



Nevada Site Specific Advisory Board (NSSAB)

**Full Board Meeting – Las Vegas
Wednesday, June 17, 2026**

Handouts...

- Page 2 Attendance Sheet (informational)
- Page 3 Public Comment
- Page 4 For Board Action: EM Site-Specific Advisory Board (EM SSAB) Draft Recommendation for Support of DOE-EM Reuse and Recycling Community of Practice
- Page 6 Ed Session: Well Development and Testing (WDT) at Pahute Mesa
- Page 24 List of Definitions for Educational Session: WDT at Pahute Mesa
- Page 26 Map of UGTA Wells for Educational Session: WDT at Pahute Mesa
- Page 27 Phenomenology of Underground Testing for Educational Session: WDT at Pahute Mesa

Dates, times, and topics are tentative and subject to change.

NSSAB minutes, agendas, recommendations, meeting dates and locations, handouts, and member information is available on the NSSAB website at: www.nnss.gov/NSSAB/
NSSAB Phone: 702-523-0894; NSSAB Email: nssab@emcbc.doe.gov
NSSAB Address: 100 N. City Parkway, Suite 1750, Las Vegas, NV 89106
www.facebook.com/NNSANevada

The Nevada National Security Site (NNSS) Environmental Report is available at <https://nnss.gov/publication-library/environmental-publications/>

NSSAB FULL BOARD MEETING ATTENDANCE

October 2025 through September 2026 (FY 2026)

Name	11/5/2025*	2/18/26	6/17/26	9/9/26	Max Term
MEMBERS					
Erik Anderson		E			2028
Joycelyn Austin-Mabe		√			2028
Robert (Doug) Blackstock		√			2030
Lisa Blandi		√			2028
John Cole		√			2028
Gary Elgort		√			2026
Thomas Fisher		√			2030
Pam Handor		√			2030
Mark Hilton		√			2026
Tammi Odegard		E			2030
Lori Olson-Arzaga		E			2030
Anntoinette Rivera		√			2030
Brandon Schmidt		√			2030
Kevin Trainor		√			2028
Eddie Williams		√			2028
LIAISONS					
Clark County		√			
Consolidated Group of Tribes & Organizations		√			
Elko County Commission (limited)					
Esmeralda County Commission		√			
Lincoln County Commission		U			
Nye County Commission		U			
Nye County Emergency Management		√			
Nye Co. Natural Resources and Federal Facility		√			
State of NV Division of Env Protection		√			
U.S. Natl Park Service (limited)		√			
White Pine County Commission (limited)					
KEY: √ - Present E - Excused V - Vacant U - Unexcused					

**Public Comments Received
for June 17 NSSAB Meeting**

I am hoping that this email will suffice for a submission for public comment at the next meeting. I'm not sure if this is within NSSAB purview or not, but I would hope that they could advocate for the re-start of the monthly public tours at the NNSS. I was scheduled to go on one when the tours were temporarily canceled during a government shutdown, and it now appears that they are an ongoing budget casualty. I'm simply hoping something can be done to allow that program to continue; perhaps nominal visitor fees could help offset the program?

Respectfully submitted,
Scott Elliott
Reno, NV



A Community Based Advisory Board Chartered by the Department of Energy

Local Chapters:

Hanford · Idaho · Nevada · Northern New Mexico · Oak Ridge · Paducah · Portsmouth · Savannah River

INSERT DATE

Mr. Timothy Walsh
Assistant Secretary for the Office of Environmental Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Walsh:

During the April 29, 2026, Spring Chairs meeting, the Environmental Site-Specific Advisory Board (EM SSAB) received a presentation about the U.S. Department of Energy Environmental Management's (DOE-EM) Reuse and Recycle Community of Practice (RR CoP). The RR CoP endeavors to collaborate between interested program offices and sites to reduce costs by facilitating the reuse and recycling of excess materials and equipment across the DOE complex.

Each DOE-EM site has its own unique mission, timeline, and budget. These sites may overlook collaboration when immediate material needs arise. The RR CoP aims to bridge this gap by providing a way for the sites to prioritize reuse and recycling among themselves.

The EM SSAB Chairs understand that the RR CoP was informally chartered in 2023 and is relatively new. It is encouraging to see how DOE-EM Office of Infrastructure and D&D is integrating current site activities to ensure the reuse of federal assets across the DOE complex. This effort may ultimately reduce expenses to procure equipment and materials. The EM SSAB Chairs commend DOE-EM's efforts to save taxpayer dollars through the integration of RR CoP.

The EM SSAB Chairs support the RR CoP initiative and recommend that DOE-EM continue to foster the integration of this practice across the complex by increasing the number of sites involved with the goal of improving communication and awareness.

Who We Are

The EM SSAB is the DOE-EM's most effective vehicle for fostering two-way communication between DOE-EM and the communities it serves. The EM program is the world's largest environmental cleanup program, and the EM SSAB is its only citizen advisory board. For more than 30 years, the volunteer citizens of the EM SSAB have partnered with EM officials at both the local and national levels to ensure that the public has a meaningful voice in cleanup decisions.

Public participation is required/recommended as part of a number of environmental regulations. It is also good business practice, resulting in better decisions that often result in improved cleanup. Over the past three decades, EM SSAB members have volunteered over 50,000 hours of their time and submitted to EM officials over 1,800 recommendations, of which 84% have been fully or partially implemented, resulting in improved cleanup decisions.

The EM SSAB comprises approximately 160 people from communities in Georgia, Idaho, Kentucky, Nevada, New Mexico, Ohio, Oregon, South Carolina, Tennessee and Washington. The Board is cumulatively representative of a stakeholder population totaling millions of people who are affected by generator sites, transportation routes and disposal sites. As we move forward, the EM SSAB welcomes the opportunity to highlight the value of this unique volunteer board and discuss its priorities during the months and years ahead.

