Former NCBC Davisville Site 16 – Former Creosote Dip Tank and Fire Training Area

- Summary of Supplemental Phase II Remedial Investigation Data Package Report
- Upcoming Phase III Work Plan
- 1,4-Dioxane Groundwater Sampling

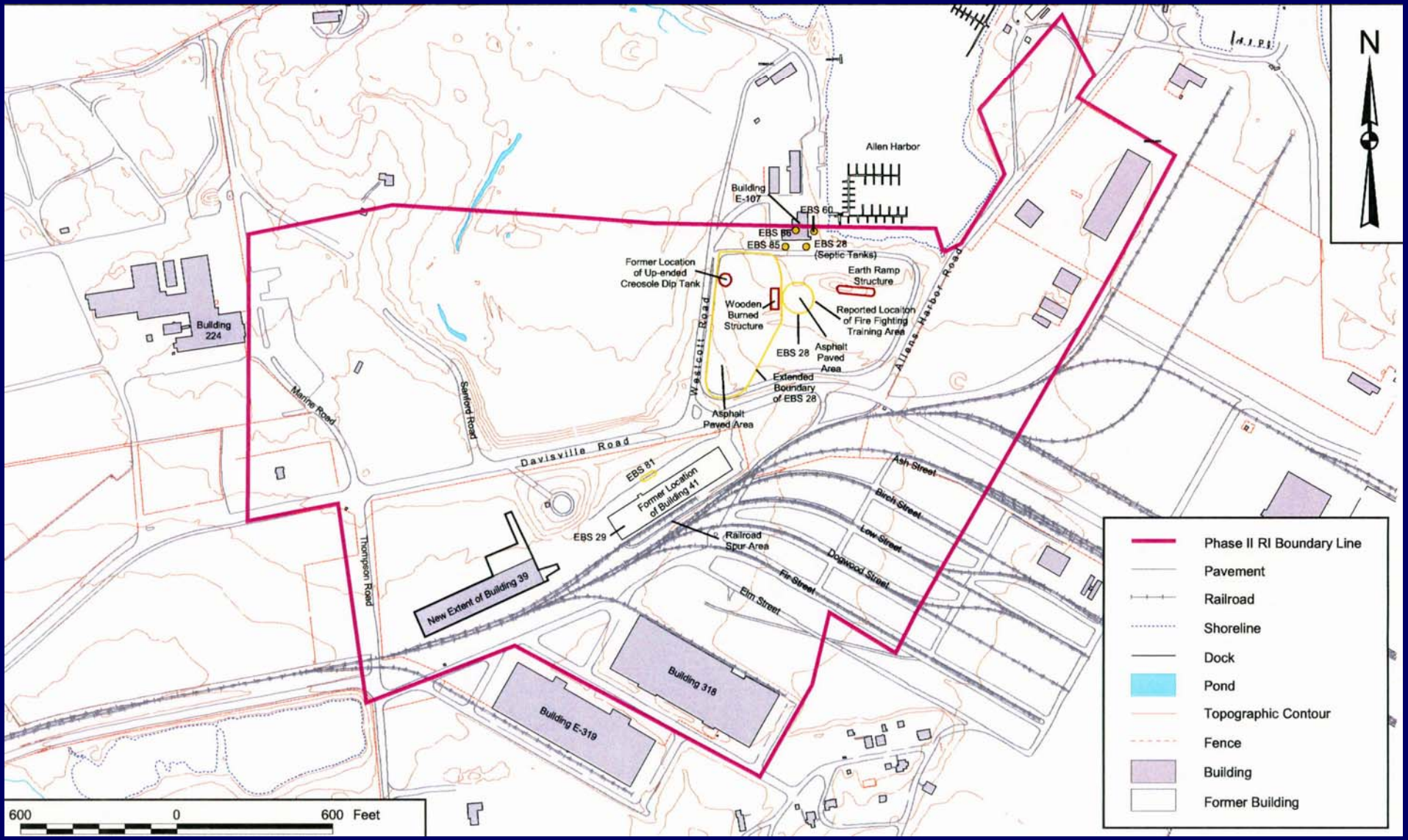
Supplemental Phase II Remedial Investigation Data Package Report for Site 16

- Primary objectives:
  - Summarize and evaluate available environmental data for Site 16.
  - Identify data gaps in information necessary to complete the remedial investigation.
  - Provide preliminary recommendations to resolve data gaps.

