



Site Program Frequently Asked Questions

Fort Hall Mine Landfill Site, Bannock County, Idaho

This document addresses questions about 2019-2020 site program activities, sampling result findings, and community stakeholder concerns. The June 2019 and July 2020 Fact Sheets [add link here from City] provide site history information and a timeline of site investigation and cleanup activities. A glossary and acronym list is provided on the last page of the this FAQ.

Chemicals of Potential Concern and Regulatory Standards

1. What is tetrachloroethylene (PCE)?

Tetrachloroethylene is a solvent that dissolves oils and grease used for dry cleaning and metals degreasing. PCE is found in common consumer products. You can find additional information on PCE at:

<https://www.atsdr.cdc.gov/phs/phs.asp?id=263&tid=48#bookmark02>.

2. What is trichloroethene (TCE)?

Trichloroethene is also a solvent that dissolves oils and grease and is used in similar applications as PCE. TCE is also used to manufacture adhesives and refrigerant chemicals. You can find additional information on TCE at:

<https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=172&tid=30#bookmark02>.

3. What is EPA's regulatory standard for PCE and TCE in drinking water supplies?

U.S. Environmental Protection Agency (EPA) adopts pollutant-specific maximum contaminant levels (MCLs). An MCL is the maximum allowable level of a pollutant in drinking water (see inset box for EPA PCE and TCE MCLs).

4. What is Idaho Department of Environmental Quality's regulatory standard for PCE and TCE in drinking water supplies?

Idaho Department of Environmental Quality (DEQ) adopts water quality standards. DEQ water quality standards for PCE and TCE are 5 µg/L or ppb each. They are the same as EPA MCLs.

U.S. EPA and Idaho DEQ MCLs

- PCE MCL = 5 micrograms per liter (µg/L) or parts per billion (ppb)
- TCE MCL = 5 µg/L or ppb

Site Program Site Investigation and Sampling Activities

5. Why are site investigation activities necessary?

Site investigation activities look at how chemicals of potential concern (COPC) – TCE and PCE – move from Fort Hall Mine Landfill to the Portneuf Valley Aquifer (PVA). The PVA is the only drinking water source for most people living in the Pocatello municipal and surrounding areas within Bannock County. The site investigation findings will help Bannock County to update the groundwater remedy to address TCE and PCE impacts to the PVA.

6. Why are there multiple sampling events?

We sample wells numerous times to monitor known water quality conditions and learn any changes over time due to the season or ongoing cleanup efforts. Our team identified wells within the PVA and adjacent to areas of known or potential groundwater COPC (TCE and PCE) contamination for continued sampling.

7. How much water is pumped from my well during sampling activities and where does it go?

Well sampling generates approximately 200 gallons of water. Wells are purged (pumped) to collect samples that represent groundwater within the PVA. Water can be disposed in vegetative and pasture areas.

8. Is it safe to dump well water from sampling activities directly on the ground on my property?

Most domestic wells sampled do not have COPCs (TCE and PCE). It is safe to dump that purge water on the ground. For a few properties with impacted wells, COPCs in groundwater are volatile. TCE and PCE concentrations decrease significantly when poured to the ground surface and transferred to the air. So, dumping that water on the ground is also safe.

What does “volatile” mean?

A volatile compound can move from a liquid phase into a vapor or gas phase. As volatile compounds, TCE and PCE can move from a liquid to a vapor phase, like boiling water moves from liquid to gas (steam).

9. When will I get results from the sampling event?

We generally send letters with sampling results by three months after the sampling occurred. Residents and property owners receive letters. Bannock County’s Environmental Contractor will call to make sure you received your letter.

10. If previous sampling did not find COPCs concentrations above regulatory standards, why do I need to participate in resampling?

We know where TCE and PCE concentrations are above regulatory standards in the PVA, but the contaminants move in the groundwater over time. We monitor wells within or near areas of the known contamination to understand how it is moving.

Risk Assessment Findings

11. How did you determine risk to humans and the environment?

Our risk assessment looked at the following ways humans and the environment could be exposed to the chemicals, known as exposure routes:

- drinking, washing, or bathing with groundwater
- breathing indoor air containing chemicals via a process called vapor intrusion
- eating homegrown vegetables watered with groundwater

Potential Exposure Routes (shown in figure)