Susan Coleman, Chair
Hanford Advisory Board

Robert Skinner, Chair
Idaho Cleanup Project CAB

Mark Hilton, Chair
Nevada SSAB

Beverly Martin, Chair
Northern New Mexico CAB

Kris Bartholomew, Chair
Oak Ridge SSAB

Benjamin Stinnett, Chair
Paducah CAB

Donna Carson, Chair
Portsmouth SSAB

Deborah Creech, Acting Chair
Savannah River Site CAB

cc: Kelly Snyder, Designated Federal Officer, EM-2.33
Shannon Chester, DOE EM, EM-4.11

Educational Session Well Development and Testing at Pahute Mesa

**Brian Haight and Tim deBues
Underground Test Area (UGTA)**

**Navarro Research and Engineering, Inc.
Contractor to U.S. Department of Energy (DOE)
Environmental Management (EM) Nevada Program**



**U.S. DEPARTMENT
of ENERGY**

**Office of Environmental
Management**

EM-Nevada

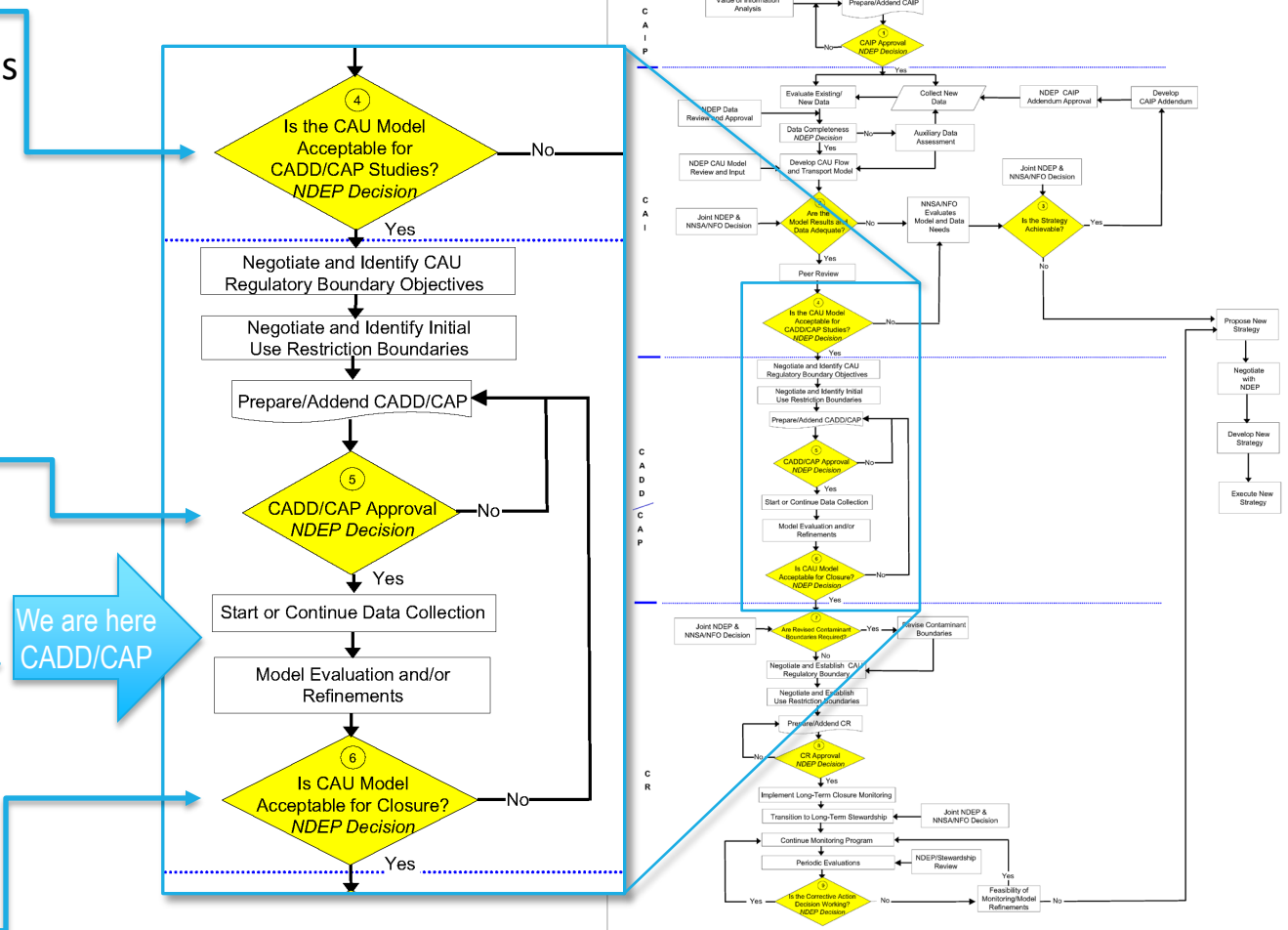
Outline

- UGTA Strategy
- Model Evaluation Targets
- New Wells on Pahute Mesa
- Well Development and Testing (WDT)
 - Strategy
 - Schedule
 - Status
 - Data and Analysis
- Outlook
- Key Messages



Where Are We in the UGTA Strategy?

- Decision Point 4:** Corrective Action Unit (CAU) flow and transport model defining contaminant boundaries was approved by the Nevada Division of Environmental Protection (NDEP) allowing the Corrective Action Decision Document/Corrective Action Plan (CADD/CAP) to proceed
 - CADD/CAP defines processes to assess the reliability of CAU flow and transport model results through data collection and model refinement
- Decision Point 5:** CADD/CAP was approved by NDEP
 - Well drilling and WDT activities are part of Data Collection
 - Data collected will be used to evaluate CAU flow and transport model. The goal of Model Evaluation is to build confidence that the CAU flow and transport model can be used for the regulatory decisions required for CAU closure
- Decision Point 6:** NDEP will decide if model is acceptable for Closure



FFACO UGTA Strategy Flowchart (FFACO, 1996 as amended)



