

Using OxyZone® on PFAS & Mixed Organic Contaminants at an Air Force Base



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 OxyZone and OxyZone XCT™ are used to destroy poly and perfluoroalkyl substances (PFAS) along with petroleum hydrocarbon and chlorinated organic contaminants.

Site Details

Site: Fire Training Area, Air Force JBLE, Virginia

Contaminant: Mixed solvents, fuels & PFAS

Geology: Interbedded silt and sands under tidal influence

Challenge: Destroy PFAS & organic contaminants
Remediation: OxyZone ISCO process

of the study was to assess the efficacy of OxyZone and OxyZone XCT to treat mixed organic contaminants at the Fire Training Area of Joint Base Langley-Eustis (JBLE) in Virginia. During the groundwater and soil characterization program, PFAS (PFOS, PFOA and other compounds) from the use of aqueous film-forming foam (AFFF) were detected. PFAS samples before and after ISCO injections were analyzed to evaluate the impact of OxyZone and OxyZone XCT on PFAS compounds in the presence of co-contaminants at higher concentration.

Results

The results indicated that the patented processes of OxyZone and OxyZone XCT were successful at desorbing, remediating and destroying the majority of the traditional petroleum hydrocarbon and chlorinated organic contaminants. A statistical analysis comparing the PFAS concentrations in wells within the injection test cell to those outside the injection test cell showed a statistically significant decrease in PFAS concentrations within the test cell, but not outside. Additionally, groundwater concentration of the conservative tracer chloride showed no overall dilution impact from the injections, suggesting that there was no or minimal dilution of PFAS. The data also showed that PFAS concentrations did not rebound within the subsequent six month post-injection period. For more details please ask for our whitepaper.

Background

The Air Force Civil Engineering Center (AFCEC) seeks to fund better, faster and more sustainable environmental solutions for the Air Force and selected EnChem Engineering, Inc. to perform a field pilot test. The object

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.



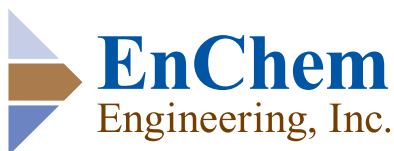
Benefits of the OxyZone® process

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



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