Status: Completed prep work October 2010
  - Planned: Closure construction – December 2010 – May 2011
  - Status: Completed May 10, 2011



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# Waste Management FY 2011 Wrap Up

(continued)

- Planned: Receive Hazardous Waste Storage Unit (Area 5 - Drum Yard) Storage Permit
- Status: Received December 2010
- Planned: Receive Explosive Ordnance Disposal Unit (Area 11) permit
- Status: Received December 2010
- Planned: Determine if the DOE Complex needs mixed waste treatment on the Nevada National Security Site
- Status: Not yet resolved, need has not been formerly determined and no funding available to initiate application



**EM** Environmental Management

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# FY 2012 Planned Baseline

FY 2012 (\$K)	Current Approved Baseline	Proposed Work Authorization*
Low-Level Waste	\$35,376	\$18,200

\* As of September 6, 2011



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# FY 2012 Planned Activities

- Safely dispose approximately 1.2 million ft<sup>3</sup> of forecasted Low-Level Waste (LLW) and Mixed Low-Level Waste (MLLW)
- Operationally close disposal cells as necessary



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# FY 2012 Planned Activities

(continued)

- Complete closure of the 92-acre portion of the Area 5 Radioactive Waste Management Site in compliance with NDEP approved Corrective Action Decision Document / Corrective Action Plan
  - Complete re-vegetation by end of December 2011
  - Submit final closure report to NDEP by end of February



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# How can NSSAB help in FY 2012?

- From a community perspective, provide a recommendation regarding if the Nevada Site Office should safely dispose U233 waste from Oak Ridge
  - Deadline for submittal to Department of Energy – March 2012
- Review and provide public comment on the HQ update to DOE Order 435.1 - Radioactive Waste Management
  - Deadline for submittal to Department of Energy – TBD



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# Other Topics



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# NNSS Treatment and Disposal Permitted Activities

- Various federal and state regulations (such as the Resource Conservation and Recovery Act [RCRA], Solid Waste Disposal Act [SWDA], and Nevada Administrative Code) require permits for activities which are issued and enforced by the State of Nevada
- Nonradioactive asbestos disposal via municipal landfill
  - Area 23 Solid Waste Disposal Site
  - U10c Solid Waste Disposal Site in Area 9
- Radioactively-contaminated asbestos disposal in Cell 20 at the Area 5 Radioactive Waste Management Site (RWMS)



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# NNSS Treatment and Disposal Permitted Activities

(continued)

- Nonradioactive PCB wastes accumulated at the Area 5 Hazardous Waste Storage Unit prior to shipment off site for treatment and disposal
- Radioactive PCB-contaminated waste disposal in Cell 18 at the Area 5 RWMS
- Unusable explosives treatment by open-air detonation at the Area 11 Explosive Ordnance Disposal Unit
- Area 23 Sanitary Sewer



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# Industrial Sites FY 2011 Wrap Up and FY 2012 Planned Activities



**Kevin Cabble**

Industrial Sites Federal Sub-Project Director

Nevada Site Specific Advisory Board

September 14, 2011



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[www.em.doe.gov](http://www.em.doe.gov)

# Industrial Sites FY 2011 Wrap Up

- Area 25 Reactor Maintenance Assembly and Disassembly (R-MAD) Facility, Corrective Action Unit (CAU) 113\*
  - Planned: Complete and submit Closure Report Addendum to State of Nevada Division of Environmental Protection (NDEP)
    - December 2010
  - Status: Completed report and received NDEP acceptance

\* American Recovery and Reinvestment Act (ARRA) funded



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Area 25 Test Cell C Facility (CAU 116)
  - Planned: Complete demolition of main building – July 2011
  - Status: Completed
  - Planned: Complete and submit Closure Report to NDEP- September 2011
  - Status: Closure Report will be submitted to NDEP in September



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Area 26 Pluto Disassembly Facility (CAU 117)\*
  - Planned: Complete demolition of facility – April 2011
  - Status: Completed
  - Planned: Complete and submit Demolition Letter Report to NDEP – July 2011
  - Status: Completed report and received NDEP acceptance



\* ARRA funded



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Areas 25 and 26 Railroad Tracks (CAU 539)\*
  - Planned: Complete field characterization and remediation of railroad tracks – January 2011
  - Status: Completed
  - Planned: Complete and submit Closure Report to NDEP – June 2011
  - Status: Completed report and received NDEP approval

\* ARRA funded



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Miscellaneous Contaminated Waste Sites (CAU 547)
  - Planned: Complete and submit Streamlined Approach for Environmental Restoration (SAFER) Plan to NDEP – May 2011
  - Status: DOE and NDEP determined a CADD/Corrective Action Plan was more appropriate than a SAFER; CADD/CAP will be submitted to NDEP in September



\* ARRA funded



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Engine Maintenance Assembly and Disassembly (EMAD) Compound (CAU 566)
  - Planned: Complete characterization and closure fieldwork – February 2011
  - Status: Completed
  - Planned: Complete and submit Closure Report to NDEP – June 2011
  - Status: Completed report and received NDEP approval



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# Industrial Sites FY 2011 Wrap Up

(continued)

- Resource Conservation Recovery Act (RCRA), Non-RCRA, and Tonopah Test Range (TTR) post-closure sites
  - Planned: Complete post-closure inspections – throughout FY 2011
  - Status: Continuing activity
  - Planned: Submit FY 2010 post-closure monitoring reports to NDEP - May 2011
  - Status: Completed reports and received NDEP acceptance



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# FY 2012 Planned Baseline

FY 2012 (\$K)	Current Approved Baseline	Proposed Work Authorization*
Industrial Sites	\$2,844	\$2,687

\* As of September 6, 2011



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# Industrial Sites FY 2012 Planned Activities

- CAU 547, Miscellaneous Waste Sites – Complete closure field work and submit final Closure Report to NDEP – July 2012
- RCRA, Non-RCRA, and TTR post closure inspections - throughout FY 2012
- Submit FY 2011 RCRA, Non-RCRA, and TTR monitoring reports to NDEP – March 2012



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# How can NSSAB help in FY 2012?

- Provide a recommendation regarding long-term monitoring activities at closed Industrial Sites
  - Deadline for submittal to Department of Energy – May 2012



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# Soils FY 2011 Wrap Up and FY 2012 Planned Activities



**Kevin Cabble**

Soils Federal Sub-Project Director  
Nevada Site Specific Advisory Board  
September 14, 2011



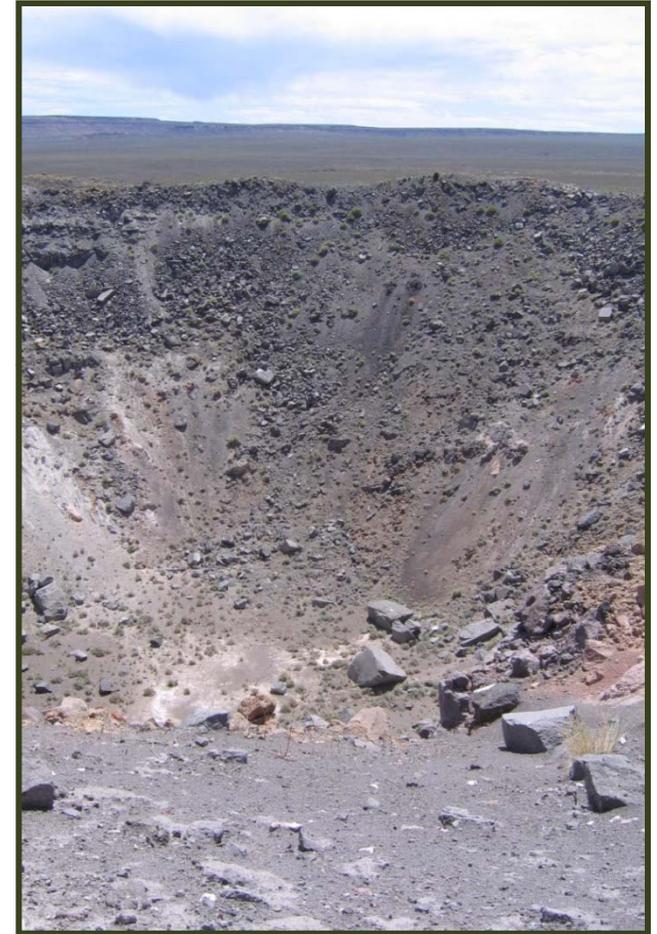
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[www.em.doe.gov](http://www.em.doe.gov)

