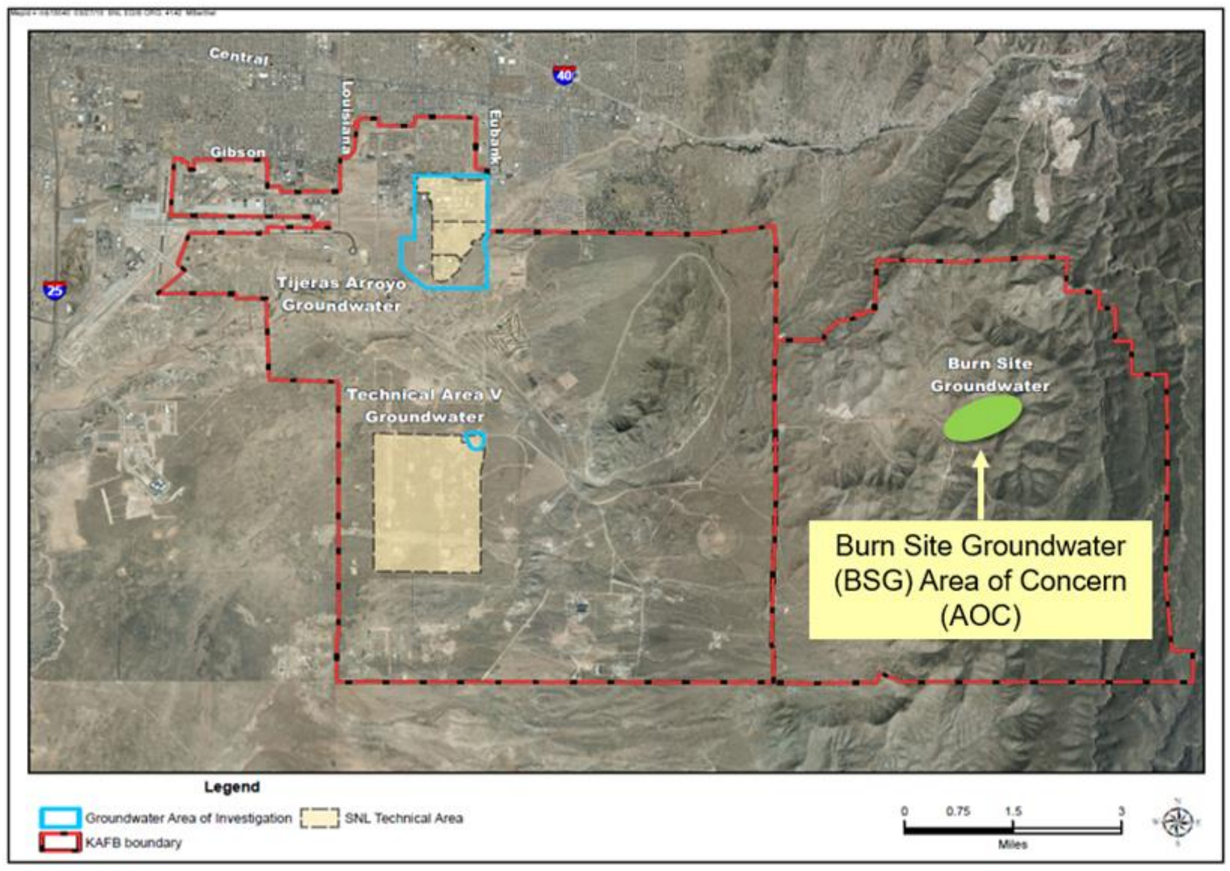
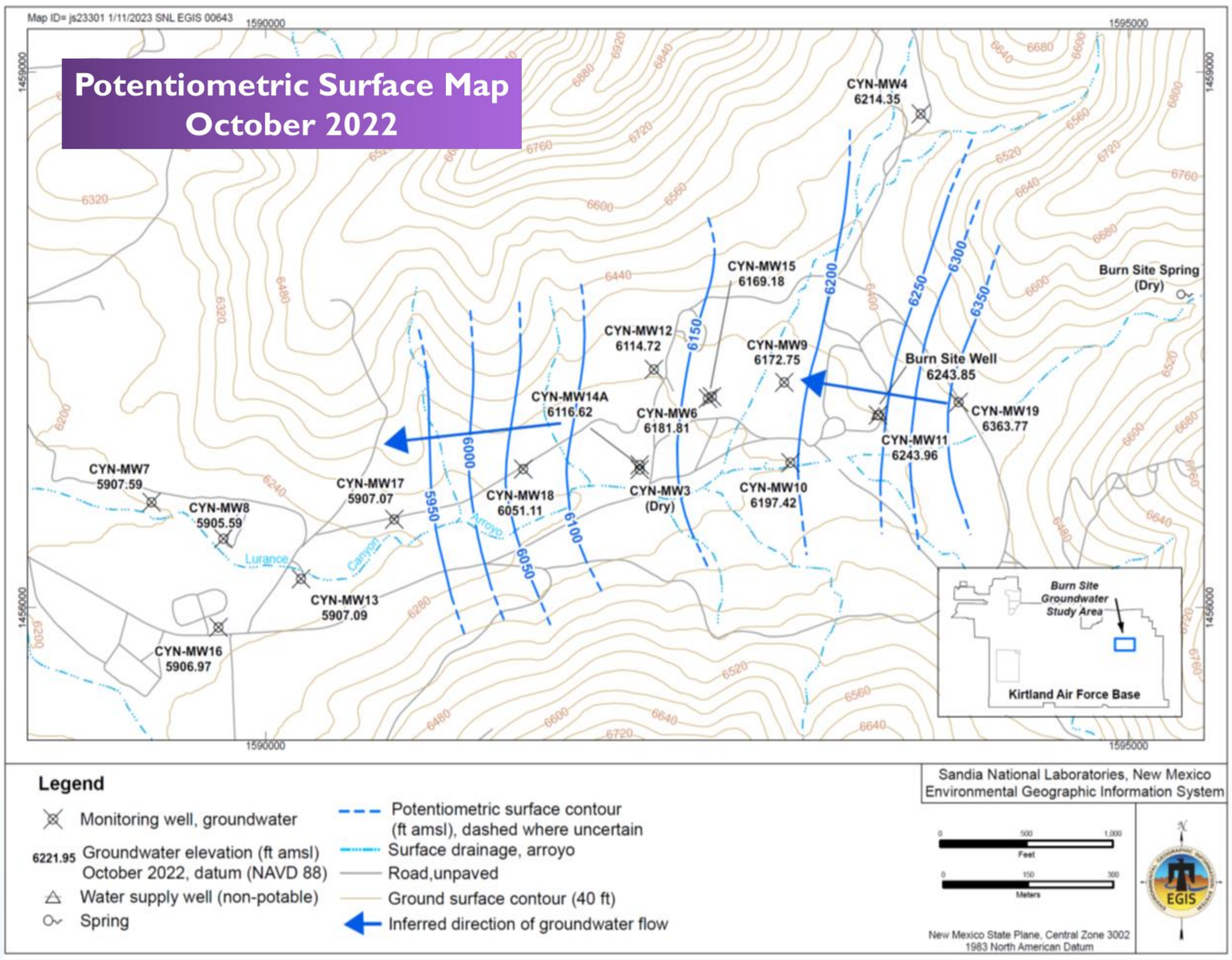
Burn Site Groundwater Investigation

