Central Nevada Test Area (CNTA), Nevada, Site

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Presentation for Nevada Site Specific Advisory Board

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CNTA, Nevada, Site

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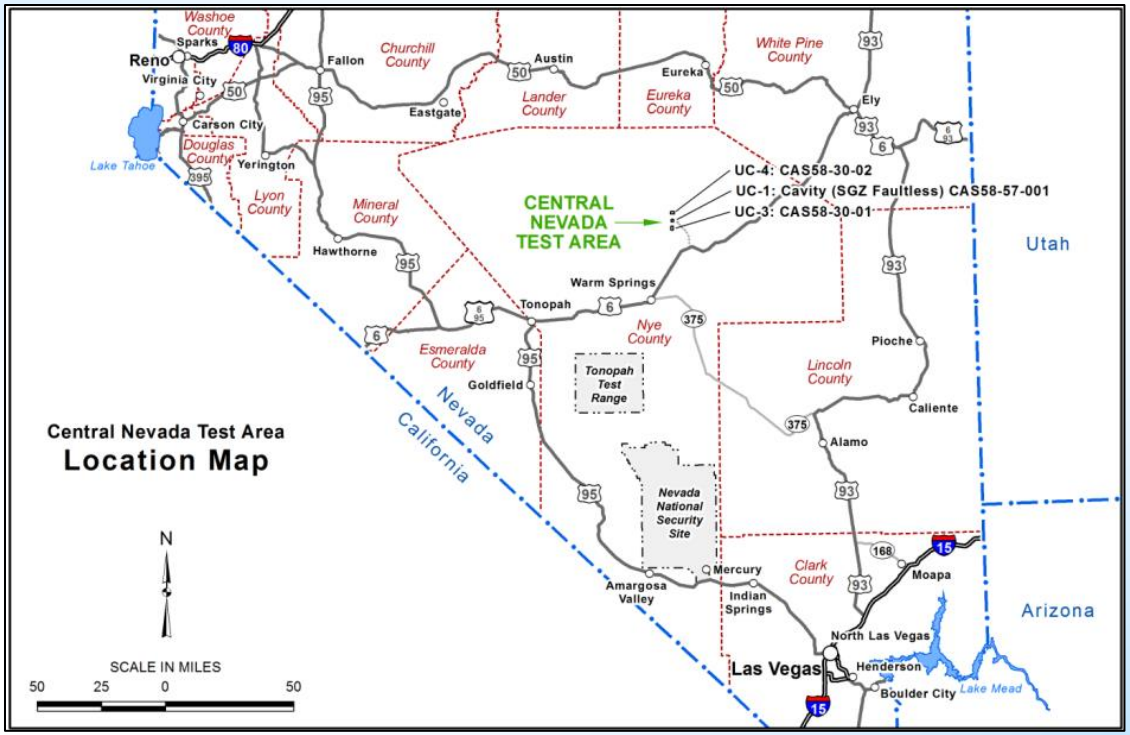
- Road to closure and long-term monitoring
  - Site background
  - Corrective actions and monitoring well network
  - Site conceptual model and evaluation
  - Closure and long-term monitoring

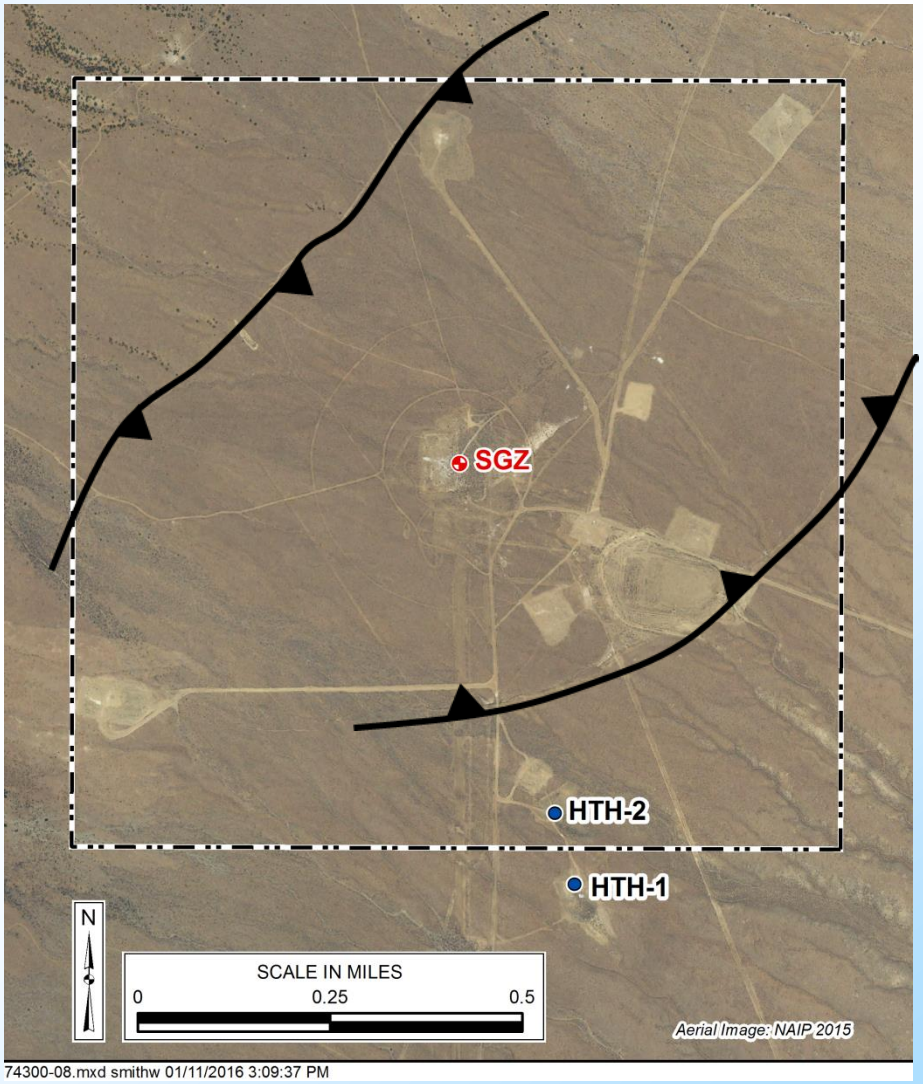
CNTA, Nevada, Site

- Site background
  - CNTA was acquired in the early 1960s for underground nuclear testing and as an alternative site to the Nevada National Security Site
  - An emplacement borehole was drilled on each parcel, the boreholes UC-1, UC-3, and UC-4 identify the parcels
  - The underground test was conducted in borehole UC-1
  - Two additional tests were planned (boreholes UC-3 and UC-4), but they were not performed



Site Background

- Underground nuclear test
  - Emplacement borehole UC-1 (SGZ)
    - January 19, 1968
  - Depth of 3,200 feet below ground surface (bgs)
  - Reported yield of 0.2 to 1 megaton
  - Immediately following the test the ground dropped ~15 feet along pre-existing faults creating a down-dropped fault block (or graben) that extends to land surface