# Soils FY 2011 Wrap Up

- Area 20 Schooner Unit Crater (CAU 374)\*
  - Planned: Complete characterization field work – August 2010
  - Status: Completed
  - Planned: Complete Corrective Action Decision Document (CADD) and submit to Nevada Division of Environmental Protection (NDEP) – January 2011
  - Status: Completed CADD/CR and received NDEP approval \* ARRA funded



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# Soils FY 2011 Wrap Up

(continued)

- Area 20 Cabriole/Palanquin Unit Craters (CAU 372)\*
  - Planned: Begin closure field work – December 2010
  - Status: Completed
  - Planned: Complete CADD and submit to NDEP – October 2010
  - Status: Completed CADD/CR received NDEP approval

\* ARRA funded



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# Soils FY 2011 Wrap Up

(continued)

- Areas 5, 11 Frenchman Flat Atmospheric Sites (CAU 106)\*
  - Planned: Complete fieldwork – October 2010
  - Status: Completed
  - Planned: Complete CADD and submit to NDEP – May 2011
  - Status: Submitted CADD/CR to NDEP, awaiting approval



\* ARRA funded



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# Soils FY 2011 Wrap Up

(continued)

- Area 10 Sedan, Ess and Uncle Unit Craters (CAU 367)\*
  - Planned: Complete CADD and submit to NDEP – January 2011
  - Status: Completed closure fieldwork
  - Status: Completed CADD/CR, received NDEP approval



\* ARRA funded



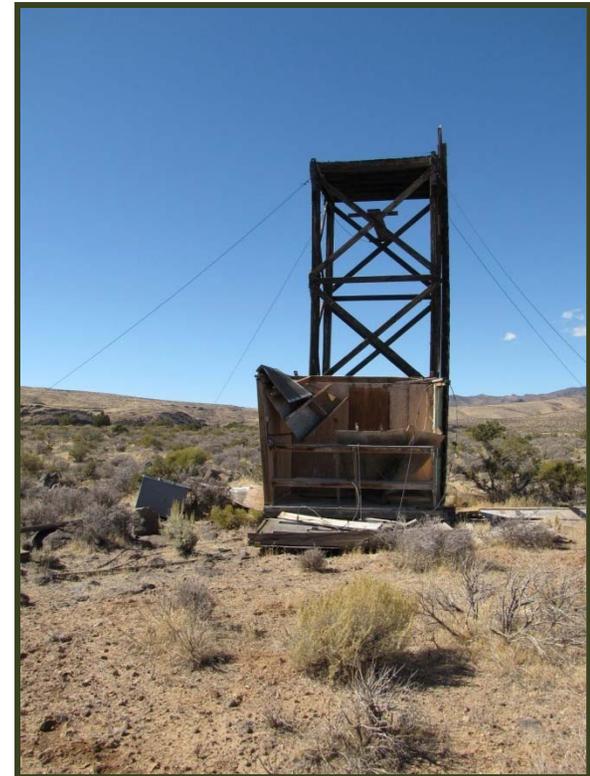
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# Soils FY 2011 Wrap Up

(continued)

- Area 30 Buggy Unit Craters (CAU 375)\*
  - Planned: Complete CADD and submit to NDEP – February 2011
  - Status: Completed closure fieldwork
  - Status: Submitted CADD/CR to NDEP, awaiting approval



\* ARRA funded



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# Soils FY 2011 Wrap Up

(continued)

- Area 11 Plutonium Valley Unit Safety Shots (CAU 366)
  - Planned: Complete CAIP and submit to NDEP – February 2011
  - Status: Draft CAIP submitted to NDEP for review
  - Planned: Begin characterization fieldwork – March 2011
  - Status: Characterization fieldwork pushed back until October 2011



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# Soils FY 2011 Wrap Up

(continued)

- Baneberry Contamination Area (CAU 365)\*
  - Planned: Complete CAIP – December 2010
  - Status: Completed CAIP and received NDEP approval
  - Planned: Complete characterization fieldwork – April 2011
  - Status: Completed characterization fieldwork
  - Status: Draft CADD/CR submitted to NDEP for review



\* ARRA funded



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# Soils FY 2011 Wrap Up

(continued)

- Area 3 Yucca Flat Atmospheric Test Sites (CAU 569)
  - Planned: Begin Corrective Action Investigation Plan (CAIP) – July 2011
  - Status: Draft CAIP out in late October



\* ARRA funded

- Area 7 Yucca Flat Atmospheric Test Sites (CAU 104)\*
  - Planned: Complete CAIP and submit to NDEP – September 2011
  - Status: Submitted CAIP to NDEP, awaiting approval



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# FY 2012 Planned Baseline

FY 2012 (\$K)	Current Approved Baseline	Proposed Work Authorization*
Soils	\$7,673	\$6,179

\* As of September 6, 2011



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# Soils FY 2012 Planned Activities

- CAU 104, Area 7 Yucca Flat Atmospheric Test Sites – Complete characterization field work – May 2012
- CAU 366, Area 11 Plutonium Valley Dispersion Sites – Complete field characterization work and submit CADD to NDEP – September 2012
- CAU 465, Hydronuclear Sites – Submit SAFER Plan to NDEP – November 2011, complete closure field work and submit CR to NDEP – August 2012



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# Soils FY 2012 Planned Activities

(continued)

- CAU 550, Smoky Contamination Area – Submit CAIP to NDEP and begin characterization field work – June 2012
- CAU 569, Area 3 Yucca Flat Atmospheric Test Sites – Submit CAIP to NDEP – March 2012, and complete characterization field work – September 2012
- CAU 574, Neptune – Complete closure field work - October 2011 and submit CR to NDEP – March 2012



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# How can NSSAB help in FY 2012?

