

PASCOAG MOBIL

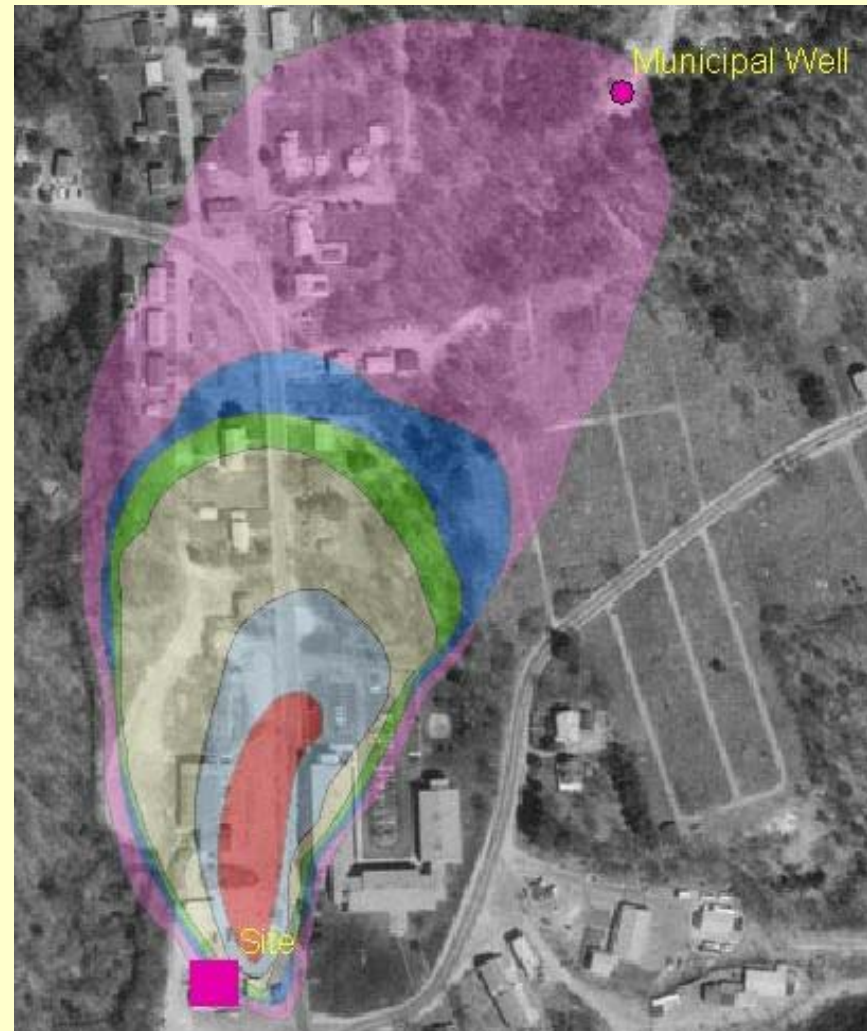
USE OF REAL-TIME FIELD
CHARACTERIZATION TECHNOLOGIES
FOR REMEDIATION DESIGN

On September 2, 2001, methyl tertiary-butyl ether (MTBE) was discovered in the public drinking water well (PW-3A) in Pascoag, RI. Rhode Island Department of Environmental Management took over investigation and remediation of the problem after the owner of the source (a gas station) went bankrupt.

