State Perspective Panel Q&A

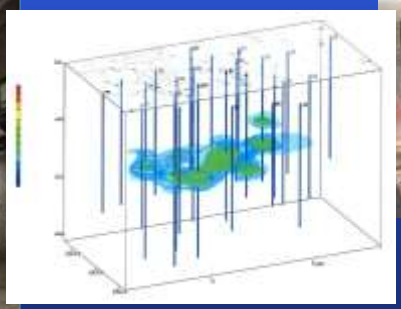
NEWMOA Workshop - Making Better Decisions: Real-Time Data Collection and Interpretation – March 2016

Andrew M. Fuller, P.G.
Waste Management Division
Oil Remediation and Compliance Bureau

Introduction





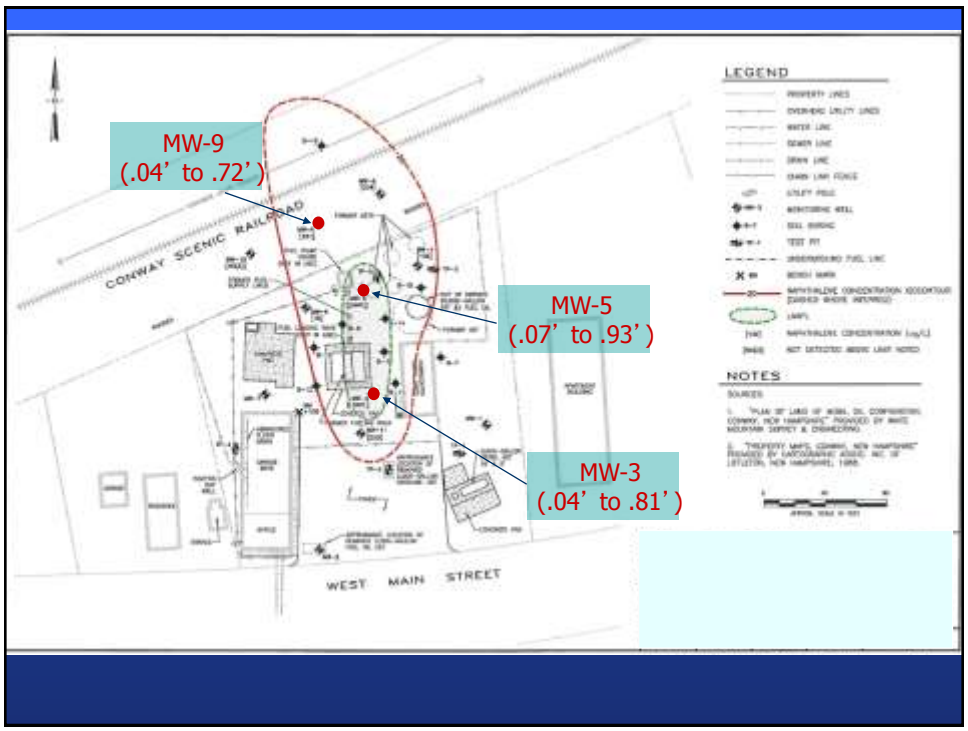


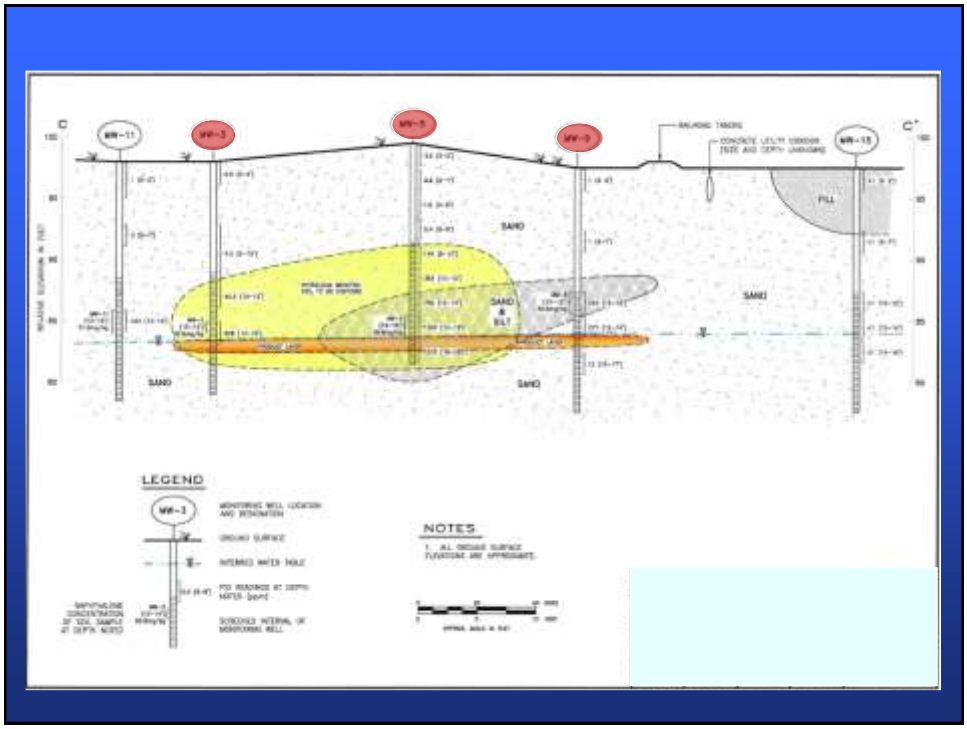

Overview of Technologies Utilized

- Laser Induced Fluorescence (LIF) – NAPL plume delineation
- Membrane Interface Probe (MIP)
- Tar-specific Green Optical Screening Tool - TarGOST® - MGP and creosote
- Cone Penetrometer Testing – Delineate soil stratigraphy
- Groundwater Profiling – Dissolved-phase plume evaluation
- On-site Laboratories
- X-Ray Fluorescence (XRF) – Metals

