

Portland Bangor Waste Oil Robbins Property, Ellsworth

Summary of the Remedial Investigation & Remedial Action



Overview

- Introductions – Team Members
- Background
 - *Site History*
 - *Investigations Summary*
 - *Site Setting*
- Remedial Investigation – Site Characterization
 - *Source Area Soils, and*
 - *Groundwater (overburden and bedrock)*
- Removal Actions Summary
- Conclusions and Recommendations

Team Members

- **DEP**
 - Hank Aho, Program Manager
 - Wayne Paradis, Project Manager
 - Troy Smith, Project Geologist
- **GZA GeoEnvironmental, Inc. (Contractor)**
 - James Gagnon, Senior Project Manager
 - Tom Lawless, District Manager

Site History

- 1963 - 1980 George West, (d.b.a. Portland Bangor Waste Oil Company) operated the Ellsworth waste oil facility as a satellite to PBWO Site in Wells
 - Facility processed nearly 100,000 gallons of waste oil
 - Facility stored locally acquired waste oil, allowing oils to stratify in the tanks
 - Lighter oils were decanted and sold as fuel supplements
 - Residual, heavier oils were sold to towns and race tracks as dust suppressants to dirt surfaces
 - Waste oil stored at site believed to be primarily petroleum, with other impurities including lead and solvents
- 1986 - West sold the property to the Robbins
- 1988 - Residence constructed on the site
- 1989 - Site identified to DEP during interview with George West

Investigation Summary

- 1989 - initial interviews with the Robbins
- 1990 - investigation identifies contamination in Robbins' residential water
- 1991 - DEP finds contamination in three additional residential and one public water supply wells; water treatment systems installed on all contaminated wells
 - Preliminary Assessment completed
- 1994 - DEP conducts soils and groundwater investigation on the site
- 1997-2000 – Source investigation and remedial investigations complete

Site Setting

- Site is located in a sparsely populated, wooded, rural area, set back approximately 450ft from US Route 1A
- Surficial topography directs drainage to the east towards the site's closest, neighboring residences
- Overburden soils: a pocket of sand and gravel, bounded on all sides by a fractured fine-grained silt and clay deposit
- bedrock: fractured granite

