



700S 1600E PCE Plume Community Advisory Group (CAG)

Meeting Minutes

April 29, 2026

Attendee	Organization
Shaun Cwick	EPA Region 8 RPM
Dave Allison	Utah Division of Environmental Response and Remediation (DERR) Community Involvement
Robin Carbaugh	Resident
Steve Mason	Resident
Gilbert Castañeda	Utah Department of Health and Human Services (DHHS)
Alejandra Maldonado	Utah DHHS
Maureen Petit	DERR
Kyle Shields	SLC Parks
Kim Shelley	SLC Public Lands
Kira Johnson	SLC Public Lands
Wes Sandlin	Utah Department of Environmental Quality (UDEQ)
Jim VanDerslice	University of Utah
Shannon Smith	VA CERCLA Program Manager
Anna Shum	VA CERCLA Project Engineer
Gregory House	VASLCHCS Public Affairs
Matthew Critchfield	VASLCHCS Associate Director
Irene Lee	Agency for Toxic Substances and Disease Registry (ATSDR)
Jesse Stewart	SLC Public Utilities
Doug Sborov	Self
Jim Webster	Resident
Vicki Varela	Resident
Eric Povilus	Resident
Steve Mason	Resident
Julie Day	Resident
Mike Van Voorhis	Resident
Esther Hunter	Resident (Online)

Attendee	Organization
Janet Hemming	Resident (Online)
Amit Prabhakaran Nair	Resident (Online)
Neil Smith	CDM Smith (Online)
Isaac Astill	Salt Lake City School District (Online)
Hayley Shaffer	Salt Lake County (Online)
Andrea K	(Online)
Steve	(Online)
Katie	(Online)
Glenna	(Online)
Susan	(Online)
Ann Chenoweth	(Online)
Briana Kistler	(Online)
James L	(Online)
Susan	(Online)



U.S. Department
of Veterans Affairs

Community Advisory Group Update

700S 1600E PCE Plume Superfund Site

Presented by: Shannon Smith
Date: April 29, 2026

Robin Carbaugh introduced herself as the head of the Community Advisory Group (CAG). She reminded attendees that the CAG serves as a roundtable for community input and is intended to be an open discussion rather than a one-sided presentation.

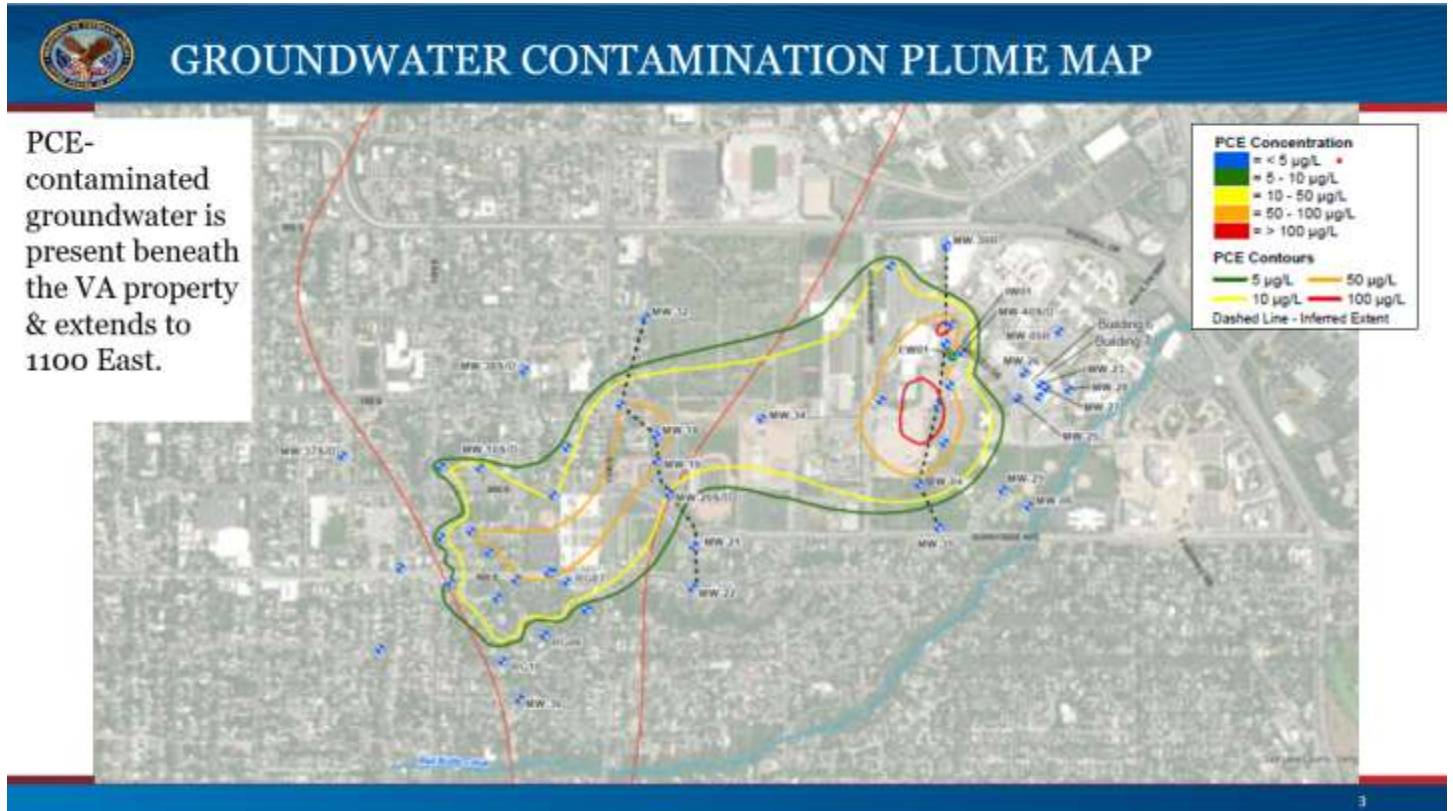
Shannon Smith introduced herself as the Salt Lake City VA CERCLA Program Manager.



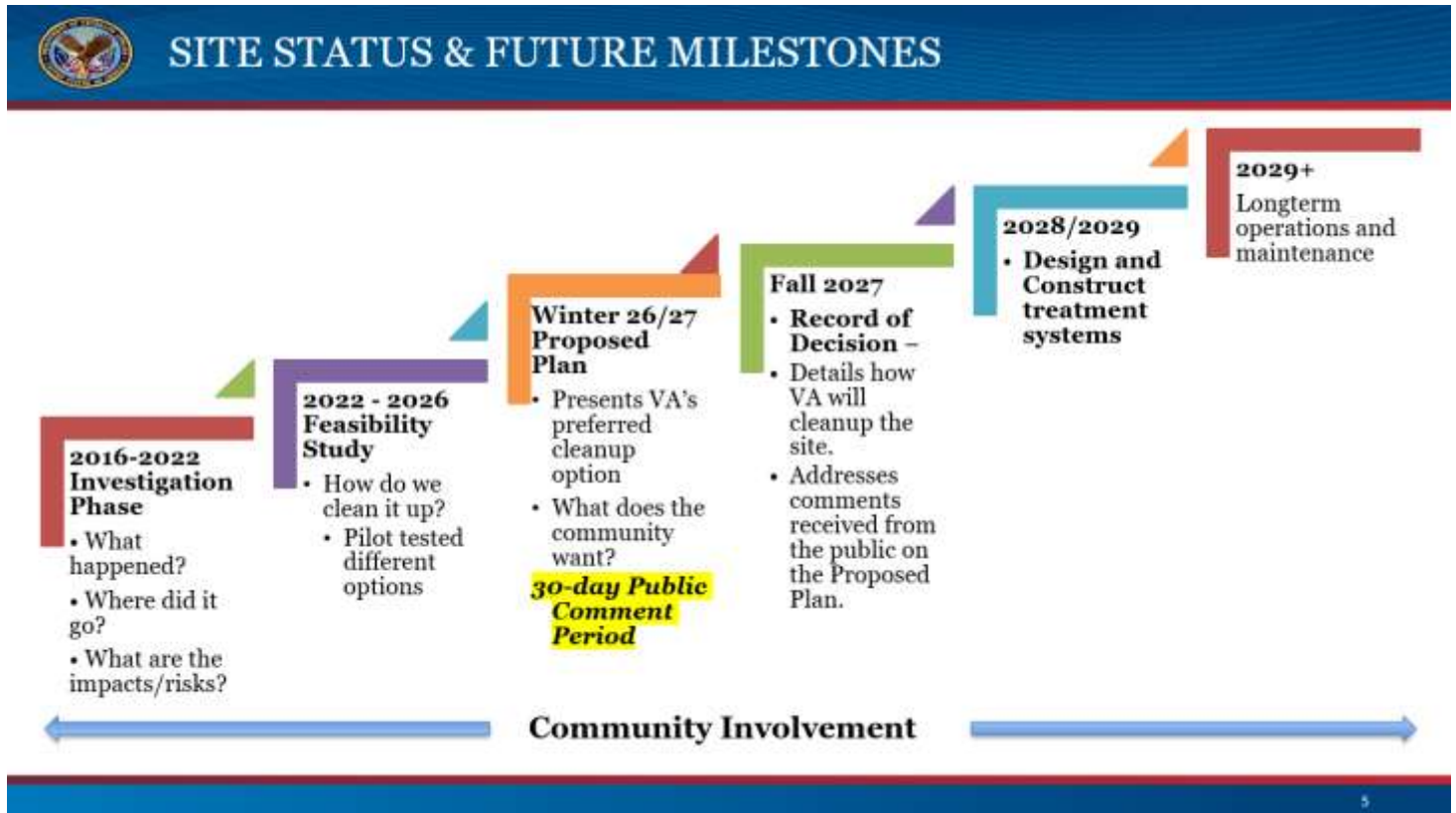
AGENDA

- **Past PCE Contamination and Future Mitigation Coordination in Sunnyside Park** – Shannon Smith, VA; Q&A with Kim Shelley, Director, SLC Public Lands
- **SLC Municipal Well 18 History and Future Plans** – Jesse Stewart, Deputy Director, SLC Department of Public Utilities
- **East High School Indoor Air Sampling Update** – Shannon Smith, VA
- **Public Health Assessment: Evaluation of Contaminants in Indoor Air, Soil and Surface Water** – Lt. Commander Irene Lee, U.S. Public Health Service; Agency for Toxic Substances and Disease Registry ([ATSDR](#))

The agenda was summarized, with an emphasis on topics of high community interest, particularly the recent testing at Sunnyside Park and East High. These areas will be highlighted in today's meeting. The VA will discuss how the contamination relates to Sunnyside Park, and a representative from Public Lands will be available to address questions about the city's involvement with the plume in relation to the park. A representative from Salt Lake City Public Utilities will also speak about impacts to the municipal water supply, current correspondence, and future planning.