Case Study – Conway, NH


Pump House
Former AST Area
Fueling Rack
Google earth
feet
meters
600
100


MW-9
(.04' to .72')
MW-5
(.07' to .93')
MW-3
(.04' to .81')
CONWAY SCENIC RAILROAD
WEST MAIN STREET
LEGEND
NOTES



Investigation Techniques

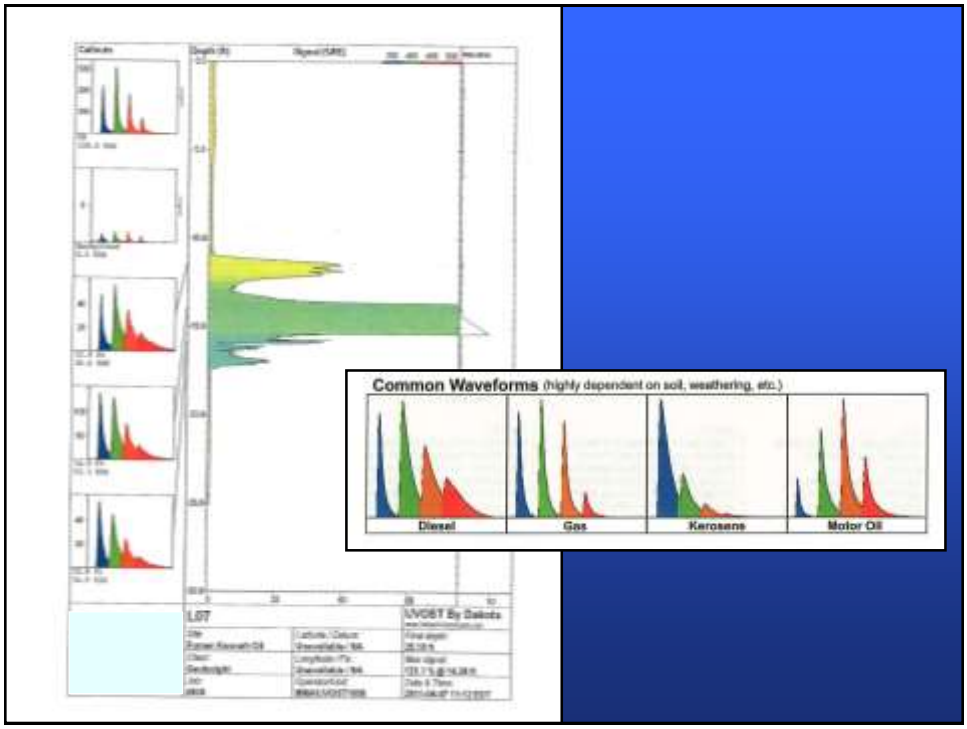
Traditional

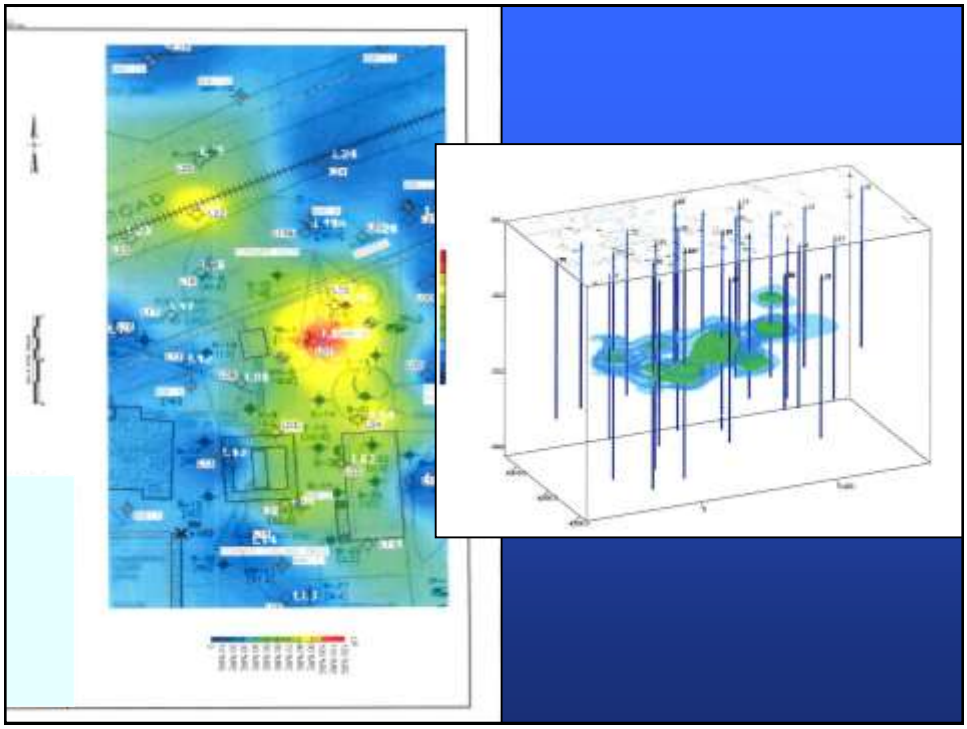
Soil Boring & Well Installation with traditional drilling and sampling techniques.

