



OVERVIEW

As part of a real estate transaction, our client was committed to remediating chlorinated ethane impacts within the groundwater to below the applicable Standards. The concentrations of the compounds of concern were:

- 1,1,1-TCA (maximum concentration of 11,000 µg/L)
- 1,1-DCA (maximum concentration of 1,100 µg/L)

SCOPE OF WORK

- Acquired all relevant permits to complete the remediation program.
- Designed and optimized an *in-situ* program to maximize treatment efficiencies.
- Implemented a program that minimized capital expenditures and infrastructure.
- Monitored pre- and post-injection treatment parameters.



THE VERTEX APPROACH

- Enhance existing natural attenuation processes already occurring
 - Reductive dechlorination
- Temporary injection points
- Injections under moderate pressure
- Injection of multiple reactive compounds
 - > 1,250 kg of EHC & EHC-A
- Injections completed using direct push
- Grid of 27 injection points



OUTCOME

- Successful installation of a reactive zone via injection
- Hydrogen generating conditions created:
 - Redox decreased 500 mV within one week
 - pH remained neutral
 - Long-term reactive zone created with zero-valent iron
- Concentration reductions after 1 injection:
 - 1,1,1 TCA - 74%