Slurry Injection MTBE Remediation in Pennsylvania

Contaminants	Application Method	Soil Type	Groundwater Velocity
MTBE, BTEX	Slurry Injection	Silty Sand	0.6-1.0 ft/day

High levels of MTBE and BTEX in groundwater were reported at a service station in Pennsylvania. Contamination was likely due to leakage from a dispenser island and UST. The contaminant plume consisted of MTBE concentrations ranging up to 15,000 ppb and BTEX concentrations ranging up to 54,000 ppb in an aquifer consisting primarily of silty sand. Groundwater flow direction is to the west at a calculated velocity ranging from 0.6 to 1.0 foot per day.

A total of 540 pounds of ORC powder were injected as a slurry via Geoprobe® in the area of the dispenser island. Monitoring well MW-2, located 60 feet downgradient from the dispenser island, was used to monitor the reduction of BTEX and MTBE. A map of the site detailing the treatment area, groundwater flow direction, and monitoring well location is presented in Figure 1. After approximately six months, MTBE and BTEX levels decreased substantially in MW-2. The decrease in contaminant levels is graphically represented in Figure 2.

NOTE: The data set represented in the following graphs shows that BTEX levels decrease before MTBE levels. The ORC Technical Bulletin entitled "Potential for the Bioremediation of Methyl Tertiary Butyl Ether (MTBE)" discusses this mechanism in more detail, pointing out that the presence of background hydrocarbons (i.e. BTEX) may interfere with the metabolism of MTBE. Thus, the impact of ORC on BTEX is an important secondary factor in MTBE bioremediation.

Figure 1

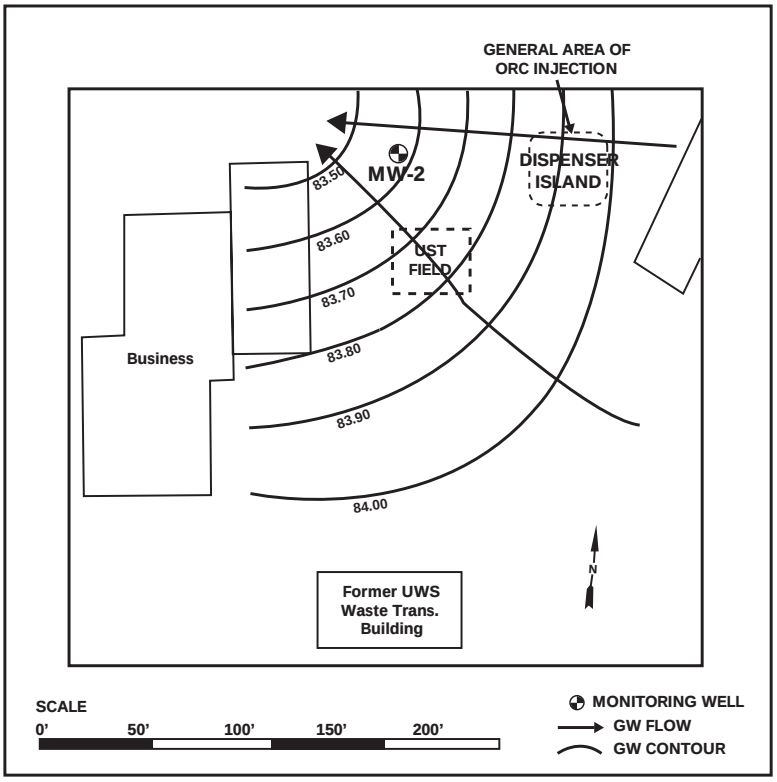
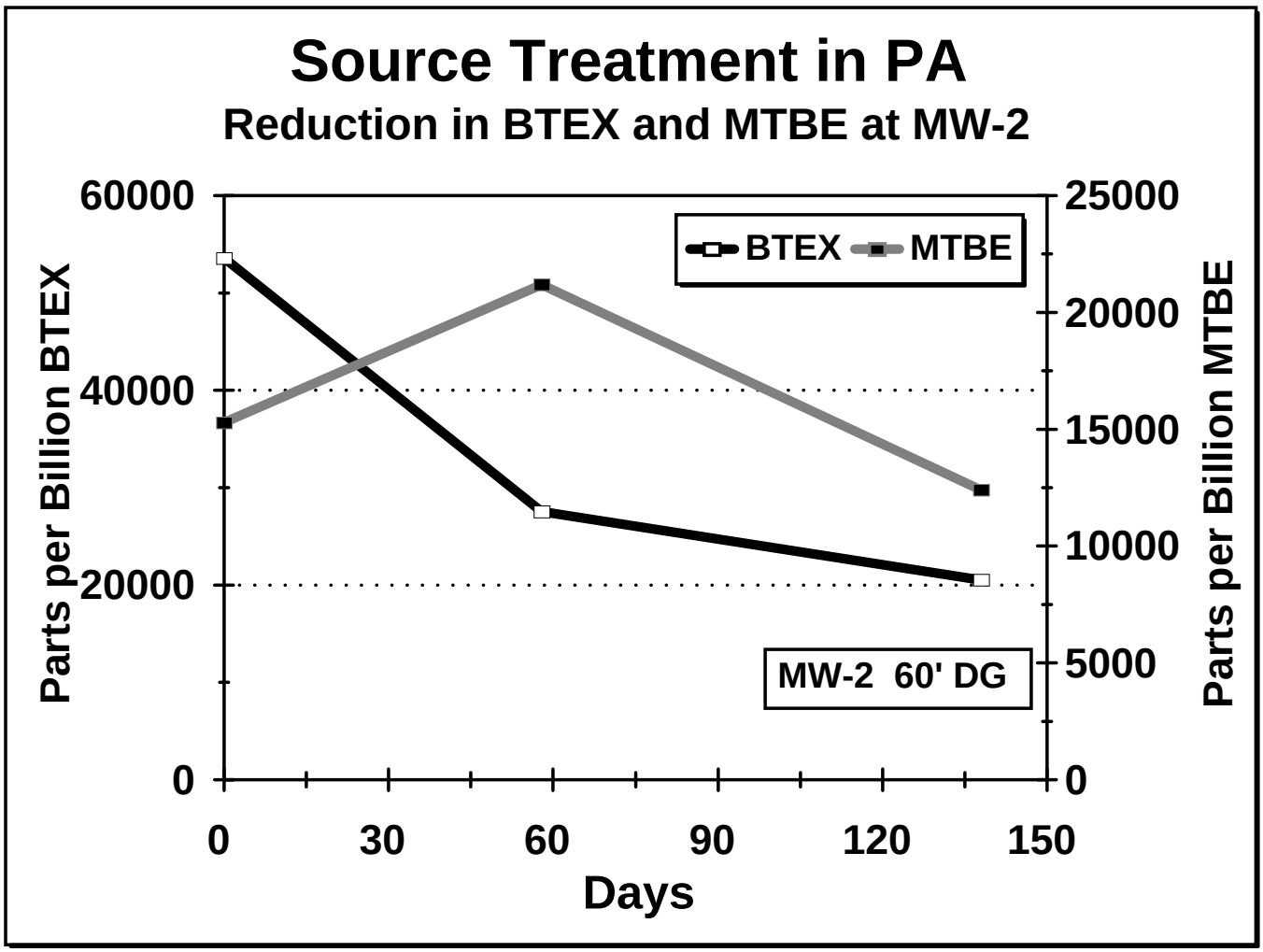


Figure 2



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