An updated map was shown illustrating the current extent of the groundwater plume as well as the locations of all monitoring wells.



A CERCLA project timeline was presented. The site investigation began in 2016. The Feasibility Study has recently been completed, and the team is currently preparing to release the Proposed Plan, which will include an opportunity for public input. Construction of the selected remediation approach is expected to begin in 2028 at the earliest.



Past PCE Contamination and Future Mitigation Coordination in Sunnyside Park

Introduction of topic change to the upcoming discussion on what occurred at Sunnyside Park and why contamination is present beneath the area.



HOW DID THIS BECOME A SUPERFUND SITE?

Source of PCE

(Based on personnel interviews conducted in 2010s)

- PCE used from 1976 to 1982 in a single dry-cleaning machine
- The used PCE was likely disposed down the building floor drain connected to the sewer.
- Sewer line installed in 1940s; clay pipe (the go-to material until PVC became available)
- Known issues: joint failure, brittle, root infiltration



Tree roots seek out water and nutrients; when roots detect moisture seeping from the joints or a crack in a clay pipe, they grow towards it.

Source: <https://bestplumbers.com/plumbing-blog/why-tree-roots-love-clay-sewer-lines-vitrified-clay-pipes>

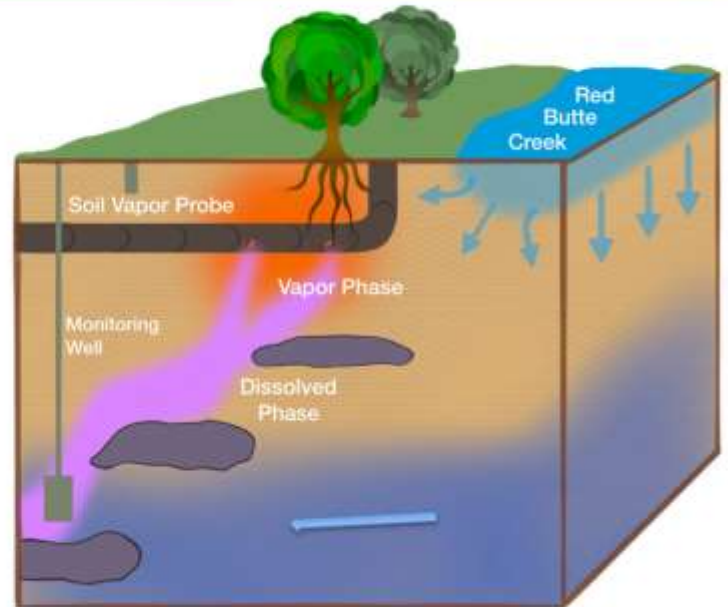
Background on contamination activities was given. There was roughly a 30-year gap between when the contamination occurred and when employees were interviewed to help reconstruct the activities that contributed to it. The source was traced to a dry-cleaning machine that used PCE as a solvent. At the time, it was common practice to dispose of PCE through the sewer system. The sewer lines were constructed of clay, and over the years tree roots created cracks and openings at the joints, allowing PCE to escape into the surrounding soil and migrate into the groundwater.



PCE RELEASE FROM PIPELINE

Soil/Vadose zone

- Some of the PCE can turn into a gas and move into the air spaces in the soil.
 - **The VA measured soil gas**
- Some PCE sticks to soil or gets trapped and doesn't move easily through the ground.
 - **The VA collected soil samples**
- PCE moves deeper into the ground because of gravity and water (precipitation and irrigation) soaking into the soil and can dissolve into groundwater.
 - **The VA (& EPA) installed monitoring wells**



Information was provided on how PCE behaves once released into the environment. Some PCE permeates the soil and then volatilizes, which can lead to vapor intrusion in homes; this is monitored through the VA's vapor intrusion program.

A portion of the PCE moves downward and infiltrates the groundwater, where conditions are tracked through monitoring wells.

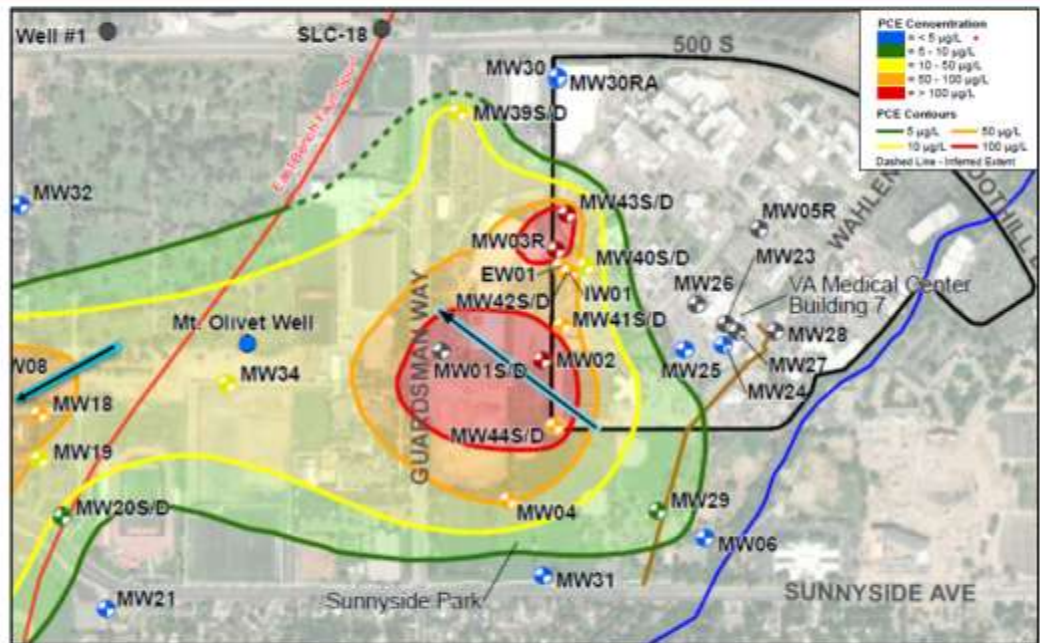
Although Red Butte Creek runs parallel to the sewer line, it is a losing stream, so contamination of the creek is not expected; instead, the creek's outward flow directs PCE toward the groundwater.

PCE has not been detected in the soil but has been found in soil gas samples.



PCE IN GROUNDWATER

Concentrations of PCE at MW-04 and MW-29 in Sunnyside Park likely originated from sanitary sewer releases, migrating along low-permeability layers and perched groundwater to the shallow aquifer west-northwest of the source.



A map was shown indicating the sewer line (brown) running parallel to Red Butte Creek (blue). Groundwater flow within the plume generally moves WNW before shifting to WSW near 1300 East.

Questions:

Q: What is the date of this map?

A: 2025.

Q: Does Red Butte Creek contribute to the plume in a one-way direction?

A: Yes. For example, Monitoring Well 6, located between the sewer and the creek, has never shown detectable PCE. This indicates the creek is not receiving contamination but is instead contributing to groundwater movement that pushes PCE in the opposite direction.

Q: Is new PCE still entering the system?

A: No. A single “slug” event occurred in the past, during which most of the PCE was released, resulting in the higher concentrations shown in red.

Q: Over time, will this slug move in the direction of groundwater flow and become more diluted?

A: Yes.



The yellow areas shown represent locations where treatment systems are proposed for installation. These areas indicate the potential ranges where treatment infrastructure may be placed; they do not represent full-area construction zones.

Questions:

Q: What is the smaller rectangle near the “Guardsman Way” label?

A: It is located near the SLC-18 well and represents a standalone system that would operate when the well is running, serving to prevent contamination from entering the well.