- Provide a review and comments on the draft “Risk-Based Corrective Action Decision Process” document
  - Deadline for submittal to Department of Energy – March 2012



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# Underground Test Area (UGTA) FY 2011 Wrap Up and FY 2012 Planned Activities



**Bill Wilborn**

UGTA Federal Sub-Project Director  
Nevada Site Specific Advisory Board  
September 14, 2011



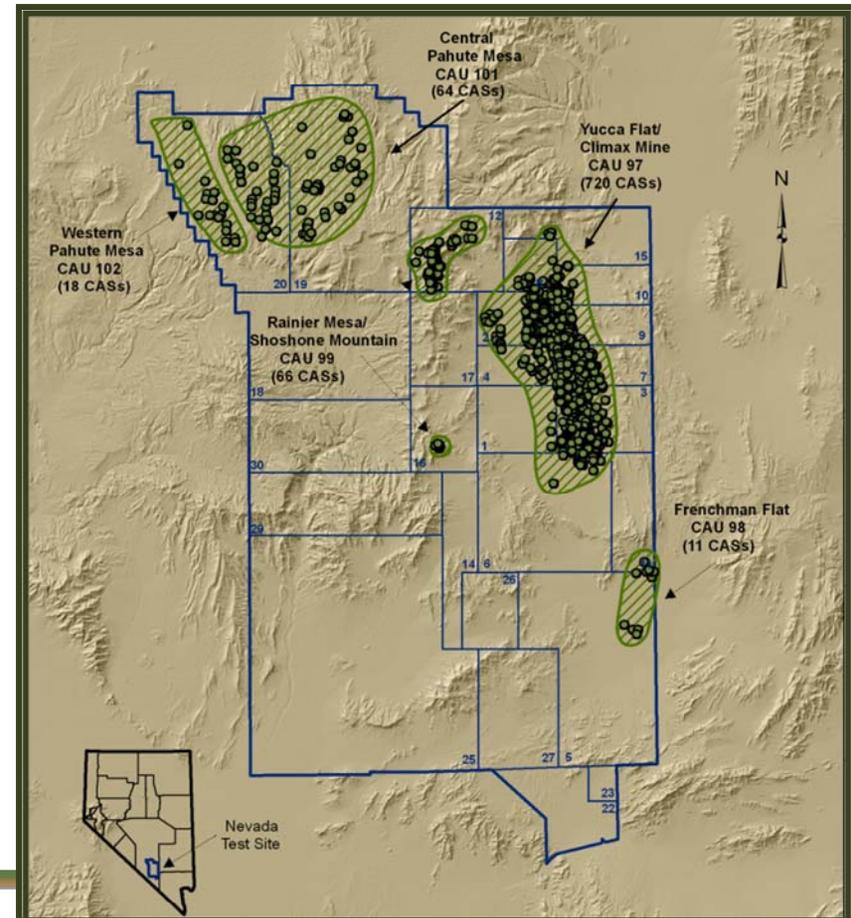
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[www.em.doe.gov](http://www.em.doe.gov)

# Underground Test Area (UGTA) FY 2011 Wrap Up

- Frenchman Flat
  - Planned: Complete CADD/CAP and submit to NDEP – June 2011
  - Status: CADD/CAP approved by NDEP



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# UGTA FY 2011 Wrap Up

(continued)

- Frenchman Flat
  - Planned: Begin Closure Report
  - Status: Continue preliminary work on Closure Report
  - Status: Sited and constructed two Model Evaluation drill site locations



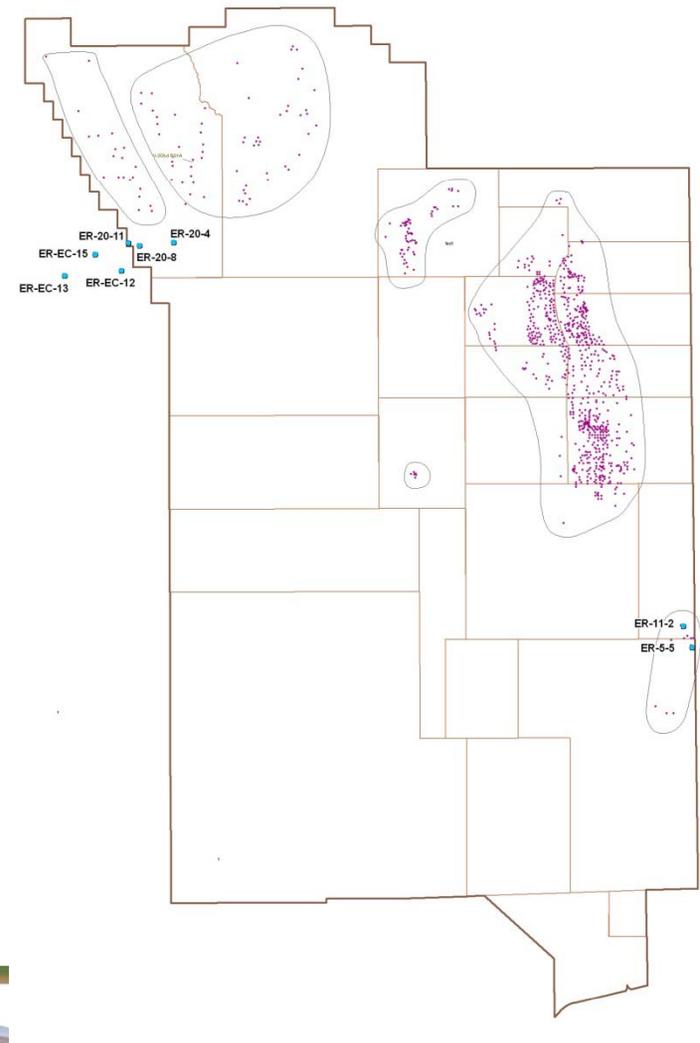
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# UGTA FY 2011 Wrap Up

(continued)

- Central/Western Pahute Mesa
  - Planned: Drill one Well – November 2010
  - Status: Completed drilling well ER-EC-13 (ARRA)
  - Status: Completed drilling well ER-EC-15



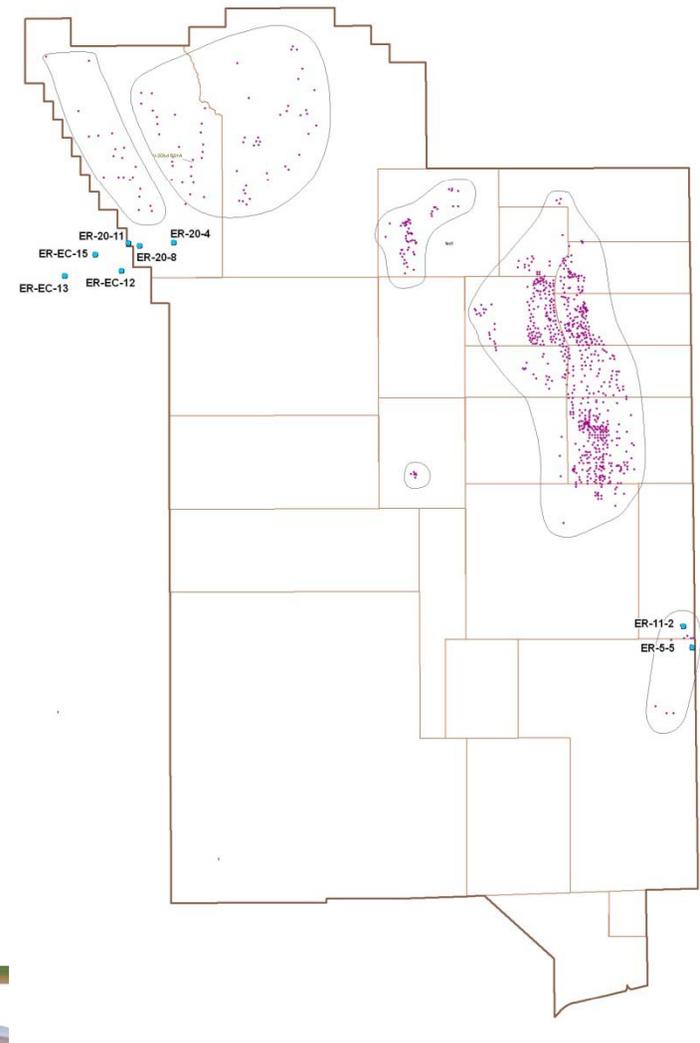
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# UGTA FY 2011 Wrap Up

(continued)

- Central/Western Pahute Mesa
  - Planned: Complete well development and testing at three wells, complete two – ongoing through FY 2012
  - Status: Completed Well Development and Testing of well ER-20-8
  - Status: Will Complete Well Development and Testing of well ER-20-4



