

Raytheon

Public Involvement Meeting

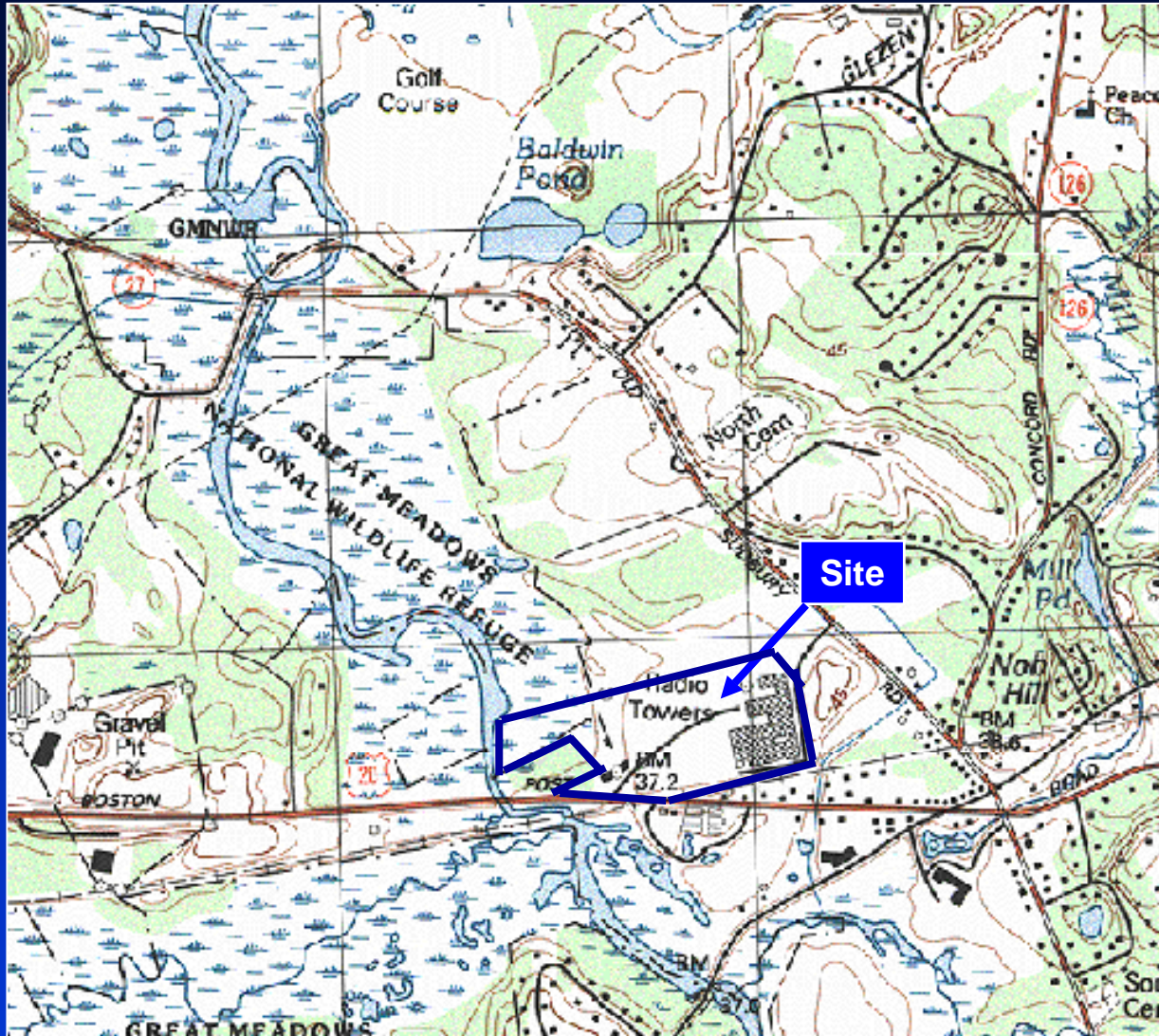
March 9, 2005

Former Raytheon Facility
Wayland, Massachusetts

Presented by:
Edwin P. Madera

Purpose of Meeting

- **Draft Phase II – Comprehensive Site Assessment (CSA) Scope of Work**
 - For Release Tracking Number (RTN) 3-22408 (Northern Area of the Site)
 - Proposed additional assessment activities
- **Deed Restriction / RAO AUL for wetland remedial areas**
- **Question and Answer Period**