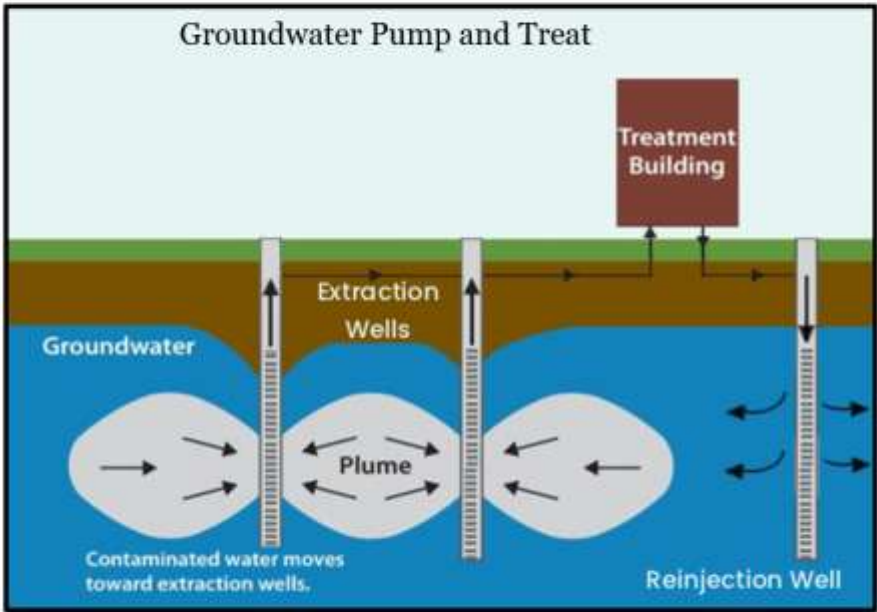
Q: What is SLC-18?

A: It is a municipal well, formerly used as a drinking water source during peak seasons. It is currently offline due to concerns about drawing in PCE. Additional details will be covered in Jesse Stewart’s Public Utilities presentation.

Q: When the University built the baseball field near Sunnyside Park and excavated deeply, was any PCE encountered?

A: No. Groundwater in that area is more than 100 feet below the surface.

GROUNDWATER TREATMENT NEAR SUNNYSIDE PARK



Monitoring Well in Park



The VA explained that a final treatment system has not yet been selected, although the options under consideration are generally similar. The baseline approach involves a groundwater pump-and-treat system, which uses a series of extraction and reinjection wells. Contaminated water would be brought to the surface for treatment and then reinjected into the aquifer. The specific treatment method is still being evaluated and will be presented for public feedback.

Most components of the system, including connections, would be located underground. Only the wellheads, which sit flush with the ground, and the above-ground treatment building would be visible. The discreet monitoring wells currently present in the park provide an example of what the remediation wells would look like (right photo).



SUNNYSIDE PARK – FINAL CONCEPTUAL DESIGN

- Treatment Building - Located on VA property
- Well locations will not be in “active play” areas – playing fields, courts, playground, etc.
- VA will need to amend current easement with SLC Real Estate

VA shall take all such actions as are necessary to prevent damage to the Site. VA shall promptly repair any damage to the Site and return the Site to the same condition as existed prior to entry by VA, as determined by City.



The final redesign concept for Sunnyside Park, scheduled to begin in 2027, was presented. The redesign is being conducted by Public Lands and is not affiliated with the Superfund remediation activities. Regarding remediation, any new wells installed within Sunnyside Park would be placed outside active play areas such as fields and courts. The aboveground treatment building is planned to be installed solely on VA property. The city will also have a say in approving elements of remediation design that will impact the park.

Questions:

Q: How will the treatment area options impact the U of U Ballpark?

A: The aboveground elements of the system will not impact play areas, including the Ballpark. They would be installed in “dead zones” or less active areas. Ideally, they will be installed in the street where no one is impacted. The VA would prefer installing the wells on Guardsman, but the traffic and preexisting utilities pose logistical issues.

Q: How deep will the wells be?

A: Around 150-200 ft.

Q: How many?

A: Around 15-20 for the whole area (not just inside Sunnyside Park), from the park to the new University Police Station. They will all need to be connected underground.

Q: Does it include mitigation for PFAS?

A: No. PFAS has been measured, but it isn't a problem in this area. However, this mitigation system can also treat PFAS if it ever becomes a problem in the future.

Q: With the park redesign, will you need to re-dig? Parents are concerned about mid-construction impacts to play areas and sports teams schedules.

A (Shelley, Public Lands): Yes, they will need to re-dig. Public Lands has received 4.2 million dollars from the University of Utah to complete the redesign project with the requirement that it is completed by 2027. This doesn't align with the remediation construction, which is not anticipated to start until 2028. Impact on parkgoers will be minimized as much as possible by coordinating construction in phases and perhaps focusing construction in off-seasons.

Shelley highlighted improvements of the park in the new redesign, including pickleball courts. \$750k is also coming from the GO Bond that SLC voters approved. Shelley also has experience as former Director of UDEQ working with Utah Department of Health and Human Services, which informs the decisions she currently makes with Public Lands.

Q: You've completed the Feasibility Study and you've selected the groundwater pump and treat as the treatment?

A: Yes, some kind of version of Pump and Treat, mainly because groundwater at this location is so deep that we're limited to what kind of technologies we can use.

Q: One option previously discussed was to do nothing. If you do nothing, at what concentrations would you expect PCE to come out of the springs?

A: PCE is already present in springs. We compared the levels to drinking water standards, and it's above that level. It's important to note, though, that this water isn't being used for drinking.

Q: Are water levels and vapor levels in residential basements at a point where we need to take action to keep those concentrations from increasing in the future?

A: Yes.

Q: Can some reach hazardous levels if a basement is not ventilated properly?

A: Yes. There are about 300 houses in the area where we track residential vapor intrusion. Of those 300 houses, we've been granted access to test about 100 of them. Of those 100 tested houses, only one has levels that exceed the removal action levels.

Q: Residents have volunteered to do outreach to recruit more of those 300 houses to sample their homes. Has the VA done any additional outreach yet?

A: No, no additional outreach yet, but we did sample 5 houses this winter, including one house that has not been previously sampled.

[Interest from the residents in doing another concerted lit drop round: door hangers, letters, etc.]

Yalecrest Neighborhood Council (YNC) has a new "neighborhood champions" initiative where one person takes responsibility of communication with 40 households in the area, which can improve outreach.

[Resident: Please make sure that the community council chairs are given the information so that we can spread the word about additional testing]



DEPARTMENT OF PUBLIC UTILITIES





Serving Our Community, Protecting Our Environment
Jesse Stewart, Deputy Director

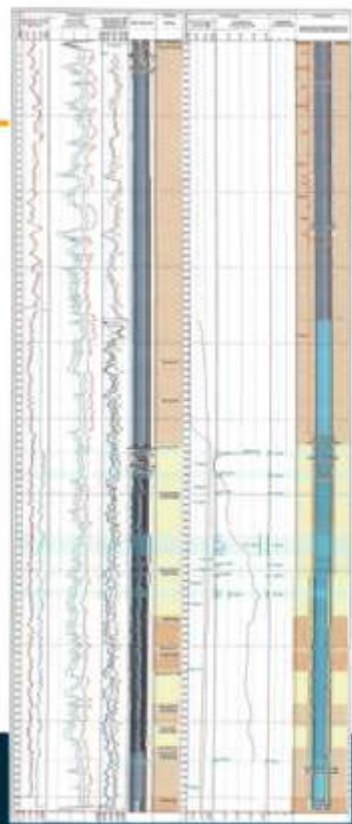
29 April 2026
Advocates for the VA Groundwater Plume Resolution



Jesse Stewart, Deputy Director of Public Utilities, provided introductory remarks. He noted his long-term involvement with the plume, beginning during his consulting work prior to joining the City in 2013, and highlighted ongoing collaboration with Shannon Smith and previous project leads. He explained that his focus for this presentation would be on the municipal well, its impacts, and planned actions rather than on plume hydrogeology. It was also clarified that Well 18 has never shown concentrations above the groundwater maximum contaminant level.

Well #18 Construction

-  Installed in 1956
Peaking well - July to October use
-  20-inch diameter, 510 feet deep
2,100 gallons per minute (gpm) or
~3 million gallons per day (mgd)
-  Depth to water: 1956 - ~ 204' bgs
2011 - ~ 184' btoc
-  Pumped directly to the 500 S Reservoir
Distributed to the west to ~ 21,500
connections, blended with other sources







Well #18 Summary



Additional context was provided regarding Well 18 and how it functions within the City's drinking water system. Well 18, installed in 1956, is a deep culinary production well used only during periods of high seasonal demand. It is one of approximately 26 deep wells operated across the valley to supplement system pressure and supply during summer months. The well is 510 feet deep, highly productive, and historically produced up to approximately 3 million gallons per day.

Well 18 remains offline pending future decisions about the plume's remedial approach, which will determine whether treatment would be required before returning it to service. When in use, water from the well feeds into the 10-million-gallon finished-water reservoir near Rice-Eccles Stadium, where it is blended with treated surface water from multiple sources. Periodic testing is conducted by pumping to waste through a storm-water purge line, ensuring water does not enter the culinary system until confirmed safe.

Tetrachloroethylene/perchloroethylene (PCE) history

-  Federal Maximum contaminant limit of 5 parts per billion (ppb) or micrograms per liter ($\mu\text{g/L}$)
-  PCE first detected in Well # 18 in 1997 at 0.6 ppb
-  2004 concentration of 2.3 ppb after prolonged pumping, discontinued use
-  PCE detected in Mt Olivet in 1990
Nearby irrigation and monitoring wells with concentrations of 300 ppb



Well #18 Summary



Information was provided on the history of PCE detections in Well 18. PCE was first detected in 1997 at 0.6 parts per billion (ppb). The highest concentration was recorded in 2004 at approximately 2.3 ppb (with some historical reports showing 2.8 ppb due to difficulty reading older logs). Although these levels remained below the federal maximum contaminant level of 5 ppb, the well was taken offline in 2004 as a precaution.

