



North Central Groundwater Investigation and Clean-up Project Former Plymouth Tube Site May 2016



History and Discovery of Contamination at the Plymouth Tube Site

In 2000, the Gila River Indian Community (Community) Department of Environmental Quality (DEQ) discovered trichloroethylene (TCE) and other volatile organic compounds (VOCs) in one of its groundwater monitoring wells near I-10 and Wild Horse Pass Boulevard in District 4. TCE is a common groundwater contaminant throughout the United States and has impacted several other areas in Arizona including Scottsdale, Phoenix, Goodyear, and Tucson. Since 2000 the DEQ has installed 25 groundwater quality monitoring wells throughout the project area to further define the groundwater contamination and to determine the location of the contamination source. In 2006 a source of contamination was detected at the former Plymouth Tube industrial facility. Due to the magnitude of the project and the potential impact to the Community resources, the Community requested assistance from the U.S. Environmental Protection Agency (EPA). In 2007 a joint GRIC/EPA management team was created to oversee all investigations and cleanup. Since then, Plymouth Tube has been conducting extensive environmental investigations and cleanup.

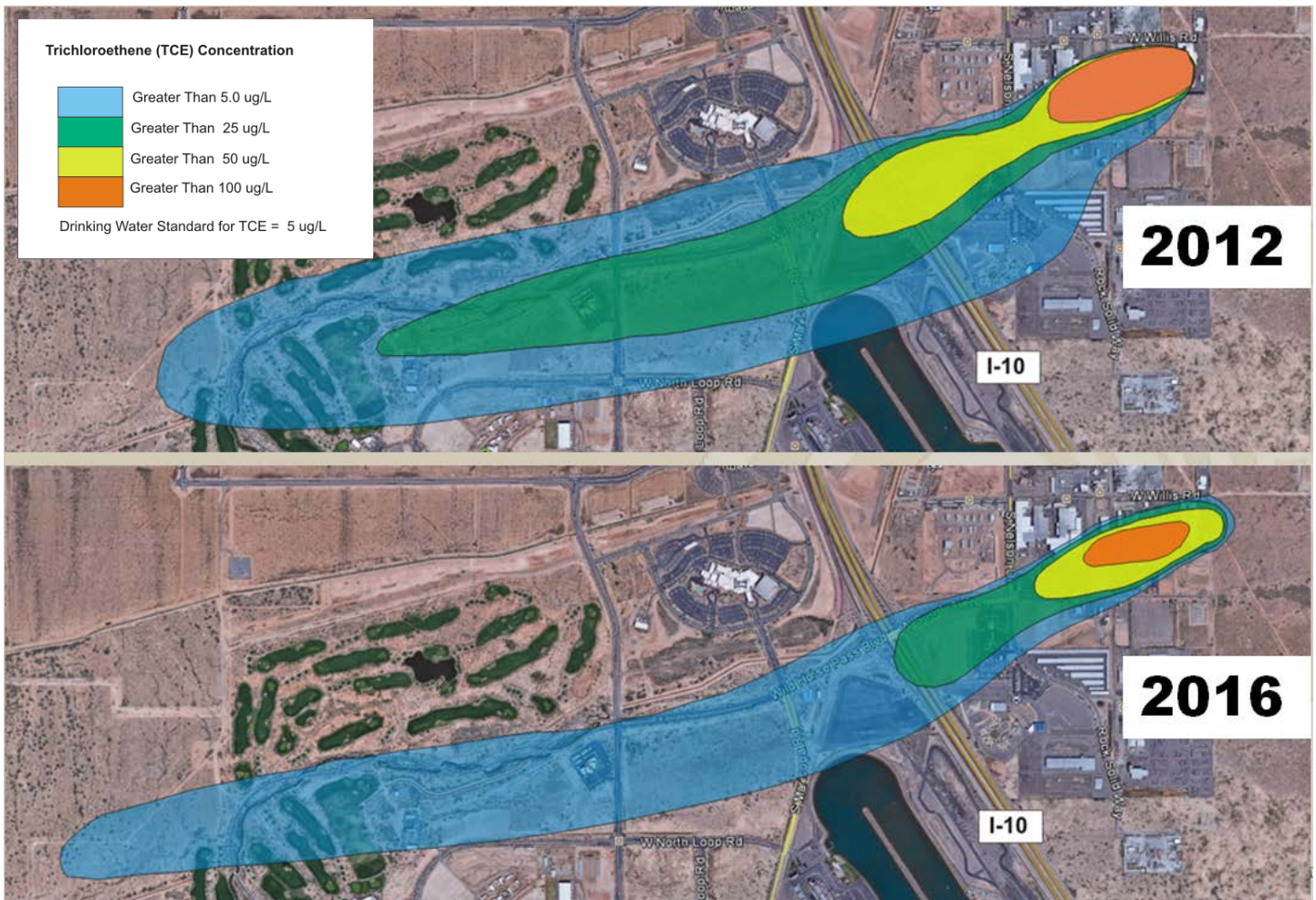


Figure 1. Changes in estimated concentrations of TCE in groundwater between 2012 and 2016 after implementing interim clean-up measures at the former Plymouth Tube site.

What is TCE?

Trichloroethylene is a manmade chemical and was typically used as an industrial solvent to remove grease from metal parts in commercial applications and to clean electronic circuit boards. TCE can also be found in some household products, including paint removers, adhesives, and spot removers.

Have any drinking water supplies been compromised by the TCE?

At this time, drinking water wells in the area of the TCE contamination have been tested and do not contain TCE or any other volatile organics above federal standards (EPA drinking water standard for TCE is 5 µg/l). The DEQ will continue working with the Community's Department of Public Works and private well owners to monitor drinking water sources in the area.