Locus Map



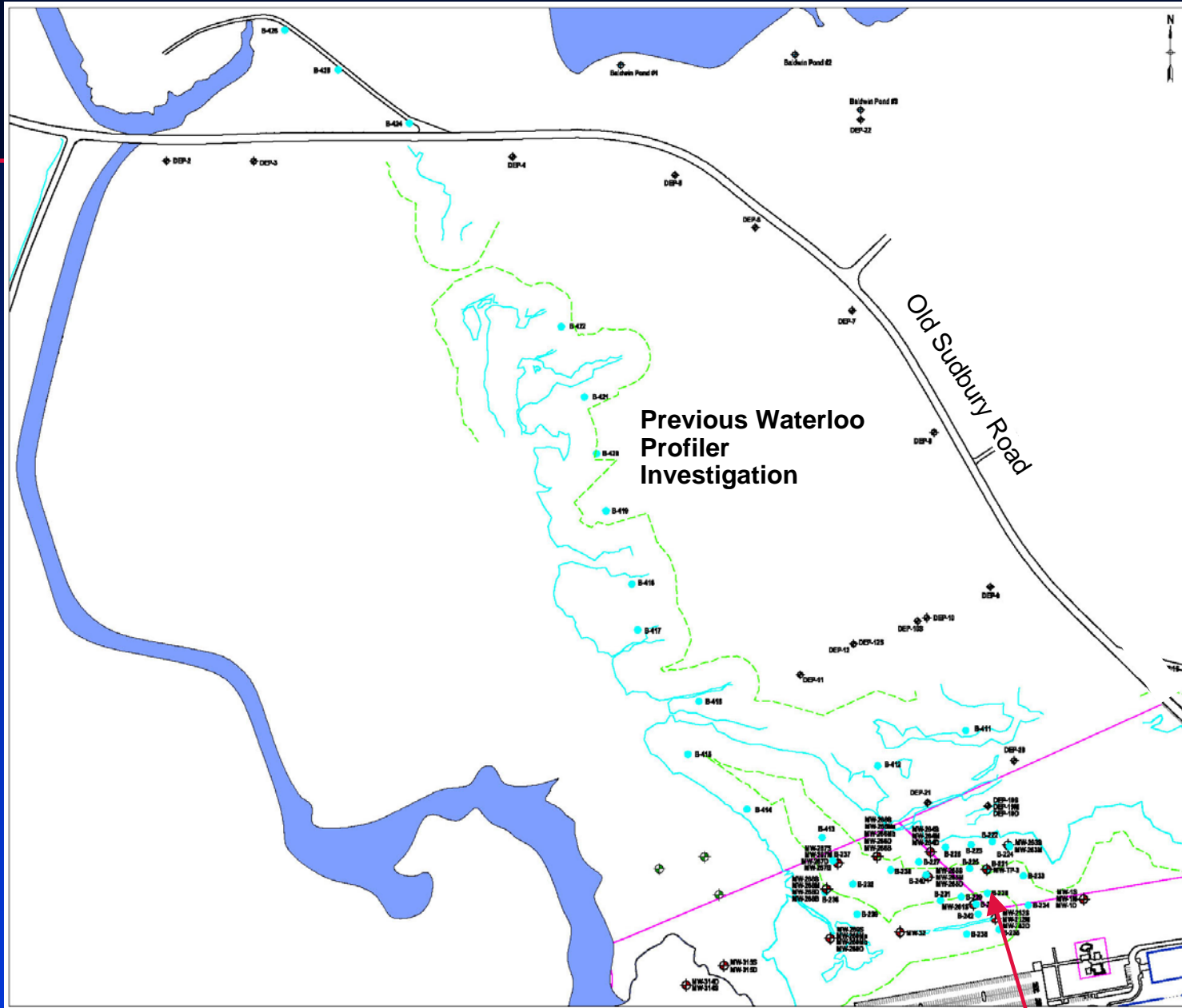
Completed Wetlands
Remediation

Proposed Phase II Site
Investigation

Completed Groundwater
Remediation



Northern Area
Investigation
Map



Suspected Source Area

Other Phase I Contaminants

- **MTBE**

- The presence of MTBE in groundwater is attributed to a release from local gas station
- Supporting evidence provided in the Phase I Report

- **Arsenic**

- The presence of arsenic in groundwater is naturally occurring
- Supporting evidence provided in the Phase I Report

- **Continue to conduct groundwater monitoring activities**

Draft Phase II –
Comprehensive Site
Assessment (CSA)
Scope of Work

Draft Phase II – CSA Scope of Work

- Conducted for RTN 3-22408 (Focused in Northern Area)
- Purpose of a Phase II – Comprehensive Site Assessment
 - Collect data to support conclusions and opinions regarding:
 - 1) The source, nature, and extent of oil and/or hazardous materials
 - 2) The potential risk of harm to health, safety, public welfare, and the environment
 - 3) The need to conduct remedial actions at the Site.

Draft Phase II – CSA Scope of Work

- Dynamic Investigation within and near suspected source area
 - Membrane Interface Probe
 - Waterloo profiler borings
 - Soil sampling
 - Permanent monitoring wells
- Conduct monitoring well installations in wetlands
- Conduct hydraulic conductivity testing
- Conduct treatability study
- Conduct groundwater sampling and gauging
- Perform risk characterization

Phase II - Investigation Techniques

Membrane Interface Probe (MIP)

- Provides real-time continuous relative contaminant distribution data
- Used both above and below the water table
- 41 proposed boring locations

Waterloo Profiler

- Provides groundwater samples that can be analyzed in the field
- 7 proposed boring locations

Soil Sample Collection

- Analyzed for soil properties
- Up to 5 boring locations

Monitoring well installation

- Provides long-term monitoring points
- 5 proposed locations near source area
- 3 proposed locations in the wetland

