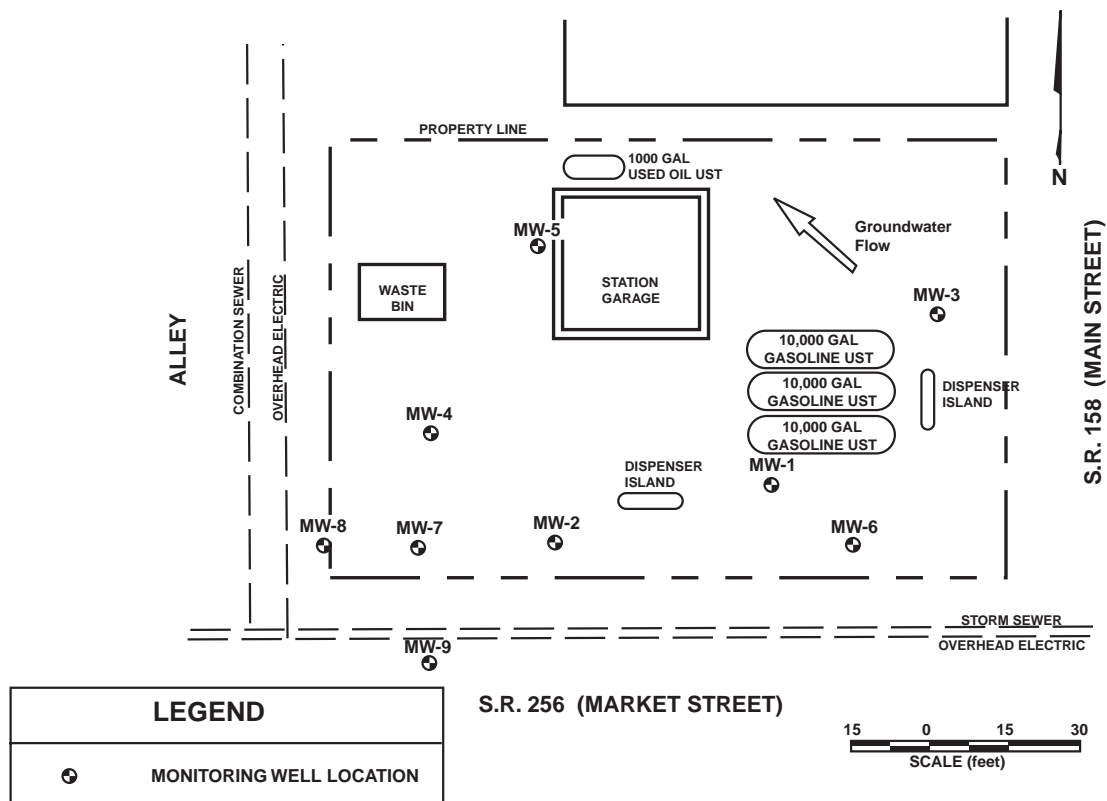


Risk Reduction BTEX Remediation in Ohio

Contaminants	Application Method	Soil Type	Groundwater Velocity
BTEX	Risk Reduction	Clay	0.08 ft/day

Site Description and Remedial Design

A BTEX source area was reduced 94% in 3 months and a wide dispersive pattern of dissolved oxygen was recorded at a BP service station site. The project manager declared that ORC "...significantly increased the concentration of dissolved oxygen" and that "... the diffusion process was an effective means of distribution for dissolved oxygen"*. The addition of dissolved oxygen was also declared to have "...enhanced in-situ biodegradation to the extent that historic BTEX concentrations have been significantly reduced"**. Contamination was localized to a single monitoring well (MW-7) and treated with 7 feet of 4" diameter ORC filter socks. BTEX was reduced as noted and outlying wells, which were not contaminated, had elevated dissolved oxygen levels 18-26 feet from the ORC source well. This was after substantial oxygen was consumed in the source well. At 3 months, levels of dissolved oxygen were still on the order of 17 ppm.



* Advective influence was minimal; the gradient was .002 yielding a ground water velocity of < 1" /day

**Public Document: Progress Report 1 - Dissolved Oxygen Enhancement and Groundwater Monitoring at BP Site #07738 (105 North Main Street, Baltimore, OH). August 2, 1996.

Results

As noted in Figure 1, there was a rapid reduction in BTEX at MW-7 upon the addition of ORC filter socks. All of the BTEX constituents declined substantially and benzene, which is the most actionable, is also presented in Figure 1. Figures 2 and 3 present some of the data on dissolved oxygen for a series of wells over the 3 month experimental period. Figure 2 shows that oxygen levels in the source well (MW-7) increase rapidly and stay elevated even in the presence of BTEX. Figure 3 is of particular importance in that, with reference to the site map, an extensive area of dissolved oxygen influence around the single source well can be seen.

Figure 1

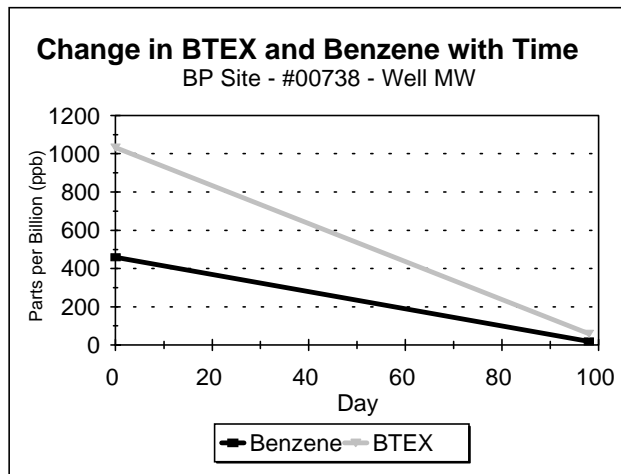


Figure 2

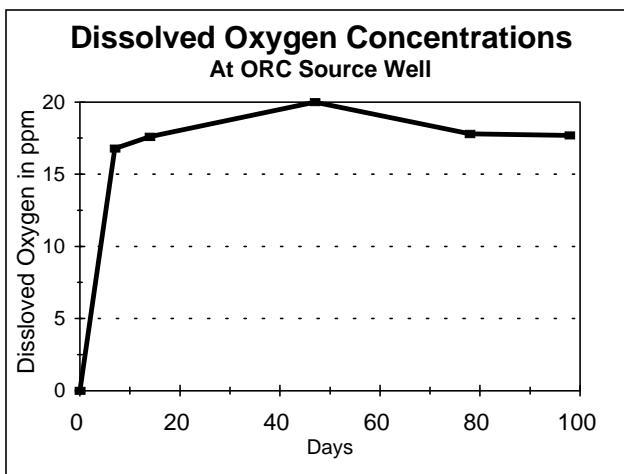


Figure 3