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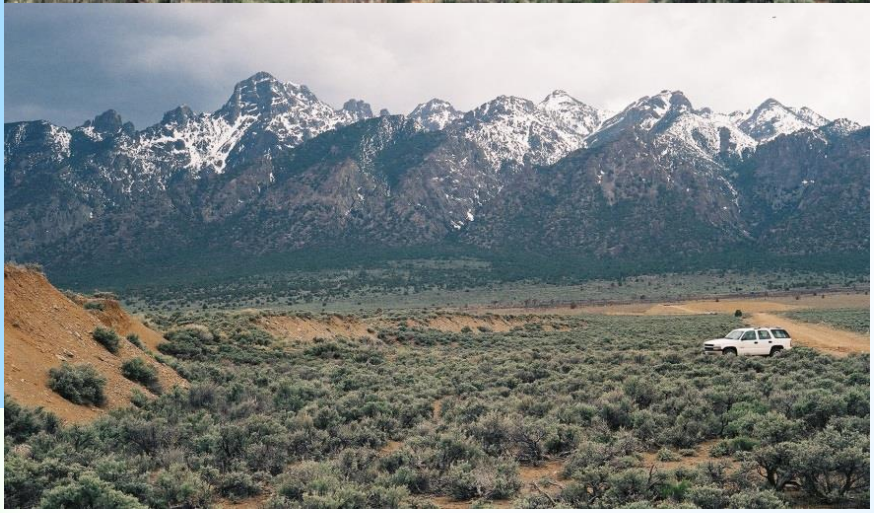
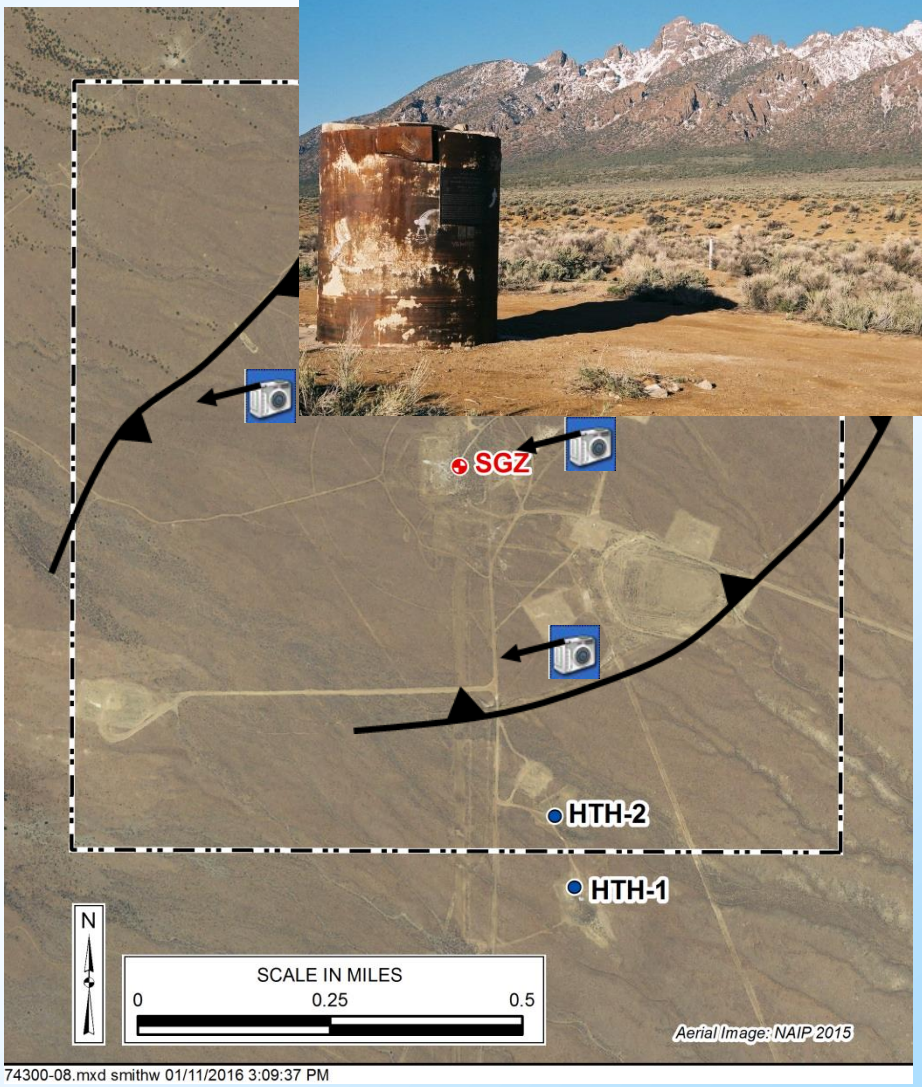
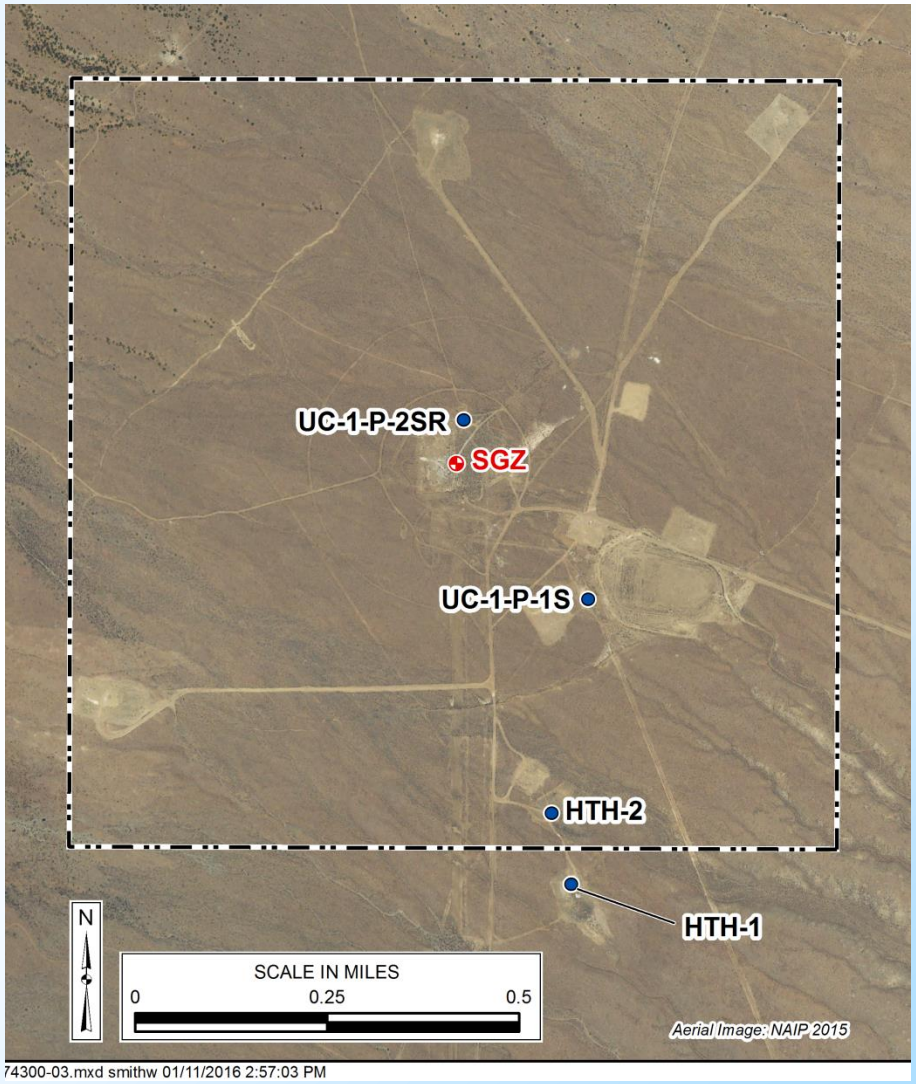




Site Background (continued)

- Wells drilled shortly after test
  - UC-1-P-1S had troubles during drilling and could not be completed as planned (drill pipe twisted off)
  - UC-1-P-2SR (re-entry well) was completed in the cavity and chimney created by the detonation



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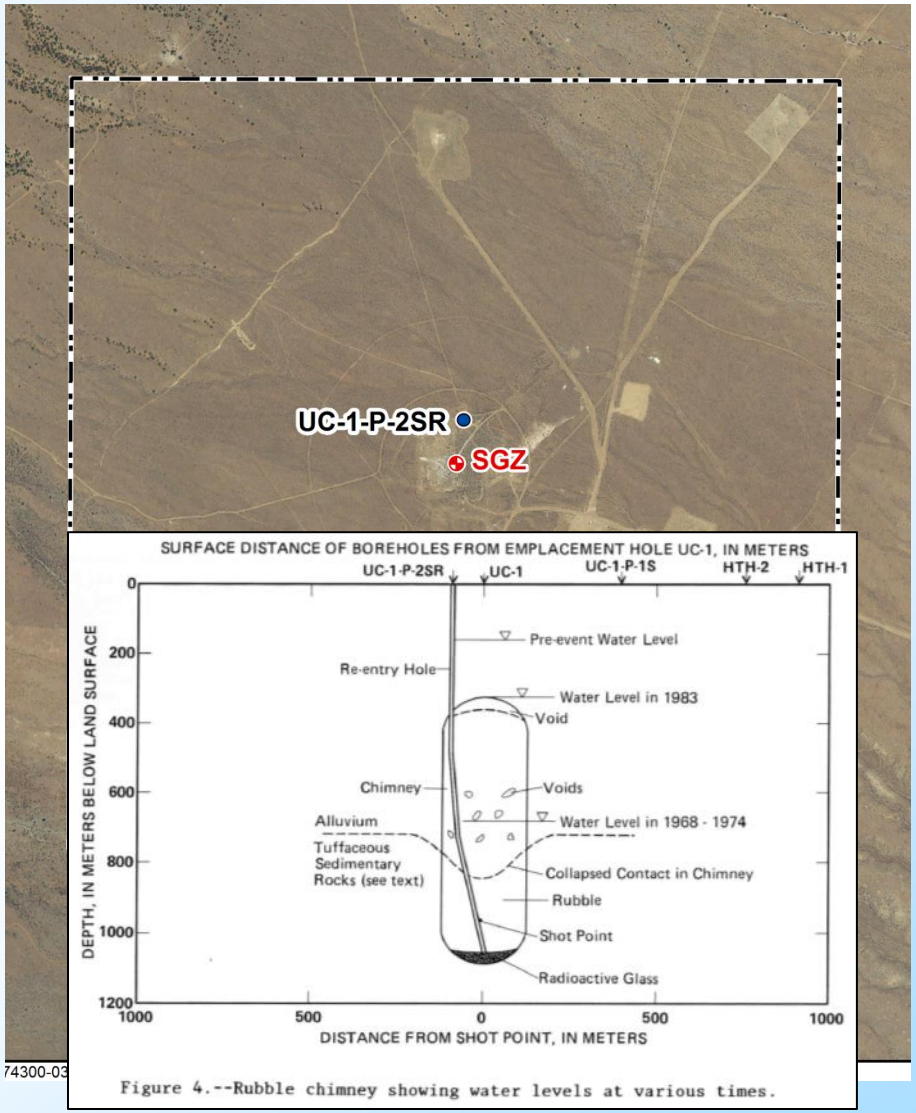

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Site Background (continued)

- Wells drilled shortly after test
  - UC-1-P-1S had troubles during drilling and could not be completed as planned (drill pipe twisted off)
  - UC-1-P-2SR (re-entry well) was completed in the cavity and chimney created by the detonation
- In 1972, the Long-Term Hydrologic Monitoring Program was started
  - The re-entry well was not sampled as part of this program; but, water levels were monitored in the well
  - No detection of radionuclides in the other wells

