

## Auto Parts Manufacturer SVE Wells – Detroit, Michigan

**D**TD has completed several horizontal wells at an automobile parts manufacturing facility in the Detroit area. The installations are part of a large-scale cleanup effort that addresses multiple source areas on the property. The wells are being used to remediate volatile organic compounds beneath the facility floor slab.

DTD was originally contacted by GeoTrans, the site consultant, in 2008 and worked closely with their project engineer to refine the well design for constructability and well efficiency. The initial pilot well was installed in March 2009, a 500 foot long dual phase extraction well. This well installation was followed by a shallower, parallel soil vapor extraction well later in the year. After pilot testing of the SVE well, a single production/operational well was installed in the same operable unit in 2010, with another pilot SVE well placed in a different operable unit for additional testing. DTD has installed a total of four horizontal wells at the project site so far, with several more anticipated to be installed.



Preliminary testing for the SVE pilot well demonstrated an efficiency that exceeded the client's expectations. Analysis of data from monitoring wells surrounding the SVE well indicated a radius of influence exceeding 170 feet in some directions, with no less than a radius of 90 feet in any direction. In three months of operation, the pilot SVE well reduced VOC concentrations by 90%. As a result, the design for production wells has been scaled back from an array of several wells to only two in this operable unit. It is anticipated that similar economies will be achieved in other operable units at the site. With cycled operation, it is anticipated that the wells will recover and be able to remove residual levels of VOCs to meet or surpass MCLs.



DTD mobilized our Vermeer 24x40a drilling rig for this project. This rig is well-suited for projects of this size and scope, with a capability to install wells up to 800 foot in length, while maintaining a small equipment footprint on the busy site. The rig is supported by a Vermeer ST750 mud system. All of the equipment, including rig, mud system, and all tooling and drill pipe, is delivered to the project site in a single semi-trailer. Additional support, including a backhoe and forklift, is locally procured.

Steering and navigation for all four bores was challenging. The site is an active factory and portions of all of the bores passed beneath an active loading dock, active assembly lines, and warehousing areas, often with heavy electromagnetic interference. DTD used a DCI Eclipse walkover system for steering and navigation. Electromagnetic interference at the site often required the locating technician to apply experience and interpretive knowledge to determine the path of the drill head. With frequent communication between GeoTrans and the DTD project manager/geologist, all wells were completed to acceptable standards for use. The depths generally had less than a foot of variation from the design elevation in the screened intervals. Horizontal deviations were generally within a few feet of the desired bore path, despite interference and obstructed bore paths.

# Case History—Auto Parts Manufacturer, Detroit, MI

DTD and GeoTrans selected a custom stainless steel casing with high-strength threaded couplers for the well installation. This provided some assurance that the well materials could be installed even if some caving occurred in the pilot bore.

Initial and continuing tests of the wells show promising results for site cleanup, and GeoTrans is evaluating the performance of the new pilot well for potential use in additional wells at the site.

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