

# Portland Bangor Waste Oil Remedial Investigation Remedial Action Summary



August 30, 2004

Presented by: Maine Department of  
Environmental Protection and  
Drumlin Environmental, LLC

# Agenda

- Introductions
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- Background
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- Remedial Investigation-Site Characterization
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  - Surface Water
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- Removal Action Summary
- RI-RA Findings
  - Conclusions and Recommendations
- Discussion

# Introductions

- **DEP**
  - Hank Aho, Program Manager
  - Kathy Niziolek, Project Manager
  - Hank Andolsek, Project Geologist
- **Drumlin Environmental, LLC**
  - Matt Reynolds, P.E., C.G.
- **Guerin Associates/EER**
  - Marianne Guerin, President
  - Steve Dyer P.E., Project Manager

# Background - Site History

- 1969 - 1980 Portland Bangor Waste Oil Company operated Casco waste oil collection and storage facility as a satellite to PBWO site in Wells
  - facility had reported capacity of 150,000 gallons
  - facility was used when Wells facility was at or approaching capacity
  - waste oil stored at site believed to be primarily petroleum, with other impurities including lead and solvents
- 1983 - Site identified to DEP by town
- 1986 - West sold property to Hawkes
- 1987 - Residence constructed on portion of site

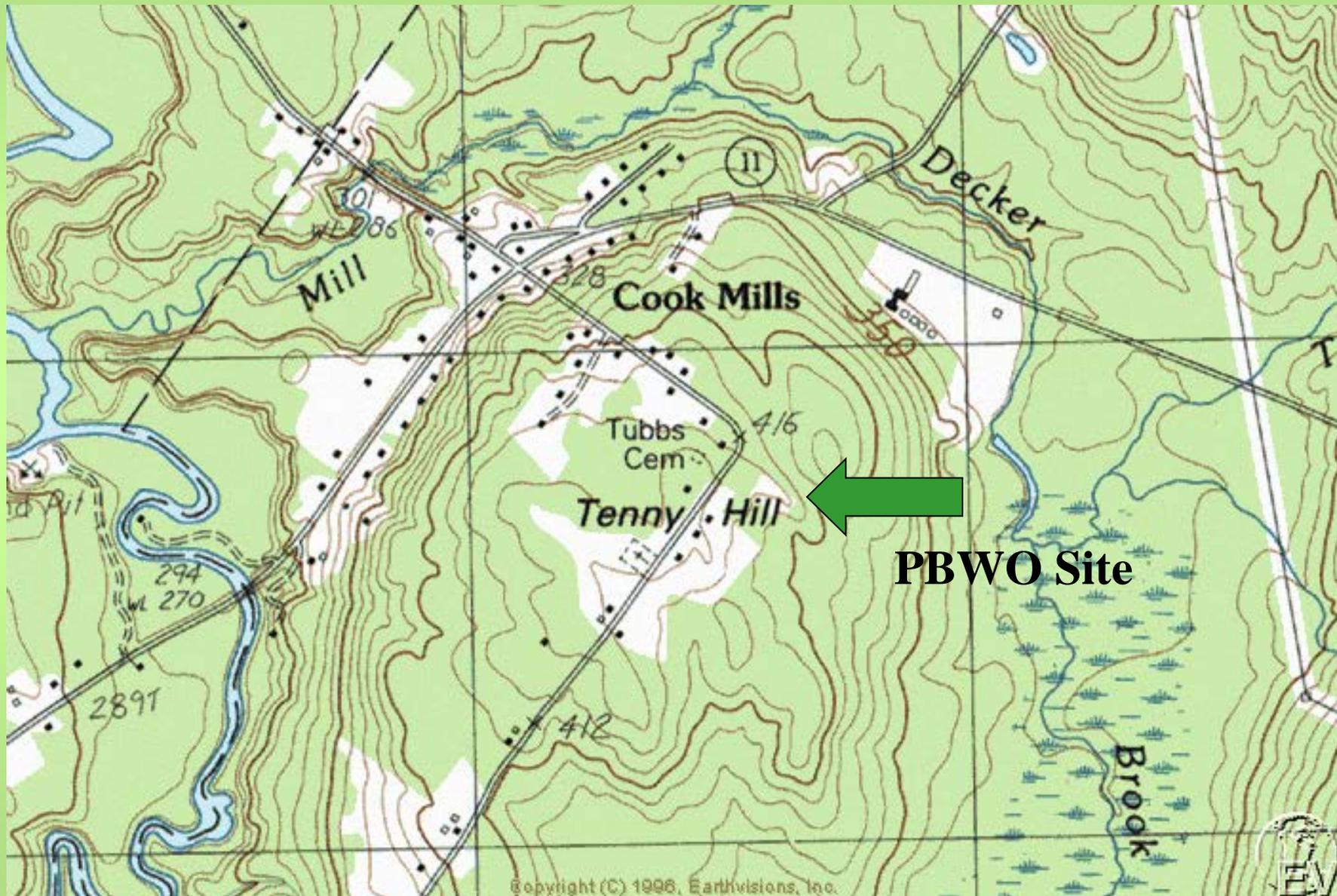
# Background - Investigatory History

- early 1990s - PA, SI investigations, identified chemicals released at site
- 1995 - EPA issued No Further (Federal) Action letter, delegated further investigation to the state