Hydraulic Conductivity Testing

- Assist in calculating groundwater velocity

Phase II - Investigation Techniques

MIP and Waterloo Profiler Equipment



Phase II - Investigation Techniques



MIP Instrumentation



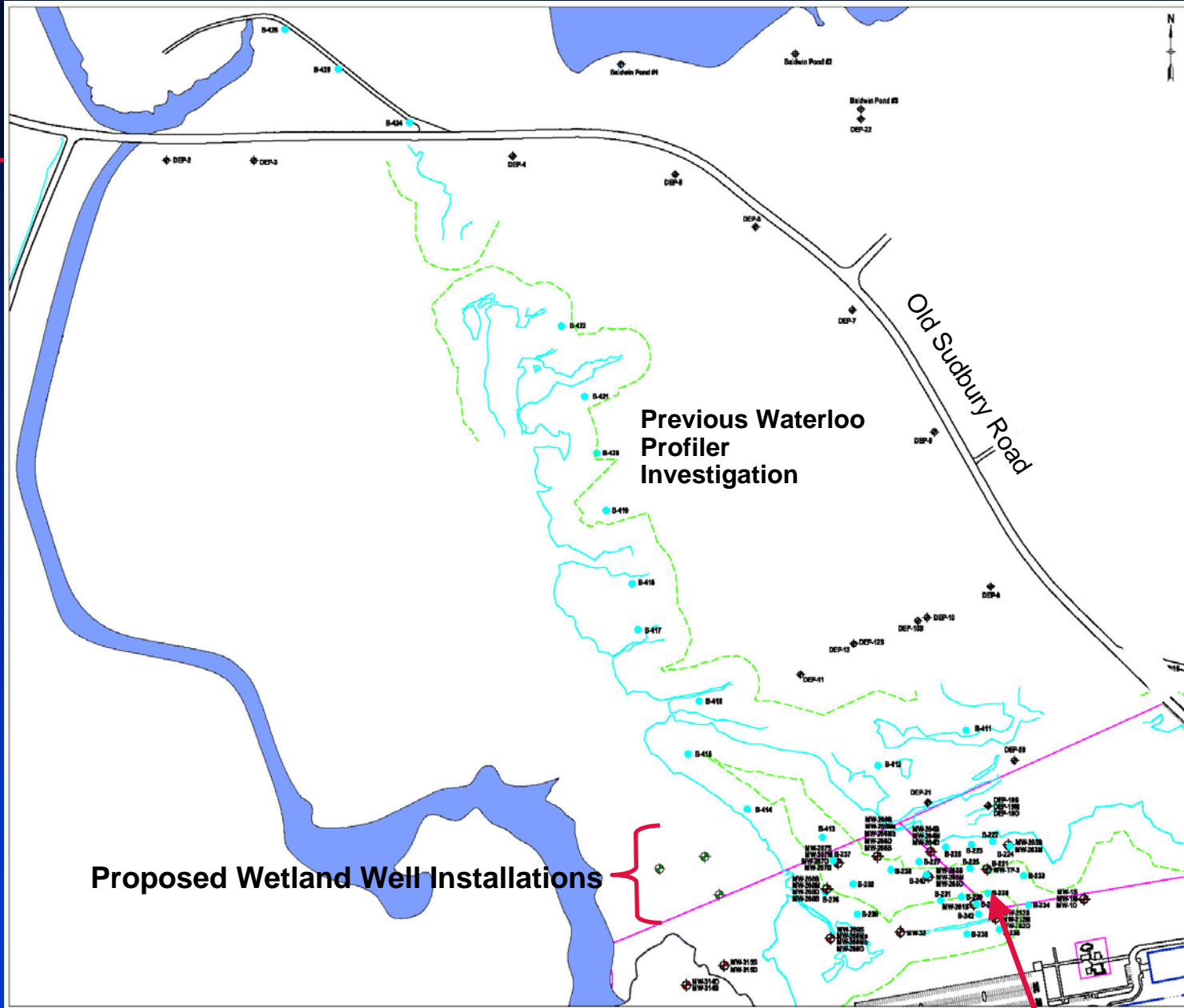
MIP Down-hole Tool



Waterloo Profiler Down-hole Tool



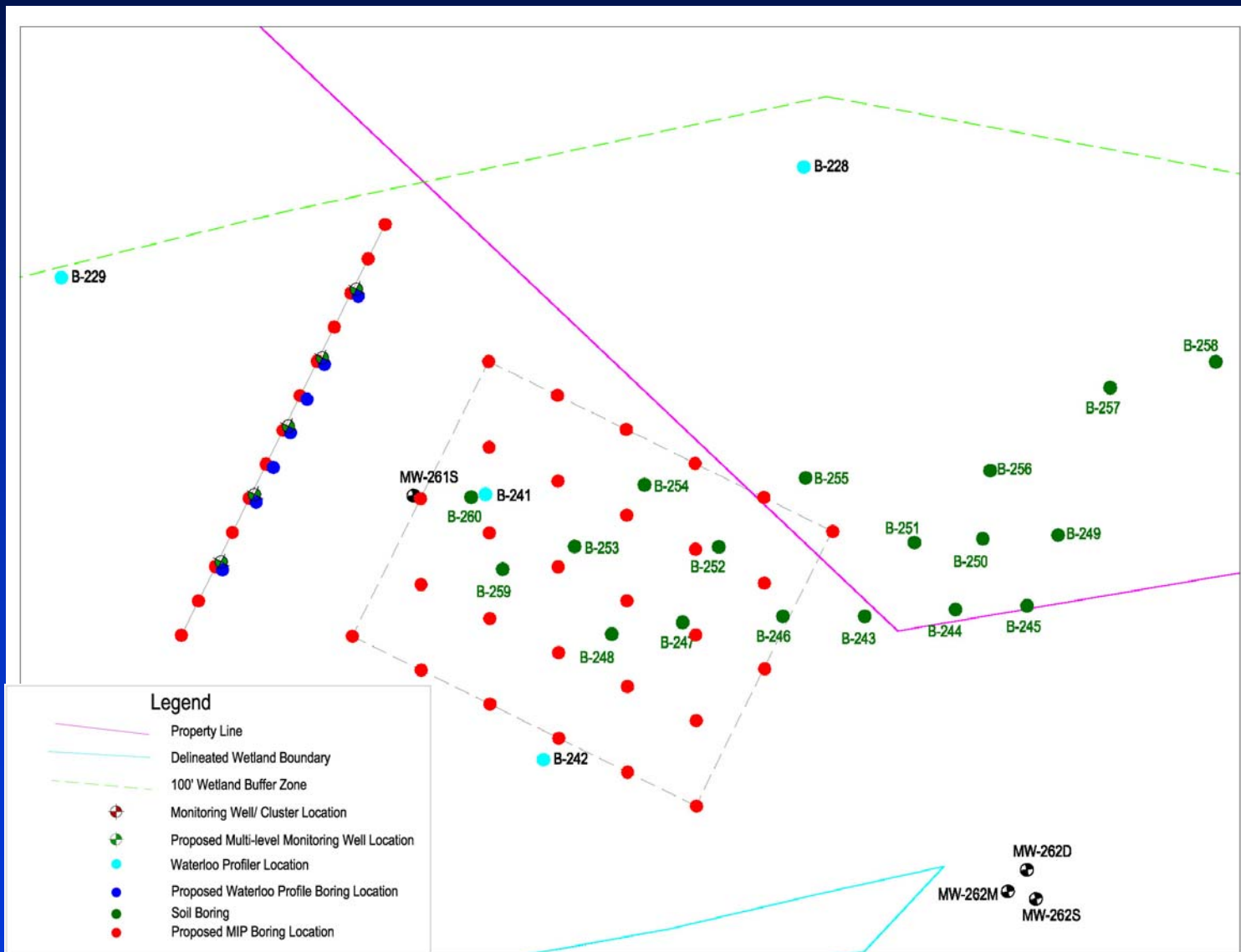
Waterloo Profiler Instrumentation



Proposed Wetland Well Installations

Blow up on next slide

Source Area Investigation



Phase II SOW – Treatability Study

- **Soil and groundwater samples will be collected for a Treatability Study**
 - Evaluate the potential for native bacterial populations to biologically degrade CVOCs
 - Evaluates the results of adding carbon substrates and/or nutrients, in an effort to increase bioremediation efficiency
 - Information will be used to:
 - Assess the possibility of using enhanced bioremediation as a remedy
 - Determine how to optimize the bioremediation process