Site Description

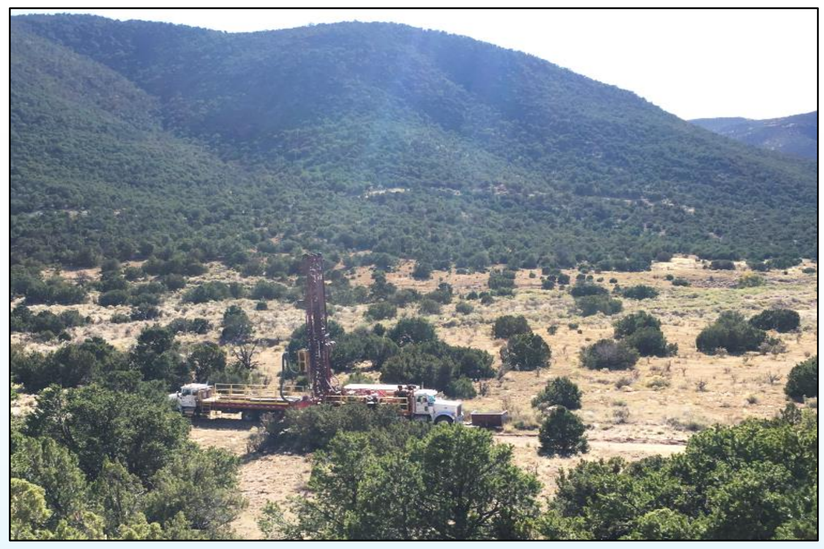
- The Burn Site Groundwater (BSG) Area of Concern (AOC) is located in Lurance Canyon in a remote area of the Manzanita Mountains.
- Lurance Canyon is a west-flowing drainage deeply incised into Paleozoic and Precambrian bedrock in moderately to heavily wooded pinon-juniper forest.
- Sandia National Laboratories activities at the Burn Site began in 1967. Early activities included explosives testing; current activity is fire survivability studies (i.e., burn testing).