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# UGTA FY 2011 Wrap Up

(continued)

- Central/Western Pahute Mesa
  - Planned: Begin aquifer testing data collection and analysis – May 2011
  - Status: Continue ongoing aquifer testing using multiple wells containing sensors
  - Status: Gave a tour to NSSAB and interested public on well sensor and monitoring activities



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# UGTA FY 2011 Wrap Up

(continued)

- Central/Western Pahute Mesa
  - Planned: Conduct ongoing geology analysis evaluation – October 2010 – September 2012
  - Status: Ongoing
  - Conduct ongoing hydrology analysis and evaluation October 2010 – October 2012
  - Status: Ongoing



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# UGTA FY 2011 Wrap Up

(continued)

- Central/Western Pahute Mesa
  - Planned: Conduct Transport Model analysis and evaluation October 2010 – October 2012
  - Status: Ongoing



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# UGTA FY 2011 Wrap Up

(continued)

- Yucca Flat
  - Planned: Complete Revision 0 of Transport Model and submit to Nevada Division of Environmental Protection (NDEP) – July 2011
  - Status: Completed Preliminary Draft of Flow and Transport Model for pre-emptive review



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# UGTA FY 2011 Wrap Up

(continued)

- Yucca Flat
  - Planned: Begin Phase II Corrective Action Investigation Plan – August 2011
  - Status: Presented to NDEP results of Phase I along with technical approach to Supplemental Analysis (this could limit or eliminate need for Phase II)



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# UGTA FY 2011 Wrap Up

(continued)

- Rainier Mesa/Shoshone Mountain
  - Planned: Complete Source Term data analysis – September 2011
  - Status: Submitted Hydrologic Source Term to NDEP for review and comment
  - Will provide a presentation to NDEP on September 15 discussing current results, conclusions and possible path forward
  - Planned: Continue Flow Model data analysis and evaluation
  - Status: Ongoing



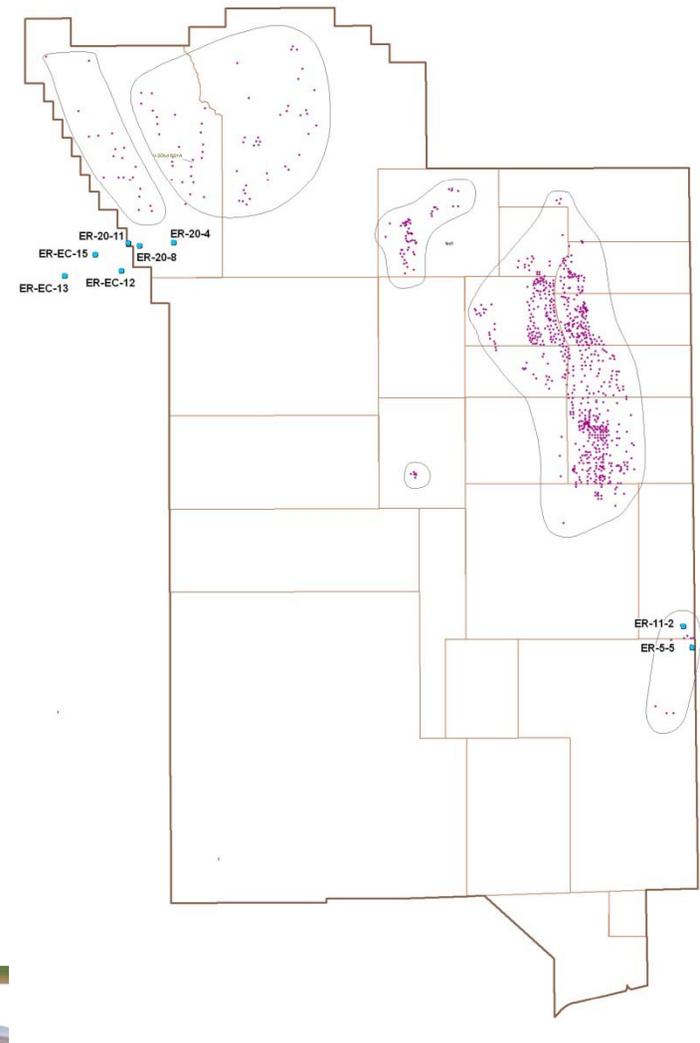
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# UGTA FY 2011 Wrap Up

(continued)

- Rainier Mesa/Shoshone Mountain
  - Planned: Continue Transport Model data analysis and evaluation – ongoing activity through 2012
  - Status: Ongoing



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# FY 2012 Planned Baseline

FY 2012 (\$K)	Current Approved Baseline	Proposed Work Authorization*
UGTA	\$39,589	\$30,588

\* As of September 6, 2011

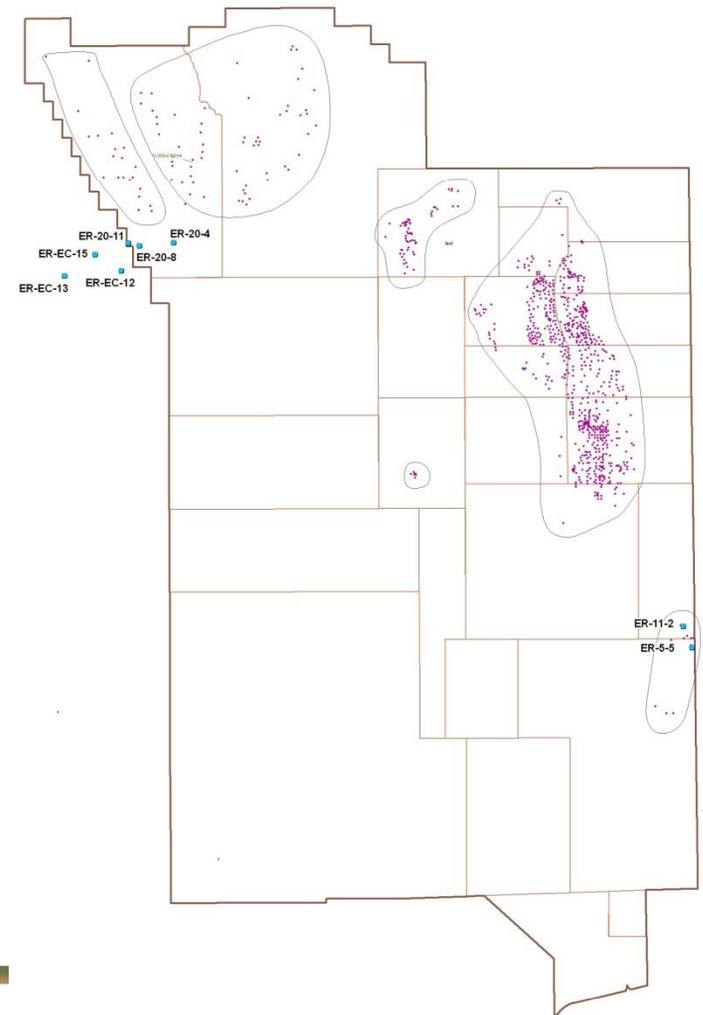


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# UGTA FY 2012 Planned Activities

- Frenchman Flat – Drill two Model Evaluation Wells
  - ER-5-5 – July - August 2012
  - ER-11-2 – August – September 2012
- Central/Western Pahute Mesa
  - Construct road and Pad – June - August 2012
  - Drill ER-20-11 – September 2012



