

CITY OF PERRYTON WELL #2 (OCHILTREE COUNTY) PERRYTON, TEXAS



EPA REGION 6
CONGRESSIONAL
DISTRICT 13

EPA ID# TX0001399435
Site ID: 0605015

Contact: Vincent Malott
214-665-8313

Updated: March 2012

Background

The Site is located within the City of Perryton in the extreme northern most part of the Texas panhandle in Ochiltree County. The City of Perryton has a population of approximately 7,758 people. Well No. 2, which has been plugged and abandoned, was located on a 1.7 acre maintenance yard used by the City of Perryton Utility Department. The maintenance yard is located near the northwest corner of Amherst Street and Santa Fe Ave. Well No.2, which was a public drinking water supply well contaminated by carbon tetrachloride, was taken out of service in June 1989 when the Texas Department of Health originally documented the contamination.

The Ogallala aquifer is the principal source of drinking water for the City of Perryton. The public water supply system consists of 11 or more wells completed in the Ogallala aquifer. Well No. 2 has a total depth of 420 feet and a static water level of 290 feet. Within the Site, the Ogallala has been divided into an upper and lower flow zones. The principal production zone for the City of Perryton is the lower flow zone, while the upper flow zone produces a minimal amount of water and is isolated from the lower zone. Ground water flow in the lower zone is to the south-southeast.

The selected remedy was a ground water pump and treat (P&T) system composed of two extraction wells and an air stripper treatment plant (ASTP) to remove the CTC from the extracted ground water. EPA conducted a shut-down of the ground water pump and treat system to evaluate potential contaminant rebound in the extraction wells after the July 2007 sample results confirmed that ground water in the lower zone had been cleaned up. The first rebound sampling event occurred on October 29, 2007 and the 2nd event was completed on November 28, 2007. The October 29th sample results indicated no change in extraction well MW-17EX, but Well #2 rebounded back to concentrations similar to pre-cleanup conditions. Following the November 28th sampling, Well #2 was re-started to ensure that the lower zone does not become contaminated again. The results for Well #2 indicated that contamination from the upper zone of the Ogallala was migrating downward along the gravel packed annulus of Well #2 and contaminating the lower zone. Continued operation of Well #2 after 2007 was necessary to prevent recontamination of the lower zone. The two extraction wells were sampled again during the week of January 7, 2008, and well MW-17EX contained 1 µg/L of carbon tetrachloride (CTC) and Well #2 contained 3.6 µg/L of CTC.

Two additional extraction wells were completed adjacent to City Well #2, targeting two separate intervals in the upper 90 feet of the Ogallala aquifer. Well drilling, construction, and initial development were completed in December 2006 followed by additional development of each well in January 2007. The two new wells did not produce a sufficient quantity of water to operate as extraction wells and will be used instead as ground water monitoring wells.

Current Status

The site is in the 8th year of the 10-year long-term remedial action and has achieved cleanup of a carbon tetrachloride plume in the main production zone in the Ogallala aquifer. The ground water pump and treat

system is currently shut-down. The upper zone in the Ogallala aquifer, which is not considered to be a productive zone for water supply, has not been cleaned up. EPA signed a Record of Decision Amendment in September 2011 that includes a technical impracticability (TI) waiver for the carbon tetrachloride and nitrate cleanup standards in the upper zone of the Ogallala aquifer. The surface boundary of the TI Zone is presented in the figure below. A quarterly ground water sampling event was completed in February 2012, and the next event is planned for the month of May 2012.

A vertical pathway for contaminant migration from the upper perched zone to the lower production zone in the Ogallala aquifer was present along the Well #2 annulus. EPA completed the plugging and abandonment of Well #2 in January 2011. Successful abandonment of Well #2 will prevent recontamination of the lower zone and allow decommissioning of the ground water treatment plant. A site-wide ground water sampling event was completed in August 2011, and no changes were detected in the carbon tetrachloride (CTC) concentrations since the last site-wide sampling events in April 2008 and July 2007. The lower zone wells all remained below the cleanup goal of 5 micrograms per liter ($\mu\text{g/L}$ or ppb).

Benefits

The pump and treat system has cleaned up the main production zone of the Ogallala aquifer. Successful abandonment of Well #2 will allow unrestricted use of the aquifer, the source of drinking water for the City of Perryton.

National Priorities Listing (NPL) History

NPL Inclusion Proposal Date:	September 29, 1998
NPL Inclusion Final Date:	January 19, 1999
HRS Site Score:	50

Wastes and Volumes

The cleanup goal for carbon tetrachloride in the ground water is 5 ppb. The cleanup goal has been achieved for the lower zone in the Ogallala aquifer. The upper flow zone still has contamination above the cleanup goal but behaves as a perched zone and not a part of the primary water production zone in the Ogallala. The Ogallala aquifer supplies drinking water to private residences and municipalities as well as water for irrigation across West Texas. The properties located above the contaminant plume are not affected by the ground water contamination.