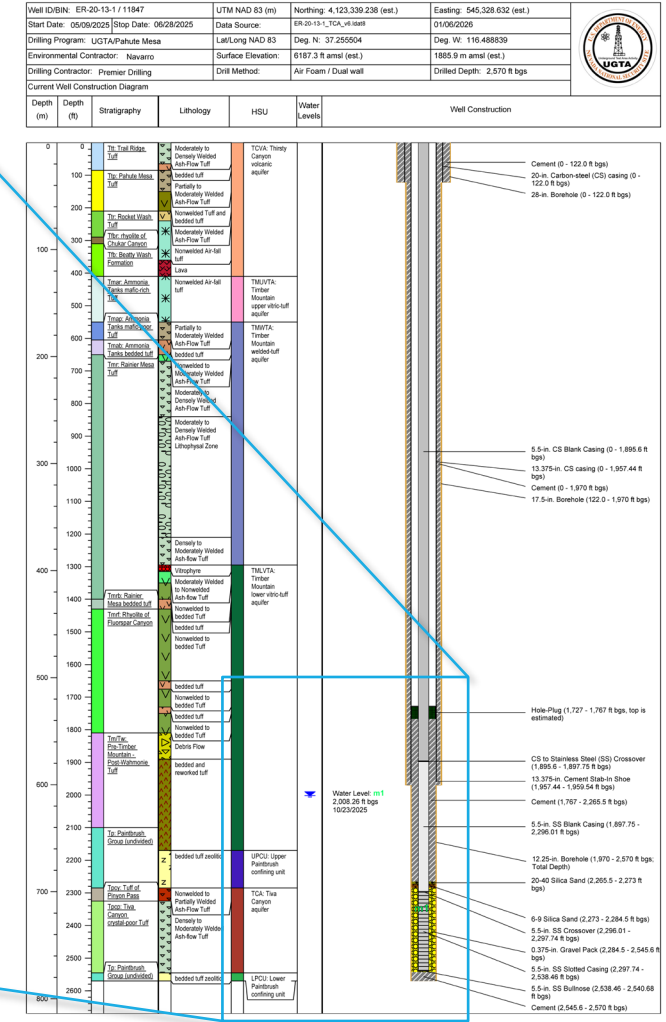
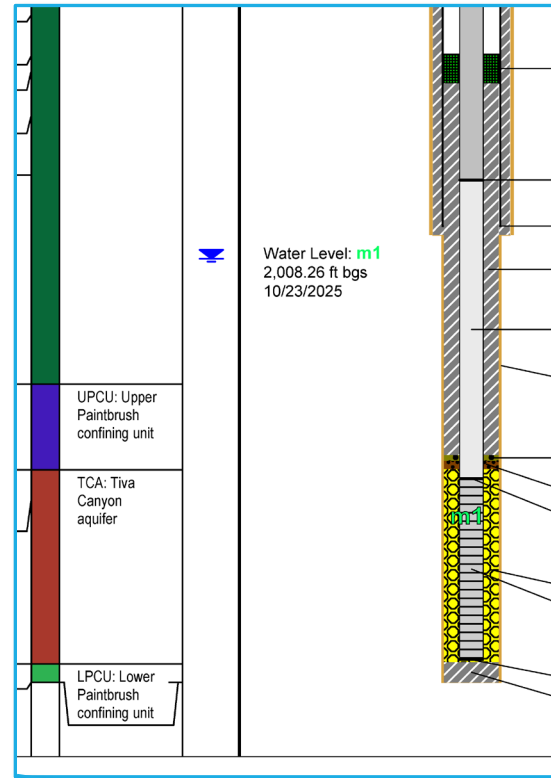
Model Evaluation Targets

- As defined in the CADD/CAP, there are six model evaluation targets to build confidence in the contaminant boundary forecasts and the supporting flow and transport models:
 1. Hydrogeology of Western Pahute Mesa (Area 20)
 2. Extent of radionuclide distribution
 3. Plutonium transport
 4. CAU flow model confidence building
 5. CAU transport model confidence building
 6. Hydrogeology between HANDLEY and BENHAM
- Wells drilled in 2025 and current WDT activities support all six