Environmental Baseline Survey Review Items Within Site 16

- Item No. 28 – Creosote Dip Tank Area and Suspected Former Fire Fighting Training Area.
- Item No. 29 – Former Building 41.
- Item No. 60 – Building E-107 Septic Tanks.
- Item No. 81 – Former Building 41 Septic Tanks.
- Item No. 85 – Former UST Area.
- Item No. 86 – Bldg E-107 Floor Drains.

Site 16 Map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Allen Harbor
Building E-107
EBS 60
EBS 86
EBS 85
EBS 28 (Septic Tanks)
Former Location of Up-ended Creosote Dip Tank
Earth Ramp Structure
Wooden Burned Structure
Reported Location of Fire Fighting Training Area
EBS 28
Asphalt Paved Area
Extended Boundary of EBS 28
Asphalt Paved Area
Westcott Road
Allens Harbor Road
Building 224
Marine Road
Sanford Road
Davisville Road
EBS 81
Former Location of Building 41
EBS 29
Railroad Spur Area
Thompson Road
New Extent of Building 39
Ash Street
Birch Street
Low Street
Dogwood Street
Fir Street
Elm Street
Building 318
Building E-319
600 0 600 Feet
Phase II RI Boundary Line
Pavement
Railroad
Shoreline
Dock
Pond
Topographic Contour
Fence
Building
Former Building

Environmental Investigations Conducted at Site 16

- Environmental Baseline Survey (EBS) Investigations (1996 – 1998)
- Phase I Remedial Investigation (RI) (1999 - 2001)
- Phase II RI (2002 – 2003)
- Phase II Screening Level Ecological Risk Assessment (SLERA) (2004)
- Supplemental Phase II Study and HRC Pilot Study (2004)
- Note…. Approximately 200 monitoring wells have been installed to date.

Observations Regarding Surface/Subsurface Soils

- Most sampling conducted to date has been biased toward known/suspected source areas. Surface soils (0 to 2 feet bgs) collected in north-central (EBS 28 area) only.
- Polycyclic aromatic hydrocarbons (PAHs) and volatile organics (e.g., trichloroethene [TCE]) are the primary chemicals detected in surface and subsurface soils, respectively.
- Limited evidence of metals contamination.

Observations Regarding Surface/Subsurface Soils (continued)

- PAH concentrations are highest at the former location of the up-ended creosote dip tank. Relatively low concentrations at former fire training area. Some detected concentrations exceed EPA/State of Rhode Island benchmarks.
- TCE concentrations are highest (greater than 1000 part per billion [ppb]) in the deeper soils south of Davisville Road.
- Dioxin/furan concentrations in surface soil do not exceed EPA Action level (1 ppb).