PCE had been detected earlier in the Mount Olivet well in 1990, prompting expanded sampling that ultimately identified the presence of PCE in Well 18. Since 2004, the well has remained out of service while the city works with the VA to determine whether and how it could be safely brought back online after plume remediation is selected. Historical sampling records were compiled and made available for reference.

Tetrachloroethylene/perchloroethylene (PCE) history

Date Collected	Analyte	Reading Prefix	Reading	Units
1987	Tetrachloroethene (PCE)		ND	ug/L
1989	Tetrachloroethene (PCE)		ND	ug/L
1991	Tetrachloroethene (PCE)		ND	ug/L
1994	Tetrachloroethene (PCE)		ND	ug/L
1995	Tetrachloroethene (PCE)		ND	ug/L
7/8/1997	Tetrachloroethene (PCE)		0.6	ug/L
1998	Tetrachloroethene (PCE)		ND	ug/L
1999	Tetrachloroethene (PCE)		ND	ug/L
8/7/2000	Tetrachloroethene (PCE)		0.8	ug/L
8/16/2000	Tetrachloroethene (PCE)		0.8	ug/L
6/19/2001	Tetrachloroethene (PCE)		1.22	ug/L
7/31/2001	Tetrachloroethene (PCE)		0.9	ug/L
8/8/2001	Tetrachloroethene (PCE)		1.3	ug/L
8/14/2001	Tetrachloroethene (PCE)		1.2	ug/L
8/24/2001	Tetrachloroethene (PCE)		1.4	ug/L
9/21/2001	Tetrachloroethene (PCE)		ND	ug/L
8/28/2002	Tetrachloroethene (PCE)		ND	ug/L
1/29/2003	Tetrachloroethene (PCE)		ND	ug/L
6/30/2003	Tetrachloroethene (PCE)		ND	ug/L

Date Collected	Analyte	Reading Prefix	Reading	Units
2004	Tetrachloroethene (PCE)		2.3	ug/L
4/26/2005	Tetrachloroethene (PCE)	<	0.5	ug/L
5/17/2005	Tetrachloroethene (PCE)	<	0.5	ug/L
9/1/2005	Tetrachloroethene (PCE)	<	0.5	ug/L
9/14/2005	Tetrachloroethene (PCE)		1.3	ug/L
9/19/2005	Tetrachloroethene (PCE)		1.5	ug/L
9/26/2005	Tetrachloroethene (PCE)		1.7	ug/L
9/29/2005	Tetrachloroethene (PCE)		1.8	ug/L
9/8/2006	Tetrachloroethene (PCE)	<	0.5	ug/L
9/11/2006	Tetrachloroethene (PCE)	<	0.5	ug/L
9/12/2006	Tetrachloroethene (PCE)		1.2	ug/L
9/13/2006	Tetrachloroethene (PCE)	<	0.5	ug/L
4/18/2007	Tetrachloroethene (PCE)	<	0.5	ug/L
5/9/2008	Tetrachloroethene (PCE)	<	0.5	ug/L
5/3/2010	Tetrachloroethene (PCE)	<	0.5	ug/L
5/3/2013	Tetrachloroethene (PCE)	<	0.5	ug/L
5/14/2014	Tetrachloroethene (PCE)	<	0.5	mg/L
4/16/2015	Tetrachloroethene (PCE)	<	0.5	ug/L
4/28/2016	Tetrachloroethene (PCE)	<	0.5	ug/L
5/19/2017	Tetrachloroethene (PCE)	<	0.5	ug/L
5/3/2018	Tetrachloroethene (PCE)	<	0.5	ug/L
8/3/2021	Tetrachloroethene (PCE)	<	0.5	ug/L
11/15/2023	Tetrachloroethene (PCE)	<	0.5	ug/L

Well #18 Summary



SALT LAKE CITY

Periodic testing of Well 18 has continued since 2004, even though the well remains offline. The well is periodically turned on to confirm functionality and to collect water samples. Each sampling event includes analysis for a full suite of constituents, including volatile organic compounds, semi-volatile organics, radionuclides, and metals.

Well # 18 use history

-  Last used in the distribution system in 2004
-  Never a primary source in the distribution system.
-  Mixing with surface water sources; Provo River system, Little Cottonwood Creek, Big Cottonwood Creek, and Parleys Creek
-  At peak production < 25% of the water in the 500 South Reservoir
Distributed to the west to ~ 21,500 connections



Well #18 Summary

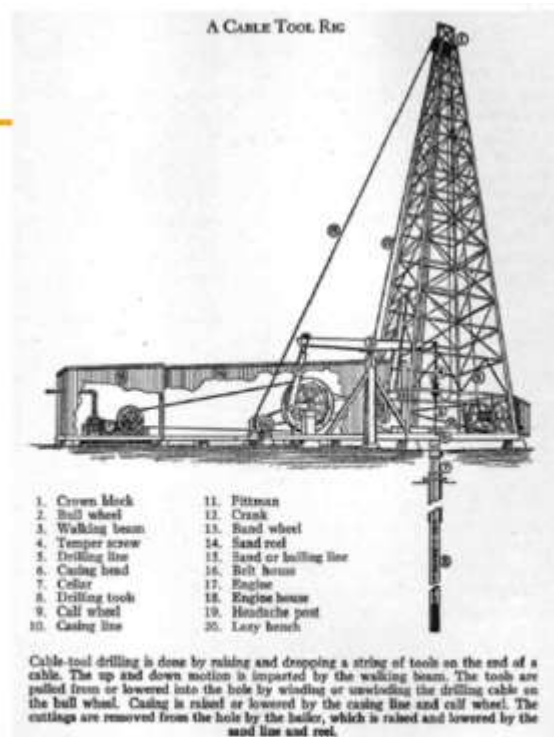


Context was provided on how Well 18 functions within the distribution system when in service. The well was last used in 2004 and has never served as a primary source; instead, it operated as a seasonal well whose water was blended within the finished-water reservoir before entering the system. Water from the reservoir flows entirely by gravity, moving downslope and generally not traveling east of 1300 East.

Model results showed that under peak operating conditions, Well 18 would contribute less than 25 percent of the water within its distribution zone and currently contribute 0 percent because it remains offline. Due to security considerations, detailed distribution maps were made available only in printed form during the meeting.

Other Information

-  No other contaminants or compounds greater than respective MCLs.
-  Preliminary design for PCE treatment
-  PFAS detected in 2024, below action levels
-  Re-activation is on hold at this point



Well #18 Summary



Ongoing sampling for a wide range of contaminants has never identified levels above maximum contaminant limits (MCLs). Naturally occurring minerals are detected at expected levels, but none exceed regulatory thresholds. Preliminary design work for potential PCE treatment has been completed, and future decisions will depend on the final remedy selected for the plume. Low-level PFAS compounds were recently detected, though not the types with established action levels.

Additional context was provided indicating that, when active, water from the Well 18 reservoir historically served approximately 21,500 customers as part of a blended distribution system.

Questions:

Q: Have PFAS levels increased with the installation of artificial turf?

A: There is not enough data to support that conclusion.

Q: Since PCE was detected in 2004 and the well was installed in 1956, is it correct that small amounts of contaminated water entered drinking water lines before sampling began?

A: Sampling records begin in 1987, and results were non-detect during that period, including during high-use seasons. Low-level detections later occurred after sustained pumping, likely due to temporary changes in groundwater gradients. The well was taken offline in 2004 once results increased.

Q: Can we receive a copy of the water distribution system?

A: Distribution maps cannot be shared publicly for security reasons, but they can be viewed in person by contacting Public Utilities.

Q: Is it fair to say there is no sampling data between 1956 and 1987?

A: Yes. No sampling occurred prior to 1987. The VA's dry-cleaning operations began in the late 1970s, so contamination would not have been present during the earlier decades. Contamination between approximately 1976 and 1987 would have been minimal, if present at all, because PCE would not have traveled from the sewer line to the well instantaneously.

Q: Could Fort Douglas have contributed to the plume?

A: Historical facilities in the area, including a former laundry and motor pool, were assessed through DEQ, and some releases were noted, though the primary plume source is associated with VA operations.



East High School Indoor Air Sampling Update

Shannon Smith resumed presenting and provided an update on recent indoor air sampling efforts. Previous short-term sampling was supplemented with three-week samples collected at East High School in January to February. Results from these longer-term samples were received and were found to be within EPA risk limits.



EAST HIGH SCHOOL VAPOR INTRUSION SAMPLING

VA in coordination with SLC School District conducted indoor air sampling to evaluate potential vapor intrusion from PCE and TCE in groundwater.

- **2016 & 2019:** 126 indoor air *grab samples* collected across all four levels of the school; negative pressure was induced to “force” potential vapor intrusion.
 - Initial health risk assessments showed PCE and TCE levels were within EPA’s acceptable risk limits.
- Grab samples represent only short-term conditions (1–6 hours), introducing some uncertainty.
- **Jan 2026:** Passive samplers placed throughout the first floor and second-floor day care
 - Devices collected indoor air for 3 weeks, providing longer-term data.
 - Results were consistent with 2016 and 2019 findings: **PCE and TCE levels remain within EPA’s acceptable risk limits.**
 - Findings indicate no action is needed to address vapor intrusion at East High School.

An overview of historical and recent indoor air sampling activities at the site was provided. More than 126 grab samples were collected between 2016 and 2019, including sampling conducted under manipulated building-pressure conditions to evaluate worst-case vapor intrusion scenarios. Results from that investigation indicated no health risks to building occupants. Long-term sampling was not completed during the COVID-19 shutdown, but new sampling was conducted in January 2026 using devices placed in first-floor classrooms, mechanical spaces, and the second-floor daycare. Results from this longer-term sampling were within EPA risk limits, and no further action is considered necessary based on the data.