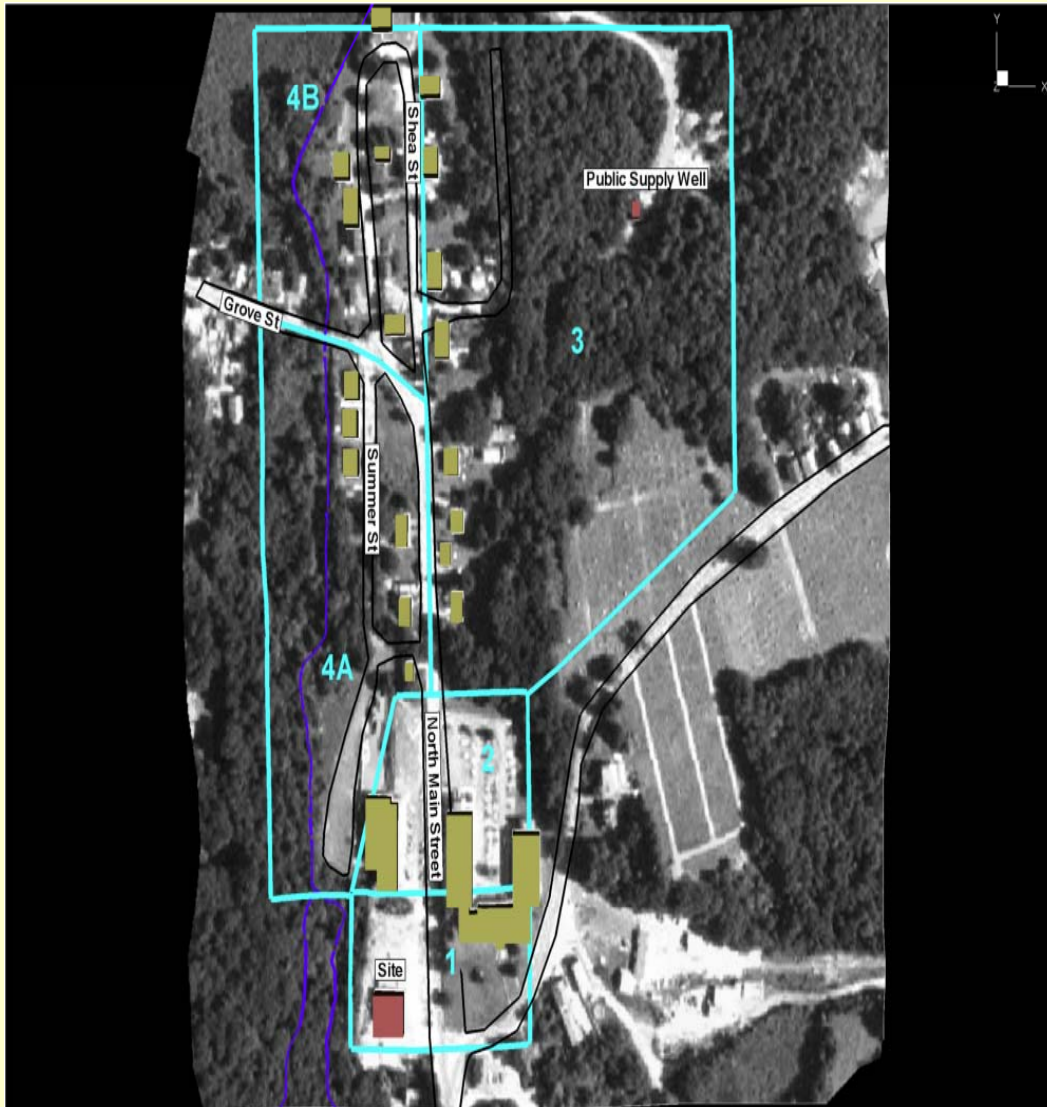
Site Contaminants:

(BTEX), (MTBE), (TBA), (TAME) along with other oxygenates.

Traditional-Style Assessment of over 70 monitoring wells revealed a very large MTBE plume: 2000 feet long, 50 feet deep with a 500 foot long area of product. Concentrations changed dramatically with depth.



A vertical profiling investigation with real time data analysis was conducted in December 2005.



Goals of the investigation were to provide detailed information on changes in geology and contamination with depth.

This information was to be used for selecting applicable remediation technologies and their cost effective use.

Three sampling transects were chosen with drilling every 200 feet for a total of 23 sampling locations.

GROUNDWATER

Vibradrill technology with groundwater samples taken with a three foot mill-slotted sampling point every five feet until hitting refusal.

The samples were analyzed for BTEX, MTBE, and TBA using a Photovac 10ST Field GC.

Several samples were selected for follow-up laboratory analysis. They were selected due to an interest in a specific location or when an unexpected data result was encountered.