- 1996-1997 - DEP investigation detected elevated levels of petroleum, solvents in site soil, groundwater
- 1998 - DEP sampled monitoring wells
- 2001 - DEP contracted Drumlin for formal RI

# Background - Site Setting

- site is located on a topographic high
- Crooked River watershed draining to Sebago Lake
- drainage from site is to the east
  - away from residences on Tenny Hill Road
  - toward Decker Brook valley
- overburden soil: sand over sandy till
- bedrock: fractured granite

# Site Location - USGS 7.5 minute quadrangle



# RI Investigation

## Site Characterization Tasks

- Sample and Analyze Environmental Media
  - Source Area Soil
  - Groundwater
  - Surface Water
  - Sediment
- Develop Conceptual Site Model
  - interpretations based on findings
- Determine Extent of Source Requiring Removal
- Draw Conclusions about the Nature and Extent of Off-Site Migration
- Make Recommendations for Controlling Migration

# Source Area Soil Sampling

- samples collected from 39 locations
  - solvent concentrations detected as high as 108 mg/kg
    - Remedial Action Guidelines (RAGs): as low as 3 mg/kg
  - lead concentration detected as high as 150,600 mg/kg
    - RAGs: 375 mg.kg
  - PCB concentration detected as high as 33.7 mg.kg
    - RAGs: 2.2 mg/kg

# Soil Sampling



Insert Map - Area A, B

# Groundwater Sampling

- samples collected from 50 locations
  - Solvent groundwater plume extends more than 2,200 feet east of site
  - Solvents in soil and top 80 feet of bedrock
  - plume discharges to Decker Brook area
  - concentrations very low at discharge, 99% less than at source area



