

# Slurry Injection MTBE Remediation in New Jersey

Contaminants	Application Method	Soil Type	Groundwater Velocity
MTBE, BTEX, TBA	Slurry Injection	Fractured Bedrock	0.2-0.3 ft/day

An industrial site in New Jersey was impacted with BTEX, MTBE, and tertiary butyl alcohol (TBA) - a breakdown product of MTBE. The plume, contained in a fractured bedrock aquifer, was approximately 20 feet by 120 feet with a thickness of 20 feet. The contaminant levels in the plume ranged from 10-2,600 ppb. Groundwater flow direction is to the east/northeast at an estimated velocity of 0.2-0.3 foot per day.

Six hundred seventy eight pounds of ORC were injected as a slurry via Geoprobe® according to the array shown in Figure 1. Three sentinel wells (MW-2, MW-8, and MW-10) were used to monitor the degradation rate of the three contaminants. A map of the site detailing the plume location, ORC injection points, and monitoring well locations is presented in Figure 1. The initial concentrations of BTEX were 20.8 ppb, 8.2 ppb, and 10.8 ppb in MW-2, MW-8 and MW-10, respectively. Initial MTBE concentrations were 120 ppb, 140 ppb, and 5 ppb in MW-2, MW-8, and MW-10, respectively. Initial concentrations of TBA were 1100 ppb, 100 ppb, and 100 ppb in MW-2, MW-8, and MW-10, respectively. Following one year of treatment with ORC the levels of BTEX, MTBE, and TBA were measured at each well. In MW-2, BTEX and TBA were reduced to non-detectable levels while MTBE was reduced to 12 ppb (Figure 2). In MW-8, BTEX and TBA were reduced to non-detectable levels with a concurrent reduction in MTBE to 19 ppb (Figure 3). In MW-10, all three contaminant concentrations were reduced to non-detectable levels (Figure 4). The ORC cost for this project was \$6,000.