- Only the groundwater at the Burn Site requires corrective action.
- The groundwater occurs in fractured Precambrian bedrock that is recharged by infiltrating precipitation; flow is controlled by changes in rock type and faults/fractures.



- Groundwater monitoring began in 1996.
- Depth to groundwater ranges from 46 to 361 feet below ground surface, and the groundwater flows to the west.
- The monitoring well network consists of 16 active wells, with the 4 newest wells installed in October/November 2019.



Installation of Monitoring Well CYN-MW19

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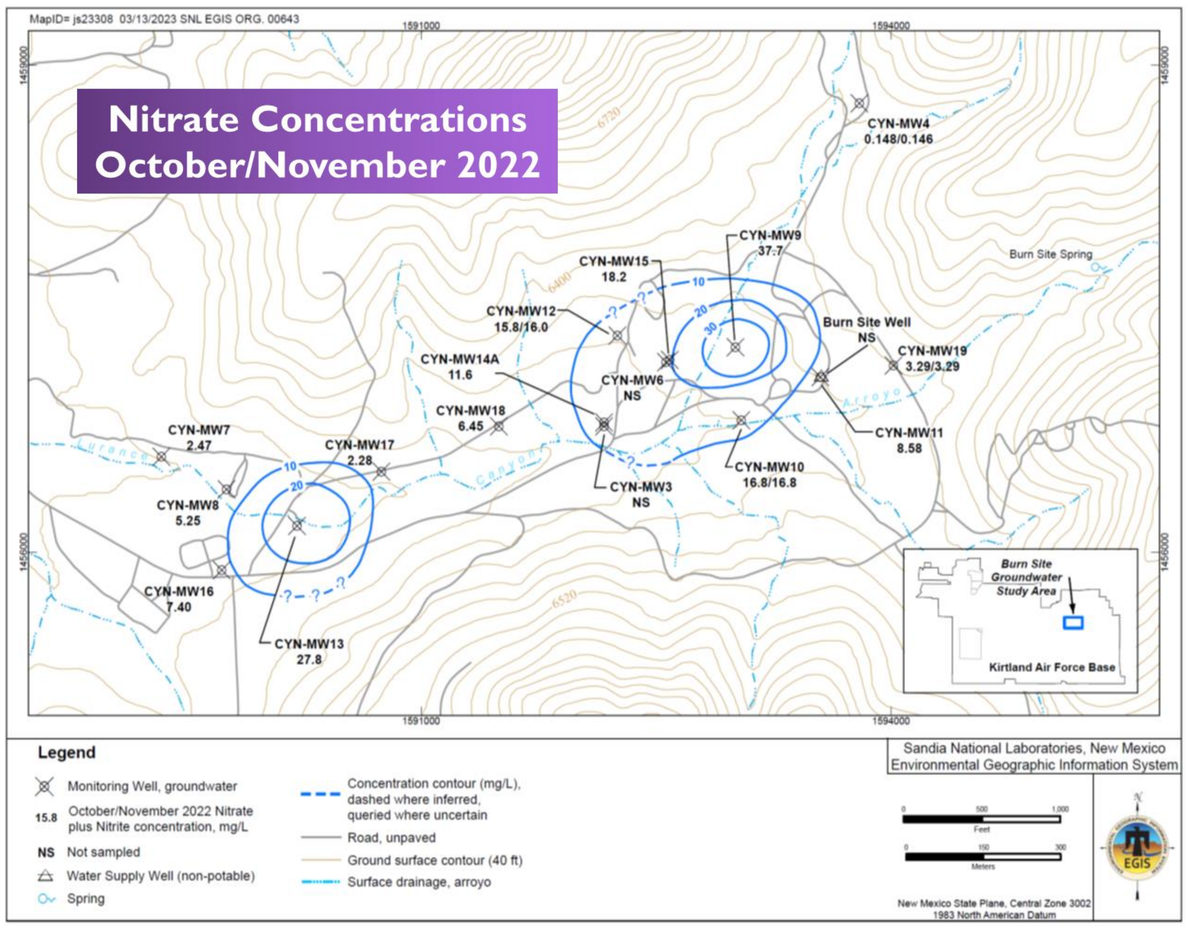
Burn Site Groundwater Investigation

- The groundwater is contaminated with nitrate (the constituent of concern) at concentrations above the U.S. Environmental Protection Agency maximum contaminant level (MCL) for drinking water.
- Nitrate above the MCL has been detected in approximately half the monitoring wells, and the two nitrate plumes combined cover 41 acres.