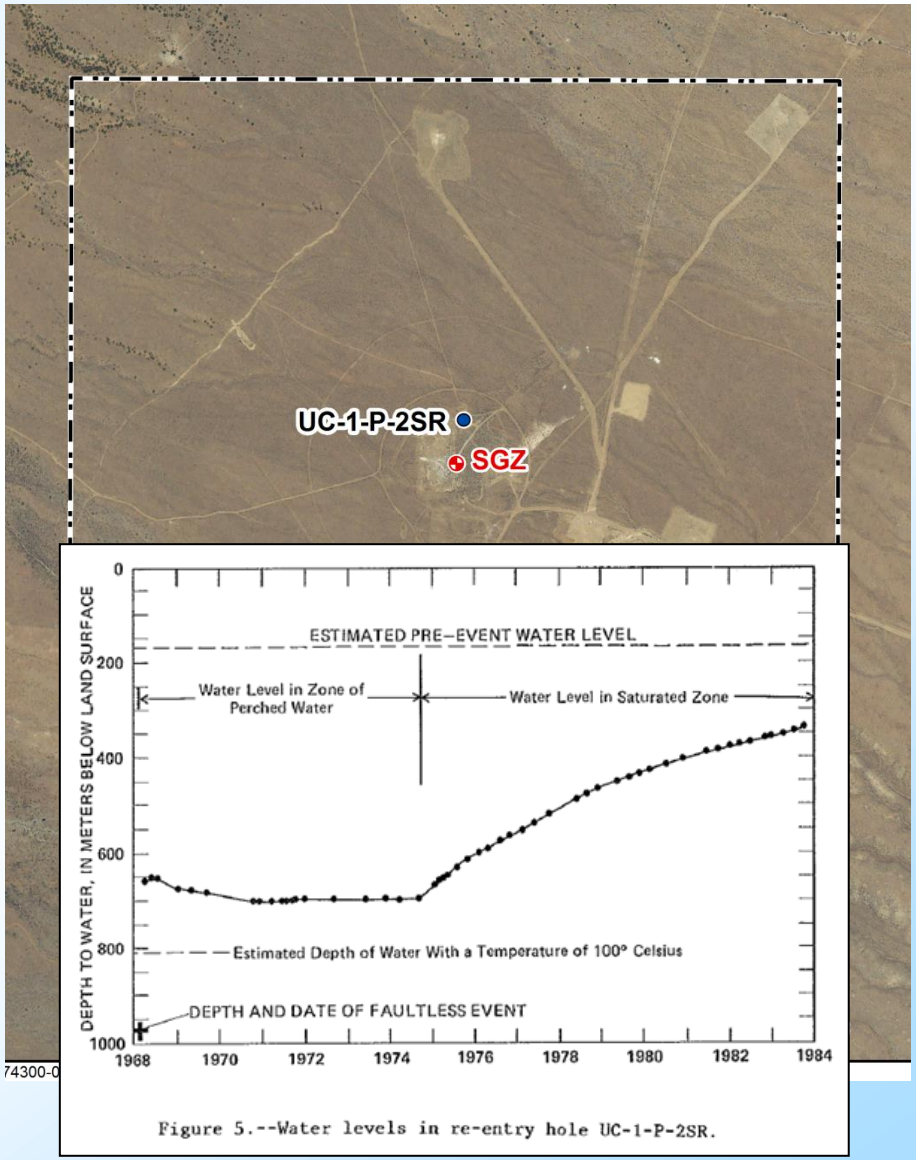


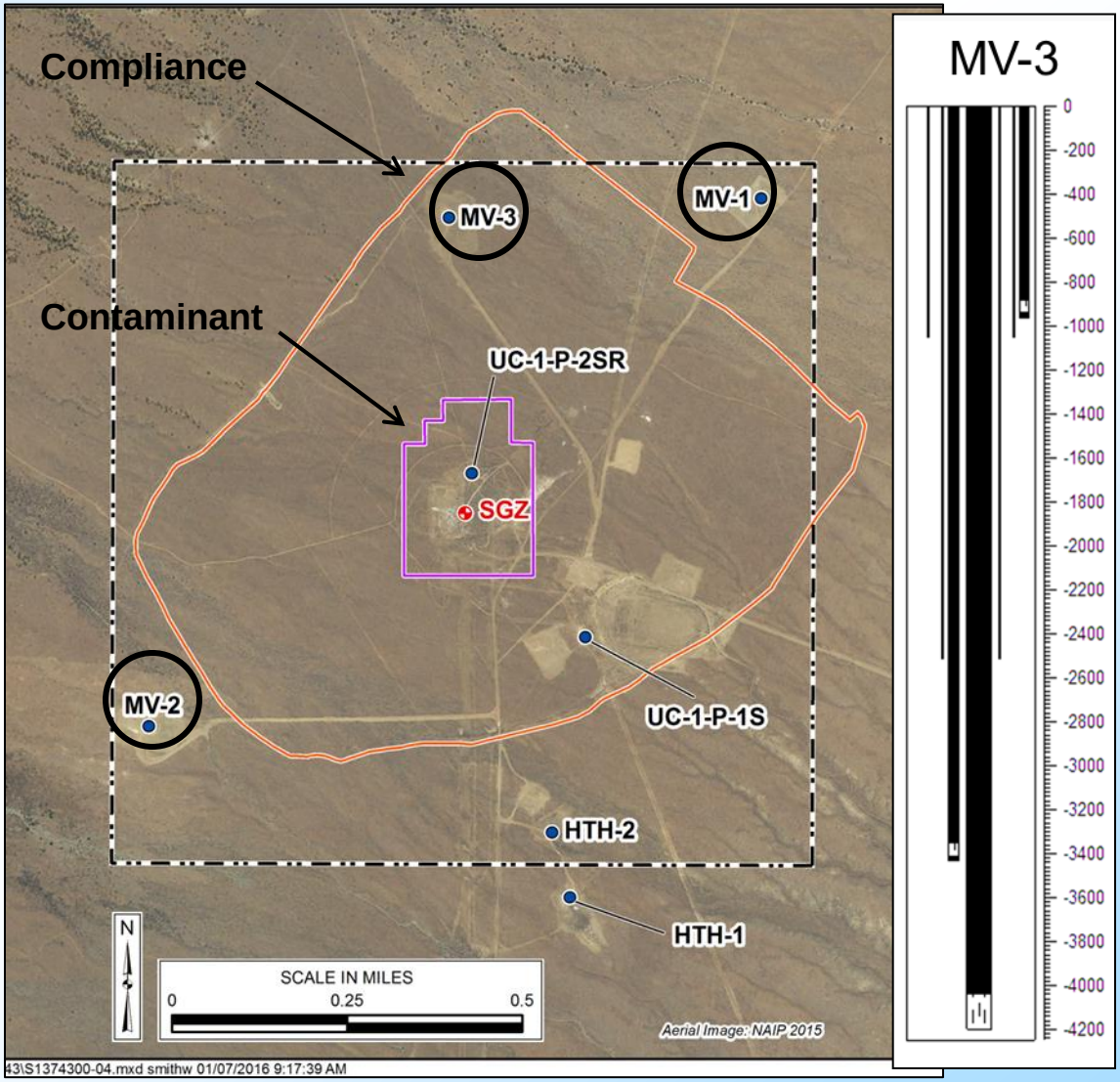
Figure 5.--Water levels in re-entry hole UC-1-P-2SR.

Corrective Actions

- Corrective action investigation activities were initiated in 1999
  - Site data were used to develop a numerical flow and transport model to simulate the potential long-term migration of contaminants away from the UC-1 cavity.
    - It was determined that groundwater velocities were very low.
  - A **contaminant boundary** was developed that depicts the extent that groundwater contaminated with radionuclides exceeding the Safe Drinking Water Act (SDWA) maximum contaminant levels would travel in 1,000 years at a 95 percent confidence level.
  - A **compliance boundary** was negotiated with Nevada Division of Environmental Protection (NDEP) that factored in modeling results and associated uncertainties with respect to the nuclear test's potential effects within the down-dropped fault block. The compliance boundary corresponds approximately to the surface expression of the fault block.

Corrective Actions (continued)

- In 2005, three wells were installed
  - To monitor the most likely transport path and validate the groundwater model, per FFACO process
  - The wells were screened in densely welded tuffs units near and below the depth of the detonation



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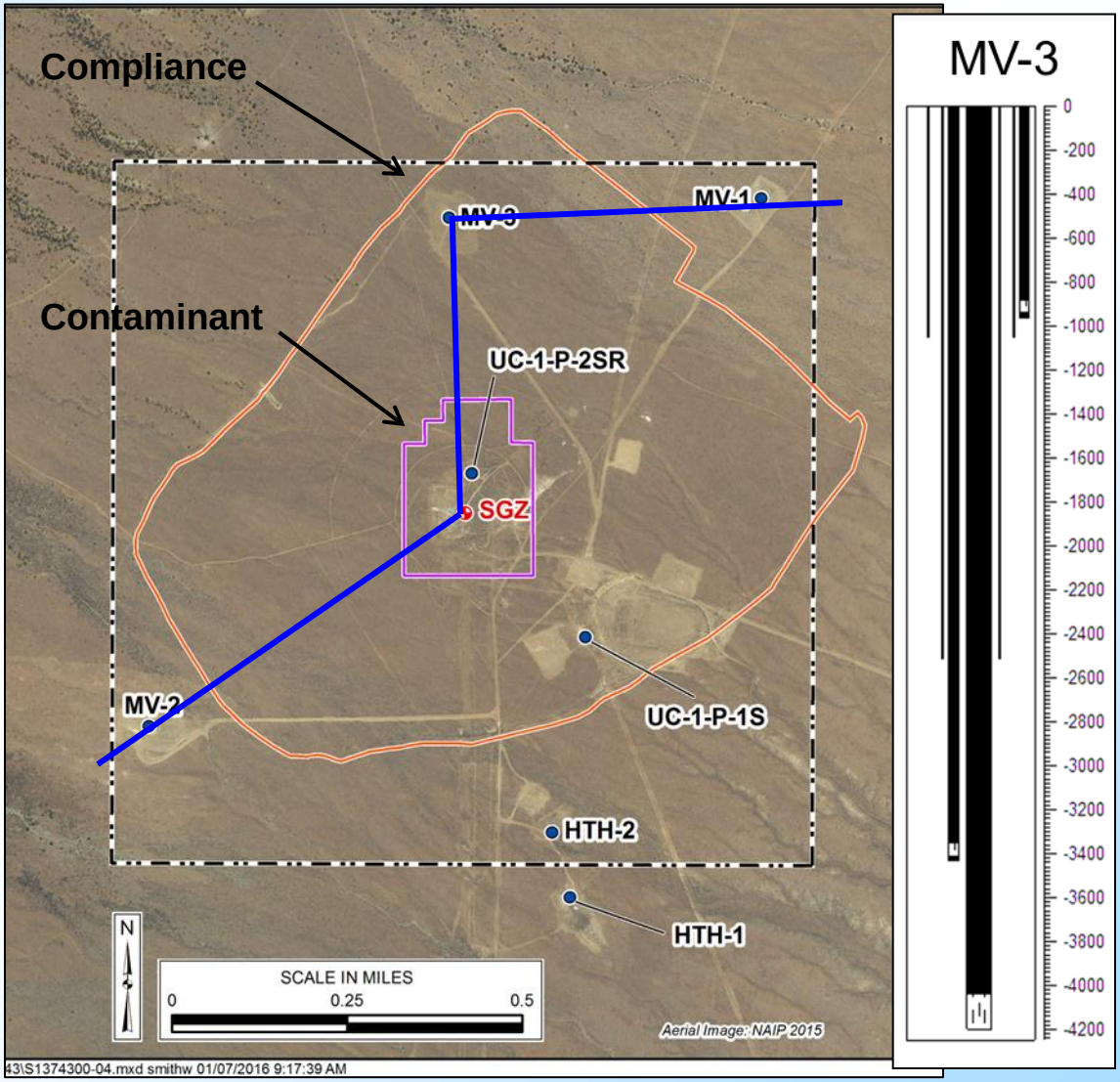
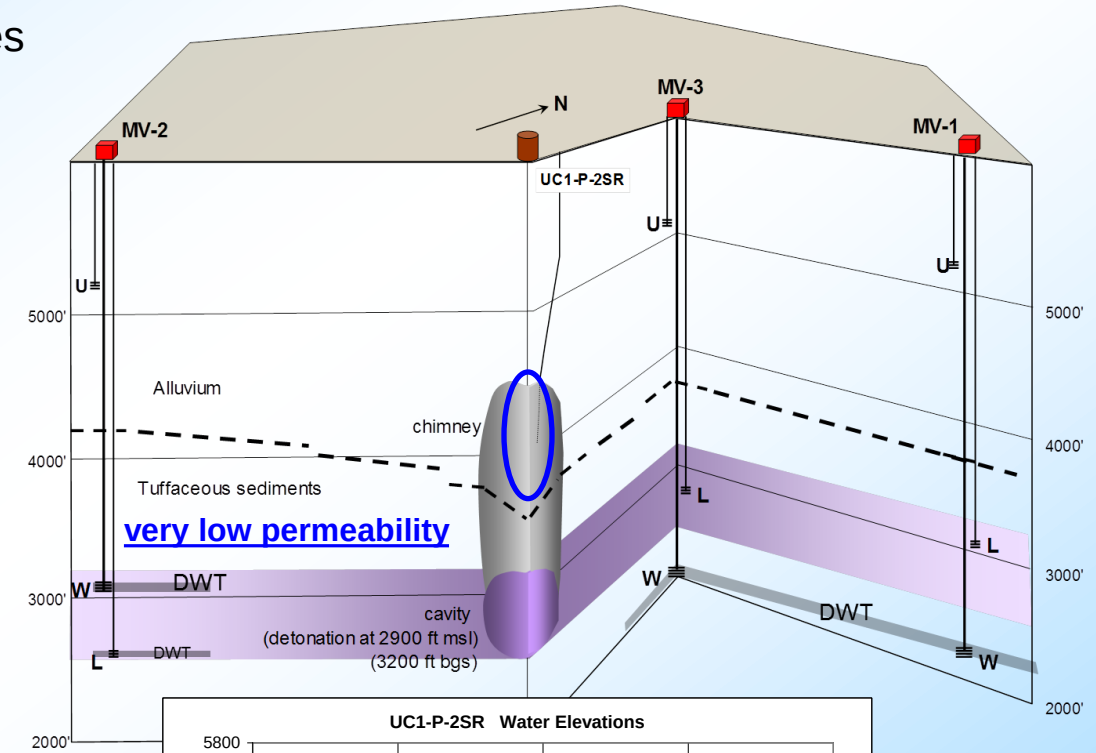
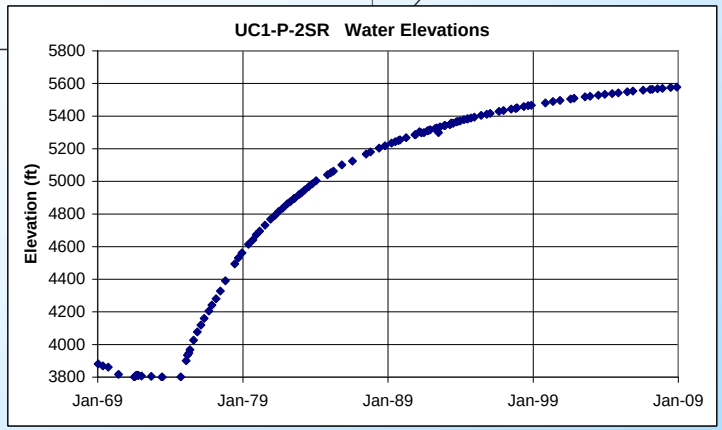