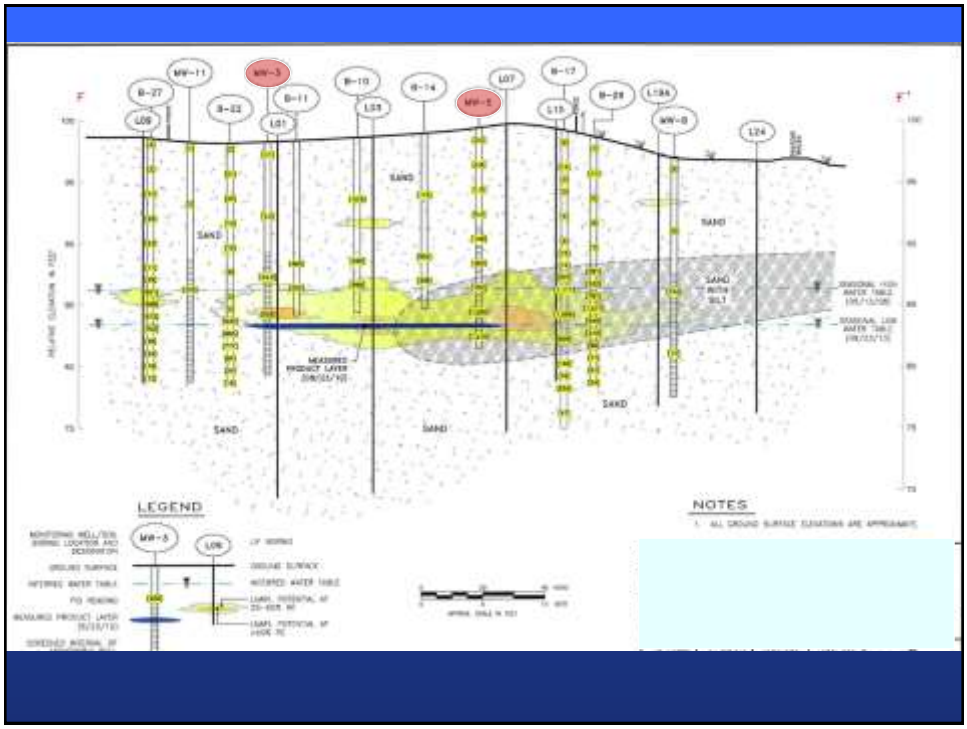
VS

Specialized

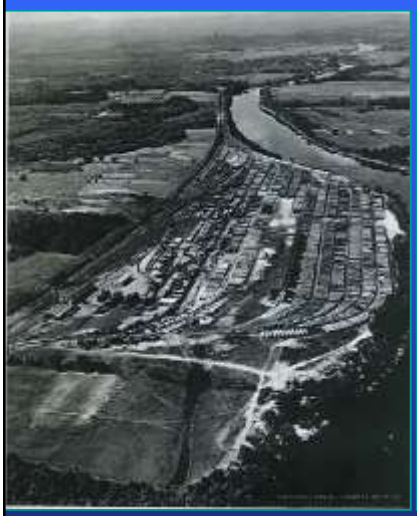
Laser Induced Fluorescence (LIF), Membrane Interface Probe (MIP), Core Preservation & UV Light, LNAPL Saturation Lab Analysis


Common Waveforms (highly dependent on soil, weathering, etc.)
Diesel
Gas
Kerosene
Motor Oil
LIF
UVOST By Dakota





Case Study – Nashua, NH



1930s

1990s

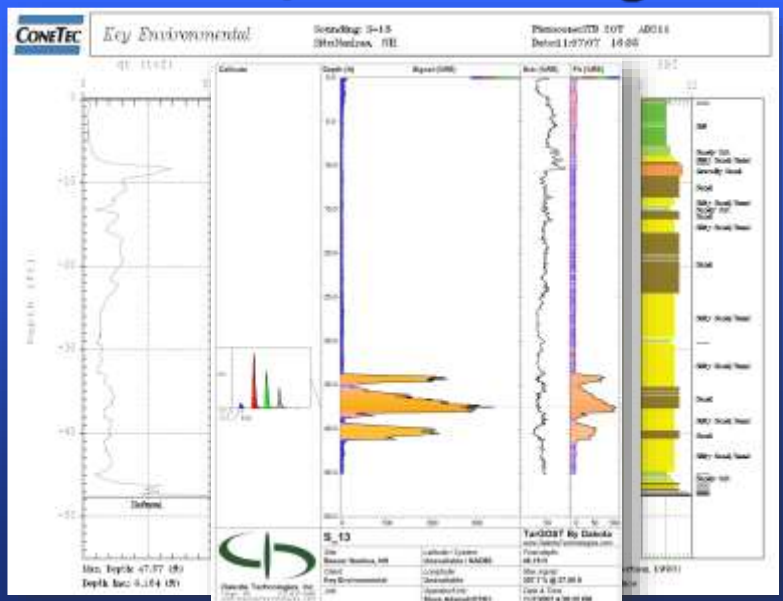
TarGOST®/CPT Investigation

- TarGOST - Delineate vertical and lateral extent of DNAPL (primarily creosote)
- CPT – Delineate soil stratigraphy

TarGOST®/CPT Investigation

- Objective: Fill in data gaps
- 38 TarGOST®/CPT boring locations
- 12 locations for verification or "ground truthing" borings

TarGOST®/CPT Investigation



TarGOST®/CPT Investigation

Benefits:

- Specific to creosote and coal tar
- Saves time (≈1,750 ft in 5 days)
- Data incorporated into 2D and 3D conceptual site models
- Support remedy design

Take Home Messages

- Understand your objectives and have a well designed workplan
- Do you have enough data and what does it mean?
- Technologies can be limited and not always applicable / Qualitative vs Quantitative
- Always open to new and evolving technologies
- Needs to be cost effective

Contact Information

Andrew M. Fuller, P.G.
New Hampshire Department of Environmental Services
Waste Management Division
Oil Remediation and Compliance Bureau

602-271-7177
Andrew.Fuller@des.nh.gov