QUESTIONS

TO LEARN MORE ABOUT THE **700 SOUTH 1600 EAST PCE PLUME SUPERFUND SITE**,
VISIT WWW.PCEPLUME.ORG OR CONTACT US DIRECTLY



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Contact information for VA, EPA, and UDEQ was provided for those seeking additional details or wishing to follow up on site-related questions.

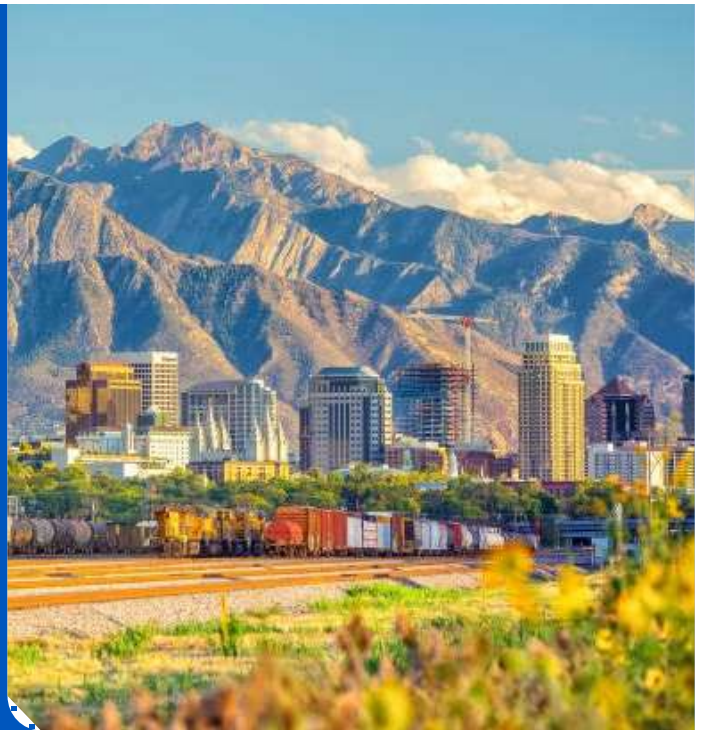
ATSDR

Review of

700 South 1600 East PCE Plume

LCDR Irene Lee, PharmD

Environmental Health Scientist
Office of Community Health Hazard Assessment
Agency for Toxic Substances and Disease Registry
April 29, 2026



An introduction was provided by ATSDR representative Irene Lee, noting affiliation and stating that the presentation would address the public health assessment for 700 South 1600 East PCE Plume site.

Outline

- » **What is ATSDR?**
- » **Overview of the Public Health Assessment Process**
- » **Background on 700 S 1600 E PCE Plume Superfund Site**
- » **Review of 3 documents:**
 - » **Evaluation of Contaminants in Indoor Air, Soil, and Surface Water**
 - » **Evaluation of Contaminants in Indoor Air and Groundwater: Residential Sampling Location 0065H**
 - » **Evaluation of Contaminants in Indoor Air and Groundwater: East High School**

A summary of the presentation agenda was provided.



What is ATSDR?

The Agency for Toxic Substances and
Disease Registry

An overview of ATSDR was provided, noting that it is a non-regulatory federal public health agency established under the 1980 Superfund Law and mandated to conduct public health assessments at Superfund and other hazardous waste sites.



**A non-regulatory
federal public
health agency**



**Created by the
Comprehensive
Environmental
Response,
Compensation, and
Liability Act
(CERCLA)**



**Congressionally
mandated to
perform public
health assessments
at hazardous waste
sites**

The mission of the agency was described as protecting communities from health effects of toxic chemicals through emergency response, contaminant investigations, research, and support to state and local partners.

Mission and Impact

Mission

- Protect communities from harmful health effects related to exposure to natural and man-made hazardous substances
- We do this by:
 - Responding to environmental health emergencies
 - Investigating emerging environmental health threats
 - Conducting research on the health impacts of hazardous waste sites
 - Building capabilities of and providing actionable guidance to state and local health partners

Impact

- Reduce morbidity and mortality related to exposure to natural and man-made toxic substances

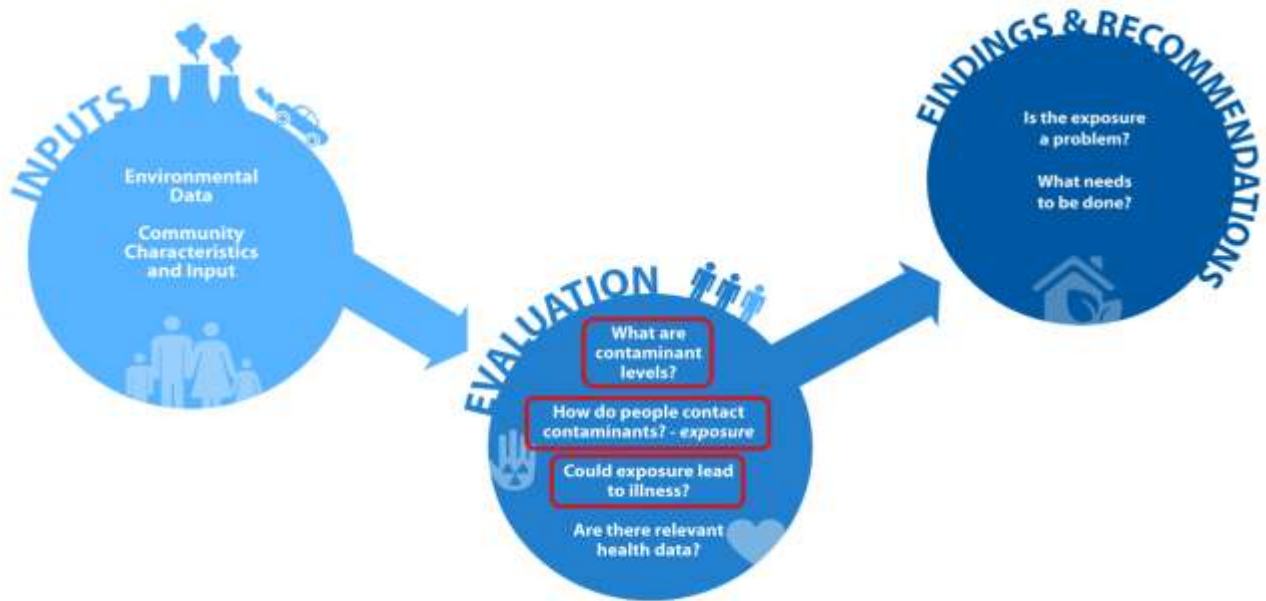
It was noted that these efforts support the reduction of morbidity and mortality associated with exposure to toxic substances



Overview of the Public Health Assessment Process

An overview of the public health assessment process was introduced.

Public Health Assessment Process



The public health assessment process was described, beginning with gathering environmental data and community information, followed by scientific evaluations that assess contaminant levels, potential exposure pathways, and possible health effects. When data are insufficient, recommendations are made to collect additional environmental information.

Public Health Assessment Impacts



Impacts of public health assessments were outlined, including supporting cleanup decisions, identifying exposure pathways, enabling early public health responses, engaging state and local agencies, providing resident guidance, and educating healthcare providers.



Background on 700 S 1600 E PCE Plume Superfund Site

Salt Lake City, Utah

A transition was made to discuss specific details of the Superfund site.