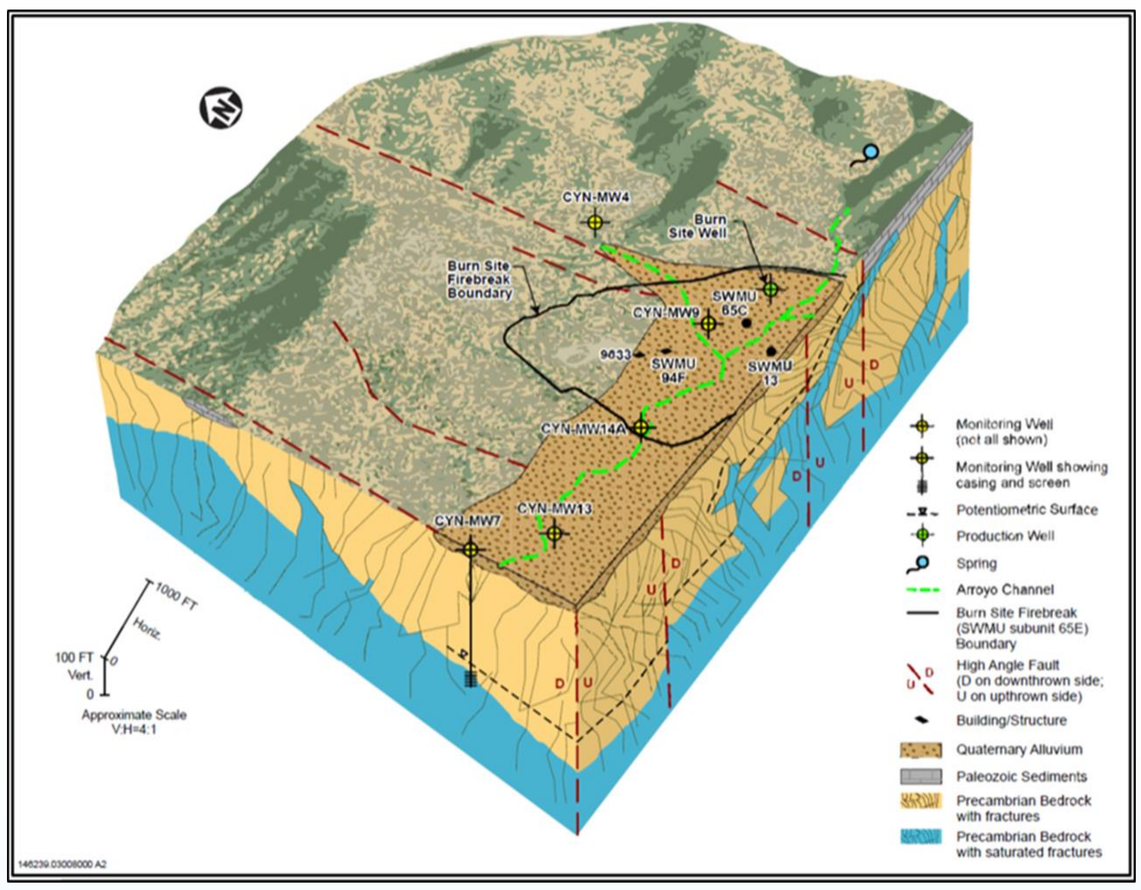
Constituent of Concern	Maximum Concentration in 2022	MCL
Nitrate	38.1 milligrams per liter (well CYN-MW9: April)	10 milligrams per liter



- The nitrate is derived from both manmade and natural sources, including ammonium nitrate slurry, wastewater discharges, and degraded explosive compounds.
- The groundwater is not used for any beneficial purpose; no one is drinking contaminated groundwater. The nearest downgradient drinking water supply well (KAFB-4) is 8.4 miles to the west.

Current Status and Recent Activities

- The BSG AOC is in the corrective action process.
- Performed quarterly water level measurements and semiannual groundwater sampling. The data are available in the *Annual Groundwater Monitoring Report, Calendar Year 2022*.
- Submitted the *Burn Site Groundwater Area of Concern Current Conceptual Model and Corrective Measures Evaluation Report* to the New Mexico Environment Department (NMED) in January 2023.
- The NMED approved the *Burn Site Groundwater Area of Concern Current Conceptual Model and Corrective Measures Evaluation Report* in February 2024 and has issued its notice for public comment on the proposed remedy for the BSG AOC.



Conceptual Site Model for the BSG Vicinity

U.S. DEPARTMENT OF ENERGY
National Nuclear Security Administration

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