How did the TCE get into groundwater?

TCE was a very common industrial solvent during the 1970's and 1980's. When TCE is released to the ground surface it can seep through the soil and eventually end up in groundwater. The actual cause of the release is still under investigation. In addition to TCE, tetrachloroethylene (PCE), 1,1-dichloroethylene (1,1-DCE), and 1,4-dioxane have been detected in groundwater at this site.

What has been involved in the investigation?

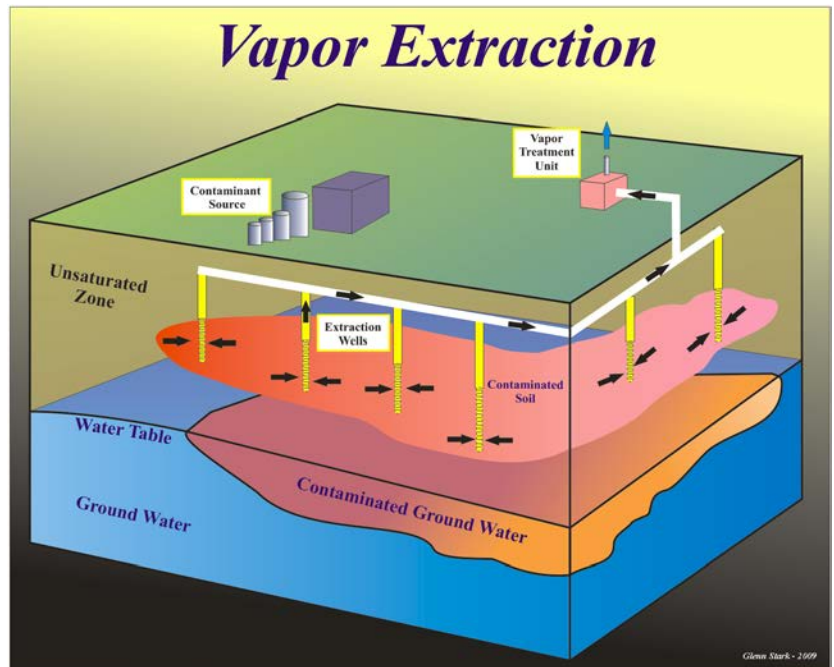
A comprehensive investigation has been conducted by both the DEQ and Plymouth Tube. All of Plymouth Tube's investigations were under the direct supervision of the EPA and DEQ. The investigation has included the sampling and monitoring of soils, unsaturated zone, groundwater, and indoor air quality. The new tenants of the Plymouth Tube building and the EPA have conducted indoor air quality monitoring to protect human health of its workers.

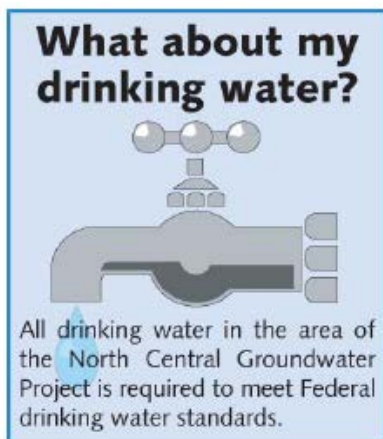
Has Plymouth Tube conducted any cleanup during the investigation phase?

Yes, Plymouth Tube has removed approximately 3,150 pounds (262 gallons) of volatile organic compounds from the source area using soil vapor extraction. Additionally, about 110 pounds (10 gallons) of volatile organic compounds have been removed from the groundwater using an extraction and treatment system. These corrective measures have been very effective in removing the contamination. Concentrations of VOCs have been significantly reduced in most of the monitoring wells.



Figure 2. Drilling and installing a groundwater monitor well to evaluate the quality of groundwater.





Are there any other health risks?

Because residual VOCs in the soil and groundwater can sometimes migrate into structures, Plymouth Tube prepared a Human Health Risk Assessment that addresses this potential pathway. Modeling of the potential pathway utilizing the highest levels of soil gas associated with the site, and disregarding the operation of the vapor extraction system, indicated that a potential for trace levels of vapor intrusion could exist. Though in 2008, before installation of the vapor extraction system Kaiser Aluminum sampled the indoor air and based upon occupational health standards found no VOCs. Additionally, in May, 2016 EPA independently sampled the indoor air at the current Kaiser facility to assure human health protection. As the existing vapor extraction system is rolled into a final remedy for the site, additional indoor air sampling will be conducted as part of that remedy.

What are the next steps?

In 2015, Plymouth Tube completed a comprehensive investigation report. This report is the foundation for Plymouth Tube's proposed "Corrective Measures Study Report" which is under review by the EPA and DEQ. This document depicts the next proposed steps for the project cleanup process. Plymouth Tube is proposing to conduct additional remediation of groundwater using In-Situ Chemical Oxidation (ISCO) to remove remaining hot spots. After the ISCO treatment is complete, the project will undergo Monitored Natural Attenuation (MNA). As necessary, Plymouth Tube will continue with soil vapor extraction. Due to the chemical properties of TCE and the impracticability to remove all residual TCE contamination at the site, small amounts of TCE will likely remain in the environment for many years. Therefore, the EPA and DEQ will continue to monitor the site for many years into the future.

If you have questions, please contact:

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With an appointment, project documents can be viewed at the DEQ in Sacaton.

Please submit comments to the EPA on the [Corrective Measures Study Report](#) and proposed remedies by **July 15, 2016**. Please send written comments to:

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