Corrective Actions (continued)

- Data from the monitoring and validation (MV) wells indicated:
  - No detection of radionuclides
  - Most likely transport path is down, toward densely welded tuff (DWT)
  - Volcanic section and DWT less permeable than originally modeled
    - Determined by aquifer tests data from the MV wells and continued slow recovery of well UC-1-P-2SR
  - However, head levels in MV wells did not agree with the model predictions (so the model could not be validated)





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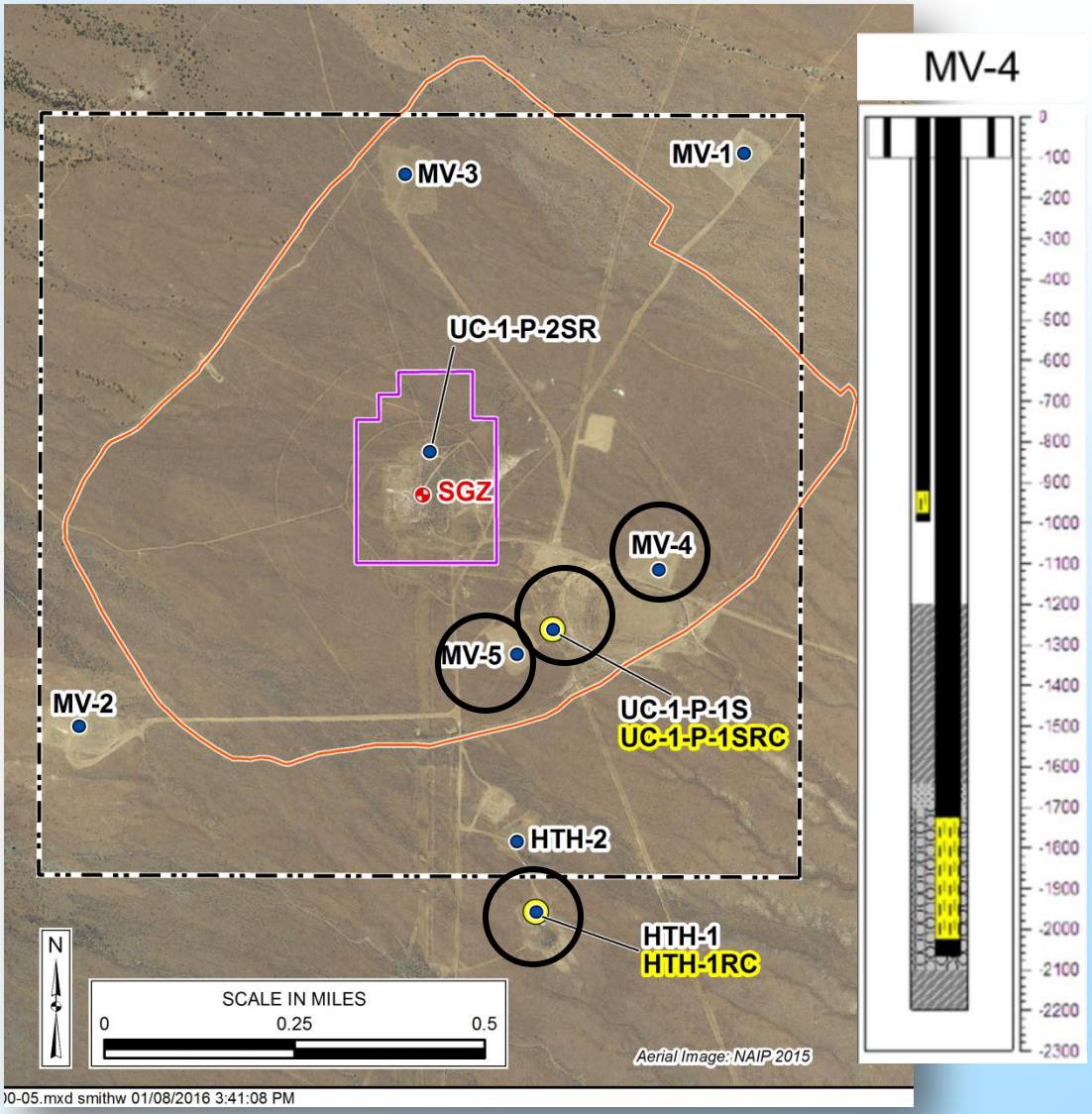
Corrective Actions (continued)

- Using these data LM developed a new strategy
  - Focused on enhancing the monitoring well network
  - Validating the compliance boundary
- Enhancements to monitoring network focused on the alluvial aquifer
  - The alluvium is an unlikely **transport** path, though
    - The chimney extends into the alluvium
    - Assess if faults are conduits or barriers to flow
  - The alluvium is the most likely **access** path
    - Alluvial aquifer is good water producer (100 gallons per minute [gpm] from HTH-2)

Corrective Actions (continued)

- In 2009, the monitoring well network was enhanced
  - This included, two new wells (MV-4 and MV-5), and the recompletion of two existing wells (UC-1-P-1S and HTH-1)
  - Wells (MV-4 and MV-5) were installed in the alluvium down-gradient from UC-1 and dually completed with a piezometer inside the graben and well outside of the graben
  - Well (UC-1-P-1SRC) was recompleted to monitor the upper alluvium (original construction had difficulties)
  - Well (HTH-1RC) was recompleted to monitor volcanic section (densely welded tuff) and provide head data in upper and lower alluvium