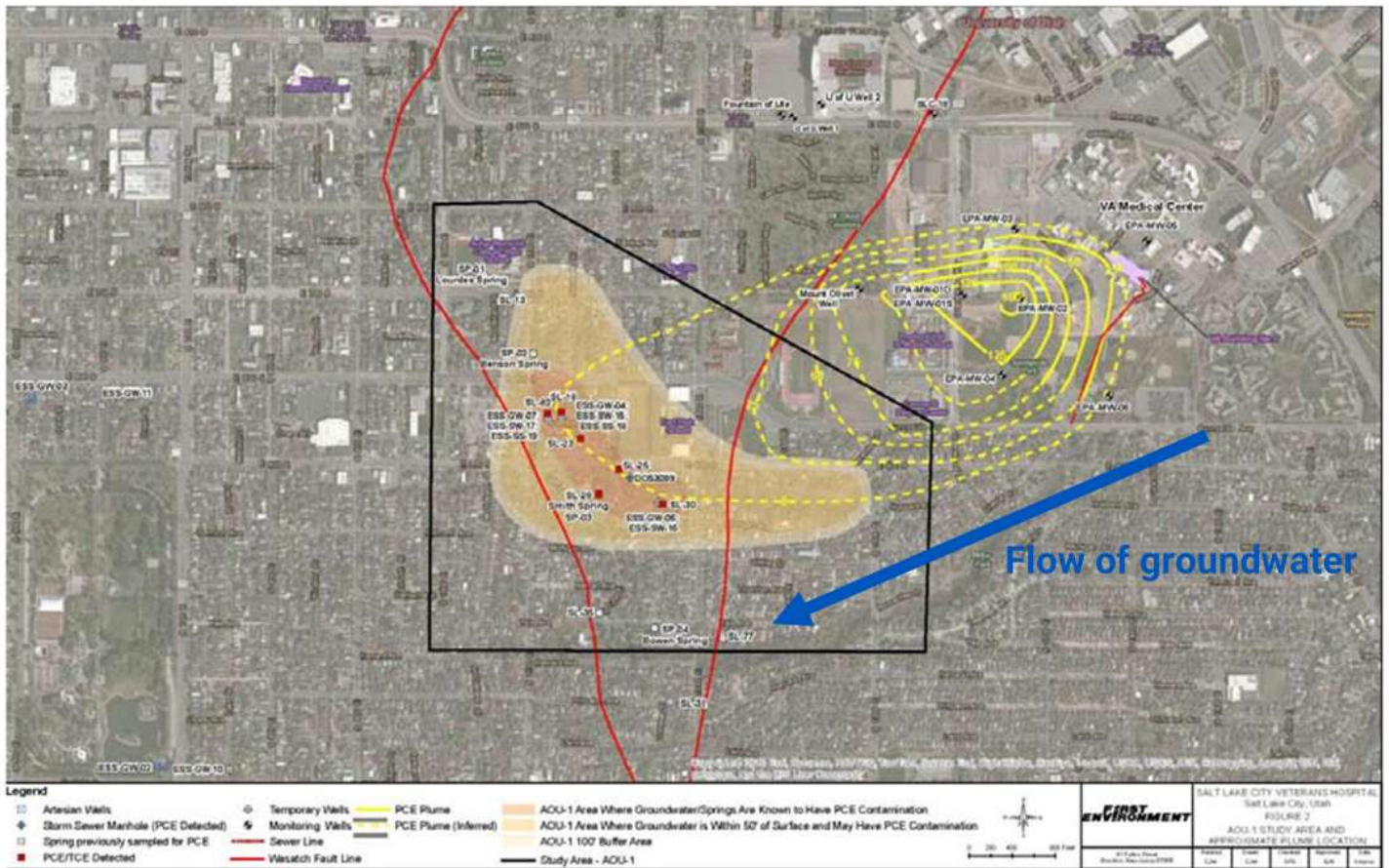


Site Information

- U.S. Department of Veterans Affairs (VA) Medical Center operated a dry-cleaning facility
- Dry cleaning residuals were disposed of into a drain, which connected to the municipal sewer system
- Leaks in the sewer system allowed contamination to enter the surrounding soil and groundwater creating a plume

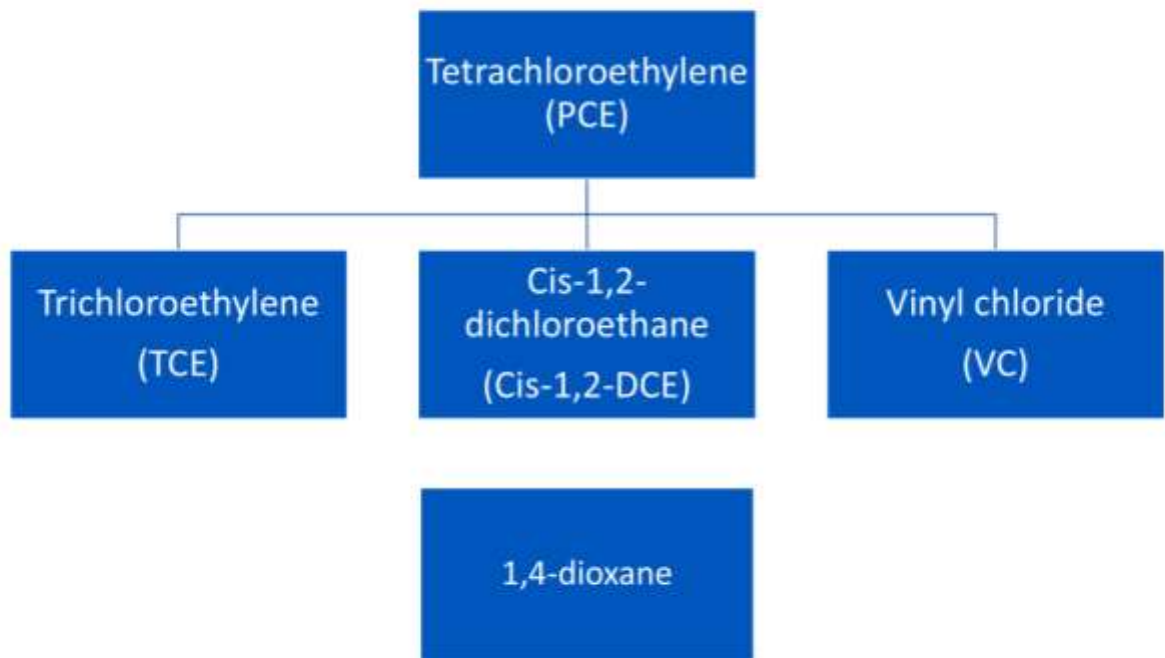
Background on the Superfund site was reviewed, noting that a VA dry-cleaning facility operated from 1976 to 1982 and discharged solvents into a drain connected to the municipal sewer. Leaks from the sewer are believed to have released contaminants into surrounding soil and groundwater, resulting in a plume.

Accelerated Operable Unit - 1



A plume was defined as contaminated groundwater moving downgradient with natural flow. Groundwater at the site flows from northeast to southwest, and contamination was identified in the orange and pink area of the map. Regulators focused on the nearby residential area rather than the VA property, as no occupied buildings were present on the VA campus at the time. Note the plume map shown is from 2015 and has changed considerably over the past decade.

Contaminants of Interest



The use of PCE as a dry-cleaning solvent was described, along with its breakdown into TCE, cis-1,2-DCE, and vinyl chloride. 1,4-dioxane was also noted as associated with dry-cleaning solvent production. These chemicals were evaluated as contaminants of interest in the public health assessment.

Vapor Intrusion

- Movement of vapor chemicals and gases from soil and groundwater into indoor air
- Influenced by:
 - Seasonal changes
 - Structural renovations
 - Proximity to contaminated groundwater
 - Ventilation
- ATSDR requires time-integrated air samples

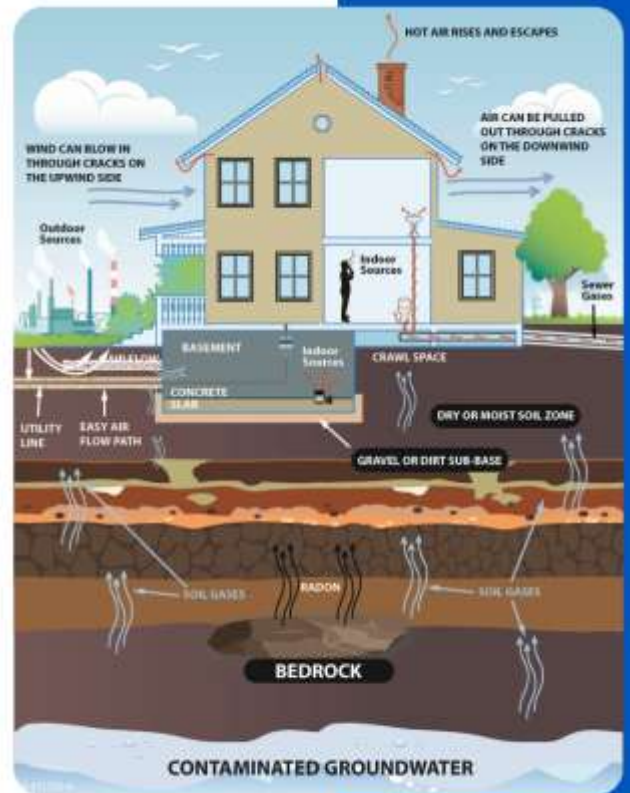


Photo credit: ATSDR

The contaminants were described as concerning due to their potential for vapor intrusion, where vapors from contaminated groundwater can migrate through soil and enter buildings through cracks or utility lines. Vapor intrusion levels can vary by season, ventilation, building conditions, and proximity to the groundwater source, with basements at higher risk. Time-integrated indoor air sampling over 8–24 hours, ideally collected in both summer and winter, is needed to evaluate potential health hazards.



Evaluation of Contaminants in Indoor Air, Soil, and Surface Water

Public Health Assessment
Published June 2023

The public health assessment first published in June 2023 was introduced, with acknowledgment that the document and subsequent reports are several years old. It was noted that ATSDR has not received new information that would alter previous conclusions, except for updated indoor air data from East High School collected in 2026.

Exposure Pathways

Source	Exposure Route
Indoor air	Inhalation
Municipal drinking water	Ingestion
Surface water from springs and seeps	Dermal absorption
Soil near springs and seeps	Dermal absorption and incidental ingestion



The first report identified multiple potential exposure pathways, including indoor air in homes, the municipal drinking water system, surface water and springs and nearby soils.



Indoor Air

- The VA sampled 34 homes in 2016 and 2017

Contaminant	Maximum Concentration ($\mu\text{g}/\text{m}^3$)	ATSDR Comparison Value ($\mu\text{g}/\text{m}^3$)
PCE	78	3.8
TCE	9.3	0.22
Cis-1,2-DCE	3.05	Not Available *
VC	0.19	0.11
1,4-dioxane	2.3	0.2

* ATSDR Acute Comparison Value for Trans-1,2-DCE = $790 \mu\text{g}/\text{m}^3$

- Residential scenario:
 - Children and adults inhale indoor air 24 hours per day, 365 days per year, for 33 years

Indoor air data from 34 homes collected in 2016–2017 were reviewed, with time-integrated samples (TO-15, green on map) preferred over grab samples (HAPSITE, pink on map). Five contaminants were compared to ATSDR comparison values; 22 homes were below all values and 12 exceeded at least one, often due to non-site indoor sources. Further evaluation focused on PCE, TCE, vinyl chloride, and 1,4-dioxane using a conservative residential exposure scenario that assumes a person breathes the measured indoor-air concentration 24 hours a day, 365 days a year, for 33 years. ATSDR relies on VA-collected data, and the indoor-air map shown is outdated and differs from the groundwater plume map. The VA (Smith) explained that grab samples were collected under manipulated building-pressure conditions to represent a worst-case scenario.