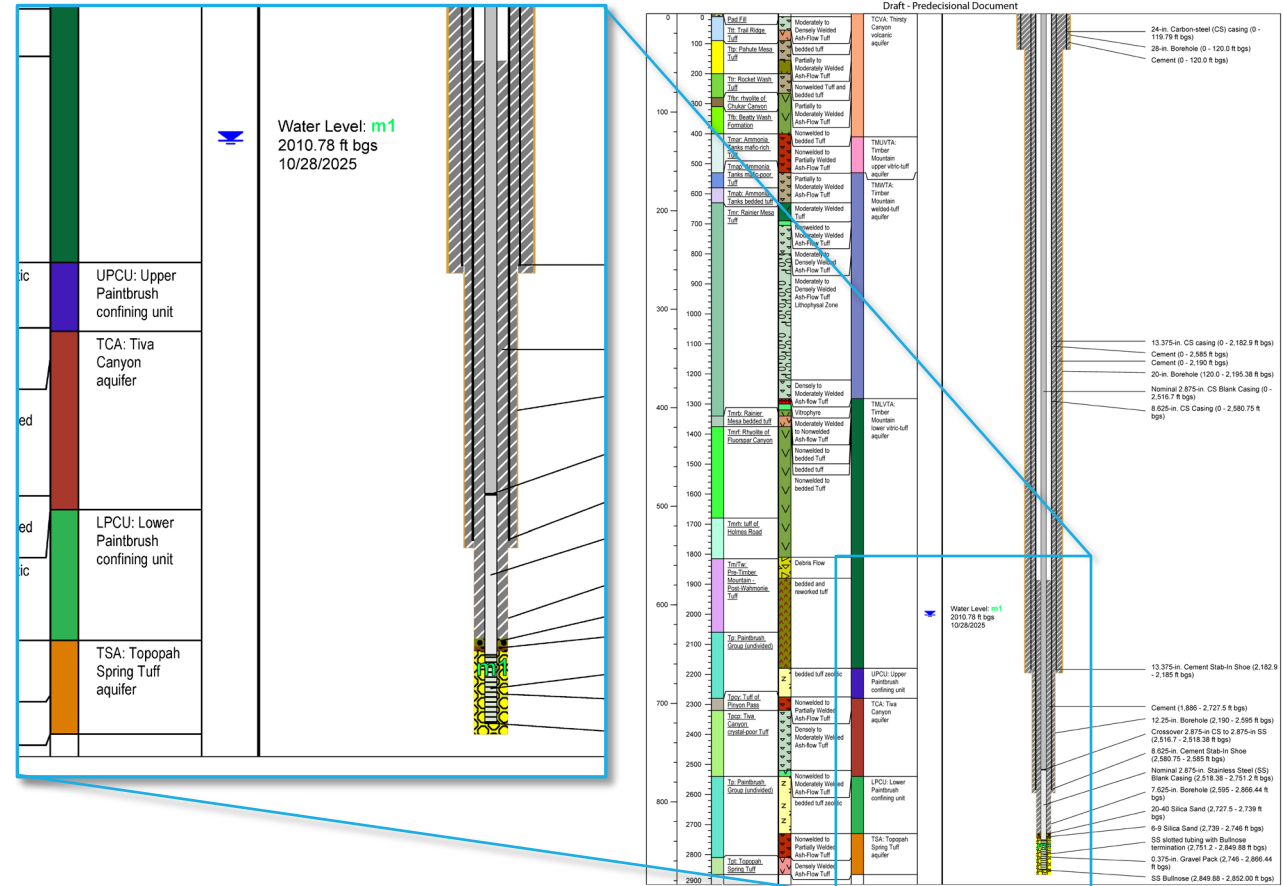
ER-20-13-1 Well Construction

- Completed on June 28, 2025
- Drilled to a depth of 2,570 feet below ground surface (bgs)
- Constructed with a single main completion casing (m1) open to the Tiva Canyon aquifer (TCA)
- TCA intersects chimney of the FONTINA test to the north



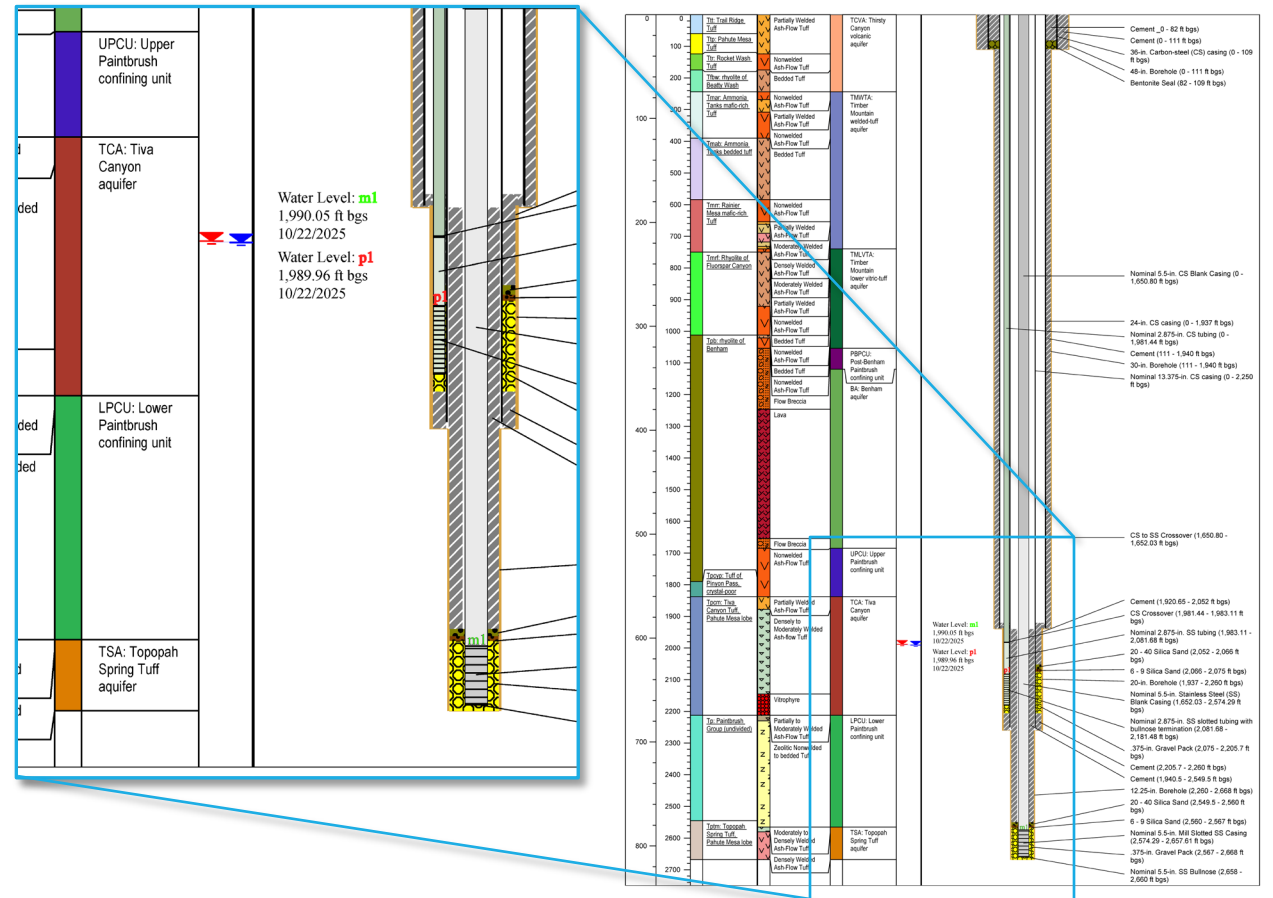
ER-20-13-2 Well Construction

- Completed on August 20, 2025
- Drilled to a depth of 2,866.44 ft bgs
- Constructed with a single main completion casing (m1) open to the Topopah Spring aquifer (TSA)
- TSA intersects chimney of the FONTINA test to the north



ER-20-1 Well Construction

- Recompleted on September 18, 2025
- Drilled to a depth of 2,668 ft bgs
- Constructed with:
 - A piezometer tube (p1) open to the lower portion of the TCA
 - A single main completion casing (m1) open to the TSA
- Located south of FONTINA and southwest of BENHAM
- Data from ER-20-5 and ER-20-7 show that TSA has high tritium concentrations downgradient of BENHAM



Why Do Well Development and Testing?

