Overview

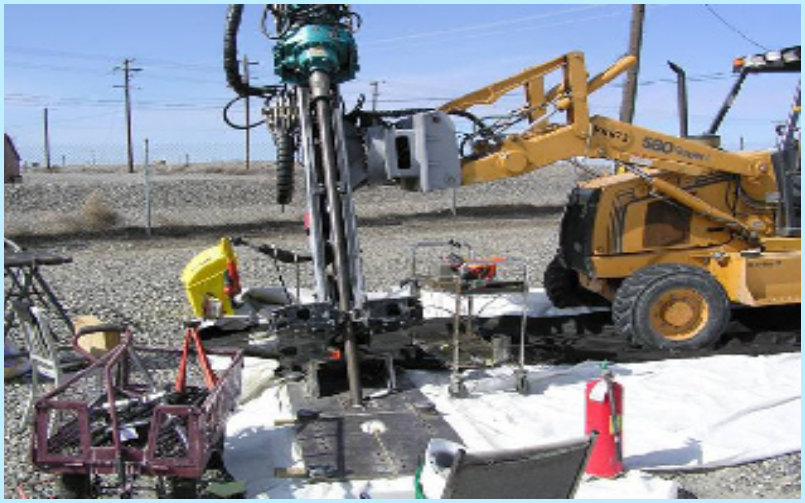
Direct Push Technology

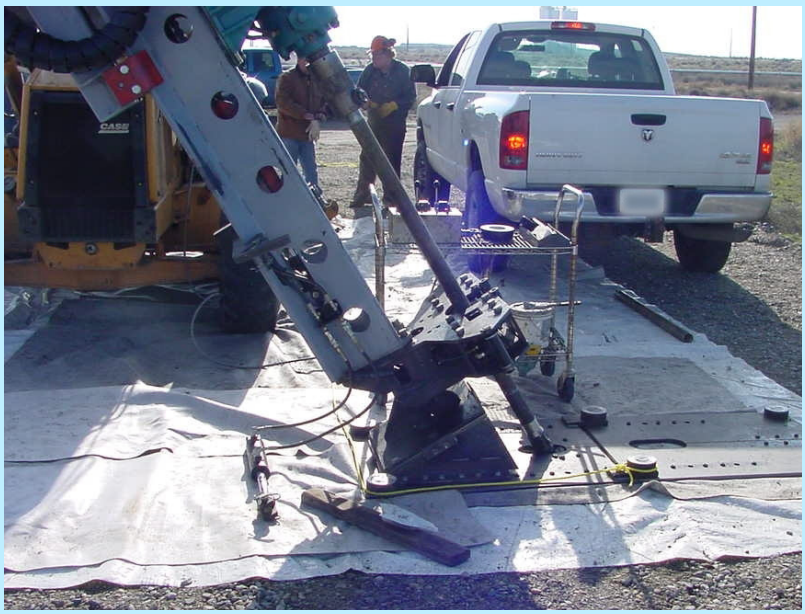
Direct Push is one of the tools we use to understand the contamination in the vadose zone around Hanford's waste tanks so we can take action to protect human health and the environment. The contamination resulted either from historical tank leaks or intentional discharges to the soil. Vadose Zone is the term used to describe the soil between the surface and the ground water table.

One of the technologies recently developed to characterize soil contaminants in the vadose zone is the Hydraulic Hammer, which is a variation of direct push technology that has been used at Hanford for several years. The Hydraulic Hammer drives a hollow pipe into the soil that rotates as it goes. At the end of the pipe is a specially designed hardened tip that can push through gravels and compacted soil. Once at the appropriate depth a soil sample can be obtained or probes can be lowered down the hollow pipe to obtain readings on soil moisture and radiation.

Not only can the hydraulic hammer push deeper into the soil than could otherwise be accomplished by other direct push techniques, it has the added advantage of being able to drive a probe into the soil at an angle, allowing characterization of contaminants beneath tanks and other structures which previously had been beyond our reach. Furthermore, it can be done at less cost than conventional drilling techniques. The technology also allows us to gather soil samples and place instruments in the soil with less risk of exposing workers to contaminants. Another advantage is that it does not generate waste that must be treated and disposed.

The Hydraulic Hammer is mounted on a mobile, lightweight backhoe, making it much lighter and more agile than conventional drilling and some direct push equipment which allows it to reach more locations within the tank farms.





Direct Push technology is one of the tools used by CH2M HILL to understand contaminants in the soil beneath Hanford's underground radioactive waste storage tanks. It pushes a hollow rod directly into the soil vertically or at an angle, allowing the capture of soil samples or the insertion of monitors in areas beneath structures that were previously beyond our reach. It also reduces worker exposure to contaminants and avoids bringing contaminated soil to the surface.

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