Questions:

Q: How are the households selected for testing?

A (ATSDR): ATSDR does not conduct its own sampling and evaluates the indoor-air data collected by the VA.



Time Critical Removal Action

- Quick removal of contamination during the Superfund process
- Exceedance of Removal Action Levels
- Sampling location 0040H
 - Initially installed portable filtration system
 - Later installed a whole house air purifier
 - The VA collected 31 indoor air samples
 - Residential scenario:
 - Adults inhale indoor air 24 hours per day, 182.5 days per year, for 33 years

A time-critical removal action (TCRA) was conducted at one residence where contaminant levels exceeded removal-action thresholds. Three portable filtration units were installed, and ATSDR reviewed 31 indoor-air samples from this home to confirm effectiveness. The conservative exposure scenario for this home was adjusted to 24 hours per day for 182.5 days per year, reflecting part-year occupancy.

Questions:

Q: If a home required treatment, were neighboring households also evaluated?

A (VA): Two nearby homes declined access, but all others on the street were sampled. This was the only home above the action level.

Municipal Drinking Water

- Salt Lake City Department of Public Utilities (SLCDPU) regulates the Salt Lake City municipal water system in accordance with the Safe Water Drinking Act
- The municipal water system sources water from multiple different wells
 - Salt Lake Municipal Well #18 detected PCE at levels lower than regulatory standards
 - In 2004, SLCDPU removed this well from service and it remains off-line
 - The blended, finished water did not detect PCE



The municipal drinking-water pathway was briefly reviewed. PCE levels were below EPA regulatory limits, and the affected well was taken offline in 2004, so ATSDR determined the pathway is not a concern.



Surface Water from Springs and Seeps

- The VA sampled 33 surface water locations from 2016 to 2019

Contaminant	Maximum Concentration (µg/L)
PCE	82
TCE	2.8
Cis-1,2-DCE	0.7
VC	Not Detected
1,4-dioxane	Not Detected

- ATSDR scenario
 - Children and adults touch water for 1 hour per day, 3 days per week, for 6 months per year

Surface-water exposure was evaluated using 33 samples collected from 2016–2019. Because ATSDR lacks surface-water comparison values for these chemicals, a conservative scenario was used: adults and children contacting the water one hour per day, three days per week, for six months per year. Variability in exposure depends on whether seeps or springs occur on a given property.

Questions:

Q: Could contamination affect garden produce?

A: ATSDR will verify uptake potential, but existing studies show plant uptake of these chemicals is not at levels of concern.

Q: What about spray irrigation?

A: Most irrigation uses municipal water and is therefore not affected. Where irrigation draws from ponds or wells, prior studies indicate plant uptake still does not reach concerning levels.

Q: What does 82 µg/L PCE in surface water mean?

A: It represents the highest concentration measured at a single sampling point; conceptually similar to 82 drops of PCE in an Olympic-sized pool.

Q: Can the approximate location of the treated home be identified?

A (VA): It is in the 12th East and 9th South area.

Soil Near Springs and Seeps

- The VA collected 3 soil samples in 2016

Contaminant	Maximum Concentration (ppm)	ATSDR Comparison Value (ppm)
PCE	0.022	180
TCE	Not Detected	5.6
Cis-1,2-DCE	Not Detected	100
VC	Not Detected	0.28
1,4-dioxane	Not Detected	3.9

Three soil samples collected in 2016 were evaluated. None of the contaminants were detected at levels exceeding ATSDR comparison values.

Conclusions and Recommendations/Next Steps

Conclusion 1

- Breathing in PCE and TCE found in indoor air in homes of the East Side Springs neighborhood is not likely to harm residents' health.
 - ATSDR recommends the VA re-test indoor air quality of living spaces of homes which had high amounts of PCE in non-living spaces.
 - ATSDR supports the VA in recruiting homes for testing, and re-testing homes for changes in air quality.

Conclusion 2

- ATSDR does not have enough information to conclude if breathing PCE and TCE at levels that existed prior to 2015 could harm people's health.
 - Utah Department of Health will prepare a cancer incidence review using pre-2015 data.

Six conclusions were summarized from the report. The first conclusion found that PCE and TCE detected in indoor air in the East Side Springs neighborhood are not likely to harm residents' health. ATSDR recommends retesting indoor air in living spaces for homes that showed elevated levels only in non-living areas and supports the VA in recruiting additional homes for testing and retesting due to changing conditions.

The second conclusion noted that there is insufficient information to determine whether pre-2015 PCE or TCE levels could have harmed health, and the Utah Department of Health and Human Services is preparing a cancer incidence review using available pre-2015 data.

Questions:

Q: Can the cancer review also evaluate radon levels for comparison?

A (ATSDR): The request is limited to evaluating PCE and TCE, not radon.

Q: When will the Utah Department of Health report be available?

A (UDHHS): Work is underway, but current population-estimate limitations complicate analysis. The report is expected sometime this year.

Q: Is this cancer review being done alongside the Chevron oil-spill study?

A (UDHHS): Yes. The updated statistical cancer review regarding the Chevron oil-spill at Red Butte Creek will address all cancer types, including those previously highlighted as concerns. The review regarding PCE will focus on myeloma.

Q: How will the public follow the study?

A (UDHHS): The VA should notify you regarding PCE plume publications. UDHHS has a website regarding the Red Butte Creek study.

Q: Is ATSDR planning on updating the public health assessment?

A (ATSDR): There are no scheduled plans for updating, but ATSDR will make an update analyzing 2026 data collected at East High School.

Q: Are PCE health effects a result of cumulative or acute exposure? Who are the most sensitive people?

A: Those with long term exposure are more at risk for adverse health effects. Pregnant mothers and small children are the most sensitive.

Conclusions and Recommendations/Next Steps

Conclusion 3

- Breathing air currently at sampling location 0040H, where the VA conducted time critical removal action, is unlikely to harm the resident's health. The portable air filters installed in the home are protective of health, but the filters do not prevent the potential for a future health risk.
 - ATSDR recommends the VA and EPA continue to find a permanent solution and remove future risk.
 - ATSDR recommends the VA and EPA define a way to monitor for change in occupancy to inform future residents.

Conclusion 3 states that indoor air at sampling location 40H, where a time-critical removal action occurred, is unlikely to harm health. Portable filtration units are protective but not a permanent solution. Continued efforts are recommended to identify a long-term remedy and to monitor any future change in occupancy.

Conclusions and Recommendations/Next Steps

Conclusion 4

- People who drink tap water from the Salt Lake City municipal system have not been exposed to levels of PCE that are likely to have harmed their health in the past nor pose a current risk.
 - Salt Lake City Department of Public Utilities ensures compliance with the Safe Water Drinking Act.

Conclusion 5

- People incidentally touching water flowing from neighborhood springs and nearby wetted soils are unlikely to experience harmful health effects from PCE or TCE.
 - ATSDR will re-evaluate if additional sampling of springs, seeps, and soil are needed as the plume migrates.

Conclusion 4 states that drinking water from the Salt Lake City municipal system has not contained PCE at levels expected to pose a health risk since monitoring began. Conclusion 5 states that incidental contact with water or soil from neighborhood seeps and springs is unlikely to cause harmful effects. ATSDR will reassess if the plume migrates.

Q: How can conclusion #4 be made given the missing data before the first detections?

A (ATSDR): ATSDR cannot assess risks prior to available sampling (first detections in the late 1980s–1990s). The conclusion applies only from that time to present.

A (Public Utilities): Well water entering the system was blended with other water sources, not delivered directly.

Conclusions and Recommendations/Next Steps

Conclusion 6

- The indoor air data needed to evaluate East High School and sampling location 0065H were not available at the time of this report's initial preparation in 2019.
 - ATSDR will review indoor air data for these two locations and summarize findings in a subsequent document.

Conclusion 6 notes that indoor-air data for East High School and location 65H were unavailable at the time of the initial report. ATSDR will review new data in later documents.



Evaluation of Contaminants in Indoor Air and Groundwater: Residential Sampling Location 0065H

Letter Health Consultation
Published October 2024

Two additional documents published in 2024 address the locations lacking data, beginning with residential location 65H.