- Well development is performed after wells are constructed to prepare wells for sampling
 - Well is pumped to clean out residual drilling additives
 - Ensures future water quality samples are representative of what is in the aquifer
- Testing is done to quantify aquifer properties



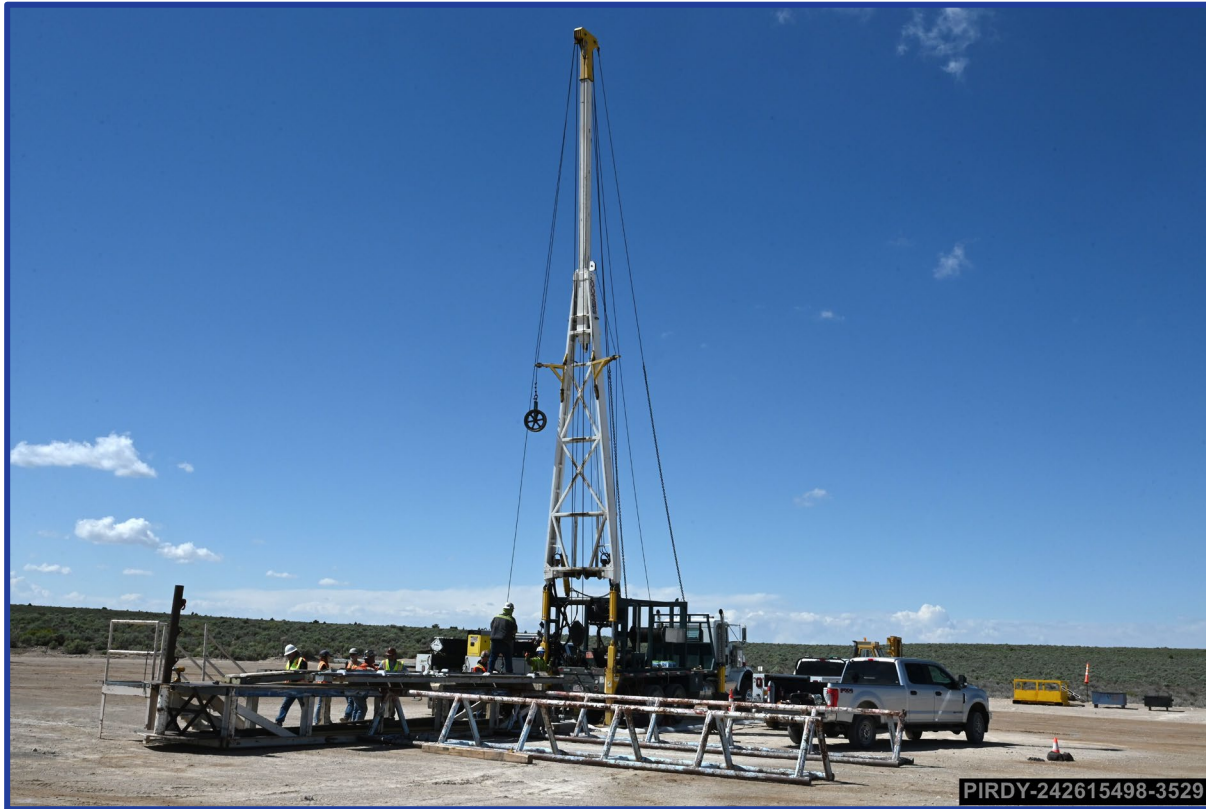
WDT Strategy

- Field logistics
 - Set aquifer transducer network before drilling and establish background readings
 - Monitor communication to wells through pressure readings in transducers
 - Reset transducers for each WDT instance to monitor during pumping and recovery periods
 - ER-20-1 TSA perform a step rate test then a 20-day constant rate test with a 20-day recovery period
 - Measure water quality, lithium bromide, temperature, and pressures during test
 - ER-20-13-1 will be a 3-day constant rate test to measure localized data (ER-20-13-1 constrained by contamination)
 - Use inserted rod pumps for final two zones at ER-20-13-2 and ER-20-1_p1

WDT Planned Schedule

- 5/5/2026: ER-20-1_m1 (TSA) step rate test followed by 20-day constant rate test
- 5/26/2026: ER-20-1_m1 20-day recovery period
- 6/20/2026: ER-20-13-1_m1 (TCA) step rate test followed by constant rate test
- 6/22/2026: ER-20-13-1_m1 recovery period
- 6/27/2026: ER-20-13-2_m1 (TSA) purge/develop/sample
- 6/30/2026: ER-20-1_p1 (TCA) purge/develop/sample

WDT Status



Rig Being Set Up to Install Pump at ER-20-1 (May 4-8)



Pump Being Installed at ER-20-1 (May 4-8)

WDT Status (continued)



Rolling Out Bypass and Discharge Lines (Including Flowmeter) to Sump at ER-20-1 (May 4-8)



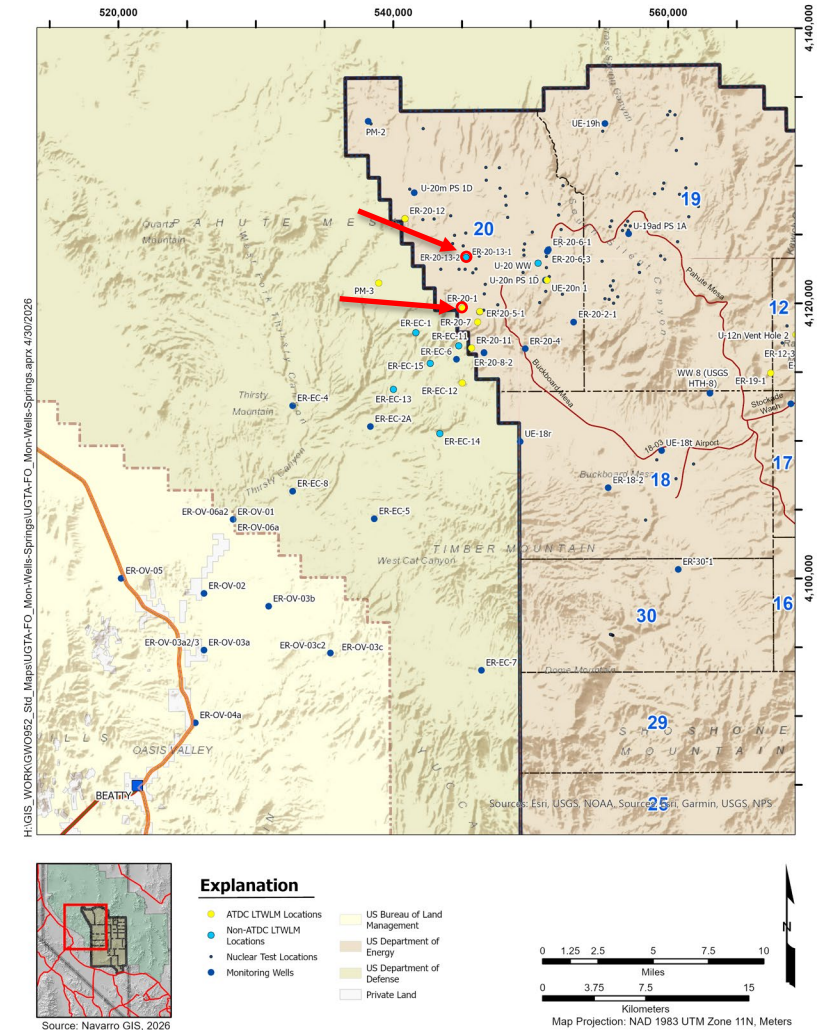
Adjusting Sampling Manifold Valves at ER-20-1 (May 4-8)