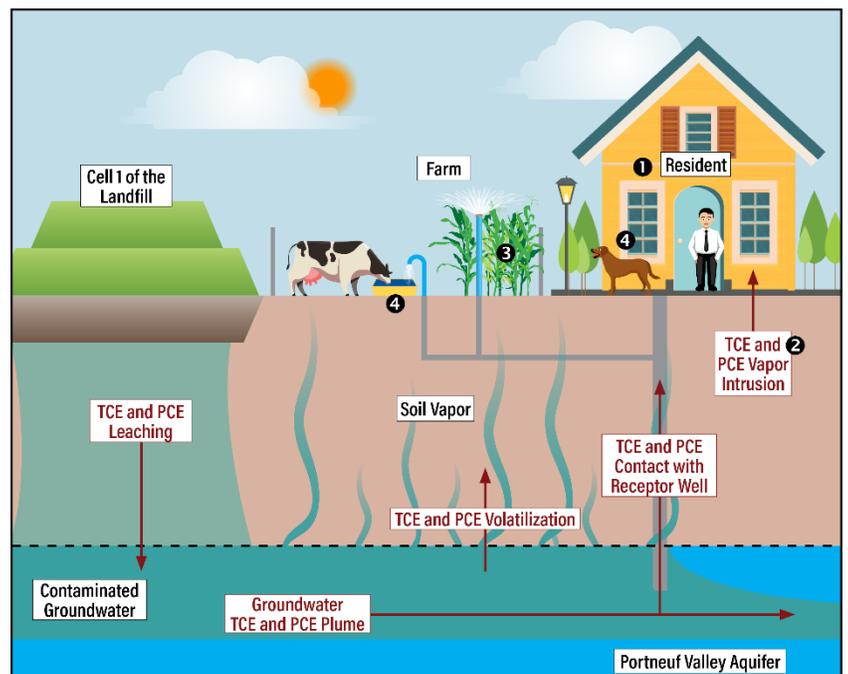
Using contaminated groundwater from a private well may result in the following potential exposure routes shown in the figure:

1. Drinking, breathing, or touching well water
2. Breathing volatile vapors that move upwards through soil towards the surface and into homes by a process called vapor intrusion
3. Eating fruits and vegetables watered with well water
4. Livestock and other animals drinking well water

We compared 2019 groundwater results to EPA risk-based concentrations for each exposure route (see inset box and figure). The risk assessment concluded that TCE and PCE in some PVA private wells pose a risk to human health and the environment.

12. What is an “unacceptable risk”?

The U.S. EPA sets “unacceptable risk” based on extensive studies on how chemical exposure affects human and environmental health. “Unacceptable risk” is the amount of a chemical that may result in a potential for cancer and other health problems.



FAQs No. 13 through 17 describe the “unacceptable risk(s)” we looked at as part of the risk assessment. General information on how we determine human and ecological (animal and plant) health risk is as follows:

- For carcinogens (chemicals known to cause cancer), we study the probability of an individual developing cancer over a lifetime after being exposed to a chemical. “Unacceptable risk” is defined as more than 1 in 10,000 people exposed developing cancer.
- For non-carcinogens (chemicals that do not cause cancer, but can still be harmful to health), we compare how much exposure occurs for a particular risk route to the amount of exposure that does not cause health problems, otherwise known as the hazard quotient. “Unacceptable risk” is defined as a hazard quotient that exceeds 1, indicating the dose of a chemical is higher than a “safe” exposure level and some concern for non-cancer health effects exists.

General Information on Risk Levels
for carcinogenic and non-carcinogenic chemicals, see the Illinois Environmental Protection Agency Corrective Action Fact Sheet on Risk Basics:
<https://www2.illinois.gov/epa/topics/cleanup-programs/taco/fact-sheets/Pages/risk.aspx>

The risk assessment findings presented in FAQs 13 through 17 are based on comparing the groundwater sampling data collected from domestic wells in 2019 to EPA risk-based TCE and PCE concentrations.

13. Is my child more susceptible to exposure or risk to TCE concentrations in well water?

Yes. Children are often more heavily exposed to environmental chemicals than adults. The risk-based screening level we used considers exposure to sensitive receptors, including children. The 5 µg/L MCL protects children.

14. Can drinking well water from my property affect my health?

The non-carcinogenic risk from drinking well water, and using it for other household purposes, like showering and cooking, was higher than a “safe” exposure level in 7 of the 54 domestic wells sampled in the PVA. For PCE and TCE, the “safe” level is less than 5 µg/L. Drinking well water from these 7 wells, and using it for household purposes, may be a health risk. The property owners and tenants were notified if their well posed a risk.

15. Are any vapors in my home pose a risk to my health?

The non-carcinogenic risk from breathing volatile vapors from contaminated groundwater was just above the “safe” exposure level in 4 domestic wells of the 54 domestic wells sampled in the PVA. We observed a maximum hazard quotient of 2, which means there is a possibility for negative effects, especially in sensitive populations like the elderly, children, and immuno-compromised. Property owners and tenants were notified if a risk to vapor intrusion exists.

16. Does watering my pet/livestock with well water or using well water in my pond pose a risk to pet, livestock, and fish health?

No. Using well water as a drinking water for pets, livestock, and fish is unlikely to pose a risk even at the highest TCE and PCE concentrations observed in domestic well water from the PVA. We looked at ecological risk screening levels for multiple mammals and fish during the risk assessment. We determined using domestic well water for pets, livestock, and fish is considered safe because the highest TCE and PCE concentrations were less than ecological risk screening levels.

