



CASE SUMMARY:


PETROLEUM HYDROCARBON VOC TREATMENT AT A FORMER GAS STATION

Overview: Petroleum hydrocarbons and many other dangerous VOCs were discovered in the soil and groundwater at a former gasoline service station in eastern North Carolina. Underground storage tanks had previously been removed, but groundwater VOC levels persisted. Impacted soil beneath the former dispenser island from leaking supply lines were identified as the source. The objectives of this pilot study were to remove the impacted soils and take a minimalistic, yet effective, approach to addressing residual groundwater contamination. The goal of the project was to deplete groundwater contaminants to below their respective NC 2L Standards.

Approach: The RemRx[™] technical consulting team utilized a proprietary remediation software to define CRP dosing requirements and worked directly with the site management consulting team to design a site-specific remedial plan. A 20' x 20' excavation perimeter was defined based on historical soil samples and groundwater monitoring data. Excavation depth of 8 feet allowed for placement of 902 lbs of persulfate-releasing RemRx[™] CRP into the smear zone (Figure 1).

Contaminant types and concentrations, as well as natural oxidant demand testing, led to site-specific dosing of 440 lbs of slow release CRP, followed by 462 lbs of fast release CRP. The amendments were activated and mixed ~1 ft. into the smear zone prior to backfilling with clean fill. These CRP applications allow for the treatment of residual contaminants left in the "margins".

Evaluated Data: After 3 months of monitoring contaminant levels, we have assessed a 98% reduction of total BTEX concentrations at MW-2R (location of excavation and amendment placement).

- **RemRx[™]** manufactures innovative solutions to solving widespread environmental issues, such as groundwater contamination.
- **CRP** is the patented system of **Controlled Release Pellets** that provide a time-released, prescriptive oxidant dosage that **sustains** delivery into the subsurface with only a single deployment. This extended release provides a constant feed of oxidant to combat natural oxidant demand and back diffusion, in order to mitigate rebounding and tailing issues that are common to traditional ISCO treatment methods. Ultimately, this means increased efficiency and decreased total project costs.
- **RemRx[™] CRP** based treatments utilize a range of oxidants and can be used to remediate chlorinated solvents, petroleum products, and numerous other industrial contaminants.

RemRx[™] is actively partnering with innovative Remediation Site Managers in pilot and test site deployments. Contact us for more information.

This site is part of the NCDEQ-DWM
UST Section Federal & State-Lead Cleanup Program

Supported by NSF SBIR Phase II Contract 1758621.

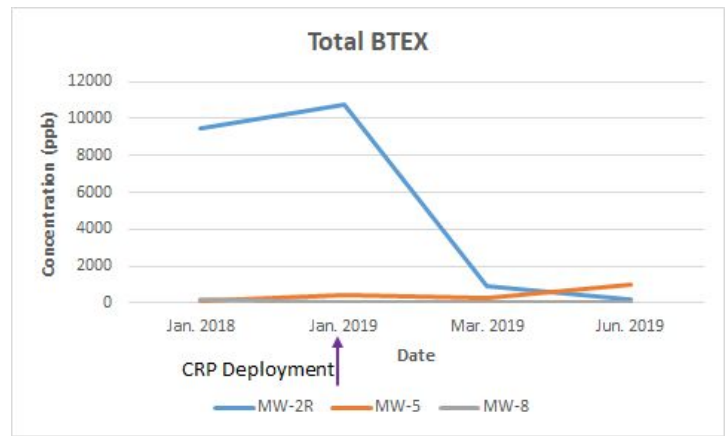


Figure 1. Site map with RemRx[™] application area and monitoring well point locations (benchmarks).

Figure 2. Excavation area below former dispenser island and the RemRx[™] CRP deployment.

Figure 3. Total BTEX concentrations at former UST gas station since deployment of 902 lbs of RemRx[™] CRP.