Obtaining Water Quality Sample at ER-20-1 (May 4-8)

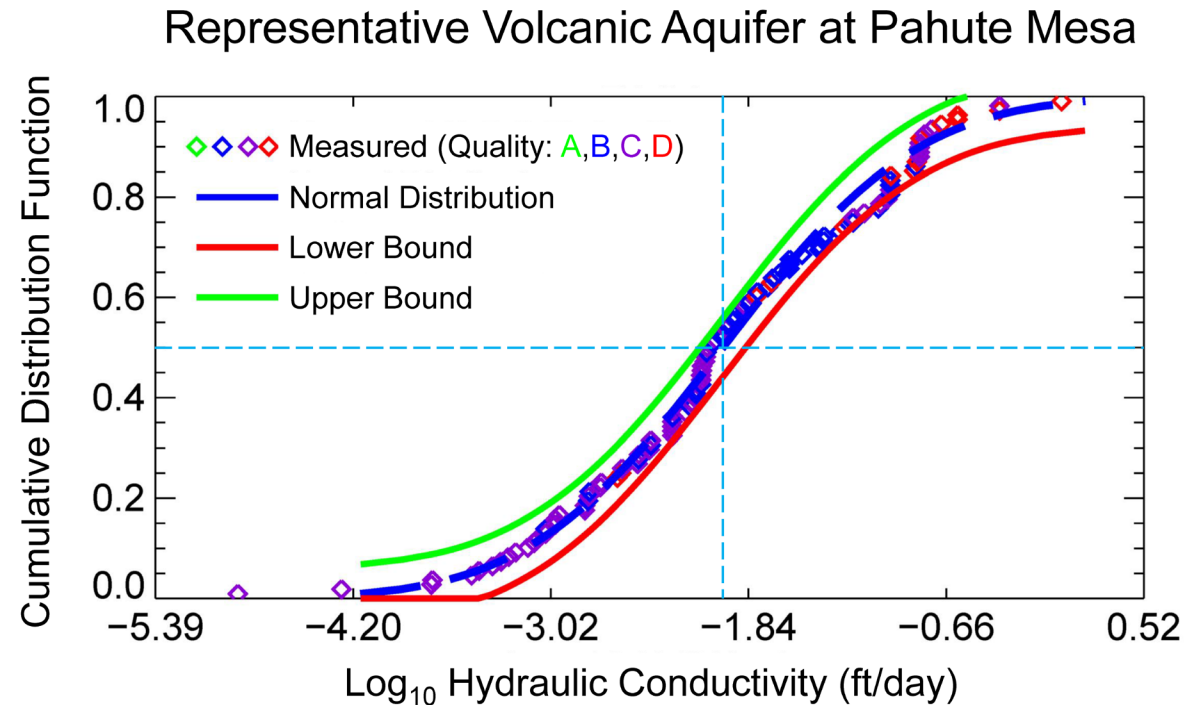
WDT Data and Analysis

- The response of a well to pumping and recovery provides useful information about formation properties and groundwater flow regime:
 - A step-rate test is used to estimate well losses which can give an indication of wellbore or formation problems (clogging or turbulence)
 - A constant-rate test is used to determine values of transmissivity, hydraulic conductivity, and storage coefficient in the aquifer being pumped
- Monitoring water levels (drawdown) in the pumped well provides information about the aquifer near the well
- Monitoring water levels in observation wells can provide information about the aquifer between pumped well and observation wells



WDT Data and Analysis (continued)

- How are results of WDT analysis applied to model evaluation?
 - New values of transmissivity, hydraulic conductivity, and storage coefficient will be compared to values that were input to the flow and transport model
 - It is expected that the new values will be within established ranges of uncertainty



Schedule Outlook

- Where will we be with Model Evaluation process?
 - WDT through summer 2026
 - Analysis through fall 2026
 - Other Model Evaluation activities through 2027
 - Model Evaluation Report for NDEP review by summer 2028

