

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



EPA REGION 6
CONGRESSIONAL
DISTRICT 13

EPA ID# TX0001399435
Site ID: 0605015

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Current Status

EPA is reviewing bid proposals for the installation of a city municipal well to replace Well #1. The Texas Commission on Environmental Quality (TCEQ) has approved the well install design plans. The City of Perryton will be abandoning Well #1 in May 2009. EPA is also finalizing the plans for the plugging and abandonment of Well #2. Installation and testing of the new water supply well should be completed by June 2009, followed by abandonment of Well #2 in July 2009. A vertical pathway for contaminant migration from the upper perched zone to the lower production zone in the Ogallala aquifer is present along the Well #2 annulus. Successful abandonment of Well #2 will prevent recontamination of the lower zone and allow decommissioning of the ground water treatment plant.

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. 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 site-wide ground water sampling event was completed the week of April 7, 2008, and no changes were reported in the carbon tetrachloride (CTC) concentrations in the ground water since July 2007. The lower zone wells all remained below the cleanup goal of 5 micrograms per liter ($\mu\text{g/L}$ or ppb). The July 2007 sample results confirmed that the cleanup goals have been achieved for the lower zone in the Ogallala aquifer, which is the primary production zone for water supply wells in the area.

EPA conducted a shut-down of the ground water pump and treat system to evaluate potential contaminant rebound in the extraction wells. The two extraction wells were scheduled for monthly sampling during the shut-down to evaluate contaminant trends in the ground water. 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 indicate that contamination from the upper zone of the Ogallala is migrating downward along the gravel packed annulus of Well #2 and contaminating the lower zone. Continued operation of Well #2 will prevent recontamination of the lower zone. Well MW-17EX will remain shut-down and there are no current plans to re-start this well. The two extraction wells were sampled again during the week of January 7, 2008, and well MW-17EX contained 1 $\mu\text{g/L}$ of carbon tetrachloride (CTC) and Well #2 contained 3.6 $\mu\text{g/L}$ of CTC.

The ground water pump and treat (P&T) system is composed of two extraction wells and an air stripper treatment plant (ASTP) to remove the CTC from the extracted ground water. When the system is operating, the treated water is piped to the nearby City of Perryton North Ground Storage Tank where the water is blended with other ground water as part of the City water supply system. EPA monitors the

operating system through quarterly sampling of the treated water from the ASTP. The ASTP is visually inspected bi-weekly and the daily operations are monitored remotely.

The size of the CTC contaminant plume and the CTC concentrations in the lower zone of the Ogallala aquifer has decreased across the site since the P&T system has been in operation. 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. EPA will completed an evaluation in 2009 on whether the upper zone is technically impracticable to clean up and what other options are available to assist in site closure.

Benefits

The P&T system has prevented further migration of the contaminant plume in the Ogallala aquifer and CTC concentrations continue to decline across the site. Remediation of the plume 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

Site Description

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 is 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 is a public drinking water supply well contaminated by carbon tetrachloride. The well 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 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. The upper flow zone is a perched interval. Ground water flow in the lower zone is to the south-southeast.

Wastes and Volumes

The cleanup goal for CTC 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 is considered 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 ASTP can remove the CTC 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.