17. Does eating vegetables and other garden plants watered with well water pose a risk to my health?

No. Agricultural and garden plants absorb very small amounts of TCE and PCE. Irrigation volatilizes the TCE and PCE prior to uptake. Therefore, very little PCE and TCE will remain in water used by garden plants. Any TCE and PCE absorbed by plants will move through their leaves into the air. Consuming vegetables irrigated with well water is considered safe.

2019 Sampling Results Findings

18. How can I get previous sampling results for my well?

Bannock County has a repository of well sampling results and notifications. Place a request with either the County or the environmental contractor. Contact information is provided on the last page.

19. Do I need to take action if TCE and PCE are detected in well water but are below EPA and Idaho DEQ drinking water and water quality regulatory standards?

No. We do not recommend taking action if TCE and PCE concentrations are below standards. Regulatory standards represent the maximum allowable level (MCL) of TCE and PCE deemed safe in drinking water.

20. Will my well be monitored to see if there are any changes in TCE and PCE concentrations?

Yes. We sample wells yearly at locations within or near areas with historical impacts from TCE and PCE in groundwater within the PVA. Multiple sampling events help identify any changes in concentrations and verify risk assessment findings. Wells will continue to be sampled yearly during ongoing cleanup efforts.

21. What happens if TCE and/or PCE are detected in well water above EPA and Idaho DEQ regulatory standards?

We have told, and will continue to tell, property owners and tenants if the TCE and/or PCE well concentrations in their wells are above regulatory standards. Well water containing TCE and/or PCE above regulatory standards (i.e. MCLs) should not be used for drinking water. An option to connect to City of Pocatello (City) water is available.

22. Will my well be shut down if TCE and/or PCE are identified?

No. Neither Bannock County nor IDEQ have the authority to shut down private wells. The County will perform periodic well sampling for TCE and PCE. The sampling results are provided to tell property owners about water quality conditions, but no action is required by law.

Connection to City Water

23. Is there a possibility of returning to City water in the future?

Yes. The City of Pocatello provides hookup to City water for drinking water use. Any property owner within the impacted area can connect to City water at any time.

24. Will a property owner be required to go on City water?

No. A property owner will not be required to hook up to City water. Private wells with groundwater TCE and PCE concentrations above regulatory standards should use an alternate drinking water source.

25. Will a property owner/tenant be reimbursed for fees associated with hooking up to City water?

No reimbursement of City water hookup fees is currently available. Bannock County is working with the City of Pocatello to potentially reimburse City water usage fees to property owners with wells contaminated above regulatory drinking water standards. The County will keep property owner/tenants informed on this initiative.

Well Treatment

26. What are the options to install treatment if a TCE and PCE concentration in my well is above the EPA and Idaho DEQ regulatory standard?

Granular activated carbon and reverse osmosis are TCE and PCE treatment options you can install at the top of your well. Granular activated carbon removes TCE and PCE by absorption. Reverse osmosis is a filter-based system.

27. Do I need to install treatment if the well is not used for drinking water, cleaning, and cooking purposes?

A property owner is not required to install well head treatment. Using contaminated well water for irrigation and gardening poses a low risk, below ecological risk-based thresholds.

28. Who is responsible for installing and paying for well treatment?

Installing well head treatment is voluntary. The property owner/tenant would be responsible for installing and paying for well treatment. No reimbursement options are currently available.

General Information on Well Treatment

- Idaho DEQ Private Wells resource for well owner’s responsibility and well head protection: <https://www.deq.idaho.gov/water-quality/ground-water/private-wells/>
- Minnesota Department of Health resource for water treatment using carbon filters: <https://www.health.state.mn.us/communities/environment/hazardous/topics/gac.html>

Property Sale

29. If I sell or rent my property, what information should I give potential buyers or renters?

Property owners should give a potential buyer or renter their private well sampling results and tell them about periodic sampling activities. Property owners should inform renters of restricted uses.

Site Contacts

For more information on the environmental work at the Fort Hall Mine Landfill, please call or email:

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Glossary and Acronyms

- COPC – chemicals of potential concern, a chemical that may or may not cause risk or negative effects to human and environmental (including animals) health
- DEQ – Idaho Department of Environmental Quality, state regulatory agency
- EPA – U.S. Environmental Protection Agency, federal regulatory agency
- MCL – maximum allowable level of a pollutant (chemical or COPC) in drinking water
- PCE – tetrachloroethylene, a dry cleaning and metals degreasing solvent and site COPC
- PVA – Portneuf Valley Aquifer, sole drinking water source for most residents in the Pocatello municipal and surrounding areas within Bannock County
- ppb – parts per billion, a unit of measure of COPC concentrations and equal to $\mu\text{g/L}$
- TCE – trichloroethene, a metals degreasing solvent and site COPC.
- $\mu\text{g/L}$ – micrograms per liter, a unit of measure of COPC concentrations and equal to ppb