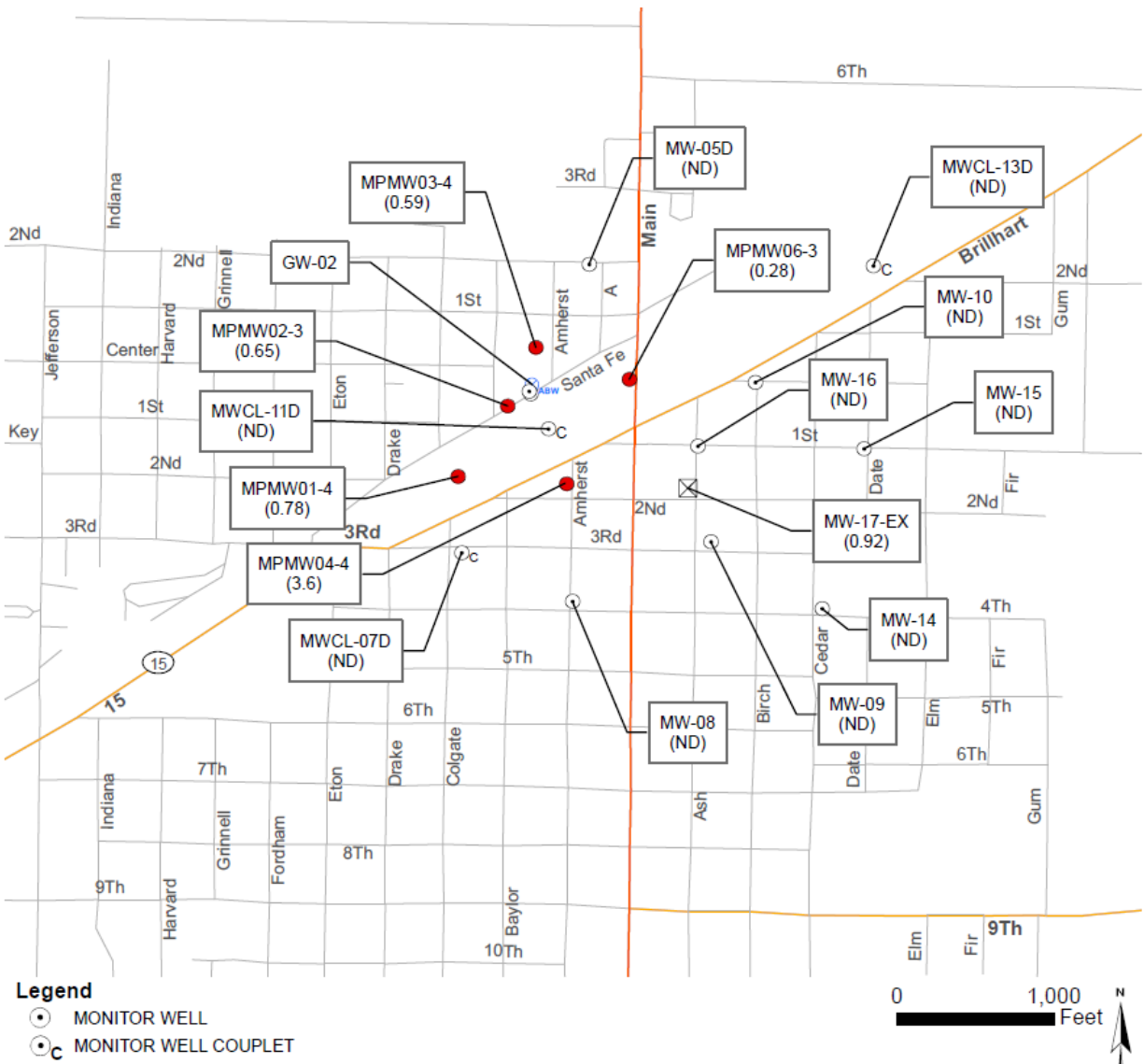
Health Considerations

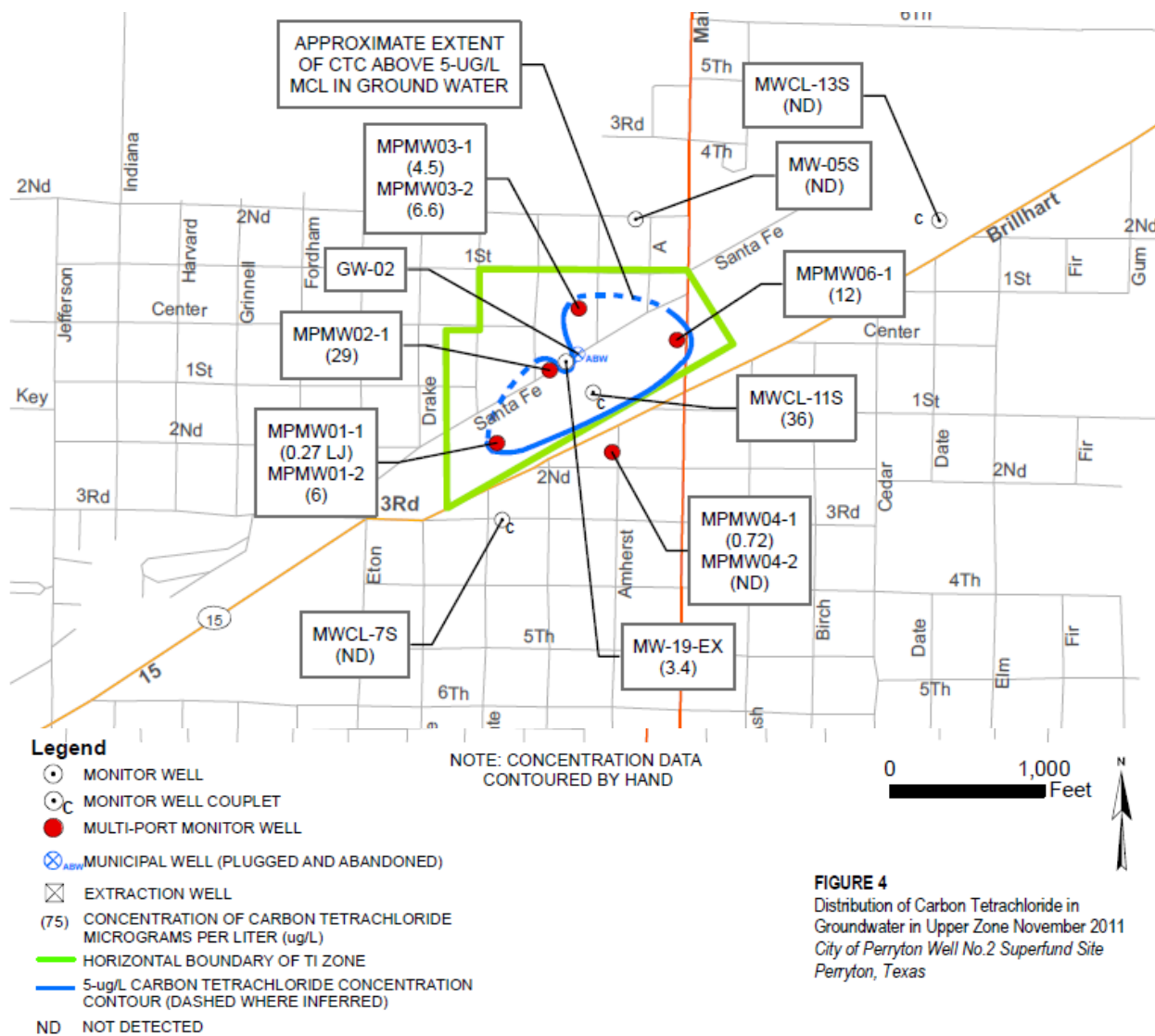
The treatment system removed the carbon tetrachloride from the extracted ground water to concentrations below the detection limit of the analyses performed on the water samples. The remaining city water supply wells are not threatened by the contaminant plume and are routinely monitored as part of the requirements of the Federal Safe Drinking Water Act.

EPA completed the five-year review process on September 9, 2008. The report is posted on the EPA Region 6 website and a copy is available at the local repository in Perryton. The five-year review determined that the remedy is currently protective of human health and the environment. The remedy will attain long-term protectiveness after the issues and recommendations identified in the First Five-Year Review Report have been addressed. The issues are related to the presence of contamination in an upper perched zone of the aquifer beneath the source area and the actions needed to prevent future site exposure. The Second Five-Year Review is scheduled for completion by September 2013.

Site Map

The site map below illustrates the site-wide monitoring well network that was used to define the extent of the carbon tetrachloride plume in the Ogallala aquifer. The next two maps labeled figures 4 and 5 illustrate the boundaries of the technical impracticability zone for the upper zone and lower unit 2 of the Ogallala aquifer, and the extent of the remaining carbon tetrachloride contamination in the two zones





Record of Decision (ROD)

An Interim Record of Decision was signed on September 29, 1999 and a final Record of Decision was signed on September 26, 2002. An amendment to the Record of Decision was signed on September 29, 2011.

Community Involvement

EPA completed the five-year review process on September 9, 2008, and a public announcement was posted in the Amarillo and Perryton newspapers on September 12th and 14th, respectively.

Information Repository: Perry Memorial Library, 22 S.E. 5th Street, Perryton, TX 7900-3112

Site Contacts

EPA Remedial Project Manager:	Vincent Malott	214-665-8313
EPA Site Attorney:	Elizabeth Pletan	214-665-8525
EPA Community Involvement Coordinator	Jason McKinney	214-665-8132
EPA Regional Public Liaison:	Donn Walters	214-665-6483
TCEQ Project Manager	April Palmie	512-239-4152
EPA Superfund Region 6 Toll Free Number:		1-800-533-3508