

Fact Sheet



Kelly Air Force Base Conversion Agency

Permeable Reactive Barrier

What is it?

Permeable reactive barriers (PRBs) are structures installed underground to treat contaminated groundwater continuously as it flows through the ground. PRBs are designed to intercept a contaminant plume, provide a flow path through a reactive material and break down the contaminants. PRBs accomplish this without requiring pumping of groundwater for treatment at an aboveground facility. In addition, because the treated water stays in the ground, disposal of treated water is not necessary.

How do you build one?

PRBs are put into place by first digging a trench directly across the flow path of contaminated groundwater, like a dam across a river. Then, the trench is filled with a reactive material, chosen based on the type of contamination found at a site, in this case, iron filings. The PRB

is not a barrier to the groundwater, but to the contaminant.

Since PRBs are typically built using heavy equipment, the construction may result in temporary street closures and other construction-related inconveniences. However, once the reactive wall is in place, it is not visible. Monitoring wells are placed around the PRB to ensure that it is working.

How does it work?

As the contaminated groundwater flows through the PRB, the iron filings chemically react with the contaminants, converting them into water, carbon dioxide and minerals.

PRBs are effective in treating the contaminated water that passes through them, so placing them "downstream" from areas of higher concentrations allows a more effective cleanup.

Do You Have Questions?

Call Us

AFBCA Public Information Line,
210-925-0956

Write Us

AFBCA

Community Involvement Office
143 Billy Mitchell Blvd., Suite 1
San Antonio, Texas 78226-1816