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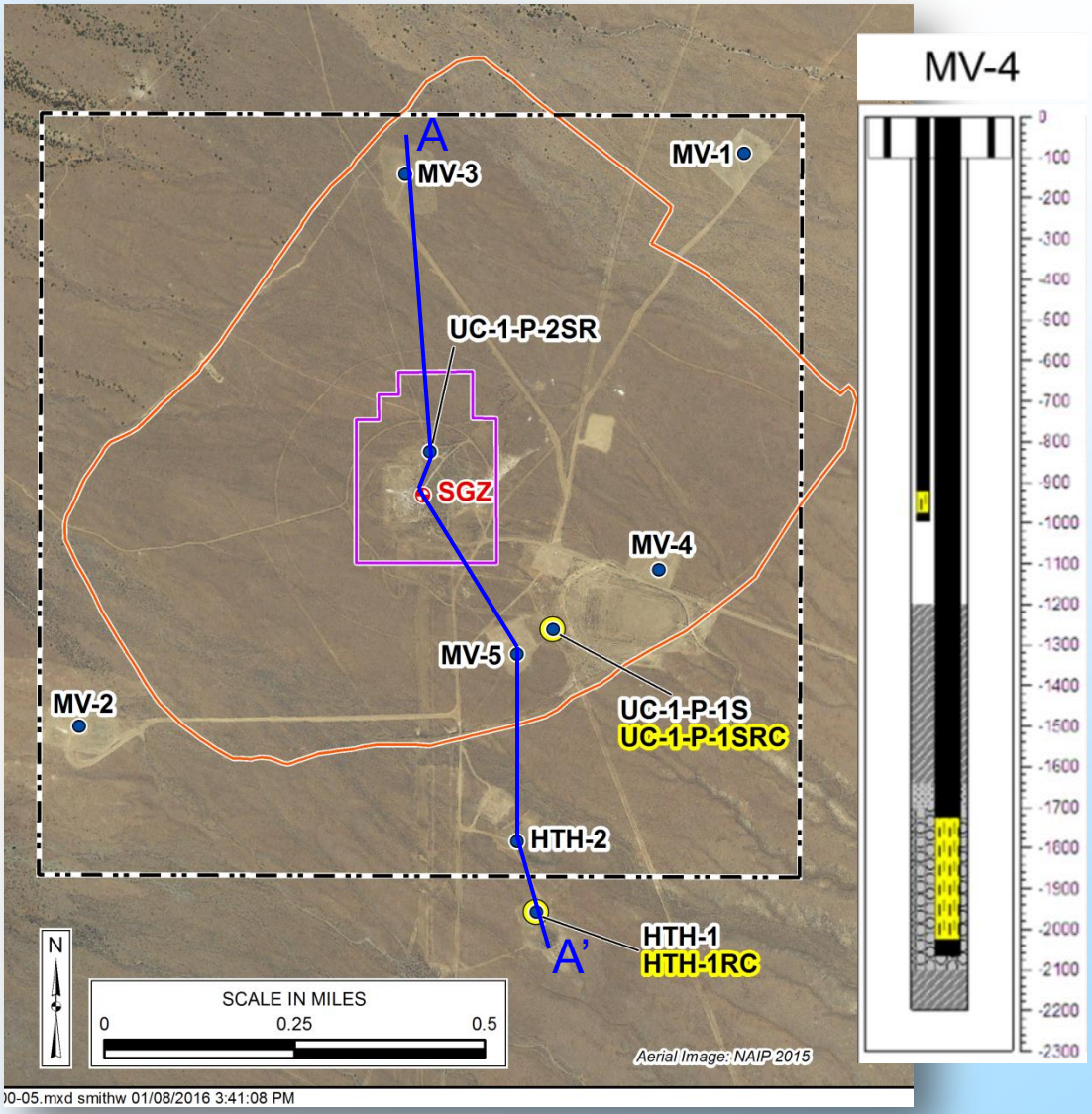
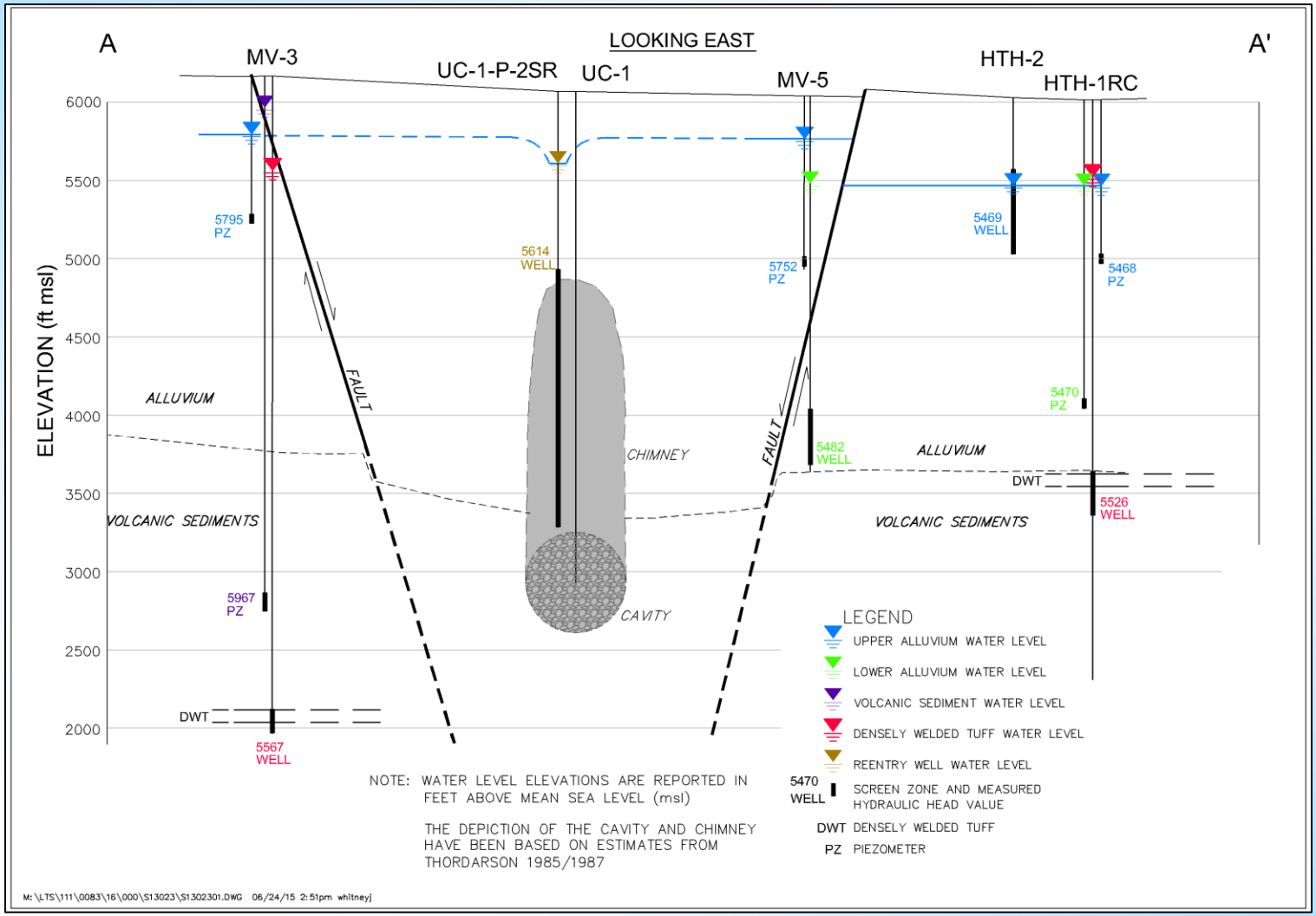


Site Conceptual Model



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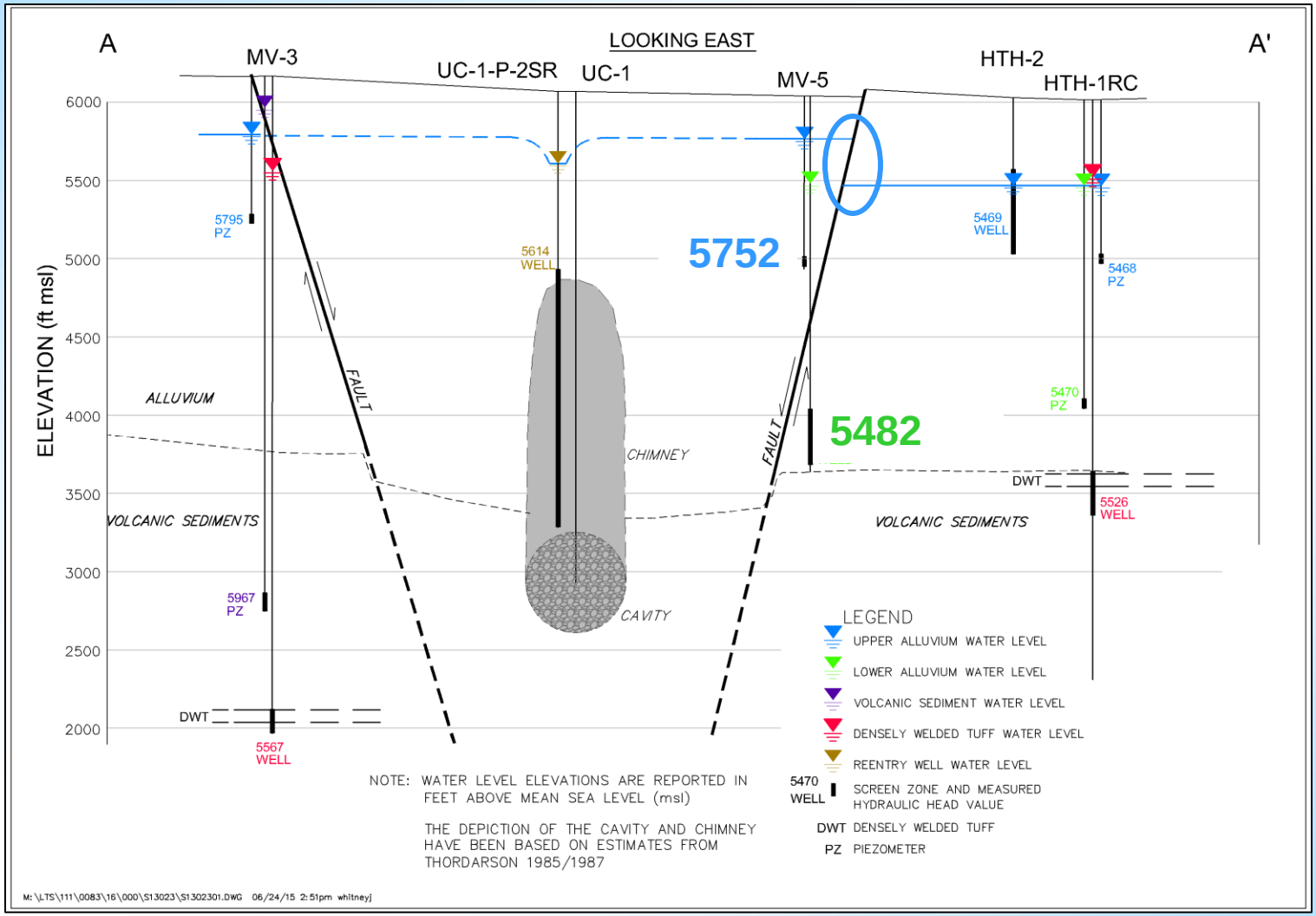