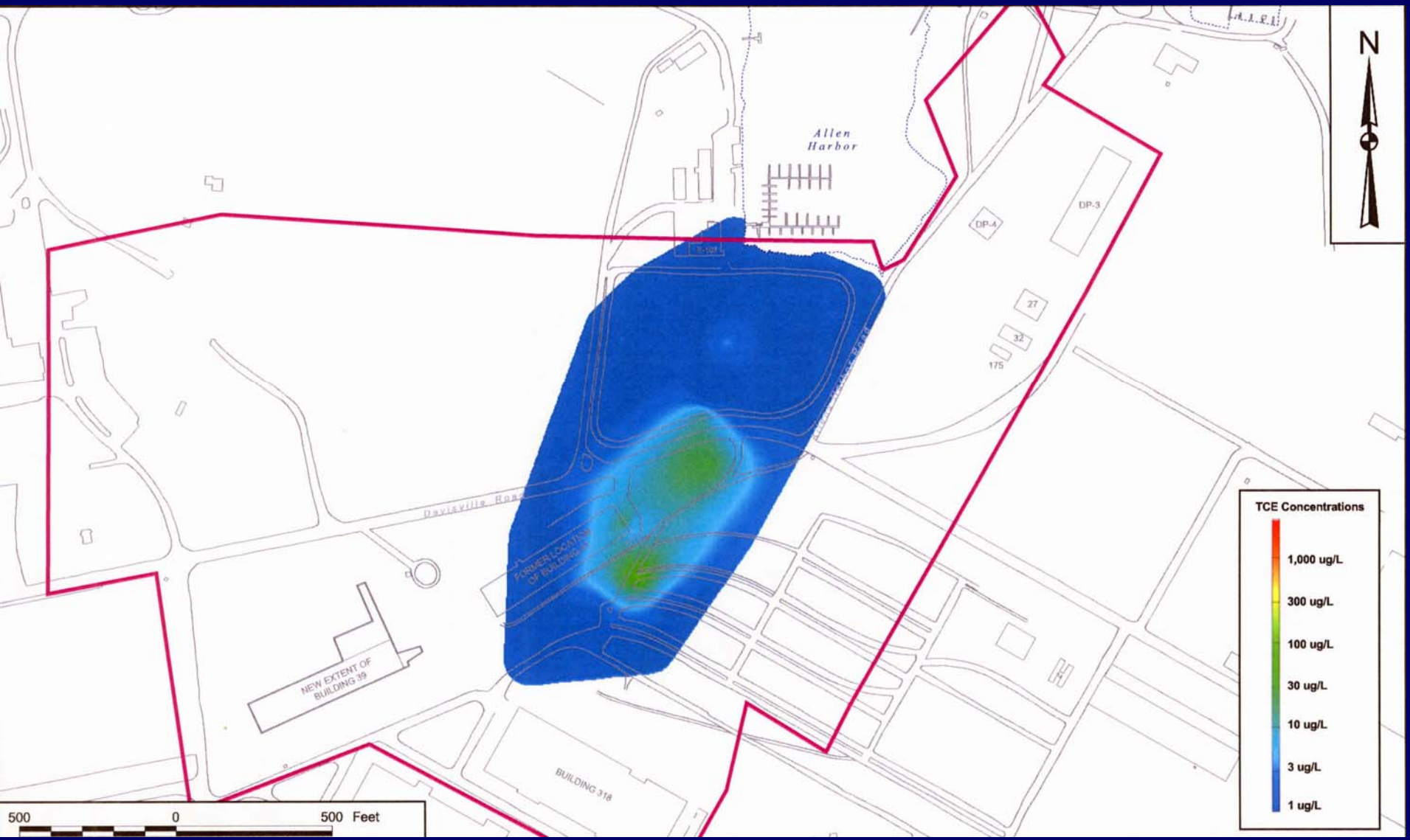
Observations Regarding Groundwater

- Generally, the groundwater is flowing to the northeast. However, deep groundwater below Davisville Road flows to the east. Groundwater flow in the southeastern part of the Site 16 is not completely defined.
- TCE (maximum concentration greater than 1000 ppb) is major VOC detected in GW .... comprised greater than 95 % of the total chlorinated solvents detected. However, several degradation by-products have also been detected (e.g., vinyl chloride [VC], cis-1,2-dichloroethene [cis-1,2-DCE]).
- Multiple sources may be contributing the plume(s) that extend from the former Building 41 area to well MW16-05 in the vicinity of Allen Harbor.