Key Messages

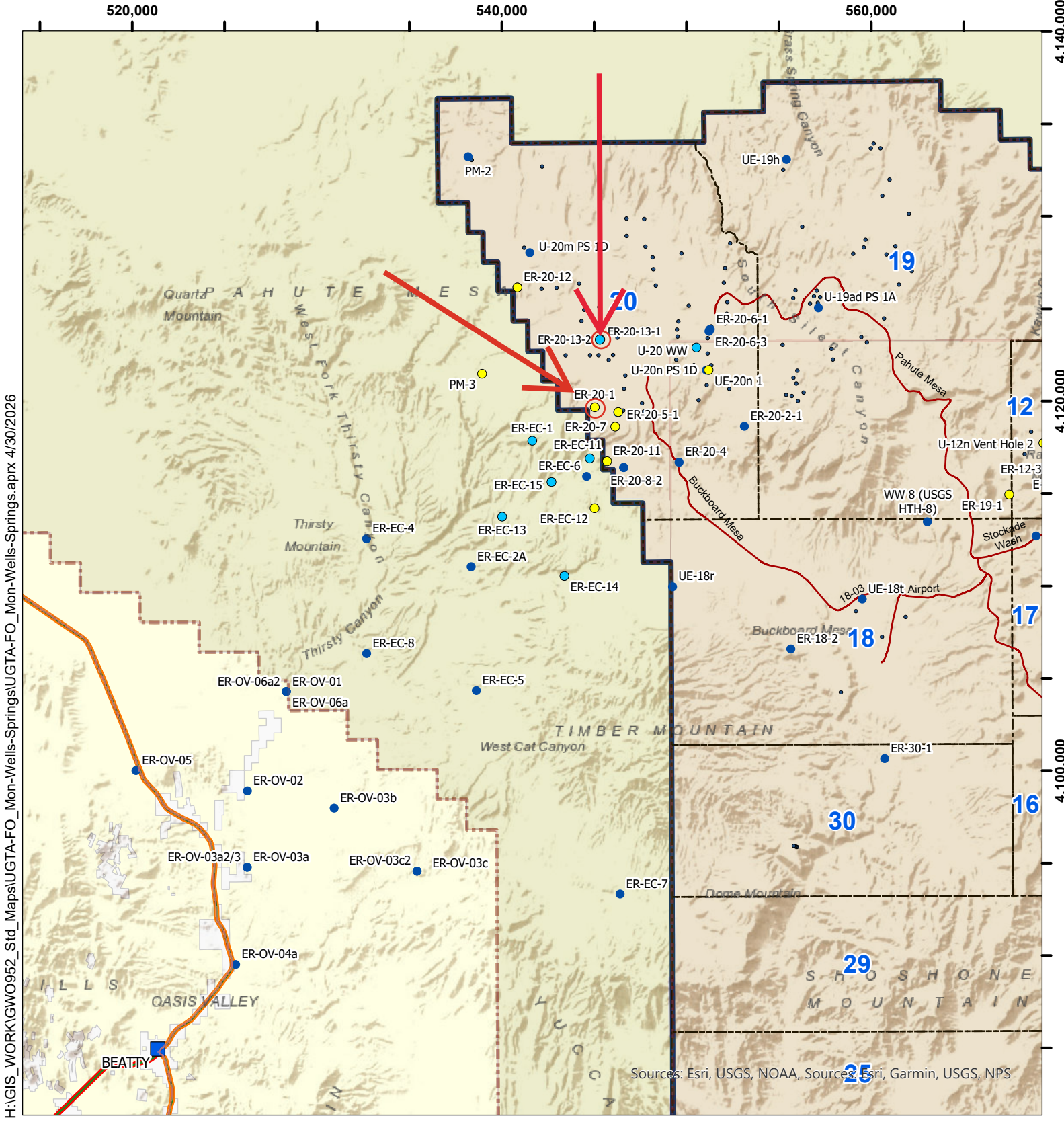
- Well drilling and WDT are part of the data collection activities performed to address data gaps identified in the CADD/CAP
- In general, data collection has gone as planned
- Use of new technology assisted in performance of data collection
- We expect that the results of the WDT analysis will increase confidence in the flow and transport model and confirm that the contaminant boundaries are conservative
- If all goes as expected, we anticipate NDEP will provide approval to move to closure



List of Definitions for Education Session: Well Development and Testing at Pahute Mesa

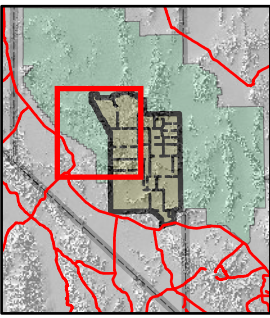
- **Aquifer** - A saturated layer of rock below the ground surface that can transmit significant quantities of groundwater.
- **Chimney** - Pertaining to an underground nuclear test, this is a column of rubble rock that forms above the test location after detonation. If it intersects an aquifer, the chimney can provide a groundwater pathway for radionuclide transport away from the test location.
- **Completion casing** - The final steel casing run into the wellbore after drilling, evaluation, and cementing operations are complete. It is the last casing placed in the borehole and is cemented in place to provide structural support, isolate different geological layers, and prepare the well for production.
- **Contaminant boundary** – a probabilistic model-forecast perimeter and lower boundary that delineates the extent of radionuclide-contaminated groundwater from underground testing over 1,000 years.
- **Corrective Action Unit (CAU)** - One or more corrective action sites that are grouped geographically by technical similarity, agency responsibility, or for other appropriate reasons, for purposes of determining corrective actions.
- **Corrective Action Decision Document (CADD)** - For UGTA, this document describes the results of data-collection and modeling activities completed during the corrective action investigation (CAI) stage for a CAU and also describes the corrective action objectives and the actions recommended to meet those objectives.
- **Corrective Action Plan (CAP)** - For UGTA, this document provides the plan for implementing the selected corrective action alternative. This includes presenting the CAU regulatory boundary objectives and initial use restriction (UR) boundaries negotiated by DOE and the Nevada Division of Environmental Protection (NDEP). It also describes the model evaluation process to assess the reliability of model results through data-collection and model refinement. The goal of the model evaluation process is to build confidence that groundwater flow and contaminant transport modeling results can be used for the regulatory decisions required for CAU closure.
- **Corrective Action Decision Document/Corrective Action Plan (CADD/CAP)** – Document that combines the function of the CADD and CAP.
- **Drawdown** - The measured decline in water level in a well or aquifer caused by pumping.
- **Flow and transport model** - Numerical or analytical tools used to simulate and predict the movement of water and contaminants in subsurface geologic layers.

- **Hydraulic conductivity** - A measure of how easily water can move through an aquifer under the influence of a hydraulic gradient. Hydraulic conductivity is calculated as the transmissivity divided by the saturated thickness of the aquifer.
- **Hydraulic head** - A specific measurement of total mechanical energy per unit weight of fluid, representing the elevation to which water rises in a piezometer or well. It determines the direction of groundwater flow, which moves from high hydraulic head to low hydraulic head. It is the sum of pressure head and elevation head.
- **Lithium bromide** – A tracer added to drilling fluids used to study fluid flow, hydraulic connectivity, and reservoir characteristics in geothermal, groundwater, and other subsurface systems. Lithium measurements are used to ensure drilling fluids are removed during well development and that future groundwater samples are not mixed with drilling fluids.
- **Observation well** - Pertaining to either well drilling or well development and testing, this is any well that is located away from the well being drilled or tested.
- **Piezometer tube** – a dedicated, small-diameter standpipe within a well with a screen in a specific formation interval. A pressure transducer or measuring tape can be lowered into the piezometer tube to monitor the water pressure or depth of groundwater, respectively.
- **Storage coefficient** – A measure of an aquifer’s ability to release water from storage in response to a change in hydraulic head.
- **Transducer (abbreviation of “pressure transducer”)**- A solid-state sensor that converts water pressure to an electrical signal that can be measured, recorded, or transmitted.
- **Transmissivity** - A measure of an aquifer’s ability to transmit water under a unit hydraulic gradient. It can be calculated as the hydraulic conductivity times the aquifer thickness.
- **Underground Test Area (UGTA) Strategy** – The agreed to approach described in Appendix VI of the FFACO that is comprised of four stages. The strategy is designed so that once the four stages are complete, closure and initiation of long-term monitoring at groundwater characterization areas may proceed.
- **Well Development and Testing (WDT)** – **Well development** focuses on minimizing impacts from drilling and well construction operations that may affect the intended use of a well, such as for groundwater sampling and characterization, and reestablish natural groundwater chemistry in the wellbore environment. **Well testing** focuses on measuring and analyzing the well’s performance to understand reservoir behavior and obtain data that is used to refine computer models on groundwater flow and movement.



