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CASE HISTORY

Groundwater Pump and Treat System at an MTBE Plume Affecting Public and Private Water Supplies

Challenge:

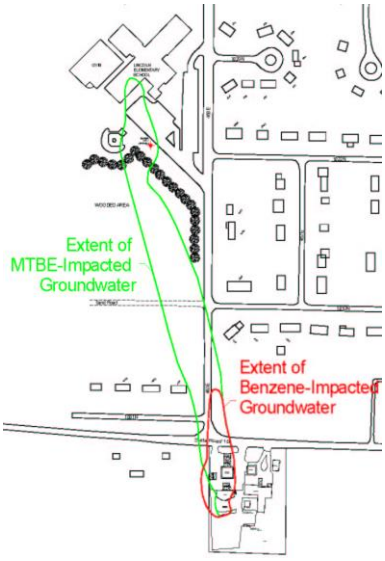
MUNDELL was retained to assess and remediate a Methyl-Tert-Butyl-Ether (MTBE) groundwater plume originating at a service station and extending approximately one quarter mile down gradient in an unconfined sand aquifer, affecting one private water supply and one public water supply. MUNDELL addressed the affected water supplies using Granular Activated Carbon (GAC) filtration systems to treat water being used by the residents/public. GAC filtration was also chosen as the method to treat groundwater recovered from three (3) recovery wells installed to intercept the MTBE groundwater plume.

Results:

MUNDELL developed a groundwater flow model to determine appropriate recovery well locations and pumping rates to capture the MTBE groundwater plume. The groundwater flow model was also used to predict groundwater flow after treated water was allowed to re-enter the unconfined aquifer at an infiltration area.

The GAC usage rate and residency time requirements were calculated once the recovery well locations and flow rates had been determined. The system influent MTBE concentration used for GAC calculations was estimated based on groundwater sample results and predicted flow patterns.

The pump and treat remediation system treats approximately 1.3 million gallons of MTBE impacted groundwater per month. Concentrations of MTBE in groundwater pumped from recovery wells have been consistent with predicted concentrations and CAC usage has been within predicted usage rates.



Map view of impacted groundwater at the Site

GAC vessels used to treat MTBE impacted groundwater