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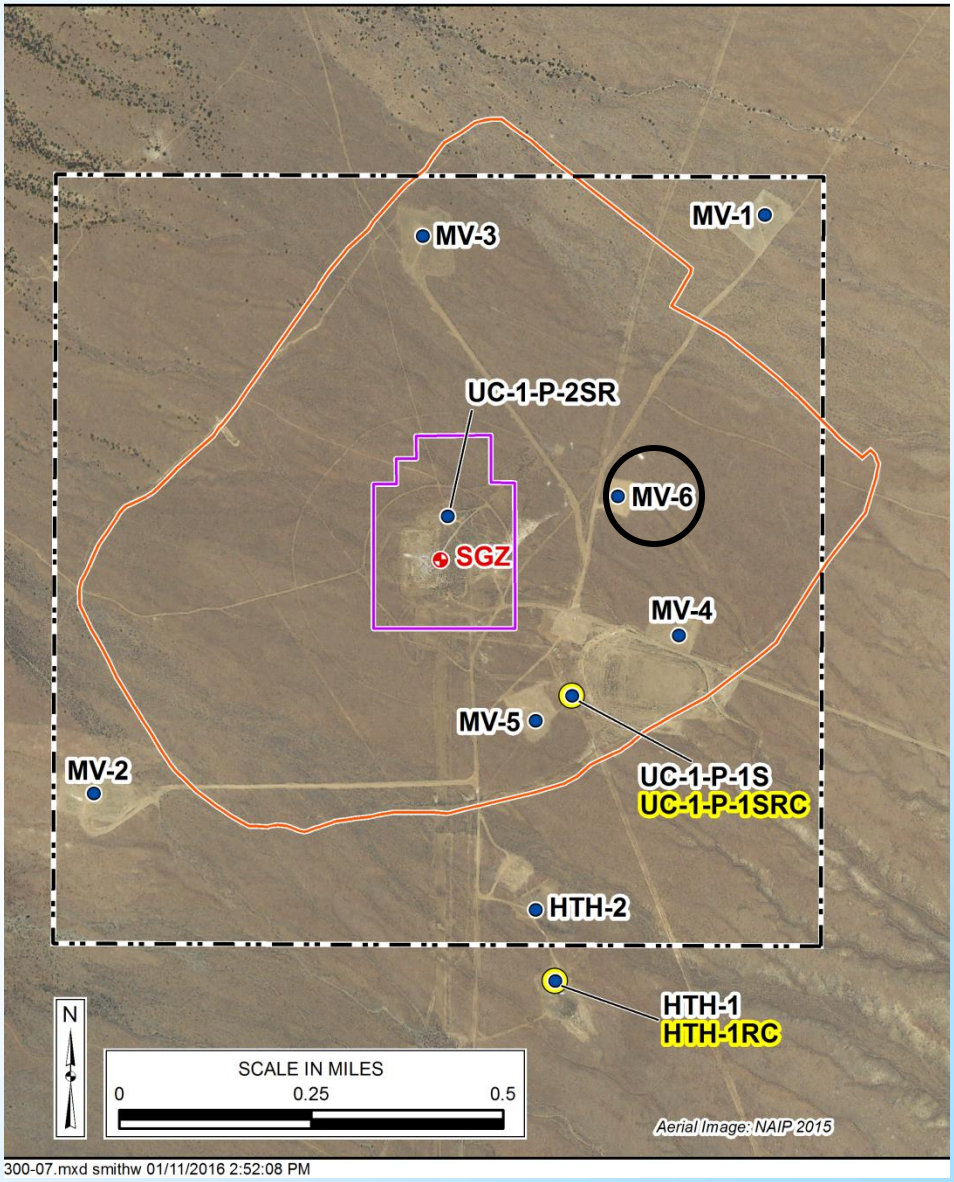
  - MV-6 was installed to provide an additional monitoring location in the upper alluvium inside the graben and to verify the site conceptual model



Site Conceptual Model (continued)

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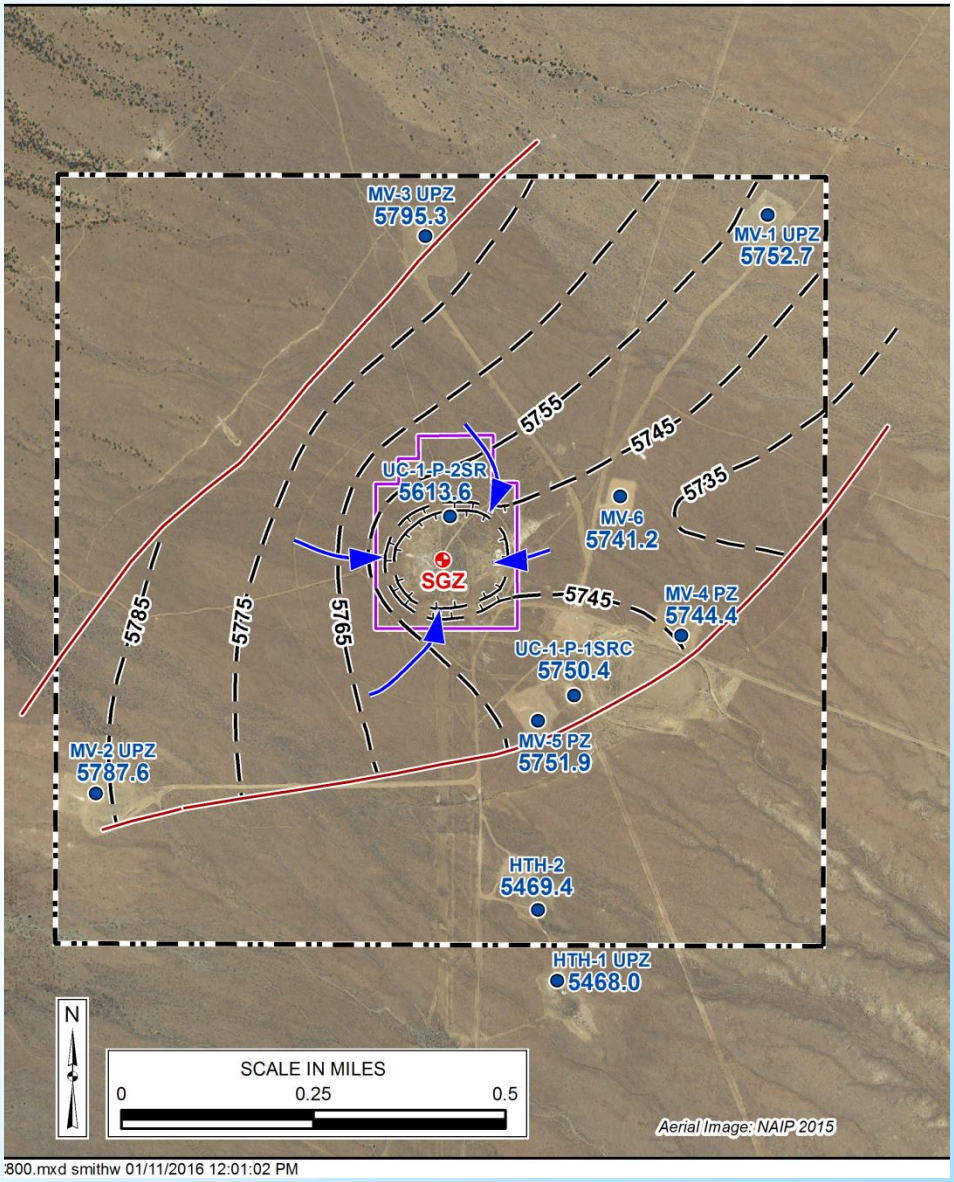
- Flow system within the alluvium
  - Flow in the upper alluvium is toward the UC-1 chimney, where water levels in UC-1-P-2RS are still recovering
  - Away from the UC-1 chimney flow is diverted to the east-northeast by the graben fault, which acts as a barrier to groundwater flow



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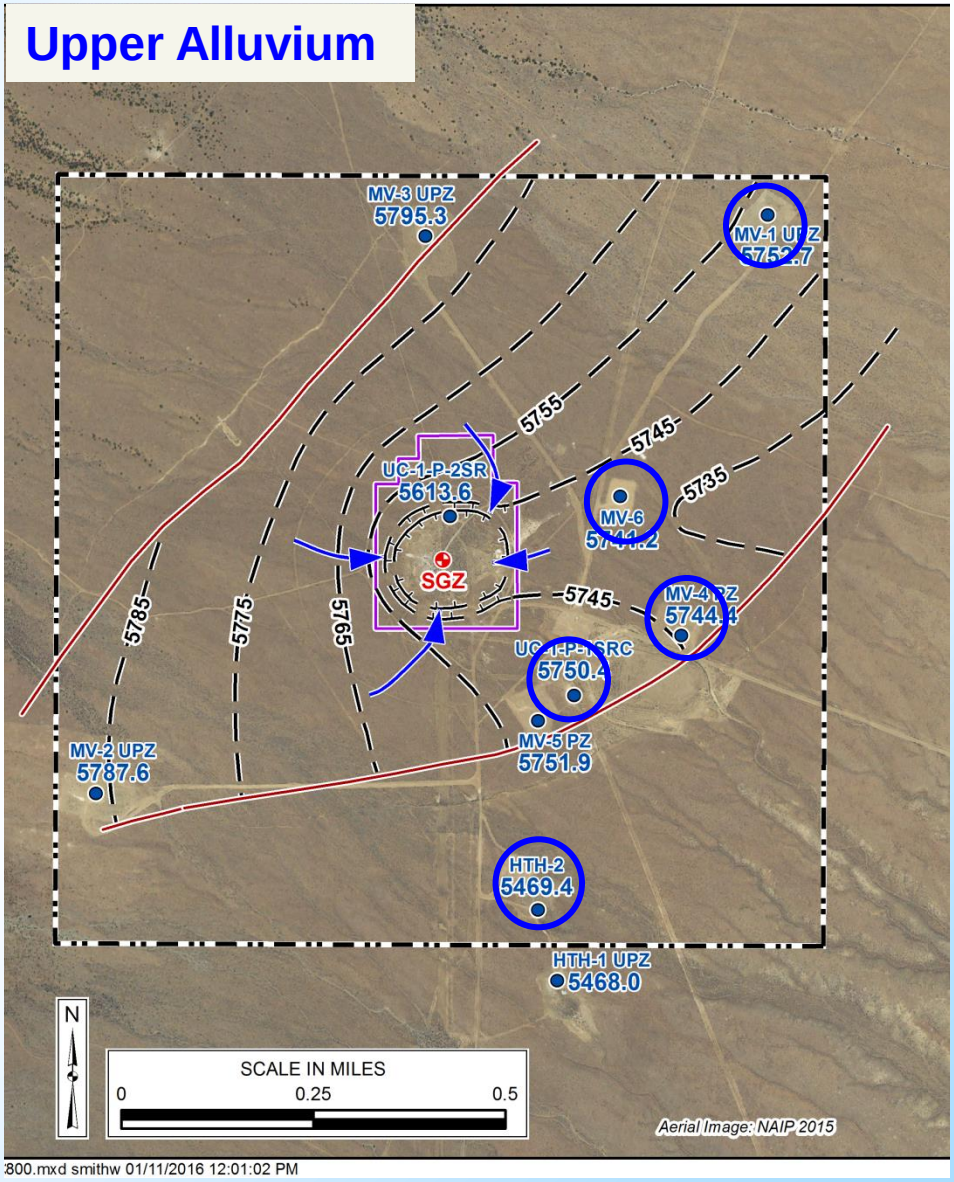