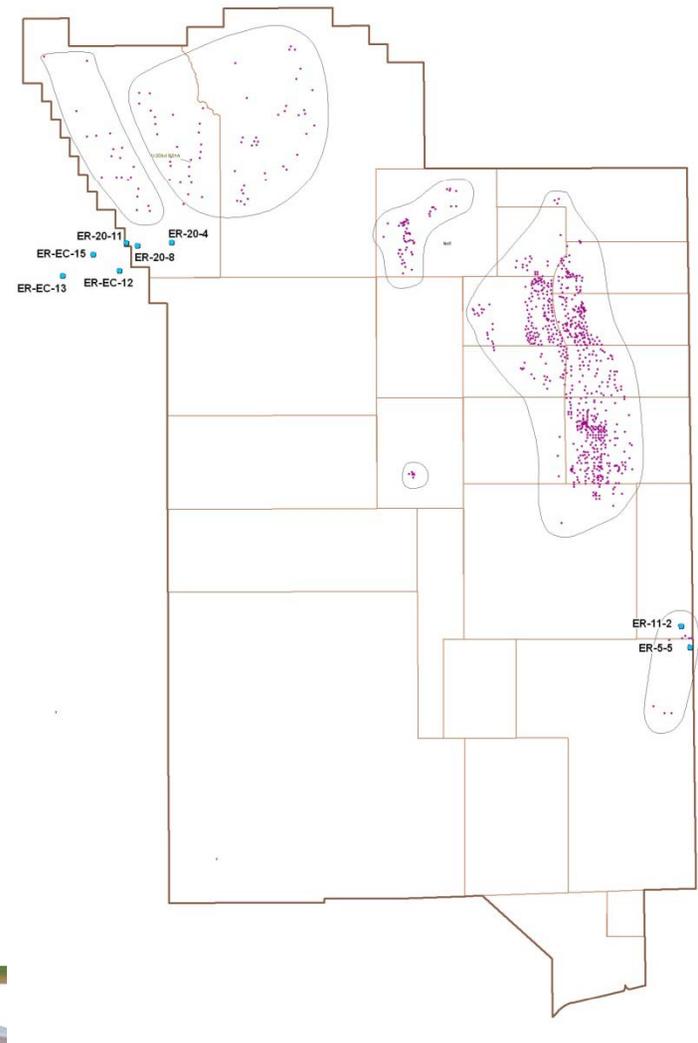
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# UGTA FY 2012 Planned Activities

(continued)

- Central/Western Pahute Mesa – Complete Well Development and Testing
  - ER-EC-12 – October – December 2011
  - ER-EC-13 – April – June 2012
- Yucca Flat – Complete Supplemental Analysis in support of Phase I results – Complete May 2012



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# UGTA FY 2012 Planned Activities

(continued)

- Rainier Mesa/Shoshone Mtn. – Continue Analysis and Evaluation and work closely with NDEP on addressing data adequacy concerns
  - Received NDEP letter on August 31 re-emphasizing their concern with data adequacy in response to Hydrologic Source Term document
  - Requiring DOE to submit a white paper discussing the path forward for acceptable Flow and Transport Model by November 1
- Baseline – developing revision to lifecycle baseline addressing future budget constraints, specific CAU Phase I results and technical risk perspectives – December 2011



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# How can NSSAB help in FY 2012?

- Provide a recommendation regarding if there is a need for a formal response plan if contamination goes beyond the regulatory boundary related to Frenchman Flat
  - Deadline for submittal to Department of Energy (DOE) – September 2012
- If the NSSAB determines there is a need, what should the response plan include from a community perspective?
  - Deadline for submittal to DOE - FY 2013
  - Begin studying background in FY 2012



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# How can NSSAB help in FY 2012?

(continued)

- Provide a recommendation determining if Yucca Flat CAU should go to Phase II or Peer Review
  - Deadline for submittal to DOE - FY 2013
  - Begin studying background in FY 2012
- Provide a recommendation regarding if DOE needs to reevaluate the options for groundwater contamination containment/removal
  - Deadline for submittal to DOE - September 2012



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# How can NSSAB help in FY 2012?

(continued)

- Provide a recommendation on how DOE could enhance its annual Groundwater Open House
  - Deadline for submittal to DOE – January 2012

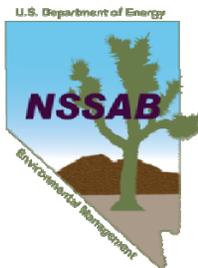


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# SWEIS Committee Update

Michael Voegele  
Committee Co-Chair  
September 14, 2011



- The Nevada Site Specific Advisory Board Site-Wide Environmental Impact Statement Committee met on September 7, 2011 to discuss comments the members had developed in their review of the Nevada National Security Site Draft Site-Wide Environmental Impact Statement (DSWEIS)
- Committee members present were Kathy Bienenstein, Donna Hruska, John McGrail, Michael Voegele, and Walt Wegst
- Approximately 80 draft comments were developed
- The Committee will continue to work to consolidate and refine the comments and prepare a draft letter for Full Board approval to submit the comments to the Department of Energy by October 27.



# Comments

From the Committee's initial review of the draft comments, it appears that the draft letter will present seven general comments:

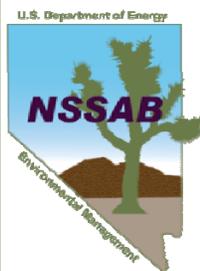
- 1) The DSWEIS does not propose a preferred alternative; the NSSAB questions the need for an update to the Environmental Impact Statement, as there is no major federal action motivating the update
- 2) The lack of a preferred alternative limits the focus of public comments on the SWEIS. If a preferred alternative is included in the final SWEIS, another public comment period should be offered.
- 3) The NSSAB questions the inclusion of commercial-scale power production, i.e., solar and geothermal, activities on the Nevada National Security Site, as the land withdrawals are specifically for weapons related activities.



# Comments

(continued)

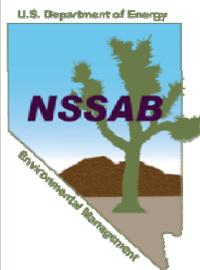
- 4) The DSWEIS does not recognize that the Reduced Operations Alternative would have an impact on Environmental Management activities. For example, under the Reduced Operations Alternative, road maintenance on Pahute Mesa would be curtailed, effectively limiting access to the UGTA monitoring wells.
- 5) The DSWEIS does not provide sufficient detail to allow meaningful evaluation of transportation shipping routes, such as the source of and the number of shipments proposed for each alternative transportation route under the constrained and unconstrained options, for each of the three alternative scenarios.



# Comments

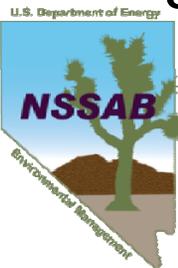
(continued)

- 6) The DSWEIS does not recognize that if the Yucca Mountain project is cancelled, as the DSWEIS states, then the Environmental Management Program is responsible for the necessary remediation activities. Remediation of the Yucca Mountain Site is a major federal action and must be included in the SWEIS.
- 7) Miscellaneous comments identifying inaccuracies and needed clarifications.



# Next Steps

- The Committee will have a draft letter ready for the Board to review and approve by the Oct 12, 2011 meeting.
- The Committee expects to have its comments consolidated and finalized prior to the meeting.
- If there are any comments on the DSWEIS from Board members, please send them to Kelly and attend the October 4, 2011 Committee meeting.