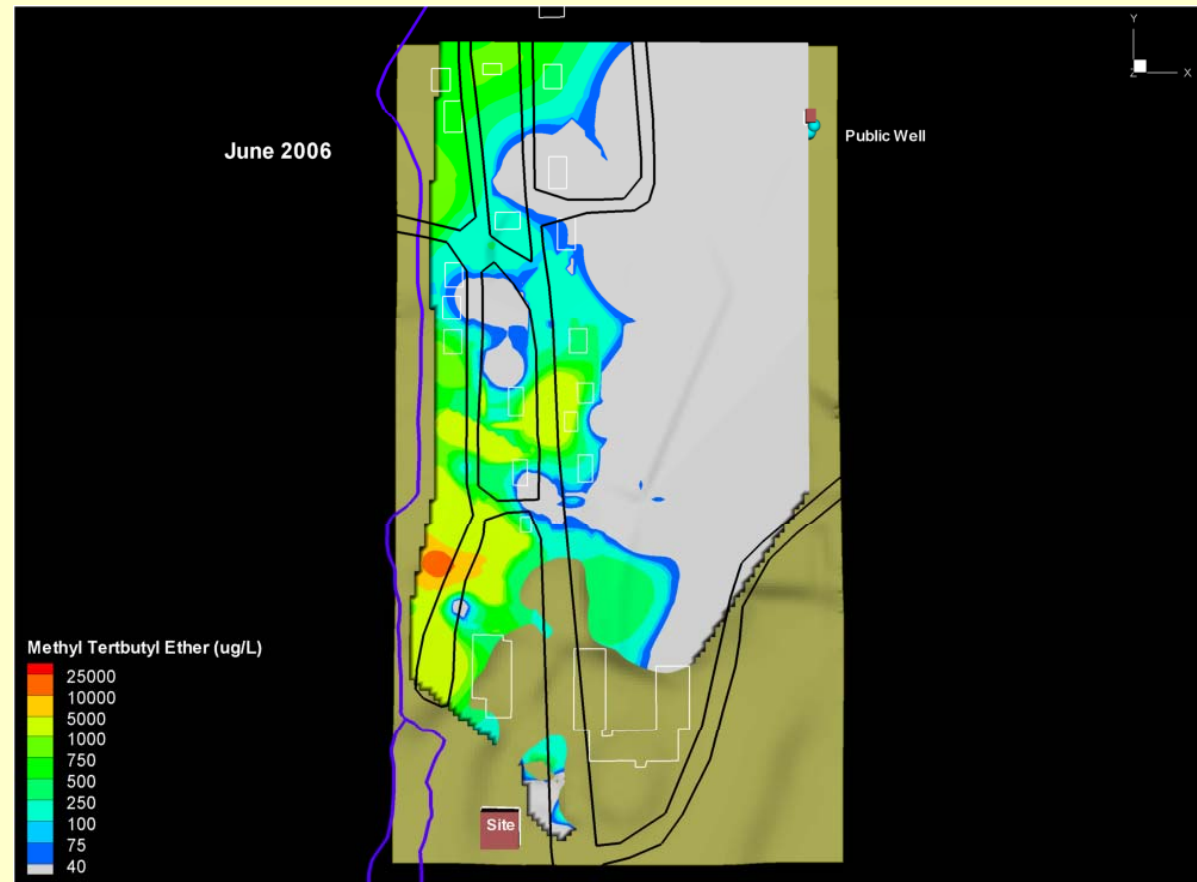
GEOLOGY

Geoprobe electrical conductivity and hydraulic conductivity logging equipment.

RESULTS

Extensive vertical distribution of contamination which rose with depth, peaking around 50 feet and tapering down until bedrock (70')

MTBE: up to 6000 ppb
Benzene: up to 300 ppb
TBA: up to 50,000 ppb



Utilized Geoprobe electrical conductivity and their brand- new hydraulic conductivity logging equipment.

Geology is 20 feet of medium sand overlaying 40 feet of well-sorted very fine sand with highly fractured bedrock

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IMPLICATIONS

- RI-DEM subsequently conducted more groundwater profiling in certain areas.
- Installed additional monitoring wells after reviewing the profiling data.
- The subsequent remediation project was also reevaluated and revised.