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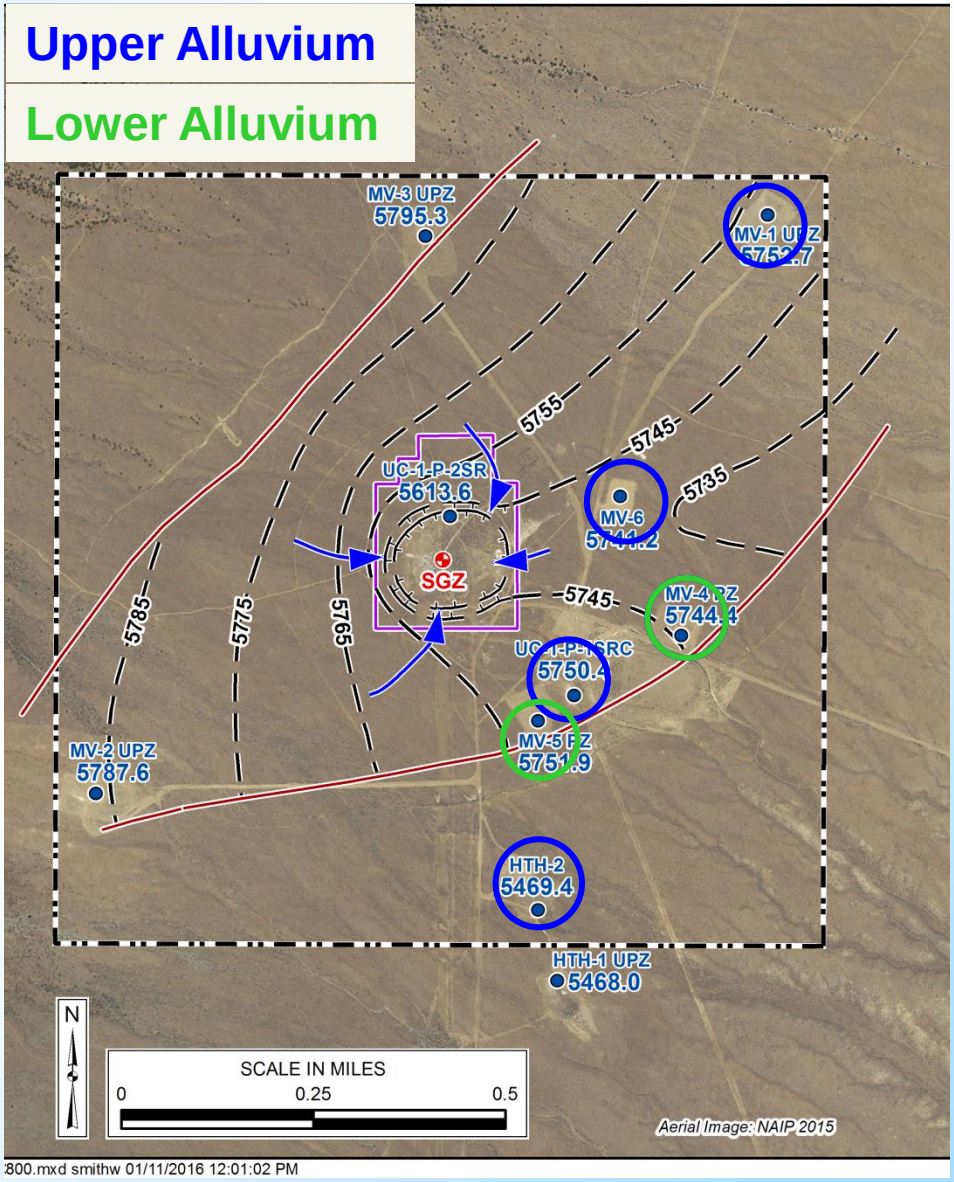
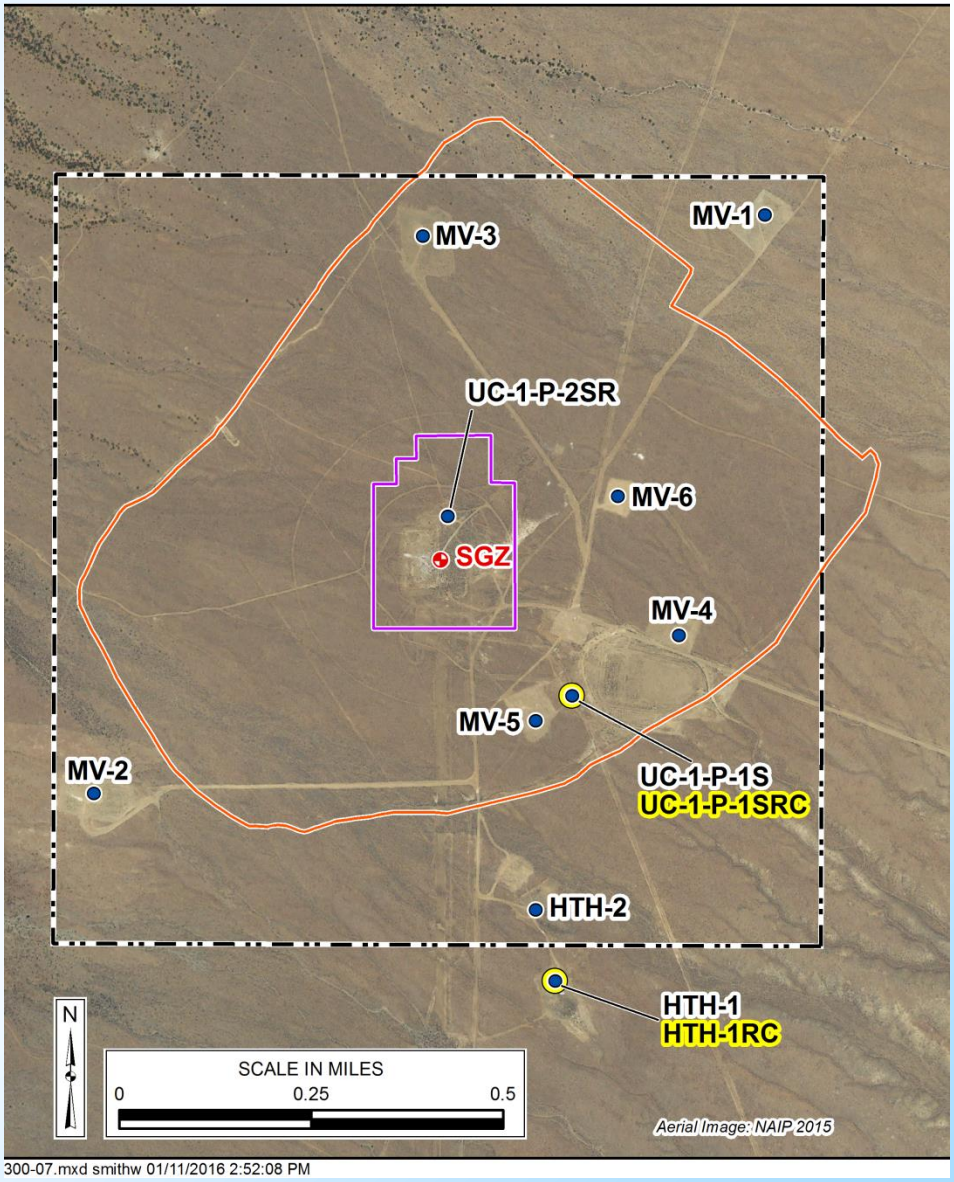


Site Conceptual Model (continued)

- Flow system within volcanics
  - Very low permeability at and near the detonation level
  - Downward gradient from the detonation zone to the densely welded tuff below the detonation
  - Densely welded tuffs are likely discontinues and fault separated



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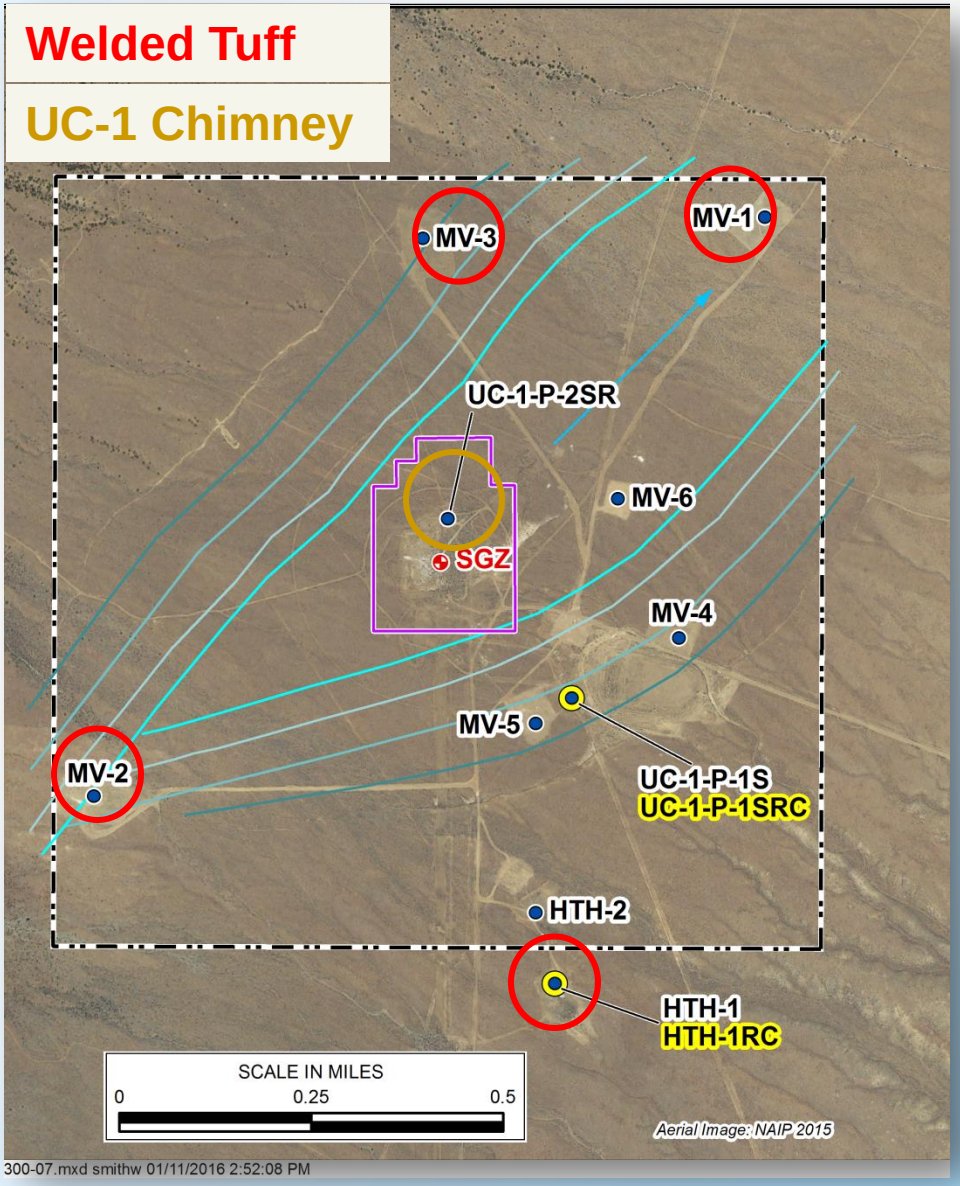

