



PILOT CASE STUDY: LEAKING UNDERGROUND STORAGE TANK AT A LOW PERMEABILITY SITE IN ONTARIO

BACKGROUND

- Water and Earth Science Associates (WESA) began remedial investigation in 2004
- Underground storage tank leakage in an airplane maintenance hangar
- Leaking F1, F2 Hydrocarbons and BTEX into the soil matrix
- Low permeability fine and silty sands

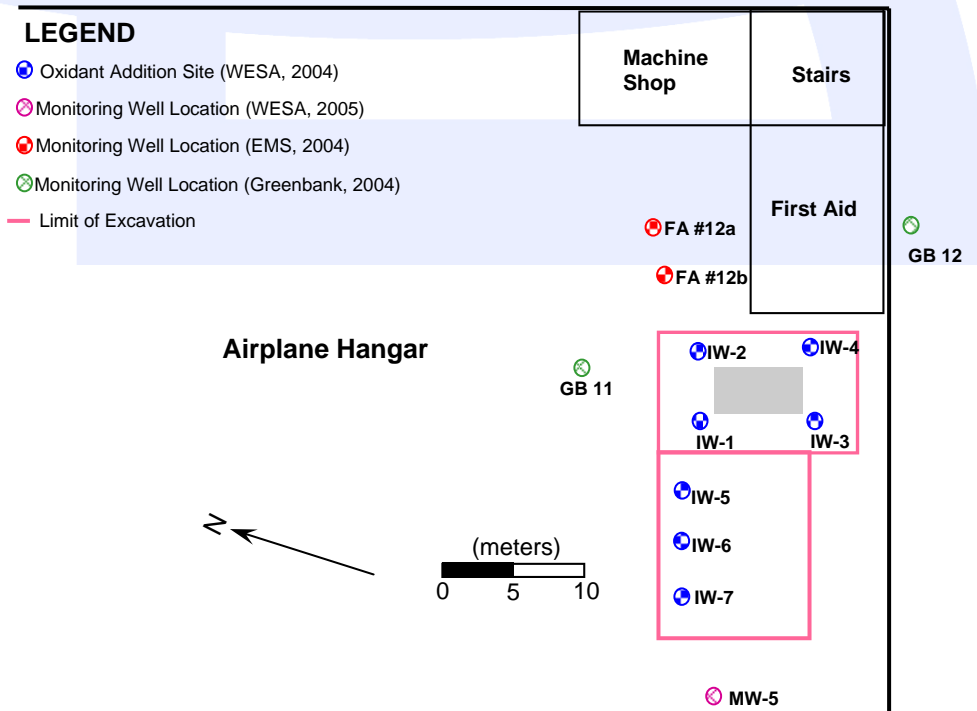
inVentures STRATEGY

- To introduce gPRO[®] HP and determine radius of influence in low permeability soils
- As water contains very high iron content, we wanted to ascertain what the affects would be on the mass transfer modules and what we needed to do as pretreatment to keep the unit running
- gPRO[®] system installed January 2006

CLEAN-UP STRATEGY

- Storage tank excavated Fall 2004
- Back filled with gravel and perforated piping was added
- gPRO[®] HP system installed January 2006
- Injected oxygenated water into IW-6

SITE MAP



PRELIMINARY RESULTS

- Site analysis showed a significant increase in DO at a significant distance from the well as shown below:
 - IW-1: Approximately 4 meters (13 feet) away from IW-6 showed DO changes from 1.78 mg/l – 24.16 mg/l
 - IW-2: Approximately 7 meters (23 feet) away from IW-6 showed DO changes from 1.17 mg/l – 18.88 mg/l
 - IW-3: Approximately 6.7 (22 feet) meters away from IW-6 showed DO changes from 1.61 mg/l – 40.00 mg/l
 - IW-4: Approximately 10 meters (33 feet) away from IW-6 showed DO changes from 2.95 mg/l – 23.01 mg/l
 - IW-5: Approximately 2.7 (9 feet) meters away from IW-6 showed DO changes from 1.91 mg/l – 24.22 mg/l
 - IW-6: Changed from 2.37 mg/l – 50.00 mg/l
 - IW-7: Approximately 2.7 (9 feet) meters away from IW-6 showed DO changes from 2.00 mg/l – 22.86 mg/l
- A small iron removal system (zeolite) was installed ahead of the gPRO[®] HP and removed enough iron such that modules and lines were not fouled
- The consultant dropped the CoC levels sufficiently to close the site

