CS04: Treating Isopropylbenzene

An EN Rx Reagent Pilot Test

SITE

Pantry #3908
Florida FAC.ID-8517831

BACKGROUND INFORMATION

Sites contaminated by crude oil often struggle addressing isopropyl benzene (cumene) throughout the remediation strategy. It tends to persist past the occurrence of other BTEX contaminants, due in large part to its nature of sorbing to soils. This causes it to be the driver for most remediation efforts where it is present. At the Pantry #3908 site this was also the case, all other constituents were below target levels, but isopropyl benzene was present at levels exceeding NADCs.

DESIGN AND IMPLEMENTATION

An ISCO pilot test using EN Rx Reagent was performed to analyze the reduction of isopropyl benzene as well as the radius of influence and effects on DO and ORP. 2,000 gallons of EN Rx Reagent was injected into the surficial aquifer via 3 injection wells over the course of the 3 day pilot test. An observation well was also installed, and existing monitoring wells were used for post sampling. Groundwater samples were collected at 1 month, 3 months, and 5 months post injection. Four wells were designated for pilot test sampling and the results are tabulated below, including the distance between the monitoring well and the injection wells.

Isopropylbenzene Sampling Results

	MW-9	OW-18	MW-6R	MW-10
Distance from IW's	<5 feet	12 feet	32 feet	35 feet
Baseline (ug/L)	27	2.3	2.8	1.4
1 Month Post	7.2	2.2	8.6	3.6
3 Months Post	2.8	ND	7.6	0.48
5 Months Post	ND	ND	ND	ND
Reduction	100%	100%	100%	100%

RESULTS

As previously noted, the nature of isopropyl benzene to adhere to soils was observed in two of the monitoring wells in the one month post sampling data. In these two wells an increase from the baseline results point to the desorption caused by the EN Rx Reagent, which then reduced the aqueous mass to below detection levels. In wells MW-9 and OW-18 the closer proximity to the injection wells resulted in more robust reactions leading to faster reduction times and lasting results across the post sampling period.

CONCLUSION

EN Rx Reagent can target both adsorbed and aqueous contamination since it is both a powerful and stabilized oxidant source that is active up to 90 days post injection. The Pantry #3908 site benefited from these long lasting reactions leading to all designated monitoring wells being below GCTL's and detection levels. EN Rx Reagent effectively addressed the isopropyl benzene contamination- a successful pilot test.

EN Rx Reagent- Powerfully Efficient, Simply Effective