Deed Restriction / RAO AUL for Wetland Remedial Areas

Deed Restriction

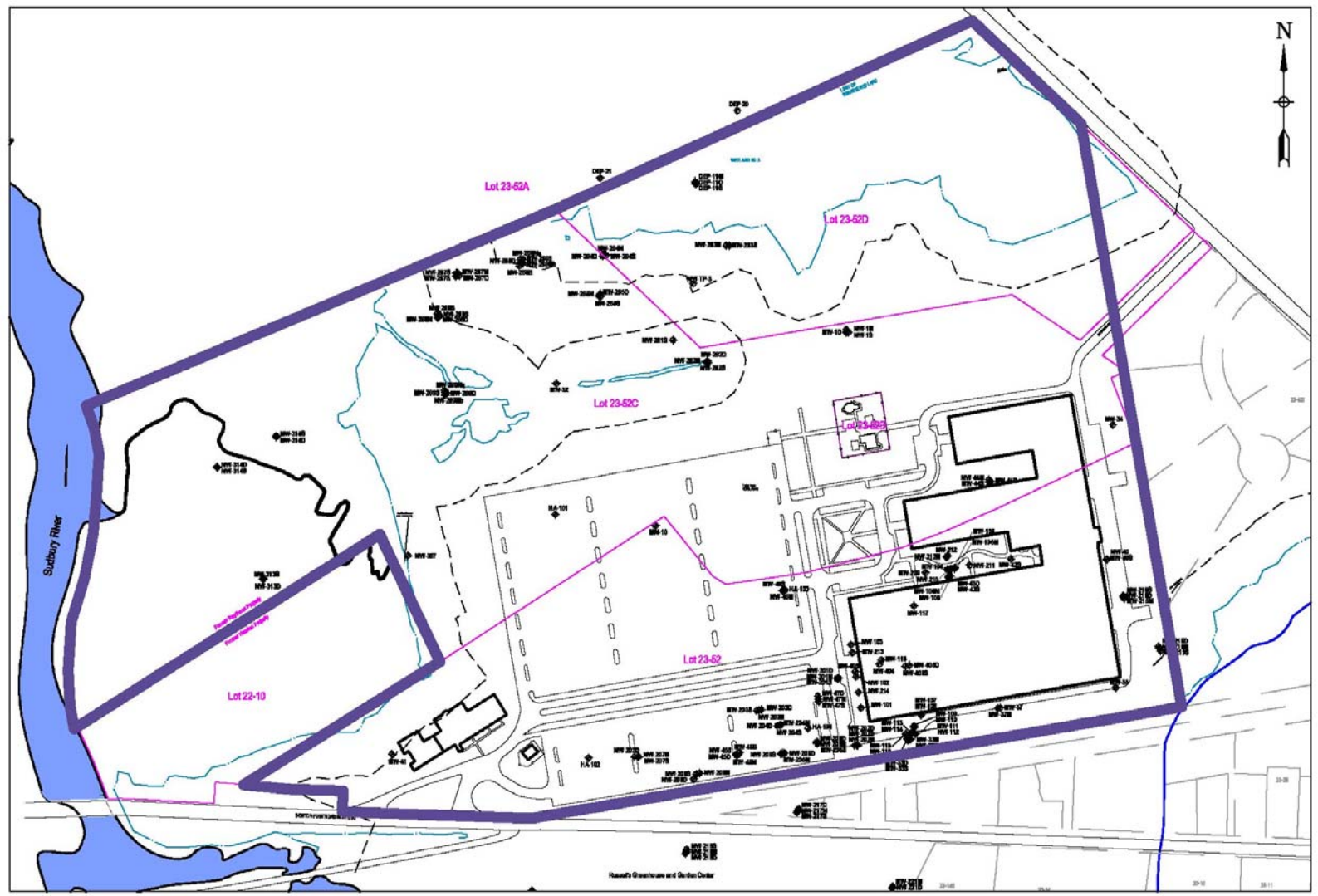
- **Approval for Risk Based PCB Remediation under 40 CFR 761.61(c) under TSCA**
 - Condition Number 13 requires submittal of a Deed Notice containing a description of the following:
 - extent and levels of contamination found in the remediation area
 - actions taken in remedial area
 - use restrictions for the remediation area.