Figure 1

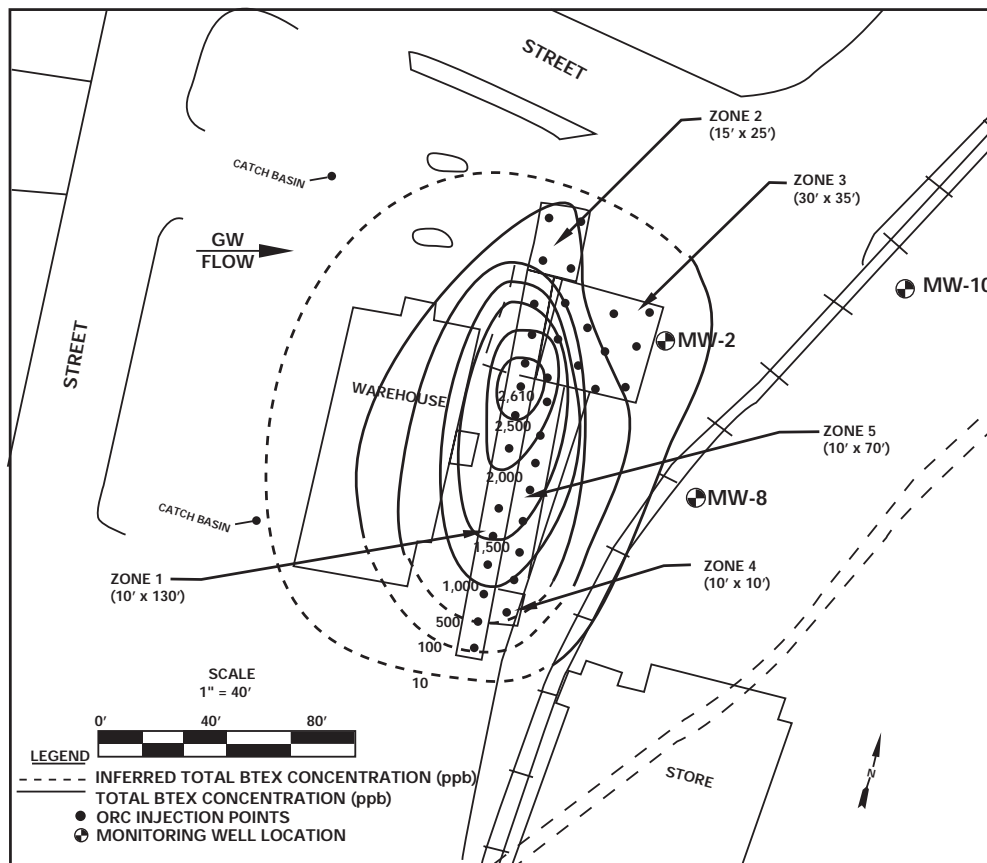


Figure 2

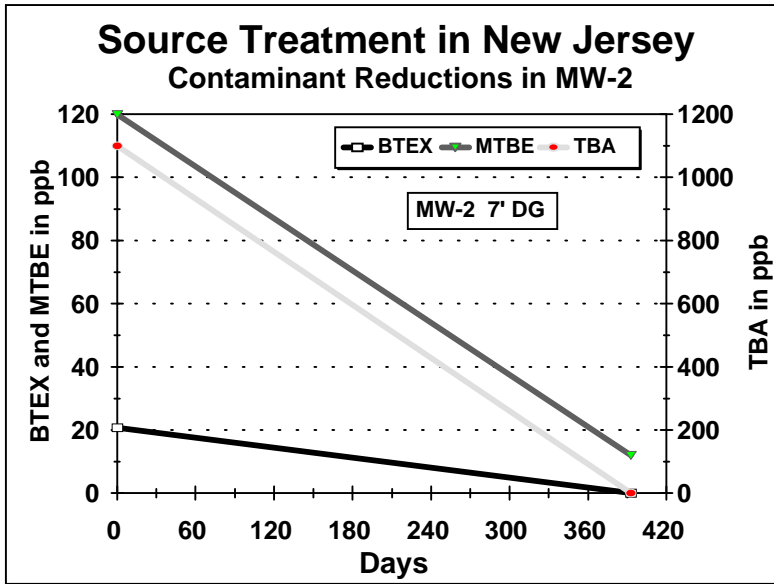


Figure 3

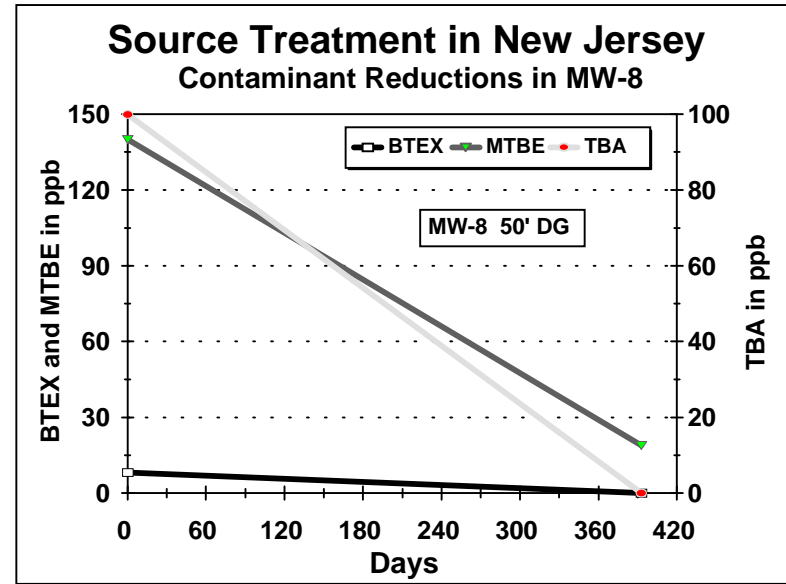


Figure 4