Indoor Air

- The VA collected time-integrated air samples in 4 different locations within the home in December 2019 and January 2020

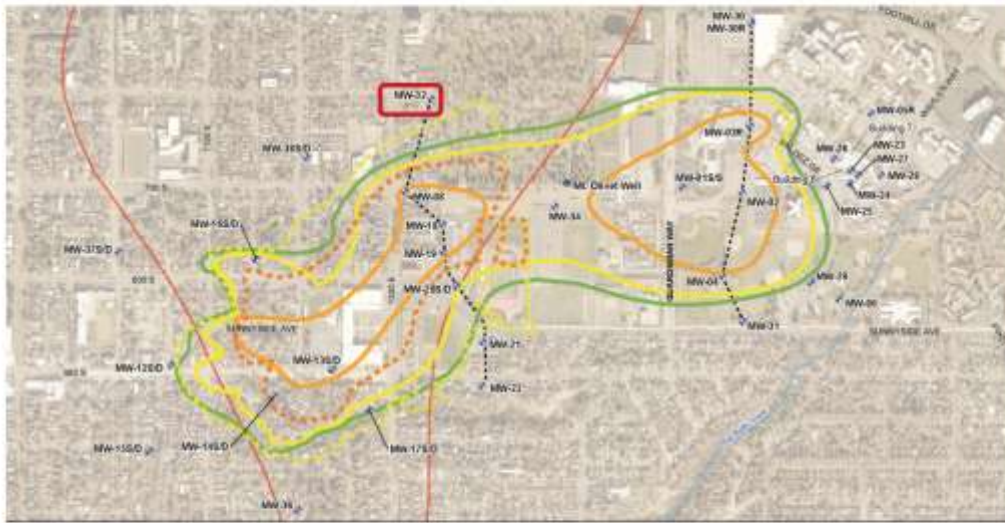
Contaminant	Maximum Concentration ($\mu\text{g}/\text{m}^3$)	ATSDR Comparison Value ($\mu\text{g}/\text{m}^3$)
PCE	0.16	3.8
TCE	0.26	0.21
Cis-1,2-DCE	0.19	Not Available *
VC	0.12	0.11
1,4-dioxane	0.88	0.2

* ATSDR Acute Comparison Value for Trans-1,2-DCE = 12,000 $\mu\text{g}/\text{m}^3$

- Residential scenario:
 - Children and adults inhale indoor air 24 hours per day, 365 days per year, for 33 years

Four indoor-air samples from late 2019–early 2020 at 65H were evaluated. TCE, vinyl chloride, and 1,4-dioxane exceeded comparison values. ATSDR used the same conservative residential exposure scenario (24 hours/day, 365 days/year, for 33 years) to assess potential health impacts.

Groundwater



Date	PCE Concentration (µg/L)
June 2021	Not detected
June 2022	Not detected
Nov 2022	0.46

ATSDR Comparison Value for PCE = 5.3 µg/L

Legend

- Monitoring Well
- Property Line
- Monitoring Well Test Point
- Flow Meter Check
- Field Line

PCE Contours (µg/L)

- 10 µg/L
- 20 µg/L
- 50 µg/L
- 100 µg/L

Notes

- Present monitoring wells MW-01, MW-02, MW-10, MW-11, MW-20, and MW-21 were not installed.
- Plume contour lines developed using existing information available, subject to discovery data from the 2021 groundwater sampling event. The contours represent the down-drift of the plume and extent of the plume as identified in the sampling database.
- µg/L = micrograms per liter
- PCE = tetrachloroethene
- TCE = trichloroethene
- µg/L = micrograms per liter

Figure H4-2
PCE Groundwater Plume Extent

CDM Smith
CDI Remedial Investigation Report
CDI TCE Swell 1000 East PCE Plume
Site Lanta City, MS

Photo credit: VA, 2021

2021 hydrogeology data shows monitoring well 32 near 65H lies outside the plume boundary. Three groundwater samples showed concentrations below ATSDR’s groundwater comparison value for PCE.

Conclusions

Conclusion 1

- Air data from December 2019 and January 2020 indicate that breathing PCE, TCE, cis-1,2-DCE, VC, or 1,4-dioxane in the air inside residential sampling location 0065H is not expected to harm people's health.

Conclusion 2

- The groundwater data from 2021 and 2022 indicate the groundwater PCE concentration near the residence is below levels of concern. Therefore, vapor intrusion is not expected to occur at levels that cause potential health effects.

Conclusion 1 states that breathing indoor air at 65H is not expected to harm health.

Conclusion 2 states that groundwater concentrations near the residence are below levels of concern, and vapor intrusion is not expected.

Recommendations

- Continue to monitor the concentration and boundary of the PCE plume in relation to residential sampling location 0065H.
- Re-sample the indoor air of the residence for vapor intrusion if:
 1. Groundwater contamination concentration increases above the comparison value, or
 2. The PCE plume migrates within 100 feet of the home

ATSDR recommends continued monitoring of plume concentrations and boundaries and resampling indoor air at 65H if groundwater concentrations rise above comparison values or if the plume moves within 100 feet of the home.



Evaluation of Contaminants in Indoor Air and Groundwater: East High School

Letter Health Consultation
Published October 2024

ATSDR's final 2024 document evaluates indoor air and groundwater conditions at East High School.

Indoor Air

- The VA collected air samples in 25 different locations within the school via HAPSITE analysis in December 2019

Contaminant	Maximum Concentration ($\mu\text{g}/\text{m}^3$)	ATSDR Comparison Value ($\mu\text{g}/\text{m}^3$)
PCE	11	3.8
TCE	0.5	0.21
Cis-1,2-DCE	0.5	Not Available *
VC	0.53	0.11
1,4-dioxane	Not Sampled	-

* ATSDR Acute Comparison Value for Trans-1,2-DCE = 12,000 $\mu\text{g}/\text{m}^3$

- School scenario:
 - Students and teachers/workers inhale indoor air 9 hours per day, 5 days per week, 47 weeks per year, for 4 years (students) or for 20 years (teachers/workers)

Twenty-five indoor-air samples collected in 2019 at East High School were grab samples, which cannot fully assess vapor intrusion in line with ATSDR's recommended standards. Assuming sufficient quality, PCE, TCE, and vinyl chloride exceeded comparison values; 1,4-dioxane was not measured. Exposure assumptions for the school setting used 9 hours/day, 5 days/week, 47 weeks/year; 4 years for students and 20 years for staff.

Conclusions

Conclusion 1

- ATSDR is unable to determine whether breathing the air inside East High School poses a health hazard to people.
 - The indoor air grab samples and HAPSITE® analysis method does not meet ATSDR's time-integrated standard for sampling vapor intrusion.
 - If ATSDR did assume this data were an adequate assessment of vapor intrusion, then the air students, teachers, and workers are breathing inside the school would not be expected to harm people's health.

Conclusion 1 states ATSDR cannot determine whether indoor air poses a health hazard at East High School because grab samples cannot adequately evaluate vapor intrusion, per ATSDR's standard. If assumed valid, the data suggest no expected harm.

Conclusions

Conclusion 2

- Groundwater data from 2021 and 2022 indicate the groundwater PCE concentration near East High School is above the ATSDR groundwater vapor intrusion comparison value. Therefore, ATSDR cannot exclude the possibility that vapor intrusion is occurring above a level of concern.
 - When contaminated groundwater moves closer to a building, the likelihood of exposure from vapor intrusion increases.

Conclusion 2 states groundwater concentrations exceed comparison values, so vapor intrusion cannot be ruled out.

Questions:

Q: If vapor intrusion cannot be ruled out, why aren't more precautionary measures taken?

A (VA): Follow-up time-integrated indoor air samples were collected to directly assess vapor intrusion. Ventilation at the school is high, and monitoring of wells continues.

Recommendations

- Use time-integrated indoor air sampling methods to measure vapor intrusion during a typical exposure period for a school/workday
- Sample indoor air, outdoor air, and sub-slab soil gas concurrently in both the summer and winter
- Analyze and report all contaminants of potential concern (i.e., 1,4-dioxane)
- Continue to monitor the concentration and boundary of the PCE plume in relation to East High School
- Re-sample the indoor air of the school for vapor intrusion if:
 - Groundwater contamination concentrations are detected above the comparison value

ATSDR recommends collecting time-integrated indoor-air samples with concurrent outdoor and sub-slab sampling in both summer and winter, analyzing all contaminants of concern, monitoring plume movement, and resampling indoor air if groundwater levels remain elevated.

Takeaways

1. Breathing PCE, TCE, cis-1,2-DCE, VC, or 1,4-dioxane in the air of homes in the East Side Springs neighborhood is not expected to harm people's health.
2. Portable air filters installed at sampling location 0040H are protective of residents' health from PCE and TCE, but do not prevent the potential for future health risk.
3. Drinking PCE in the tap water from the Salt Lake City municipal system is not expected to harm people's health.
4. Touching water or wetted soil contaminated with PCE or TCE from neighborhood springs/seeps is not expected to harm people's health.
5. Breathing PCE, TCE, cis-1,2-DCE, VC, or 1,4-dioxane in the air inside sampling location 0065H is not expected to harm people's health.
6. ATSDR is unable to determine whether breathing the air inside East High School poses a health hazard to people. ATSDR recommends time-integrated air sampling data.

Takeaways of the ATSDR's assessment were summarized.

Questions:

Q: Who are the recommendations directed to?

A (ATSDR): Primarily the responsible party (VA).

A (VA): New data were collected in Jan–Feb 2026; ATSDR has not yet reviewed them.

Q: Will East High continue to be monitored?

A (VA): Not routinely; additional sampling will occur if groundwater levels increase.

Q: Can testing be conducted during the summer, when fewer students and staff are present, since reduced activity might influence the results?

A (VA): There is no summer testing planned at this time. Our goal with these sampling efforts is to understand what students and staff would normally be exposed to in typical building use, so testing during unoccupied periods may not provide representative information.

Q: What numbers should concern the public?

A (ATSDR): Exceeding comparison values does not mean harm; it signals the need for more investigation.

A (VA): For context, the VA's residential action level is $42 \mu\text{g}/\text{m}^3$ under a conservative long-term exposure scenario.

Thank you.

For more information contact ATSDR
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 <https://www.atsdr/cdc.gov>

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Agency for Toxic Substances and Disease Registry.

ATSDR

The meeting was concluded. The VA offered to create a list of acronyms for future CAG meetings so that presentations would be easier for attendees to follow.