**Proposed NSSAB Items for Round Robin  
at the EM SSAB Chairs Meeting (Oct 20, 2011)**

**DRAFT**

**Provide One-to-Three (1-3) Topics during June – October 2011:**

- Reviewing and commenting on the Nevada National Security Site Site-Wide Environmental Impact Statement
- Provided comments on the Greater-Than-Class-C Environmental Impact Statement

**Provide One (1) FY 2011 Accomplishment:**

- Provided eight (8) recommendations to the Nevada Site Office in FY 2011
  - Six (6) fully accepted and two (2) partially accepted

**Provide One (1) Major Board Activity during June – October 2011:**

- Welcomed five (5) new NSSAB members on October 1
  - Conducted orientation on October 5 and site tour on October 19

DRAFT

Proposed Recommendation of the EM SSAB Chairs

June 17, 2011

## SUBJECT: Asset Retention

The EM SSAB applauds DOE for the cleanup work accomplished to date. Reducing the size of the EM sites through cleanup and D&D will save the American taxpayer millions of dollars in "hotel" costs in the future.

However, we are concerned that in DOE's goal to achieve cleanup and site size reduction some valuable, unique, one-of-a-kind assets may be demolished or discarded. These unique assets may be needed in the future and their capabilities do not exist elsewhere in the U.S.

We recommend that DOE identify these unique assets. Further, we recommend that DOE and stakeholders (e.g. local communities, tribal governments, and the public) review these unique assets for their potential future use before they are gone forever.

DRAFT

Proposed Recommendation of the EM SSAB Chairs  
June 17, 2011

**SUBJECT: Using Rail Transport for Moving Waste**

*Originally proposed by Northern New Mexico Community Advisory Board, April 2011*

**Background**

As part of the DOE cleanup process, some radioactive and hazardous waste must be shipped from DOE EM sites to disposal sites in other states—sites designed and regulated for final disposal. For example: Until late 2009, all hazardous and low-level radioactive waste shipments from the Los Alamos National Laboratory (LANL) were transported by truck. LANL has 15,000 cubic yards of waste which they planned to move to approved disposal sites over four or five months. Additional legacy waste shipments are scheduled to continue through 2015. Shipment of newly generated waste will also be required.

A site in Utah receives much of this waste. The Nevada Test Site receives some Low-Level Radioactive Waste (LLW). Non-hazardous, non-radioactive waste has been shipped to facilities in Colorado and Texas. A facility in Texas called WCS Site, near Hobbs, New Mexico, is seeking the capability to accept LLW from DOE.

The 15,000 cu yards of waste was from excavation sites at LANL Technical Area 39 (TA-39) and Upper Los Alamos Canyon. Approximately 10,000 cubic yards was LLW and approximately 5,000 cubic yards was waste containing small amounts of Polychlorinated biphenyls (PCBs). Shipment of this waste is regulated as Class 9 material by the Department of Transportation (DOT) because of the presence of PCBs. Class 9 materials are the lowest hazard class of materials transported in the United States. IP-1 certified soft-sided containers are used. These containers are a double sided, flexible 242 cubic feet capacity (8.9 cubic yards) fabric bag, with a capacity of 24,000 pounds each. A small number of metal “intermodal” containers will be used for larger debris.

A rail head in Antonito, Colorado would have been used for shipping this waste to Utah. LANL prefers to use rail cars when shipping to the *Energy Solutions* (ES) licensed disposal facility in Utah. Using rail would eliminate as many as 765,000 highway miles, taking the equivalent of 850 truck trips off of roadways. Additionally, there are other rail heads in New Mexico which might be used by LANL.

These shipments would be comprised of debris such as soil, wood, concrete, asphalt, and metal, all of which can be easily retrieved by LANL, its subcontractors, or the rail carrier (with LANL technical support) in the event of an accident.

## **Comments and Observations**

The Hazardous Materials Transportation Uniform Act of 1990 emphasized the need to assess the risks and benefits associated with the transportation of hazardous materials by truck and rail.

Shipment by rail will ease truck traffic on highways. One intermodal train can haul the same amount as approximately 280 trucks.

Rail freight transportation incurs about 12 percent of the fatalities and 6 percent of the injuries that trucks do, per trillion ton-miles.

Railroads have an outstanding track record in safely delivering hazardous materials -- 99.998 percent of all rail cars containing hazardous materials arrived at destination safely, without any release due to an accident.

## **Recommendation**

No. 1 DOE should identify movement of waste that could use rail.

No. 2 Prior to any shipments, DOE should consult with all involved local communities where loading and unloading may occur, providing information and education about all aspects of the shipments including holding times at rail spurs and training of emergency responders.

No. 3 DOE should consider benefits to local communities involved -- such as jobs, rental of facilities, improvement of transfer site, and improvement of local roads.

## **Intent**

The intent of this recommendation is to see that the required complex wide cleanup is completed in the safest way, specifically relative to movement of waste.

## **References**

1. H. Barry Spraggins, (University of Nevada, Reno) The case for rail transportation of hazardous materials, *Journal of Management and Marketing Research*
2. <http://www.aabri.com/manuscripts/09224.pdf>
3. LA-UR-10-00134 Enhancing Safety through Rail Shipments
4. Applicable regulations and official documents:
  - 49 CFR Parts 171-180
  - 49 CFR Subpart G -- Emergency Response Information
  - Nuclear Regulatory Commission 540/541 Uniform Low Level Radioactive Waste Manifests
  - *Supplement Analysis for the Proposed Transport of Low Level Radioactive Waste by Truck and Rail from Los Alamos National Laboratory (LANL) for Disposal at Energy Solutions in Clive, Utah (DOE/EIS-0380-SA-1)*

DRAFT

## Proposed Recommendation of the EM SSAB Chairs

June 17, 2011

### SUBJECT: Authorizing Funds for Movement of Historical/Cultural Artifacts

*Proposed by Nevada Site Specific Advisory Board, June 2011*

The Environmental Management Program across the U.S. Department of Energy Complex follows prescribed processes for disposition of property that is no longer needed by the federal government but may be of use to external entities. However, there is no Environmental Management policy and funding mechanism in place for items that have cultural/historic value to outside organizations unable to fund the physical transfer of these items.

Through Department of Energy orders and regulations, the current processes used for disposition of property associated with environmental restoration sites include:

- Prior to intrusive work, the site is evaluated in accordance with the National Historic Preservation Act (NHPA) and the appropriate action is taken
- Any items released for reuse or donation must first be evaluated for hazards (e.g. radiation) in accordance with directives and local procedures
- Items identified as hazardous or radioactive waste are appropriately disposed
- Items identified as potentially reusable are made available through the excess property procedures and typically removed/transported by the receiving entity
- Items identified as having no value through reuse but having potential cultural or historic value are made available through donation to museums and typically removed/transported by the receiving entity

After these processes are complete, some items may remain. Typically, these items are disposed as sanitary waste or allowed to remain in place. In some instances, items may have cultural or historic value but the receiving entity may not have a means of paying for removal/transport.

The EM SSAB urges the Department of Energy to be proactive in supporting the removing/transporting of items having cultural/historic value to outside organizations that are unable to fund the activity.

It is recommended that DOE formally recognize that transfer of these cultural/historic items represent beneficial reuse (and hence disposition) and as such these transportation costs be considered disposition costs.

**FY 2012 Proposed NSSAB Work Plan Tasks**

<b>Item 1 Waste Management</b>	Description of Work Plan Item:	From a community perspective, provide a recommendation regarding if the Nevada Site Office should safely dispose U233 waste from Oak Ridge.
	Deadline for Submittal to DOE:	March 2012
	Expectations:	DOE will provide background documentation, work plan, and waste profile for NSSAB review. If necessary, DOE may send 1-2 NSSAB members to Oak Ridge to view the waste. NSSAB will then provide a recommendation to DOE.