# Location of Monitoring Wells

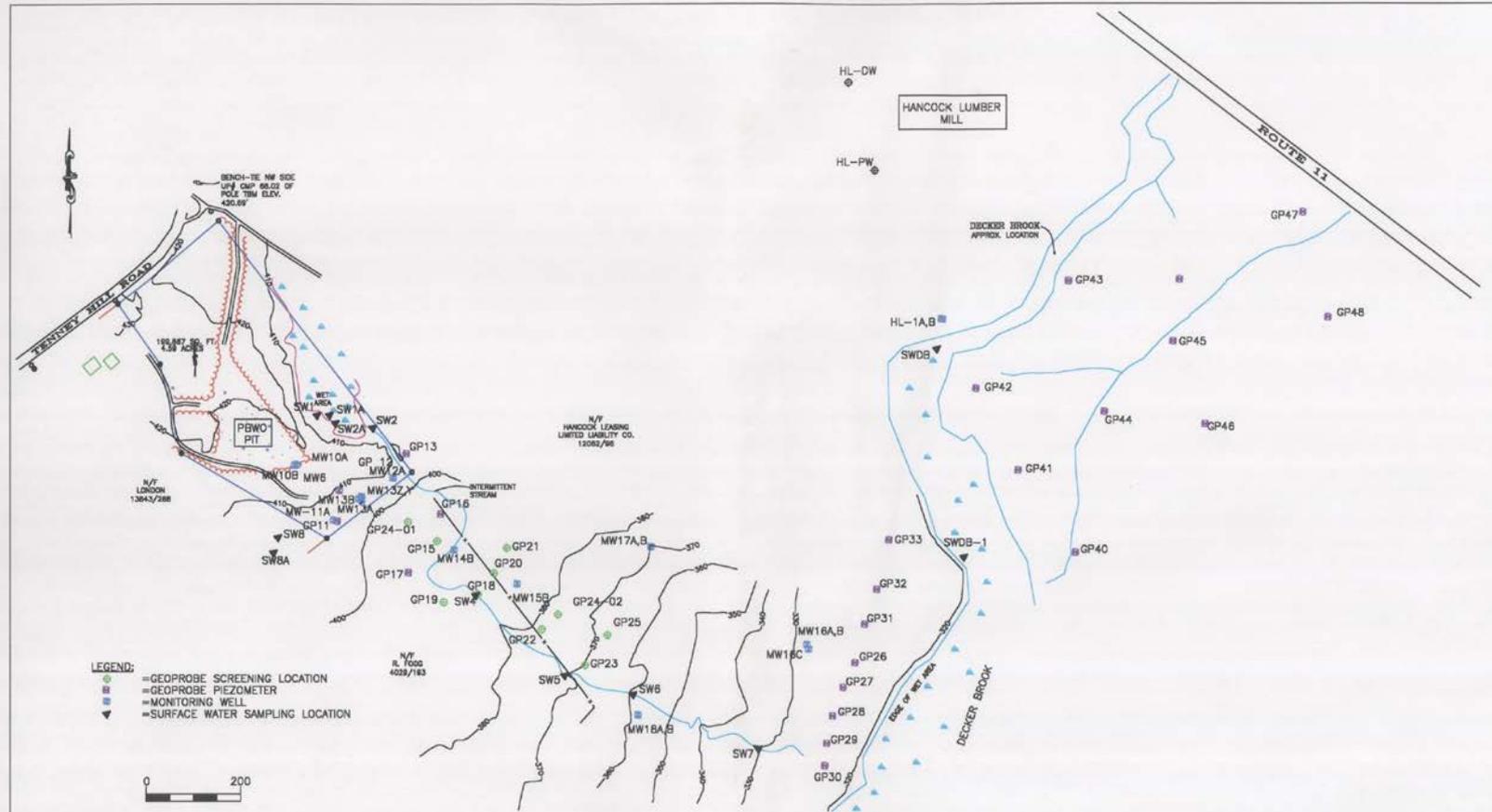
