# In-Situ Chemical Oxidation BTEX

## Former Gas Station – Grand Island, NE

**Average 85% Reduction**

**One Round of DPT Injection**

**Project Summary:** ORIN successfully treated BTEX contaminated groundwater utilizing in-situ chemical oxidation. Approximately 70 gallons of catalyzed sodium persulfate at 18-percent solution was injected into each of the forty-two injection points at depth-specific intervals. Each interval received approximately 20-gallons of treatment chemistry. The injection points were spaced in a grid pattern to treat the contaminant plume. The treatment chemistry injection was coordinated with vacuum extraction on adjacent wells to control hydraulic activity more accurately and to improve injection efficiency. This facilitated preferred treatment chemistry coverage within the targeted treatment area.

**Site Conditions:**

**Groundwater Contaminants –**

Benzene: 8,610 µg/L

Toluene: 16,580 µg/L

Ethylbenzene: 3,140 µg/L

Xylene: 14,820 µg/L

**Impacted Matrix –**

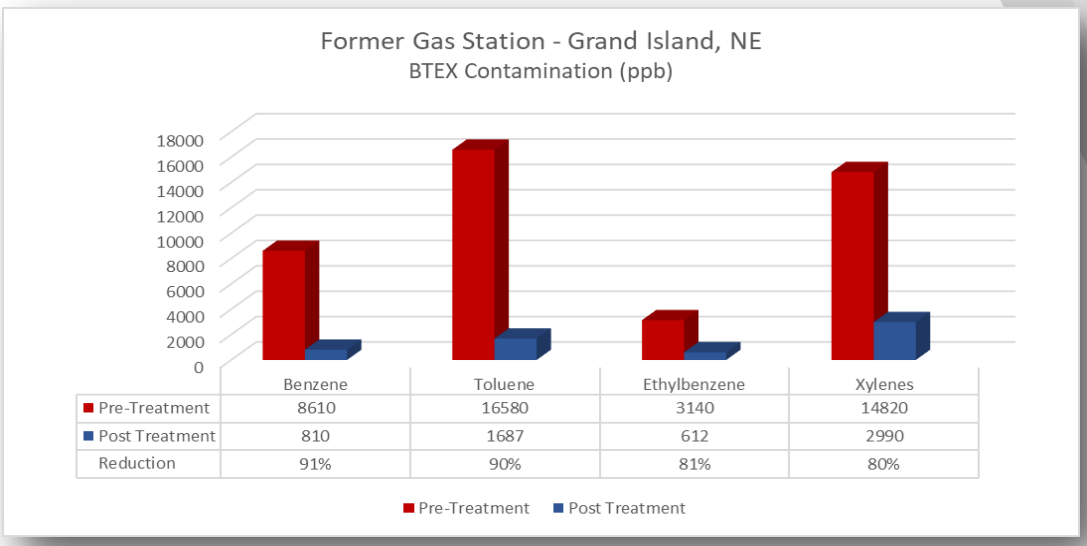
Sand and Sandy Clay

**Treatment Chemistry –**

Sodium Persulfate

PermeOx® Plus and

Sodium Hydroxide




| | Benzene | Toluene | Ethylbenzene | Xylenes |
|---|---|---|---|---|
| Pre-Treatment | 8610 | 16580 | 3140 | 14820 |
| Post Treatment | 810 | 1687 | 612 | 2990 |
| Reduction | 91% | 90% | 81% | 80% |

**Project Results:** Catalyzed sodium persulfate & PermeOx Plus, in combination with a vacuum truck, was shown to greatly decrease the concentrations of BTEX at this site. The BTEX concentrations at the most contaminated wells decreased by an average of 85% between pre-injection and post-injection sampling. The residual calcium peroxide in the subsurface will continue to provide an oxygen source and promote bioremediation.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