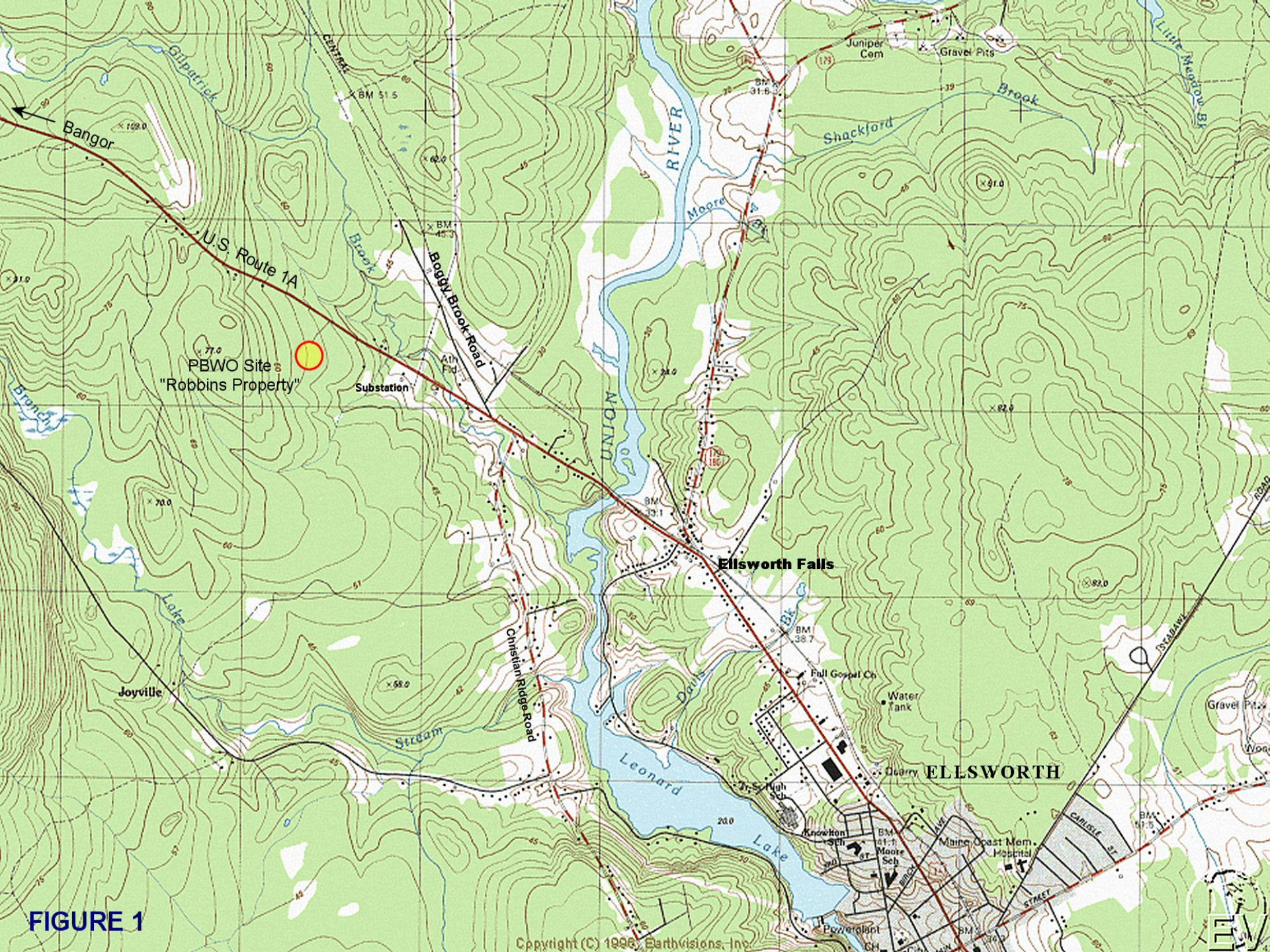


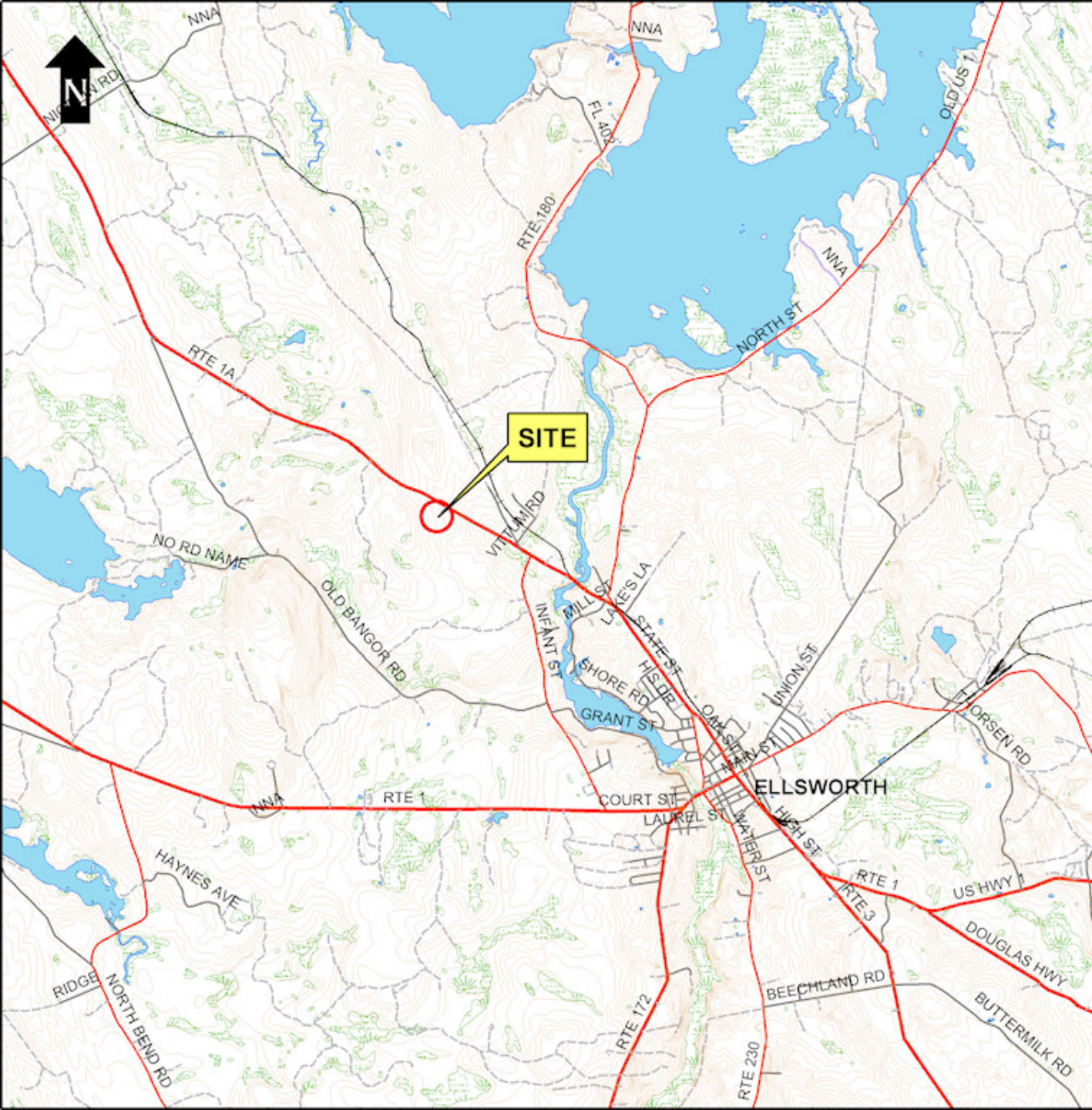
FIGURE 1



OR

**ROBBINS PROPERTY
(Portland-Bangor Waste Oil)
Ellsworth, ME**

**Figure 1
Site Location**



Legend

— Elevation_Contours

Roads

JURISDICTION

- Town Road
- Town Road - Summer
- Town Road - Winter
- State-aided Highway
- State Highway
- Toll Highway
- Private Road
- Reservation Road
- - - Seasonal Parkway
- Railroads
- Ponds and Lakes
- Rivers



RI Investigation Site Characterization Tasks

- Sample and Analyze Environmental Media
 - Source Area Soil
 - Groundwater
 - Shallow overburden
 - Deep overburden
 - Bedrock
- Develop Conceptual Site Model
 - interpretations based on findings
- Determine Extent of Source Area Soil Removal

Source Area Sampling

- Samples collected from 58 locations
 - Solvent concentrations (tetrachloroethylene or PCE) in soil detected as high as 1,400 mg/kg
 - Maine Remedial Action Guidelines (MRAGs): as low as 3 mg/kg
 - PCE concentration in site groundwater detected as high as 400,000 $\mu\text{g/L}$
 - ME Exposure Guidelines (MEG): 5 $\mu\text{g/L}$ (residential)

Soil & Ground Water Sampling (via Geoprobe)



Woods

Overgrown gravel Pit

Debris area
(white goods)

Woods

North

To US Route 1A

Orange Boundary Pin

Debris area

MW-3

GP-121

MW-1

231

236

234

Location of collapsed
Storage Barn (removed 2001)

Prior heavy equipment
storage area

Prior heavy equipment
storage area











Approximate
Leachfield
Location

Robbins
House

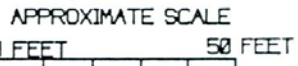
Bedrock Well

MW-2

LEGEND

-  Utility pole
-  PVC Micro-well (1995)
-  Temporary Ground Water Sample Point (1995)
-  Drilled monitoring wells (May 2000)
-  Dry Soil Borings (1995)
-  Dry Soil Borings (1997 / 1998)
-  Hazardous Substance Contamination
-  Petroleum Hydrocarbon Contamination
-  Estimated Contamination Area
-  Estimated TPH contamination area

