

Remediation of No.2 Fuel Oil Spill to Drinking Water Standards



Highlights

In Situ Chemical Oxidation (ISCO) using OxyZone® has been used to bring sites with persistent and recalcitrant contaminants to closure when other technologies and methods have failed to meet project goals. In this case study, both ISCO using Fenton's Reagent and pump and treat using granulated activated carbon failed to meet drinking water standards at the Site.

Site Details

Site: Residential Property, Central Massachusetts

Contaminant: No. 2 Fuel Oil
Geology: Glacial till, fractured bedrock

Challenge: Meet drinking water standards

Remediation: OxyZone® ISCO process

of private drinking water wells on the property and adjacent property, respectively. Following closure of the tank, petroleum impacted soil was excavated to the extent feasible and transported off-site for disposal. To maintain stability of the residential structure, excavation was limited and soil remained beneath the garage containing Volatile and Extractable Petroleum Hydrocarbon (VPH/EPH) fractions at concentrations exceeding the applicable Massachusetts Contingency Plan Soil Standard (S-1/GW-1). Groundwater in overburden and shallow fractured bedrock was impacted by VPH/EPH above the GW-1 groundwater standard for drinking water.

EnChem Engineering, Inc. then installed five injectors down to bedrock with screens placed just above the bedrock surface. An additional extraction well was also installed downgradient of the treatment area to provide better coverage for the pump and treat system.

Background

A release of approximately 200 gallons of No. 2 Fuel Oil from a 275 gallon above ground storage tank (AST) located in a garage was reported by the homeowner. The release occurred approximately 75 feet down gradient and 200 feet up gradient

Results

Post OxyZone process results for VPH and EPH fractions and target analytes were reported at a concentration below the GW-1 groundwater standards for 2 years indicating successful destruction of the persistent residual petroleum hydrocarbons.

OxyZone®

Better Technology. Better Results.

OxyZone® is an effective in-ground (in-situ) and above ground (ex-situ) chemical oxidation (ISCO) process to bring contaminated soil and groundwater sites into regulatory compliance and closure faster and with less cost.

The patented OxyZone process developed by EnChem Engineering uses a high-strength, multi-oxidant blend to overcome limitations found in most other environmental remediation treatment methods, resulting in significantly decreased remediation time and clean-up costs.

In addition to being able to destroy emerging contaminants such as perfluorinated compounds (PFCs) and 1,4-dioxane, OxyZone has been applied to remediation of sites containing common organic compounds such as gasoline, fuel oils, and chlorinated organic compounds like tetrachloroethene ("PERC") and mixtures thereof.

About EnChem Engineering

EnChem Engineering, Inc. possesses the underlying technical environmental remediation expertise and effective remediation processes, facilities and staff to solve the most complex emerging contaminant environmental challenges. We have been a hazardous waste consultant to the U.S. Environmental Protection Agency; the US Air Force and Fortune 500 companies.

EnChem Engineering Services

- Soil & groundwater remediation
- Hydrogeological site investigations
- Environmental site inspections
- Due diligence, litigation support

Call (617) 795-0058 for a free consultation. Ask for our white papers on environmental remediation with Oxyzone.



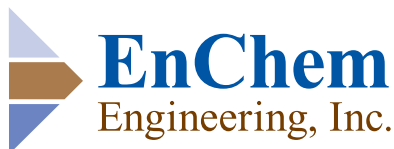
Benefits of the OxyZone® process

Versatile – a comprehensive suite of radicals and oxidants treats a wide range of organic contaminants in soil and groundwater

Persistent – OxyZone process achieves a very high oxidation potential immediately upon application and remains effective up to weeks after application

Easier – The OxyZone process generates no off-gas or heat making it easier to apply

Cost Effective – More complete clean-up in less time results in lower total cost



EnChem Engineering, Inc.

Advanced Environmental Remediation

www.en-chem.com

info@en-chem.com

151B California Street, Newton MA 02458

(617) 795-0058