Deed Restriction

- **Deed Notice for the Former Raytheon Facility was filed in October 1997**
 - Deed Notice will be amended to include the information required under Condition Number 13
- **Response Action Outcome (RAO) and Activity Use Limitation (AUL) for the Former Hamlen Property**
 - RAO / AUL for the Hamlen Property will be submitted in accordance with Condition Number 13 following PIP review
- **Raytheon may elect to file a Class C - RAO for the Former Raytheon Facility**

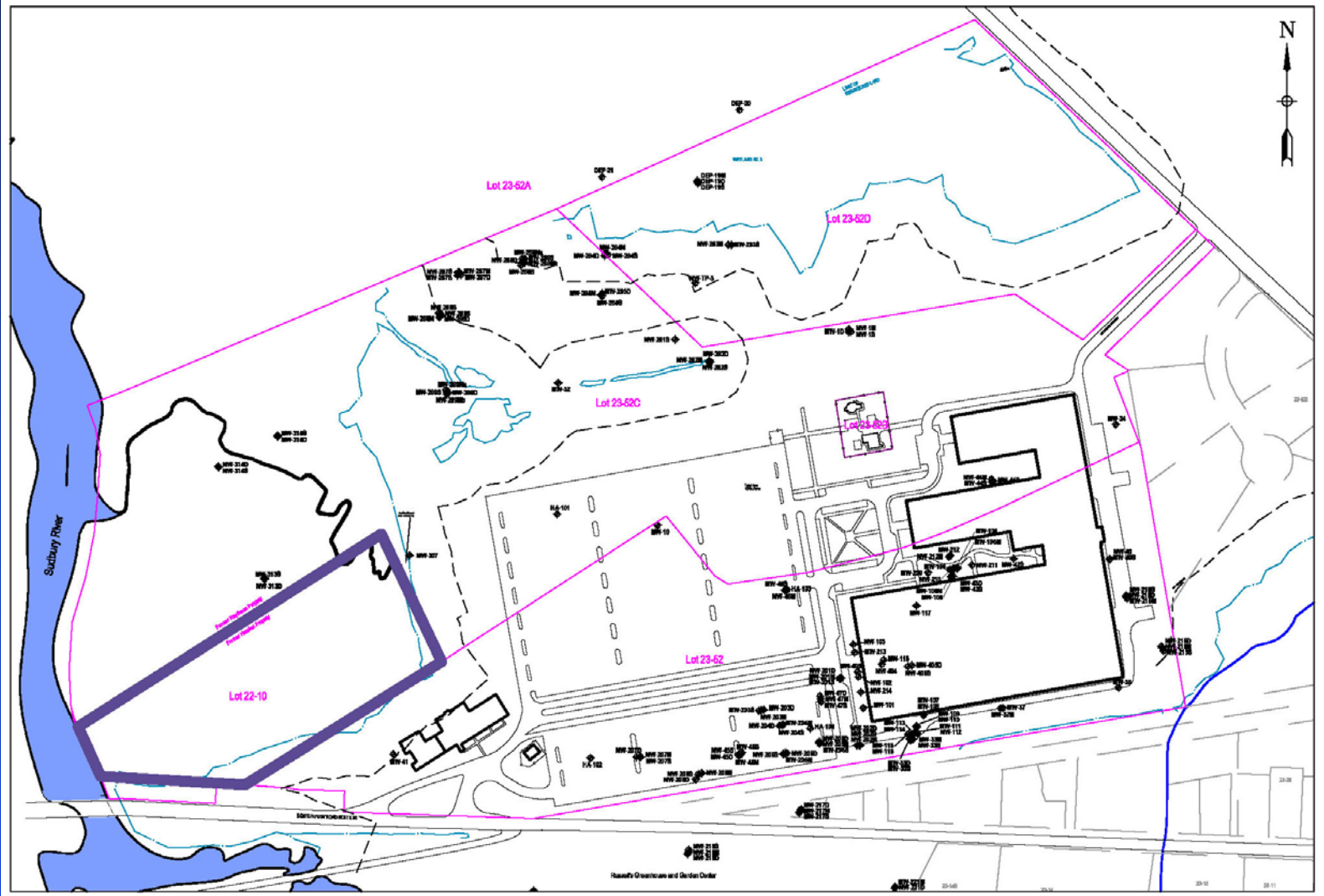
Former Raytheon Property Deed Restriction