Woods



Robbins Property Uncontrolled Hazardous Substance Site

Maine Department of Environmental Protection
Site Drawing

Produced by Troy Smith & Wayne Paradis

GP-110

GP-114

GP-109

GP-101

GP-103

GP-104

GP-105

GP-123

GP-120

GP-122

GP-117

GP-115

GP-112

GP-113

GP-107

GP-106

GP-118

GP-116

GP-114

GP-108

GP-102

GP-101

GP-119

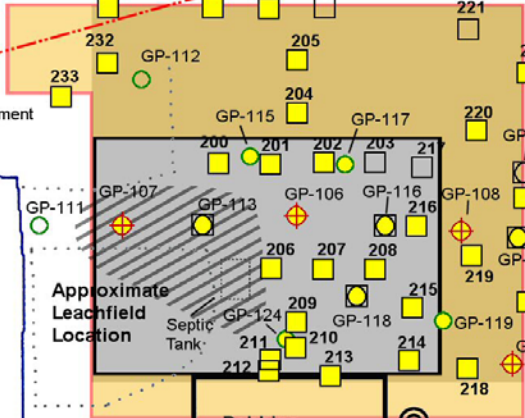
GP-111

GP-109

GP-105

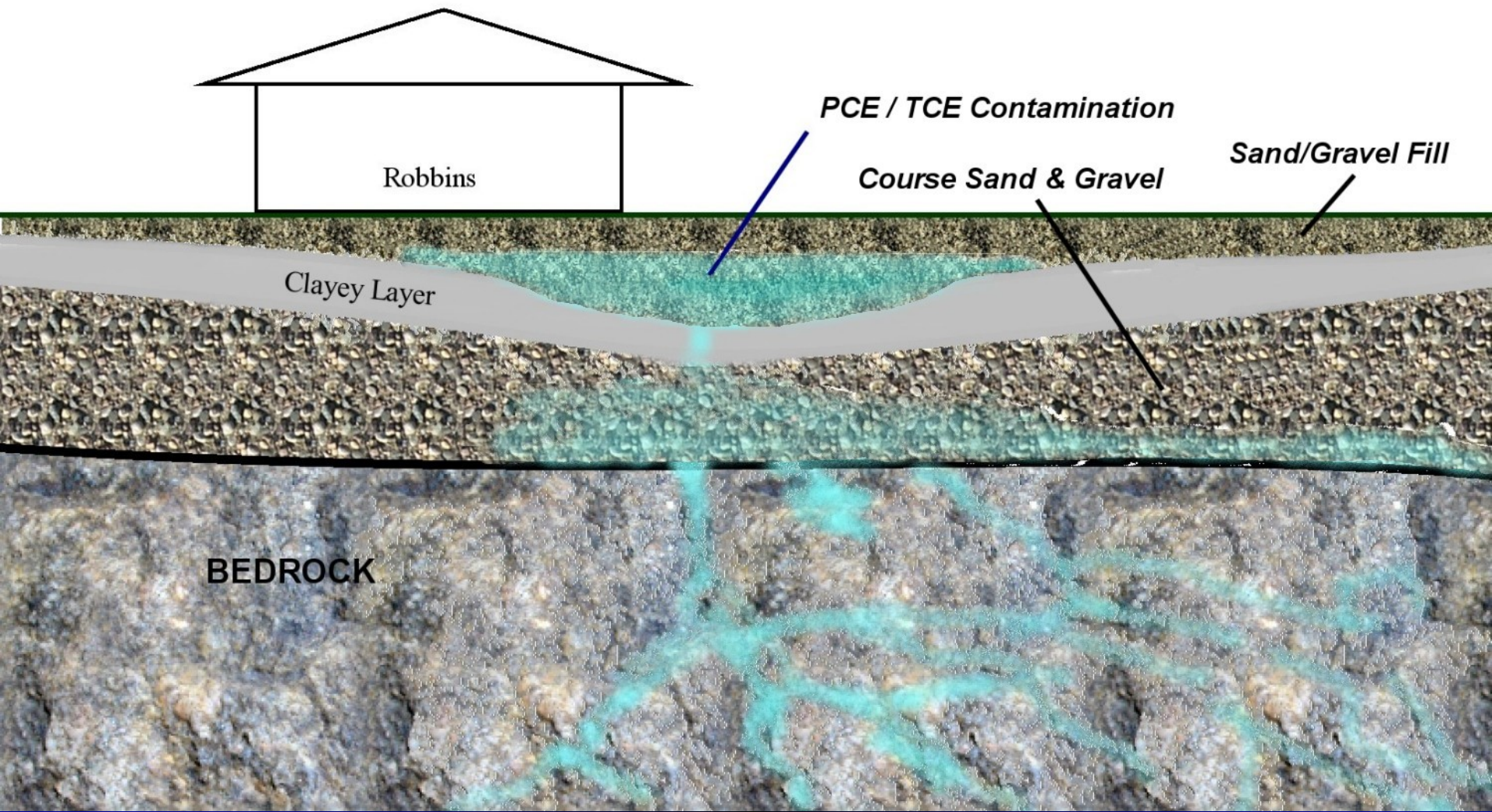
GP-104

GP-103



Composite Model Cross-Section

Robbins Property
Uncontrolled Hazardous Substance Site
Ellsworth, Maine



Removal Action



Oct & Nov 2002



**Removing solvent
contaminated clay**

Source Area Removal Summary

- 1,989 tons contaminated soil removed
 - 824 tons disposed at GSI, Canada (hazardous by characteristic)
 - 1,165 tons disposed at Pine Tree Landfill, Hampden, Maine (non-hazardous, special waste)
- 12,000 gallons of contaminated groundwater recovered during excavation dewatering
 - 10,250 gallons treated on-site
 - 1,555 gallons transported off-site and disposed at United Oil Recovery in Newington, NH



Final loads of backfill placed over the remediated site

Site Closure



Remaining monitoring wells left on site to permit routine monitoring and sampling