

BENCH-SCALE TREATABILITY STUDY

TREATMENT OF FREON AND CHLORINATED HYDROCARBONS USING VERUTEK'S S-ISCO™ COELUTION TECHNOLOGY™

Groundwater samples were collected from a former industrial manufacturing facility with moderate FREON-113 and chlorinated hydrocarbon contamination. These samples were characterized to determine initial FREON-113 and other volatile compound contamination levels prior to using in three laboratory tests:

- Test 1: No treatment (control)
- Test 2: Alkaline persulfate
- Test 3: Fe-EDTA Catalyzed Persulfate

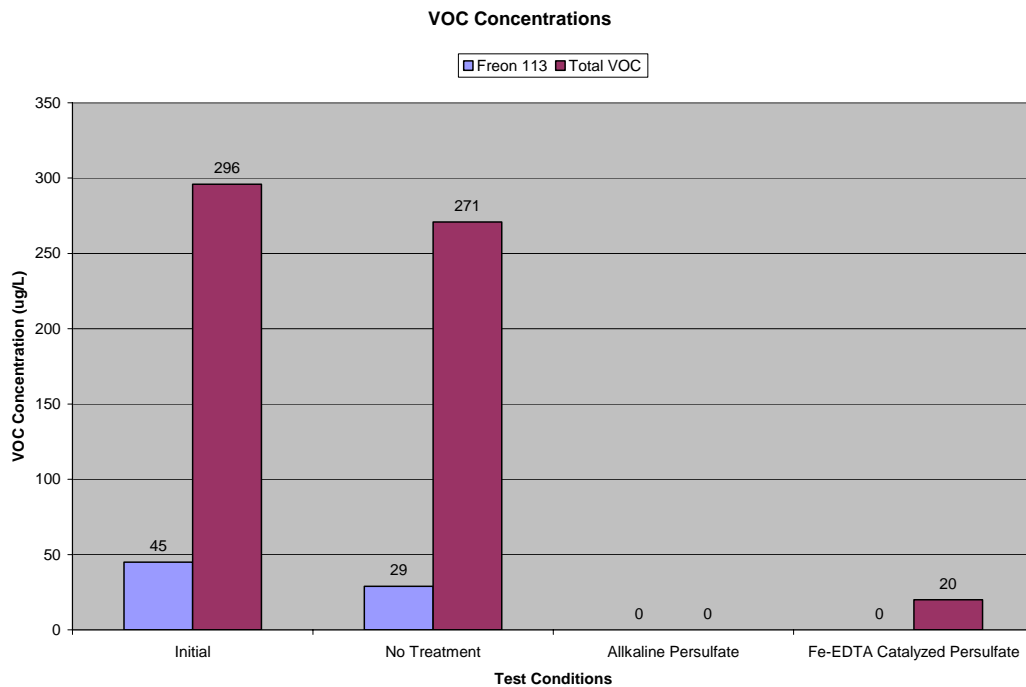
Each test contained the same amount of groundwater. Each test also contained approximately the same amount of contaminants initially; the table and graph below demonstrate the effectiveness of S-ISCO™ in destroying FREON-113 and chlorinated hydrocarbon contamination after 5 days:

Volatile Organic Compound (VOC) Concentrations (µg/L)

VOC (µg/L)	Initial	Control	Alkaline Persulfate	Fe-EDTA Catalyzed Persulfate
FREON-113	45	29	ND	ND
1,1,1-Trichloroethane	14	12	ND	ND
1,1-Dichloroethane	24	22	ND	ND
1,1-Dichloroethene	9	8	ND	ND
Chloromethane	ND	ND	ND	20*
cis-1,2-Dichloroethene	24	22	ND	ND
Tetrachloroethene	110	110	ND	ND
Trichloroethene	70	68	ND	ND
Total VOCs	296	271	0	20

ND – Non Detect

** Common Laboratory Contaminant*



Treatment with S-ISCO™ using Alkaline Activated Persulfate technology led to the destruction of 100% of the FREON-113 and chlorinated hydrocarbon contamination in just 5 days.