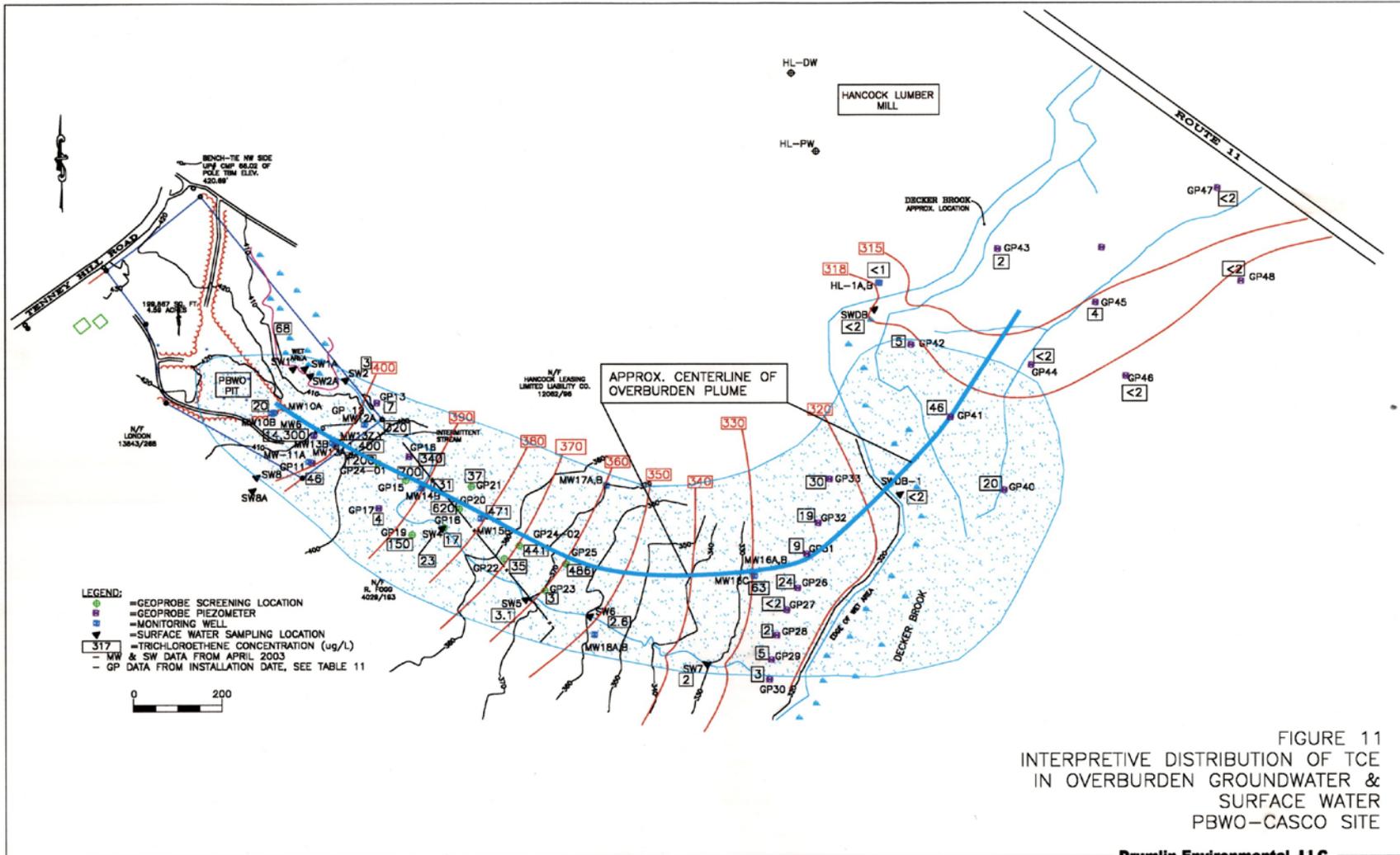