<b>Item 2 UGTA</b>	Description of Work Plan Item:	<p>A) Provide a recommendation regarding if there is a need for a formal response plan if contamination goes beyond the regulatory boundary related to Frenchman Flat</p> <p>B) If the NSSAB determines there is a need, what should the response plan include from a community perspective?</p>
	Deadline for Submittal to DOE:	<p>A) September 2012</p> <p>B) FY 2013 - Begin studying background in FY 2012</p>
	Expectations:	<p>A) Analyze if there is a need for a formal response plan. DOE can provide briefings and answer questions regarding formal response plans.</p> <p>B) DOE will provide examples of other sites' response plans. NSSAB to provide recommendation on the specific topics that should be addressed in the Frenchman Flat response plan.</p>

<b>Item 3 UGTA</b>	Description of Work Plan Item:	Provide a recommendation determining if Yucca Flat CAU should go to Phase II or Peer Review.
	Deadline for Submittal to DOE:	FY 2013 – Begin studying background in FY 2012
	Expectations:	DOE will provide a presentation to the NSSAB comparing the pros and cons of Phase II and a Peer Review toward the end of FY 2012. The NSSAB will study the various reasons for each alternative and make a recommendation to DOE in FY 2013.

**FY 2012 Proposed NSSAB Work Plan Tasks**

<b>Item 4 UGTA</b>	Description of Work Plan Item:	Provide a recommendation regarding if DOE needs to reevaluate the options for groundwater contamination contaminant/removal.
	Deadline for Submittal to DOE:	September 2012
	Expectations:	DOE will provide a presentation to the NSSAB explaining why containment was not an option in the 1990s and explain what is being done at other sites. The NSSAB will study the information and make a recommendation.

<b>Item 5 UGTA</b>	Description of Work Plan Item:	Provide a recommendation on how DOE could enhance its annual Groundwater Open House.
	Deadline for Submittal to DOE:	January 2012
	Expectations:	DOE will provide an overview on what has taken place during past Groundwater Open Houses. The NSSAB will review and provide a recommendation.

<b>Item 6 Industrial Sites</b>	Description of Work Plan Item:	Provide a recommendation regarding long-term monitoring activities at closed Industrial Sites.
	Deadline for Submittal to DOE:	May 2012
	Expectations:	DOE will provide a briefing on current long-term monitoring activities at closed sites and what the plan is for future monitoring (March 2012). NSSAB will review and provide a recommendation on what should be done in the future.

<b>Item 7 Soils</b>	Description of Work Plan Item:	Review and provide a recommendation on the draft "Risk-Based Corrective Action Decision Process" document.
	Deadline for Submittal to DOE:	March 2012
	Expectations:	DOE will provide a briefing and draft document in January 2012. NSSAB will review and comment.

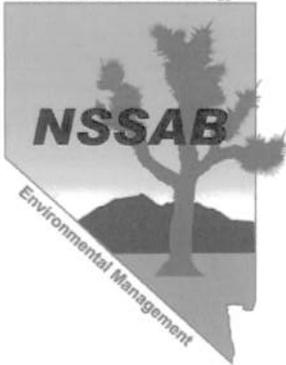
**FY 2012 Proposed NSSAB Work Plan Tasks**

<b>Item 8 EM</b>	Description of Work Plan Item:	Conduct 2012 membership drive with recruitment beginning January 2012.
	Deadline for Submittal to DOE:	March 2012
	Expectations:	NSSAB members will review applications, interview applicants, and provide a recommendation regarding a slate of candidates for DOE to consider.

<b>Item 9 EM</b>	Description of Work Plan Item:	Review FY 2014 Baseline funding and determine budget prioritization by activity
	Deadline for Submittal to DOE:	April 2012
	Expectations:	DOE will provide briefings on planned FY 2014 activities. The NSSAB will provide a recommendation ranking the activities.

<b>Item 10 EM</b>	Description of Work Plan Item:	Review and provide public comment on EM sections of the Site-Wide Environmental Impact Statement.
	Deadline for Submittal to DOE:	October 27, 2011
	Expectations:	Review Site-Wide Environmental Impact Statement and provide public comment on EM sections.

<b>Item 11 HQ - Waste Management</b>	Description of Work Plan Item:	Review and provide public comment on the HQ update to DOE Order 435.1 - Radioactive Waste Management
	Deadline for Submittal to DOE:	TBD
	Expectations:	DOE will provide background documentation and the proposed DOE Order for NSSAB review. NSSAB will then provide public comment to DOE HQ.



# Nevada Site Specific Advisory Board

September 14, 2011

Ms. Kelly Snyder, DDFO  
U.S. Department of Energy, Nevada Site Office  
P.O. Box 98518  
Las Vegas, NV 89193-8518

SUBJECT: Proposed FY 2012 NSSAB Work Plan

Dear Ms. Snyder,

At our September 14, 2011 full board meeting, the NSSAB had the opportunity to review the list of activities the Department of Energy (DOE) proposed the NSSAB incorporate into their FY 2012 work plan. In addition, the NSSAB also reviewed its FY 2011 work plan and determined what activities to carry over into FY 2012 as well as new tasks. After Full Board discussion, the NSSAB would like DOE's approval for the attached work plan.

We appreciate the opportunity to review and comment on Environmental Management activities at the Nevada National Security Site and look forward to a productive year.

Sincerely,

**DRAFT**

Walter F. Wegst, Chair

Attachment

cc: M. Nielson, DOE/HQ (EM-13) FORS  
C. Alexander Brennan, DOE/HQ (EM-13) FORS  
A. Clark, DOE/HQ (EM-13) FORS  
K. Snyder, PSG, NNSA/NSO, Las Vegas, NV  
C. Lockwood, PSG, NNSA/NSO, Las Vegas, NV  
D. Rupp, NREI, Las Vegas, NV  
NSSAB Members and Liaisons  
NNSA/NSO Read File

## Members

**Kathleen Bienenstein, Vice-Chair**  
Donna Hruska  
Robert Johnson  
John M. McGrail, P.E.  
Gregory Minden  
Michael Moore  
Michael Voegelé, PhD  
James Weeks  
**Walter Wegst, PhD, Chair**

## Liaisons

Nye County  
Clark County  
State of Nevada Division of  
Environmental Protection  
U.S. Department of Energy,  
Nevada Site Office  
U.S. National Park Service

## Administration

Denise Rupp, Administrator  
Navarro Research  
& Engineering, Inc.  
Kelly Snyder, DDFO  
U.S. Department of Energy,  
Nevada Site Office

Response Status: Completes

Filter: No filter applied

Aug 22, 2011 4:42 PM PST

Dear NSSAB Members, Where did the time go? The new fiscal year is fast approaching and we need to plan for FY 2012 NSSAB activities. Please take a few minutes to consider...have we met our FY 2011 goals? If we did, it's important to understand how. If not, we need to know how to ensure success in FY 2012. The results of this survey will be compiled and made available to the Board for use in developing the FY 2012 Work Plan and general conduct of business. We'll also share the results with key DOE Environmental Management staff so they can get an idea of what's important to the NSSAB. You're urged to provide candid feedback. To that end, the survey is designed to be anonymous. Please take a moment to complete this survey by Friday, August 12, 2011. Thank you!

**1. Are DOE EM employees and contractor staff easily accessible?**

Yes	8	100%
No	0	0%
<b>Total</b>	<b>8</b>	<b>100%</b>

**2. How satisfied are you with the NSSAB's interaction with EM Groundwater staff?**

Very satisfied	8	100%
Somewhat satisfied	4	50%
Dissatisfied	0	0%
Comment	4	50%

**Respondent #    Response**

1 The survey forced me to make two selections here

2 ?

3 I think they do a good job; more importantly, they are candid about what they know, don't know and what they are trying to find out.

