

Former Y Station Petroleum Storage Tank Site Characterization and Remediation

Clovis, New Mexico

CLIENT

New Mexico Environment
Department Petroleum
Storage Tank Bureau

HIGHLIGHTS

- Remediating a direct threat to municipal water supply in Clovis
- Utilized sonic drilling methodologies to collect discrete soils samples for accurate characterization of lithology and soil contamination
- Dual phase extraction system will remediate a 300-foot vertical thickness of impacted soil in the vadose zone and address an extensive dissolved-phase contaminant plume
- Treated water will be discharged to sanitary sewer, which conveys water through a direct potable reuse system
- Facilitated public meetings, negotiated water rights agreements, and coordinated with private and public stakeholders

Contamination associated with the Former Y Station site was discovered during investigation of a fuel release identified during a tank pull in 2011 at an active Allsup's service station north of the site. Ten wells were installed from 2012 to 2016 that identified a large dissolved-phase hydrocarbon plume south of the Allsup's. The Former Y Shamrock station operated from the 1950s through 1981, first with a series of above ground tanks and then with underground tanks. Former fuel dispensing facilities were located under what is currently the intersection of Prince Street and Commerce Way.



Remediation components include a 1,000-cfm thermal oxidizer and modular vapor extraction and groundwater treatment equipment.

DBS&A was awarded a State Lead remediation services contract in 2018 following a competitive bid process. The site is considered a high priority site due to threats to municipal drinking water supply in Clovis, New Mexico, obtained from regional groundwater present within the Ogallala Aquifer. DBS&A initiated an extensive site investigation program in 2019 that resulted in installation of nine wells to a depth of approximately 365 feet below ground surface. Eight 5-inch-diameter monitor/groundwater extraction wells were installed to define the lateral extent of contamination. Four multi-zone remediation wells were installed in the vicinity of the former source area to define the vertical extent of contamination and facilitate future remediation, with three different screen intervals installed across the vadose zone and the water table. Sonic drilling methods were utilized to provide accurate lithologic characterization and produce discrete soil samples necessary to delineate soil contamination in the vadose zone. Sonic drilling methods were the key to characterizing the Former Y Shamrock as the primary point of release. Due to the depth to water, a Bennett Pump owned by DBS&A was initially used for collection of groundwater samples. Following an extensive pilot testing demonstration program, DBS&A is now using HydraSleeve sampling devices for groundwater sample collection in lieu of the Bennett Pump.

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Aquifer testing was also performed to characterize key aquifer parameters and project reasonable pumping rates during remediation. Saturated hydraulic conductivity was performed at the DBS&A Soil Testing Laboratory to confirm aquifer parameters determined with aquifer testing.

A permanent remediation system was designed in 2021 that utilizes dual phase extraction technology. Soil vapor is extracted from multiple screen intervals and routed to a 1,000-standard cubic feet per minute (scfm) thermal oxidizer for treatment prior to discharging to atmosphere. Extracted groundwater (20 gallons per minute from up to 9 wells) is treated with diffused aeration technology and discharged to the City of Clovis sanitary sewer, which conveys water through a direct potable reuse system. DBS&A oversaw construction of that remediation system in 2022. We have been operating the remediation system under a new contract since November 1, 2023.

Activities at this site have required coordination with multiple stakeholders: from neighborhood residents to small businesses to big box retail stores. DBS&A worked with individual property owners, multiple lawyers, and several corporate real estate directors. Wells were installed in residential streets and City right-of-way, in large parking lots, and in one case seven feet from the front door of a small business. DBS&A worked with all the affected property owners to minimize impacts, while maximizing benefit to the community by remediating the direct threat to municipal water supply in Clovis. DBS&A also worked closely with the City of Clovis to facilitate multiple public meetings to disseminate information about the contamination and cleanup.

DBS&A negotiated a temporary water rights lease between the NMED PSTB and the City of Clovis to facilitate the discharge of treated water. With the water rights lease in place, DBS&A applied for a permit from the New Mexico Office of the State Engineer to temporarily change the point of diversion, place, and purpose of use of groundwater. This permit has been approved.



The drill rig was parked seven feet from the front door of a small business to facilitate installation of a critical remediation well.



Overnight drilling was employed to expedite drilling activities in extremely close proximity to a small business.