FIGURE 4  
GROUNDWATER MONITORING WELLS  
PBWO-CASCO SITE

# Overburden groundwater plume





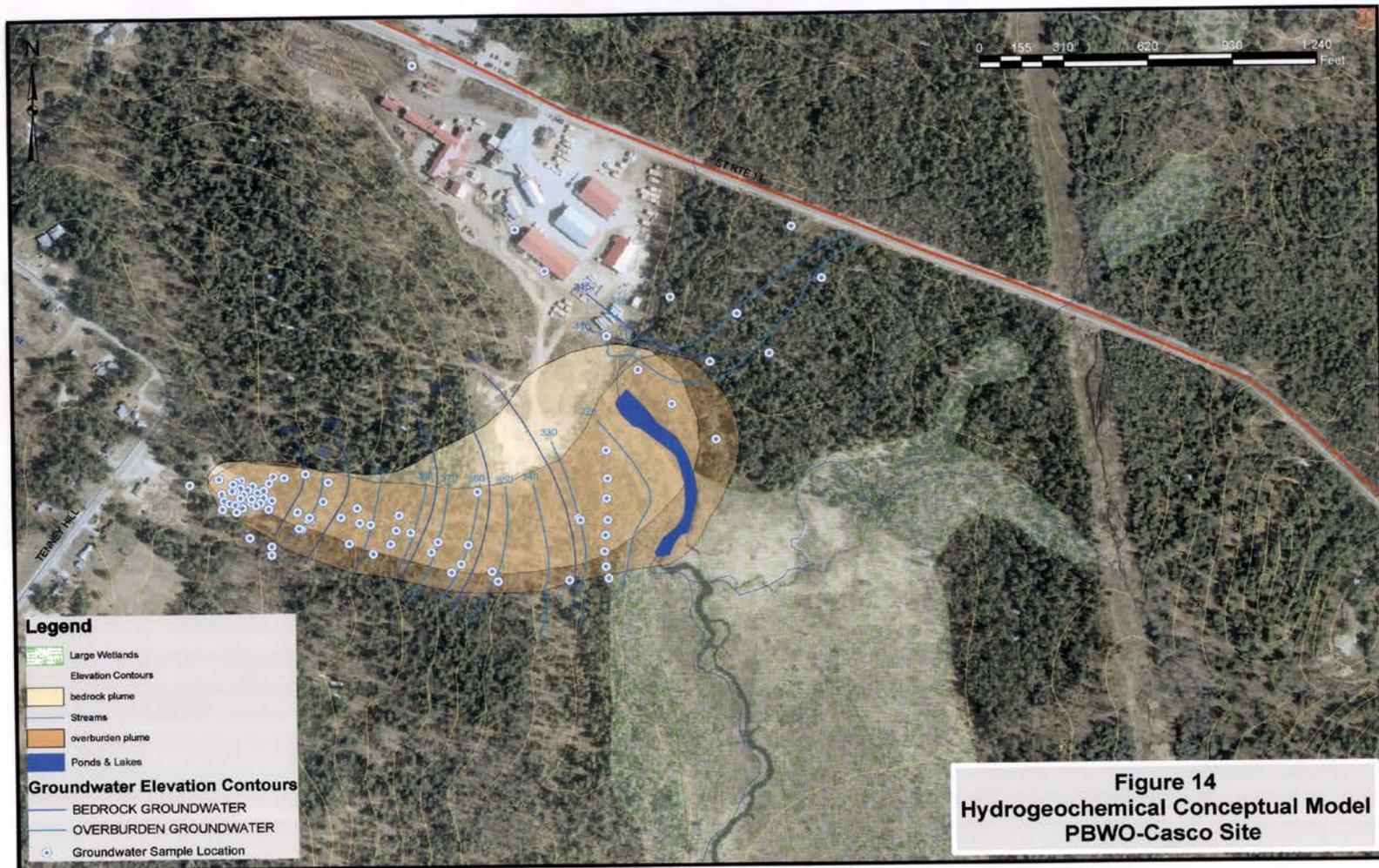
# Surface Water Sampling

- 9 samples collected from 6 locations
  - solvents detected in west side of on-site wetland
  - no chemical impact to off-site wetland
  - solvents detected in intermittent stream between site and Decker Brook
  - no detectable impact to Decker Brook

# Sediment Sampling

- 8 samples collected from 3 locations
  - solvent concentration in on-site wetland detected up to 17.3 mg/kg
  - DRO (waste oil) concentration detected in on-site wetland up to 975 mg/kg
  - no chemical contamination detected in off-site wetland sediments