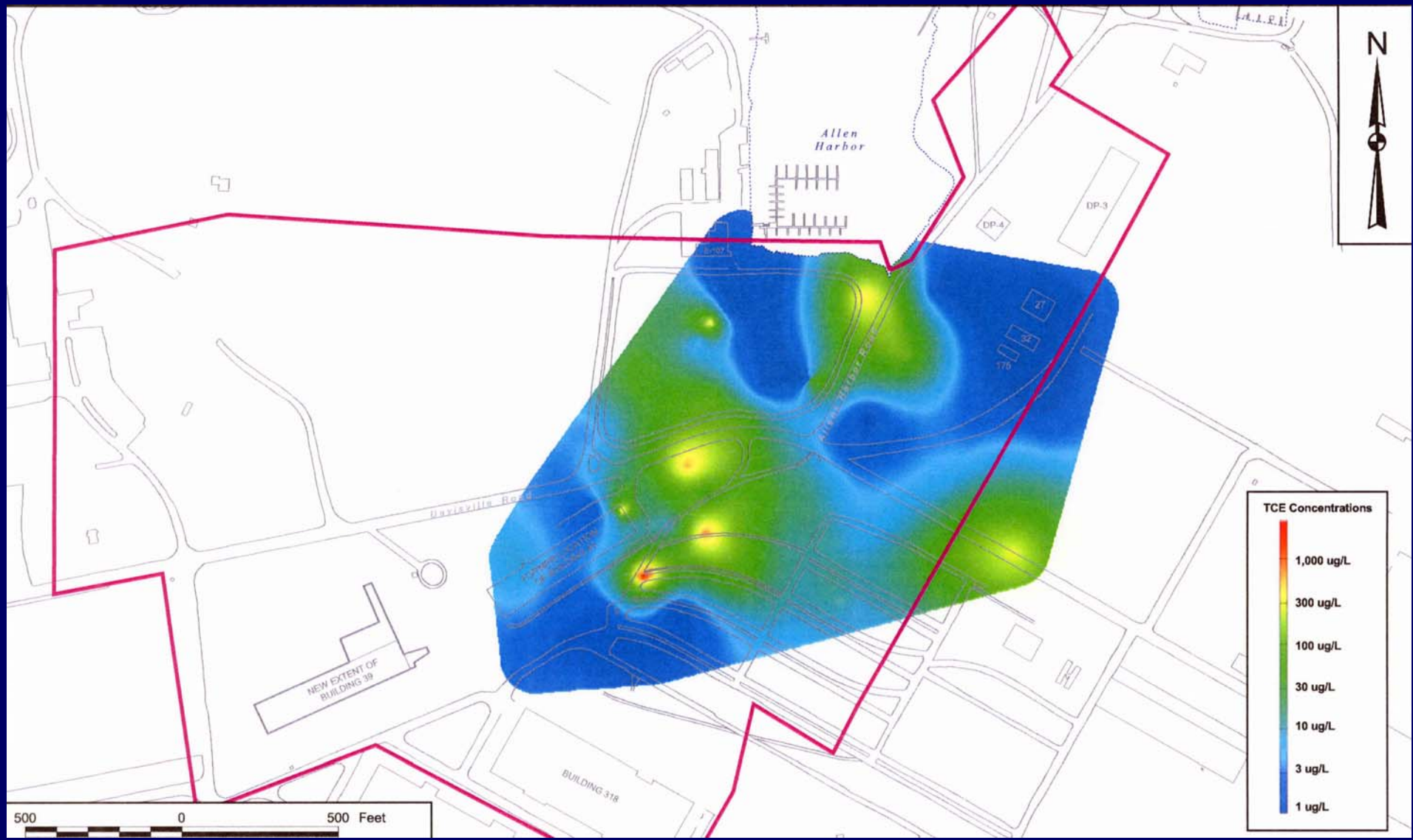
Observations Regarding Groundwater (continued)

- Other parameters (e.g., semi-volatile organics, pesticides, and metals) detected infrequently or at concentrations that may represent background.
- No evidence of non-aqueous phase liquid (NAPL) detected to date.
- TCE plume(s) not completely delineated with reference to Safe Drinking Water Act maximum contaminant level (MCL) of 5 ppb .... e.g., in the area to the east of the former Building 41.
- Additional upgradient well(s) may also be necessary.