H:\GIS_WORK\GWO952_Std_Maps\UGTA-FO_Mon-Wells-Springs.aprx 4/30/2026

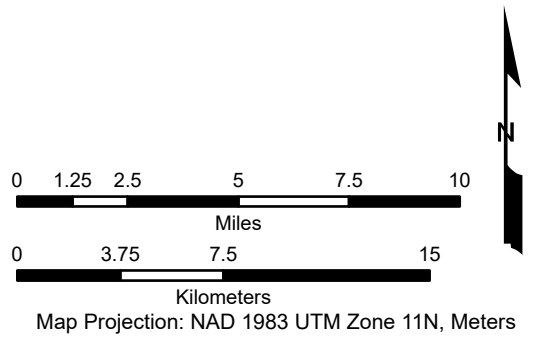
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS



Source: Navarro GIS, 2026

Explanation

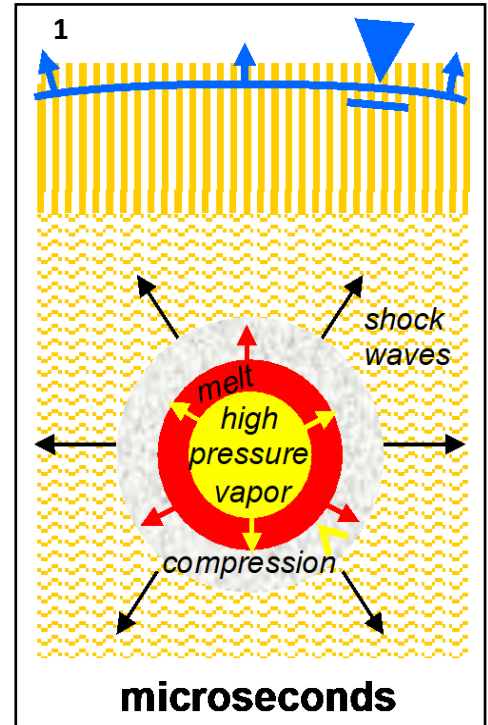
- ATDC LTWLM Locations
- Non-ATDC LTWLM Locations
- Nuclear Test Locations
- Monitoring Wells
- US Bureau of Land Management
- US Department of Energy
- US Department of Defense
- Private Land



Phenomenology of Underground Testing

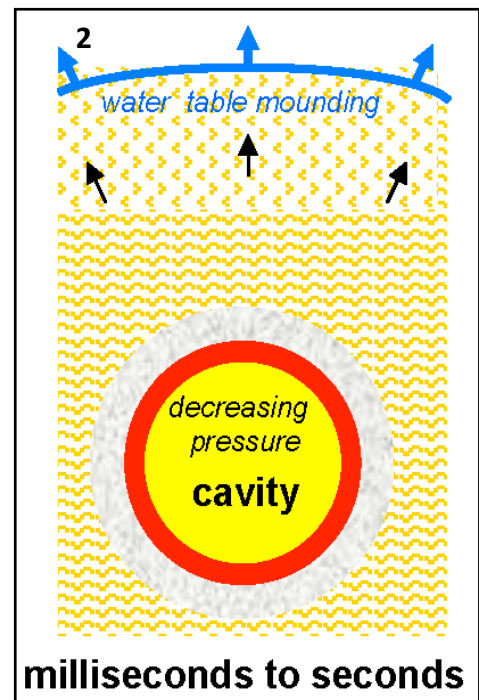
1. Detonation

- Instantaneous vaporization of rock and water
- Extremely high temperatures and pressures
- Pressure force generates a shock wave
 - Melts, heats, and alters surrounding rock



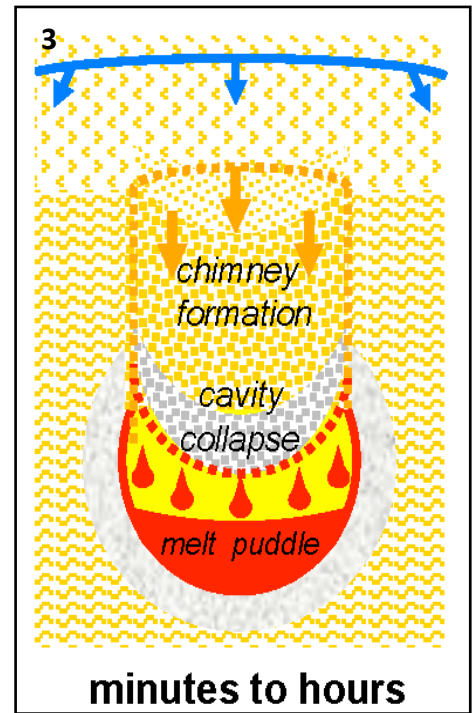
2. Cavity Formation

- Cavity expansion
- Cavity gases usually contained because of shock rebound stress (some exceptions)
- Groundwater mounding possible



3. Cavity Collapse and Chimney Formation

- Cavity gas condenses
- Melt glass puddle forms within cavity
- Collapse forms chimney and possible crater



4. Final Configuration

- Groundwater returns with temperature decrease
- High temperature in melt glass and surrounding rock dissipates over years to decades
- Possible chimney conduit (higher permeability)
- A damaged zone surrounds the cavity