# Composite Site Model



# Composite Model Cross-Section

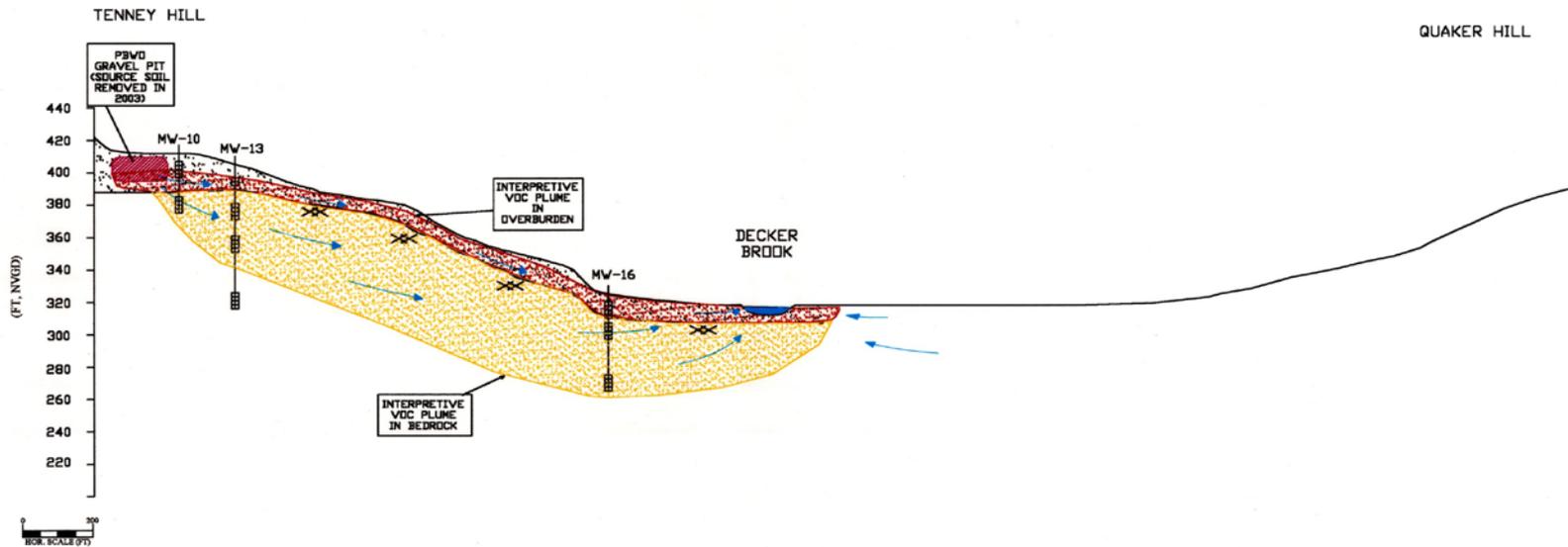


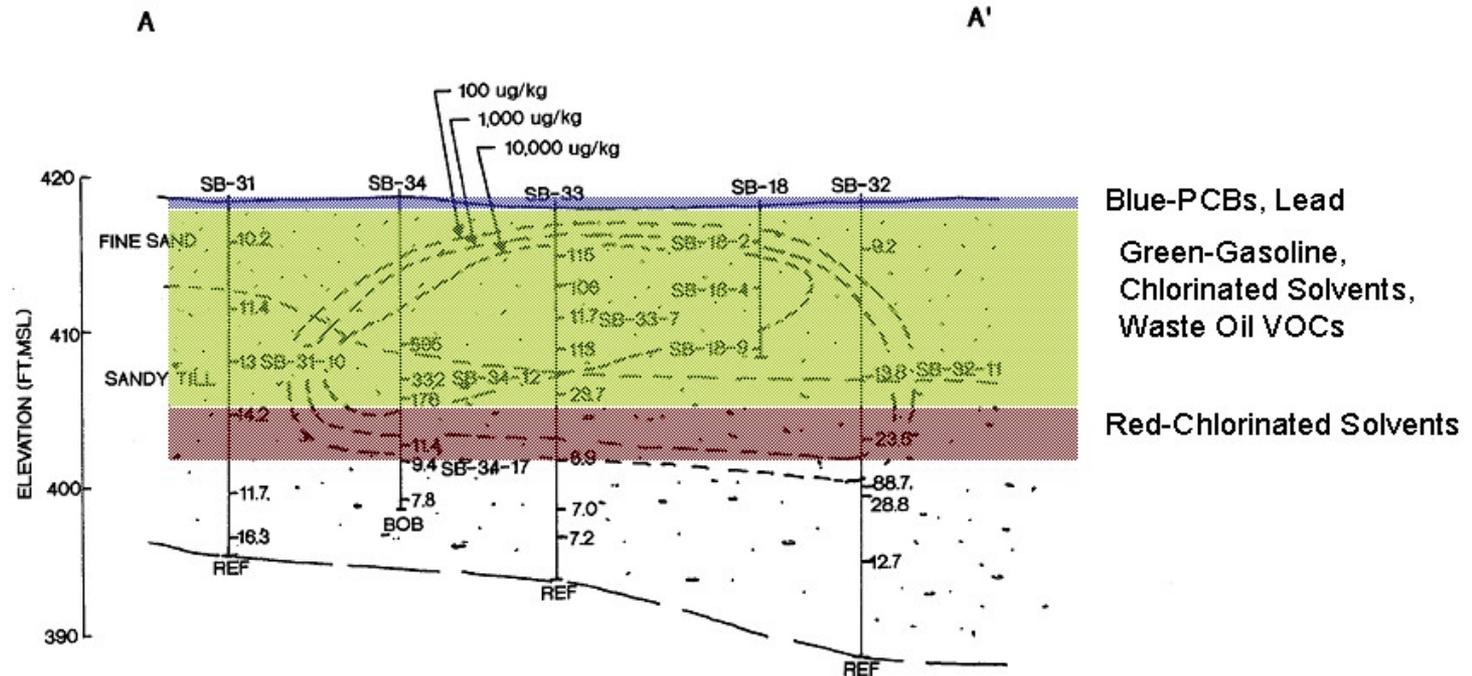
FIGURE 15  
SUMMARY PROFILE OF PLUME  
MIGRATION  
PBWO-CASCO SITE

# Removal Action

- 2002-2003 - soil removal for disposal from two areas
  - Area A
    - solvents, lead, PCBs
  - Area B
    - solvents, lead, oil



# Cross Section of Source Area A



**LEGEND:**  
 7.8 = PID HEADSPACE CONCENTRATION (PPM)  
 BOB = BOTTOM OF BORING  
 REF = GEOPROBE REFUSAL

**INTERPRETIVE GEOLOGIC PROFILE A-A'  
 VOCs IN SOIL  
 PBWO-CASCO SITE**

**Drumlin Environmental, LLC**

# Source Area Soil Removal Summary

- 6,886 tons contaminated soil removed to targets
  - 1mg/kg PCE, 1 mg/kg TCE
  - 375 mg/kg lead
  - 2.2 mg/kg PCB

# Source Area Soil Removal Summary

- 2,379 tons disposed at Stablex, Canada
  - hazardous by characteristic
  
- 4,507 tons disposed at Pine Tree Landfill, Hampden, Maine
  - non-hazardous, special waste

## Soil removal-loading trucks for disposal



# Site Closure

- Excavation site was backfilled and graded with clean, on-site material
- low levels of chemicals remain under clean backfill



# Conclusions and Recommendations

- Exposure Assessment

- soil - remaining contamination <MRAG, buried under backfill
- water
  - groundwater (drinking water)-no residential water wells in plume area, Hancock Lumber Mill well <MEGs, bottled water available for consumption
  - surface water-risk associated with ingestion; surface water only intermittently available, unlikely swimming risk in site wetland
- sediment - exposure unlikely in site wetland

- Potential Future Uses

- future uses should limit potential for exposure to residual levels
  - no groundwater extraction
  - no use, no contact in wetland area

# The Next Steps

## Site Management Plan

- Document Remediation Plan
  - natural attenuation
- Develop Monitoring Plan
  - periodic samples from monitoring wells to verify condition is stable
  - track samples from Hancock wells
- Develop Land Use Plan
  - Working with Casco on land use management

# Discussion

A copy of Investigation Report and Removal Report provided to Casco Town office for public review

submit any comments to the public record to

Kathy Niziolek, Project Manager

MEDEP/BRWM

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