

CASE HISTORY®

Work Summary (Site History)

CHS-0001 (Vinyl Chloride)

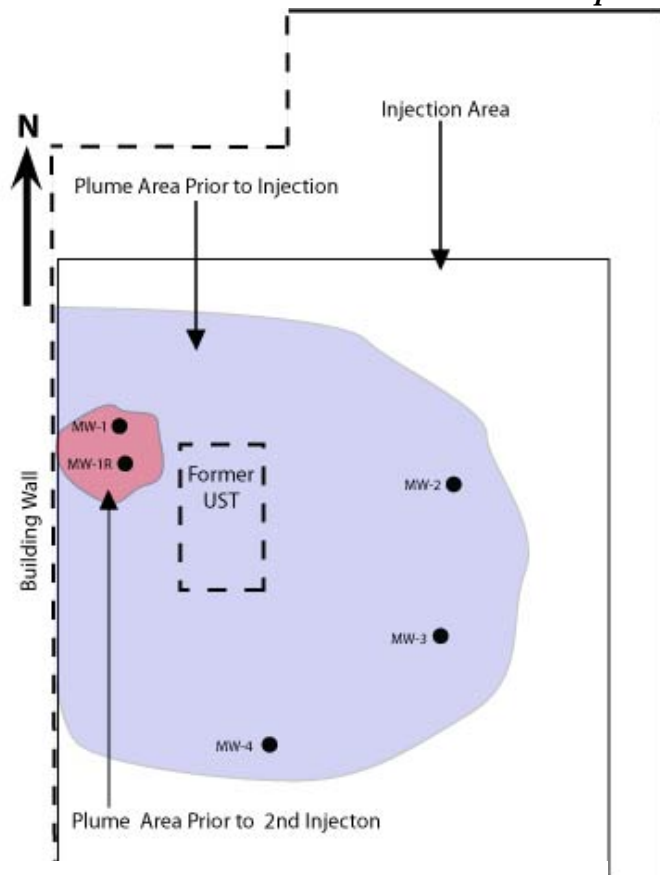
A property sale was the driver that prompted the remedial action of this site in Southern Indiana. A former hazardous waste UST had released both hydrocarbons and chlorinated solvents to the environment. Because the primary chlorinated contaminants remaining were vinyl chloride and cis-1,2-dichloroethene, it was concluded that anaerobic dechlorination had mitigated the bulk of the chlorinated solvents. Therefore, hydrogen peroxide based in-situ chemical oxidation was selected to remediate the remainder of the contaminants. At the conclusion of the mitigation process the site met State closure requirements and the property was sold.

Project at a Glance

Site 0001 - Site Information

Type of site	Industrial
Contaminants	Vinyl Chloride, cis-1,2-DCE, TCE, BTEX,
Work Scope	Inject Oxidizer
Media Treated	Soil & Groundwater
Soil Type	Dense Clay with Sand Stringers
Groundwater Depth	14 fbg
Remedial Objective	Reduce VC GW concentration to <10 µg/L

Site Map



Site 0001 - Application Information

Technology Selected	Chemical Oxidation
Application Method	DPT Probe Rod
Area Treated	1,425 square Feet
Vertical Interval	9 to 18 feet bgs = 9 feet
Injection Point (IP) Spacing	5 feet
Media Volume Treated	475 cubic yards
Number of Injection Points	57
Oxidizer Volume	1,900 gal
Oxidizer per IP	33 gal

The blue area on the site map depicts the extent of the groundwater contaminant plume prior to the first ISCO injection. Two weeks after treatment it was discovered that the monitoring wells were dry due to extreme drought conditions. Samples from replacement wells collected 13 weeks after the initial injection revealed that the contaminant plume had shrunk to a small area (see pink area on Site Map) surrounding MW-1R. A second injection (area 20 feet square) was completed. Sixteen weeks after the second treatment, groundwater samples indicated that the vinyl chloride concentrations had been reduced to site closure standards.

Current Status

Site Closed! - No Further Environmental Action Notification (NFEA) received from Indiana Department of Environmental Management

CASE HISTORY

CHS-0001 (Vinyl Chloride) (Cont.)

Results

Site 0001- Contaminant Data*

Contaminants	Baseline ⁽¹⁾	Samples #1	Samples #2	Samples #3
Time	0	2weeks ⁽²⁾	13weeks ⁽³⁾	16Weeks ⁽⁴⁾
Vinyl Chloride	77 ^(a)	NS	57	<2.0
Cis 1,2-DCE	300	NS	<MCL	<MCL
TCE	44	NS	<MCL	<MCL
Benzene	36	NS	<MCL	<MCL
Toluene	6,800	NS	<MCL	<MCL
Ethyl Ben.	150	NS	<MCL	<MCL
Xylenes	553	NS	<MCL	<MCL

* Data Presented from most contaminated monitoring well.

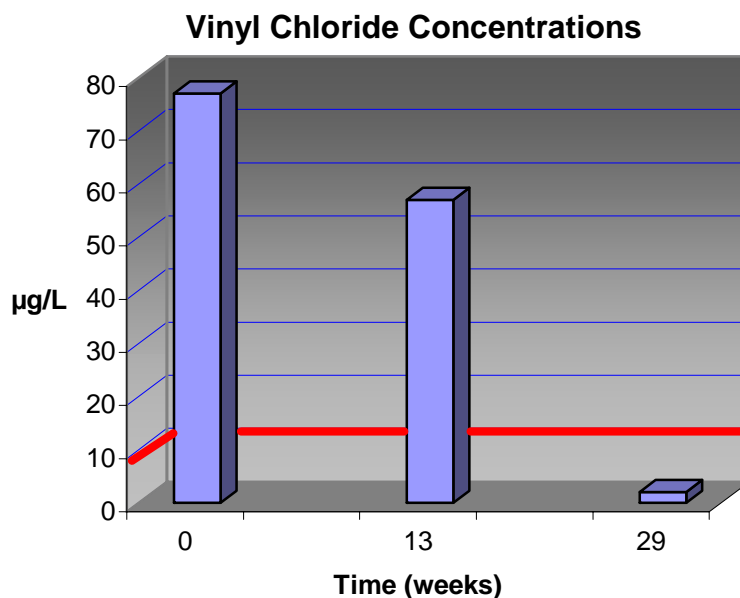
^(a) Indiana Tier II Non-residential Standard for Vinyl Chloride concentration in groundwater = <10 µg/L.

⁽¹⁾ All data reported in µg/L

⁽²⁾ Because of a severe drought, groundwater levels had dropped such that the monitoring wells were dry. Six weeks after treatment new wells were installed to contact groundwater.

⁽³⁾ Data collected thirteen weeks after treatment, revealed that with the exception of VC in one well, all contaminant concentrations had dropped below the Indiana Tier II Non-residential Goals for groundwater standards. Three weeks after sampling, a 400 square foot area around the remaining contaminated well was retreated.

⁽⁴⁾ Sixteen weeks after the second application, the VC concentration had decreased to <2.0 µg/L. The site subsequently received NFA status and the property was sold.



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The remedial solution for this site was designed and managed by a DTI Principal