**3. How satisfied are you with the NSSAB's interaction with EM Industrial Sites and Soils staff?**

Very satisfied	8	100%
Somewhat satisfied	0	0%
Dissatisfied	0	0%
Comment	0	0%

**4. How satisfied are you with the NSSAB's interaction with EM Transportation/Waste staff?**

Very satisfied	7	88%
Somewhat satisfied	1	12%
Dissatisfied	0	0%
Comment	0	0%

Very satisfied	0	0%
Somewhat satisfied	0	0%
Dissatisfied	0	0%
Comment	0	0%

5. Do you read the EM Monthly Reports that are prepared for the NSSAB?		
Yes, every month	4	50%
Sometimes	3	38%
No	0	0%
Comment	1	12%
Respondent #    Response		
	1	Missed a month or 2

6. How useful are the EM Monthly Reports?		
Very useful	1	12%
Somewhat useful	7	88%
useful	0	0%
Comment	0	0%

7. How could the EM Monthly Reports be more "Board friendly?" (format, content, order, etc.)		
5 Responses		
Respondent #    Response		
	1	N/C
	2	Things are fine.
	3	?
	4	Sometimes it is useful to have background info about current projects.
	5	no comment

8. Based on FY 2011 Work Plan items, how satisfied are you with the types of items on which the NSSAB was asked to develop recommendations?		
Very satisfied	4	50%
Somewhat satisfied	3	38%
Dissatisfied	0	0%
Comment	1	12%
Respondent #    Response		
	1	I felt the Board was rushed on certain projects. I understand that some timelines are legislated, but I think Scott Wade's approach is a good one, i.e., let us know what is coming up.

9. Which of the following capture your thoughts on Nevada National Security Site tours? (select all that apply)		
More general tours should be offered	0	0%
More topic-specific tours should be offered	2	25%
There are too many tours	0	0%
Tours are not beneficial	0	0%
The current frequency of tours is appropriate	6	75%

**10. Aside from staff presentations, EM Monthly Reports, and Site tours, can you suggest other tools that would assist the NSSAB in their mission?**

5 Responses

Respondent # Response

1 No

2 No.

3 No.

4 The personal knowledge of a lot of people who attend the meetings in various capacities. Generally most people offer info, but I think we could be more proactive in having those with specialized expertise frame some issues for us.

5 It might be useful to hear occasional presentations from our liason members about their agencies interest in NNSS EM activities.

**11. Do you believe DOE considers NSSAB recommendations when making decisions?**

Yes	6	75%
No	0	0%
Sometimes	2	25%
<b>Total</b>	<b>8</b>	<b>100%</b>

**12. What benefits do you see the NSSAB providing EM?**

7 Responses

Respondent # Response

1 Perspectives that might not have occurred to someone closely involved in projects

2 Stakeholder comment.

3 A different perspective.

4 simplifies process of public involvement input.

5 I have been impressed with the EM staff. I believe the NSSAB has provided a reinforcing mechanism for their decision making processes.

6 a civilian perspective on em issues

7 Input from both the community and from local agencies (Clark and Nye counties). At times the NSSAB has clearly expressed desired outcomes that are somewhat different than EM has proposed. This is a good exchange of ideas.

**13. How satisfied are you with the structure and conduct of Full Board meetings?**

Very satisfied	7	88%
Somewhat satisfied	1	12%
Dissatisfied	0	0%
Comment	0	0%

14. How beneficial do you believe addressing issues as a Committee of the Whole has been?		
Very beneficial	5	62%
beneficial	3	38%
Not beneficial	0	0%
Comment	2	25%
Respondent #	Response	
1	prefer smaller working committees- but co CotW does eliminate second step of committee presenting to full board.	
2	I don't think there is a perfect solution.	

15. How satisfied are you with the amount of participation by other NSSAB members during meetings?		
Very satisfied	2	25%
Somewhat satisfied	6	75%
Dissatisfied	0	0%
Comment	2	25%
Respondent #	Response	
1	Everyone absolutely must do their homework. Sometimes, they don't.	
2	I would also re-consider the seating arrangement. People seem a little spread out at times. I would also consider some meetings with assigned seating to make people sit next to someone new.	

16. Liaisons on the NSSAB represent stakeholders impacted by EM activities. Are you aware of how EM activities affect these specific organizations?		
Yes	6	75%
No	2	25%
<b>Total</b>	<b>8</b>	<b>100%</b>

17. Are you aware of the perspectives represented by the various liaison organizations that participate on the NSSAB?		
Yes	6	75%
No	2	25%
<b>Total</b>	<b>8</b>	<b>100%</b>

Current liaison positions represent Clark County, Department of Energy, Nye County, State of Nevada Division of Environmental Protection, U. S. National Park Service, and the West Career and Technical Academy (beginning in the fall).

18. Do you think these liaison organizations are a good fit to the NSSAB mission?		
Yes	7	88%
No	1	12%
<b>Total</b>	<b>8</b>	<b>100%</b>

19. Please list other organizations you believe could benefit from participating on the NSSAB.	
6 Responses	
Respondent #	Response
1	N/C
2	Unknown
3	?
4	perhaps NNSA
5	Historical and archeological groups.
6	Yes to question 18, with one exception and that is the Nat. Park Service. Not sure how that benefits either the NSSAB or EM.

20. Do you refer to your meeting packet after the meeting takes place?		
Yes	7	88%
No	1	12%
<b>Total</b>	<b>8</b>	<b>100%</b>

21. Keeping public attendance at meetings and NSSAB business in mind, how often should the Full Board meet?		
Monthly	2	25%
Bi-monthly	6	75%
Quarterly	2	25%
Other	0	0%
Comment	2	25%
Respondent #	Response	
1	Depends on work plan which depends on EM budget	
2	Except when special work is required as the Board meets as a committee of the whole.	

22. Should the NSSAB hold regular Full Board meetings in rural communities?		
Definitely - at least twice a year	1	12%
Yes - at least once a year	0	0%
Yes - but only in conjunction with a specific EM topic/event	5	62%
No - there is not enough public response	1	12%
Comment	2	25%
Respondent #	Response	
1	and when there seems to be sufficient interest to justify	
2	Yes. Has NSSAB ever determined why local citizens do not attend meetings? How about making the meetings part of the high school activities: a lot of rural activities revolve around the high school.	

23. Is it beneficial to hear about what other EM advisory boards are doing (conference calls, national meetings, site visits, etc.)?		
Very beneficial	2	25%
beneficial	6	75%
Not beneficial	0	0%
Comment	0	0%

24. How much time do you spend on NSSAB activities each month?		
0 - 4 hours	1	12%
5 - 9 hours	4	50%
10+ hours	3	38%
Comment	2	25%
Respondent #	Response	
1	Average; some months are more	
2	Depends on what the issues are. I am trying to learn background info.	

25. How often do you use the NSSAB website?		
Daily	0	0%
week	1	12%
Occasionally	7	88%
Seldom	0	0%
What website?	0	0%
Comment	1	12%
Respondent #	Response	
1	Depends on the time period.	

26. If you could do one thing to increase your satisfaction as a Board member, what would it be?		
6 Responses		
Respondent #	Response	
1	More direct involvement in groundwater programs	
2	Nothing	
3	?	
4	It would be nice to have Steve Mellington show up to say Hi at least once.	
5	We are going to have snacks. That is good.	
6	Try to encourage more members to actively participate in both meetings and outside activities of the board.	

27. Please provide one word that expresses your feeling about being an NSSAB member.	
7 Responses	
Respondent #	Response
1	Okay
2	Productive
3	Honored
4	service
5	pertinent
6	usefull
7	rewarding