Conceptual Model Evaluation

- Volcanic section is the most likely transport path
  - Water levels in UC-1-P-2SR are still recovering from the detonation;
  - Downward gradient from the detonation zone to the densely welded tuff;
  - Densely welded tuffs are less permeable than originally expected; and
  - Densely welded tuff is monitored by wells MV-1, MV-2, and MV-3
- Alluvium is the most likely access path
  - Flow in the alluvium (inside the graben) is toward the UC-1 chimney;
  - The graben fault south of UC-1 is a barrier to flow; and
  - The alluvium is monitored by wells UC-1-P-1SRC, MV-4, MV-5, and MV-6
- No detections of radionuclides outside contaminant boundary
  - Validates the compliance boundary
- Closure and long-term monitoring

Closure and Long-Term Monitoring

Table 2. Monitoring Network with Sampling Frequency for Radioisotopes of Interest

Monitoring Wells/Piezometers	Monitoring Network and Sampling Frequency for Radioisotopes of Interest													Lithologic Unit Monitored	
	2016	2018	2020	2023	2026	2029	2032	2035	2038	2041	2044	2047	2050		
MV-1UPZ			TCI		T		TCI		T		TCI		T	Upper	Alluvium
MV-2UPZ															
MV-3UPZ															
MV-4PZ			TCI		T		TCI		T		TCI		T		
MV-5PZ															
MV-6	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-1SRC	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-2SR (depth 780 ft)			TCI				TCI				TCI				
UC-1-P-2SR (depth 1,200 ft)			TCI				TCI				TCI				
HTH-2			TCI		T		TCI		T		TCI		T		
HTH-1UPZ															
HTH-1LPZ														Lower	
MV-4	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
MV-5	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-2SR (depth 1,591 ft)			TCI				TCI				TCI			UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)			TCI				TCI				TCI				Volcanic
MV-1LPZ														Tuffaceous Sediments	
MV-3LPZ															
MV-1	T	T	TCI		T		TCI		T		TCI		T	Densely Welded Tuff	
MV-2LPZ															
MV-2	T	T	TCI		T		TCI		T		TCI		T		
MV-3	T	T	TCI		T		TCI		T		TCI		T		
HTH-1RC	T	T	TCI		T		TCI		T		TCI		T		

T = Analyze sample for tritium
C = Analyze sample for ^{14}C
I = Analyze sample for ^{129}I
Note: Well UC-1-P-2SR is perforated from 1148 to 2792 ft bgs, and samples will be collected from discrete depths (780, 1,200, 1,591, and 2,192 ft bgs) within the well.

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UC-1-P-2SR (depth 1,591 ft)			TCI				TCI				TCI			UC-1 Chimney	Chimney
UC-1-P-2SR (depth 2,192 ft)			TCI				TCI				TCI				
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MV-2LPZ															
MV-2	T	T	TCI		T		TCI		T		TCI		T		
MV-3	T	T	TCI		T		TCI		T		TCI		T		
HTH-1RC	T	T	TCI		T		TCI		T		TCI		T		

T = Analyze sample for tritium
C = Analyze sample for ^{14}C
I = Analyze sample for ^{129}I
Note: Well UC-1-P-2SR is perforated from 1148 to 2792 ft bgs, and samples will be collected from discrete depths (780, 1,200, 1,591, and 2,192 ft bgs) within the well.

Closure and Long-Term Monitoring

Table 2. Monitoring Network with Sampling Frequency for Radioisotopes of Interest

Monitoring Wells/Piezometers	Monitoring Network and Sampling Frequency for Radioisotopes of Interest													Lithologic Unit Monitored	
	2016	2018	2020	2023	2026	2029	2032	2035	2038	2041	2044	2047	2050		
MV-1UPZ			TCI		T		TCI		T		TCI		T	Upper	Alluvium
MV-2UPZ															
MV-3UPZ															
MV-4PZ			TCI		T		TCI		T		TCI		T		
MV-5PZ															
MV-6	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-1SRC	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-2SR (depth 780 ft)			TCI				TCI				TCI				
UC-1-P-2SR (depth 1,200 ft)			TCI				TCI				TCI				
HTH-2			TCI		T		TCI		T		TCI		T		
HTH-1UPZ															
HTH-1LPZ														Lower	
MV-4	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
MV-5	T	T	TCI	T	T	T	TCI	T	T	T	TCI	T	T		
UC-1-P-2SR (depth 1,591 ft)			TCI				TCI				TCI			UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)			TCI				TCI				TCI				
MV-1LPZ														Tuffaceous Sediments	
MV-3LPZ															
MV-1	T	T	TCI		T		TCI		T		TCI		T	Densely Welded Tuff	Volcanic
MV-2LPZ															
MV-2	T	T	TCI		T		TCI		T		TCI		T		
MV-3	T	T	TCI		T		TCI		T		TCI		T		
HTH-1RC	T	T	TCI		T		TCI		T		TCI		T		

T = Analyze sample for tritium
C = Analyze sample for ^{14}C
I = Analyze sample for ^{129}I
Note: Well UC-1-P-2SR is perforated from 1148 to 2792 ft bgs, and samples will be collected from discrete depths (780, 1,200, 1,591, and 2,192 ft bgs) within the well.

Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ						Lower	
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)	NA						Volcanic
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

Radioisotopes of Interest = Tritium, ^{14}C, and ^{129}I
MCL = SDWA maximum contaminant levels: 20,000 picocuries per liter (pCi/L) for tritium, 2,000 pCi/L for ^{14}C, and 1 pCi/L for ^{129}I.
>0.5 MCL = Concentrations greater than 10,000 pCi/L for tritium, 1,000 pCi/L for ^{14}C, and 0.5 pCi/L for ^{129}I.
MDC = Minimum detectable concentration required by laboratory: 400 pCi/L for tritium, 5 pCi/L for ^{14}C, and 0.1 pCi/L for ^{129}I.
>2x MDC = Concentrations greater than 800 pCi/L for tritium, 10 pCi/L for ^{14}C, and 0.2 pCi/L for ^{129}I.
Notify NDEP 1 = Notification only, no action required.
Notify NDEP 2 = Modify the sampling plan (sampling locations and/or frequency) in consultation with NDEP.
Notify NDEP 3 = Develop a new strategy/path forward (new monitoring wells may be required) in consultation with NDEP.
NA = No action required because the sample location is inside the contaminant boundary and has detections above the MCL.
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Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ						Lower	
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)	NA						Volcanic
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

Radioisotopes of Interest = Tritium, ^{14}C, and ^{129}I
MCL = SDWA maximum contaminant levels: 20,000 picocuries per liter (pCi/L) for tritium, 2,000 pCi/L for ^{14}C, and 1 pCi/L for ^{129}I.
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> MCL	pCi/L
Tritium	= 20,000
Carbon-14	= 2,000
Iodine-129	= 1

Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ						Lower	
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)	NA						Volcanic
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

Radioisotopes of Interest = Tritium, ^{14}C, and ^{129}I
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MDC = Minimum detectable concentration required by laboratory: 400 pCi/L for tritium, 5 pCi/L for ^{14}C, and 0.1 pCi/L for ^{129}I.
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>2x MDC	pCi/L
Tritium	= 800
Carbon-14	= 10
Iodine-129	= 0.2

Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ						Lower	
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)	NA						Volcanic
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

Radioisotopes of Interest = Tritium, ^{14}C, and ^{129}I
MCL = SDWA maximum contaminant levels: 20,000 picocuries per liter (pCi/L) for tritium, 2,000 pCi/L for ^{14}C, and 1 pCi/L for ^{129}I.
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>0.5 MCL	pCi/L
Tritium	= 10,000
Carbon-14	= 1,000
Iodine-129	= 0.5

Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ						Lower	
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	
UC-1-P-2SR (depth 2,192 ft)	NA						Volcanic
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

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> MCL	pCi/L
Tritium	= 20,000
Carbon-14	= 2,000
Iodine-129	= 1

Closure and Long-Term Monitoring

Table 4. Monitoring Network with Action Levels for Radioisotopes of Interest

Monitoring Wells/Piezometers	Action Levels for Radioisotopes of Interest					Lithologic Unit Monitored	
	Inside Contaminant Boundary	Outside Contaminant Boundary, but Inside Compliance Boundary			Outside Compliance Boundary		
	>MCL	>2x MDC	>0.5 MCL	>MCL	>2x MDC		
MV-1UPZ					Notify NDEP 3	Upper	Alluvium
MV-2UPZ					Notify NDEP 3		
MV-3UPZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-4PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-5PZ		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
MV-6		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-1SRC		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 780 ft)	Notify NDEP 1						
UC-1-P-2SR (depth 1,200 ft)	Notify NDEP 1						
HTH-2					Notify NDEP 3		
HTH-1UPZ							
HTH-1LPZ							
MV-4		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3		Lower	
MV-5		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
UC-1-P-2SR (depth 1,591 ft)	Notify NDEP 1					UC-1 Chimney	Volcanic
UC-1-P-2SR (depth 2,192 ft)	NA						
MV-1LPZ						Tuffaceous Sediments	
MV-3LPZ							
MV-1					Notify NDEP 3	Densely Welded Tuff	
MV-2LPZ							
MV-2					Notify NDEP 3		
MV-3		Notify NDEP 1	Notify NDEP 2	Notify NDEP 3			
HTH-1RC					Notify NDEP 3		

Radioisotopes of Interest = Tritium, ^{14}C, and ^{129}I
MCL = SDWA maximum contaminant levels: 20,000 picocuries per liter (pCi/L) for tritium, 2,000 pCi/L for ^{14}C, and 1 pCi/L for ^{129}I.
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>2x MDC	pCi/L
Tritium	= 800
Carbon-14	= 10
Iodine-129	= 0.2

Questions?

http://www.lm.doe.gov/CNTA/Sites.aspx