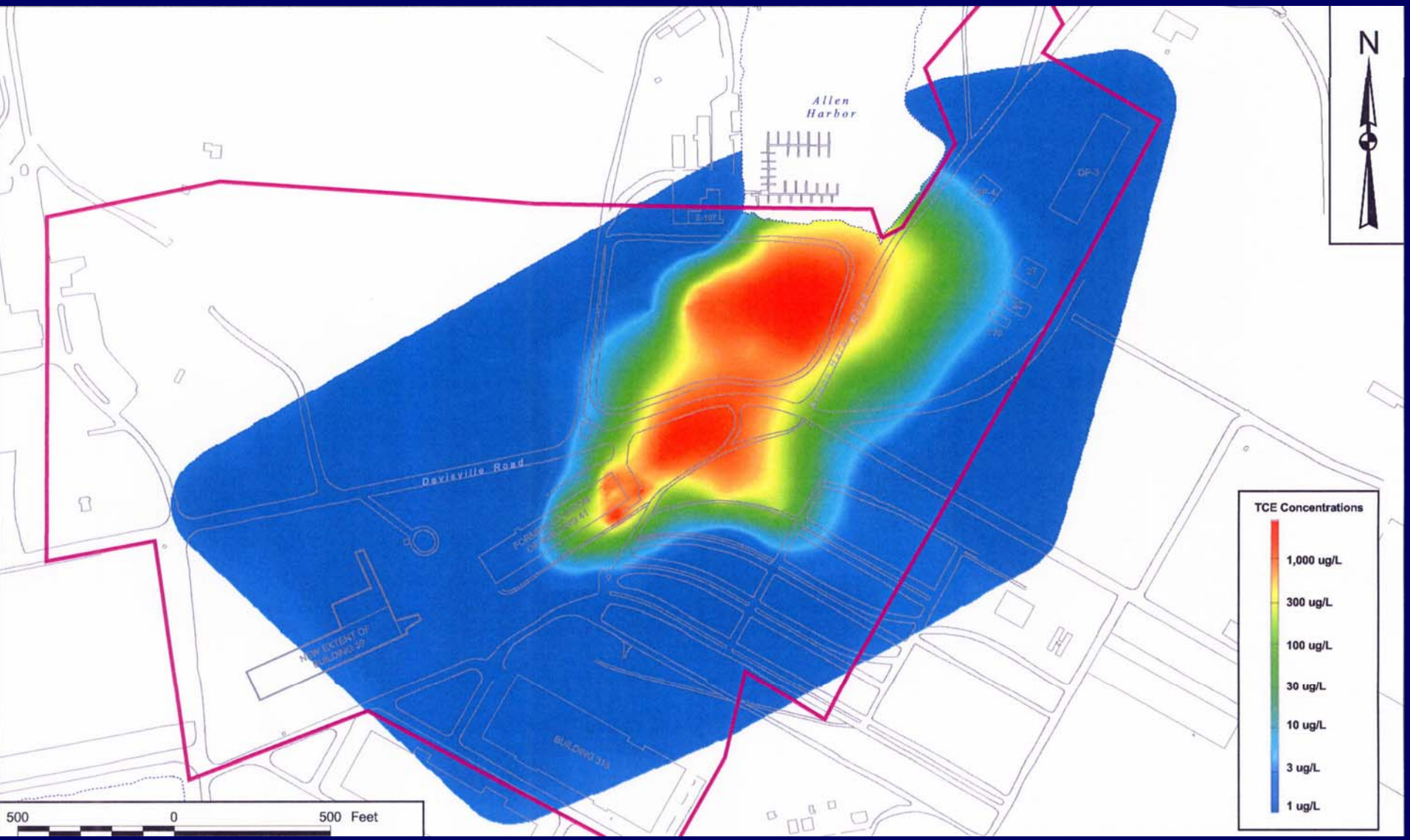
Shallow GW at Site 16



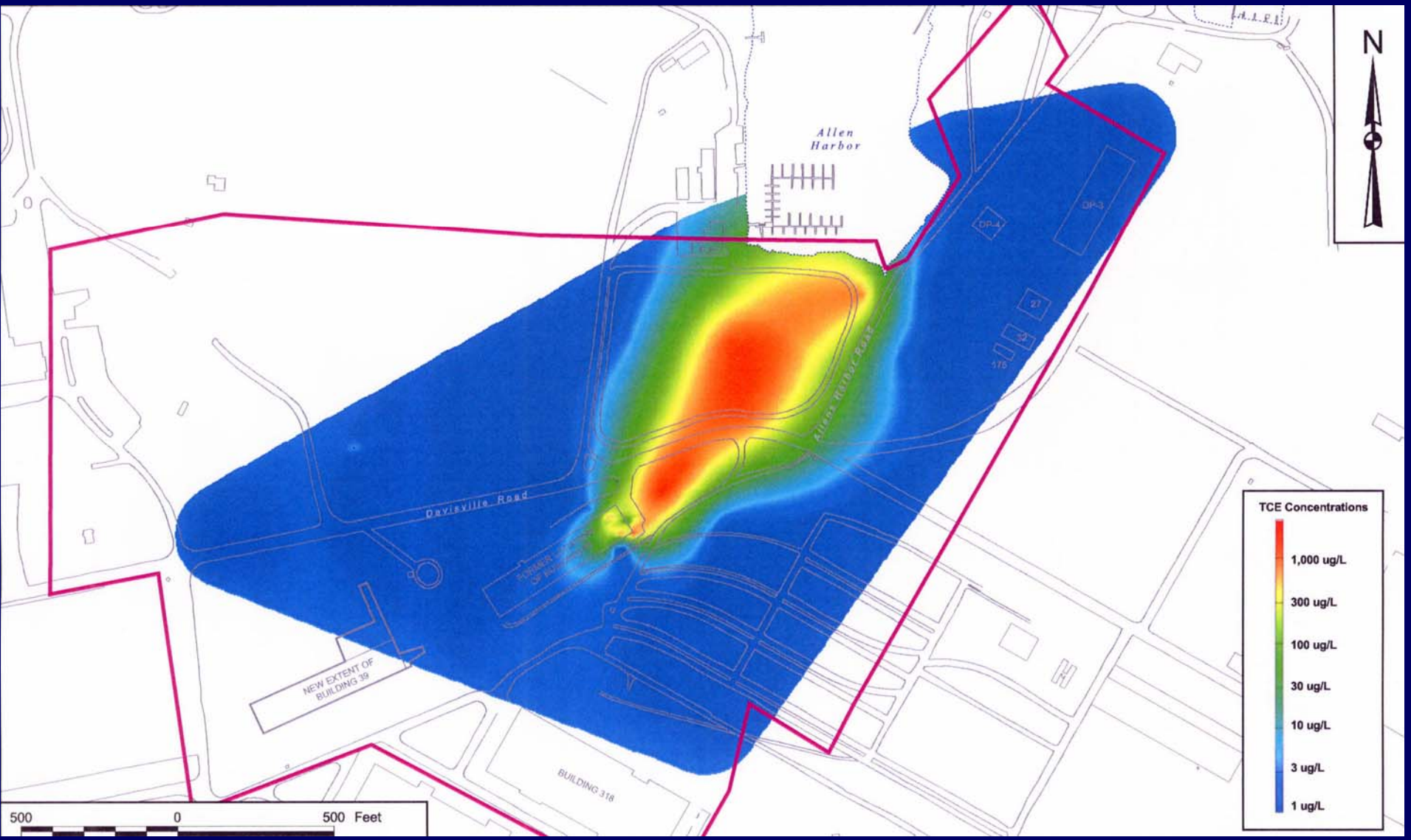
Intermediate GW at Site 16



Deep GW at Site 16



Bedrock GW at Site 16



Observations Regarding Surface Water/Sediments

- Extensive sediment sampling conducted during Phase II SLERA.
- Chlorinated VOCs detected infrequently in sediments from Allen Harbor. The maximum detected TCE sediment concentration was 2 ppb.
- Cis-1,2-DCE , a TCE degradation by-product, was the primary chlorinated VOC detected in the sediments.
- Surface water samples have not been not collected from Allen Harbor. Low-level (less than 1 ppb) chlorinated VOC concentrations detected in shoreline seep samples.

Observations Regarding Surface Water/Sediments (continued)

- PAHs were primary chemicals detected in Allen Harbor sediments.
- Phase II SLERA concluded that Site 16 source areas did not contribute substantially to PAHs in Allen Harbor sediments..... PAHs most likely a consequence of dock pilings, roadway runoff, etc.
- Navy currently evaluating the need for further sampling of Allen Harbor.

Phase III Work Plan for Site 16

- Objective – Address all remaining data gaps for Site 16 (e.g., surface soil characterization for risk assessment, groundwater characterization to east of Building 41).
- Work plan due to agencies this summer.
- Field work planned for 2007.
- Then…. Progress to Feasibility Study!

Update: 1,4-Dioxane Sampling of Site 16 GW

- 1,4-Dioxane is an additive (stabilizer) to certain solvents (e.g., 1,1,1-TCA).
- Monitoring conducted at request of EPA.
- Not included on typical analytical list for volatile organics.
- Two rounds of sampling (10 wells) conducted (Fall 2004 and Spring 2006).
- Not detected in any wells sampled. The Region 9 preliminary remediation goal (PRG) is 6.1 ppb. The reported detection limit for the second round is 2 ppb.