Raytheon

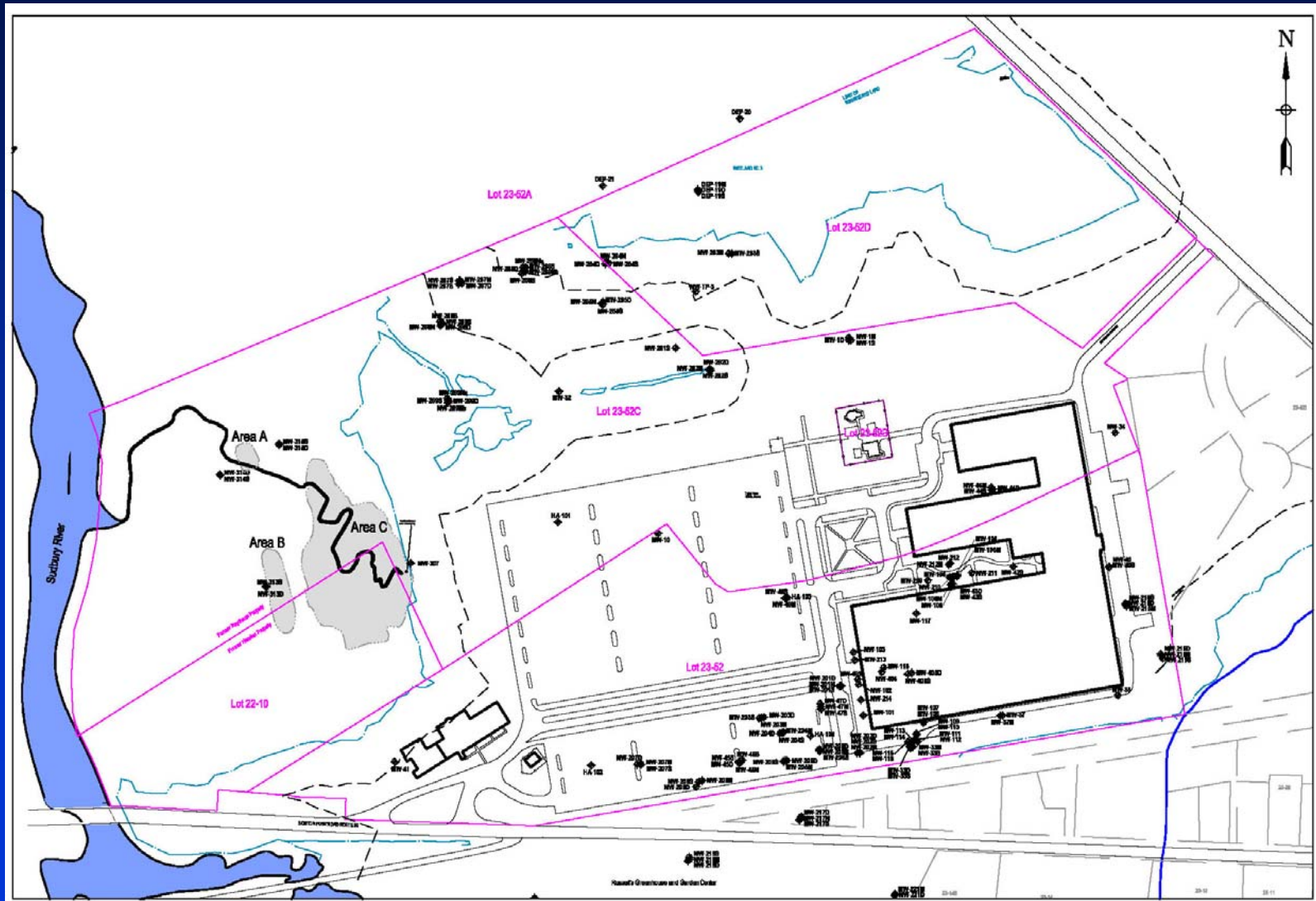


Former Hamlen Property RAO and AUL

Raytheon



Wetland Area Excavation



Upcoming Reports/Documents

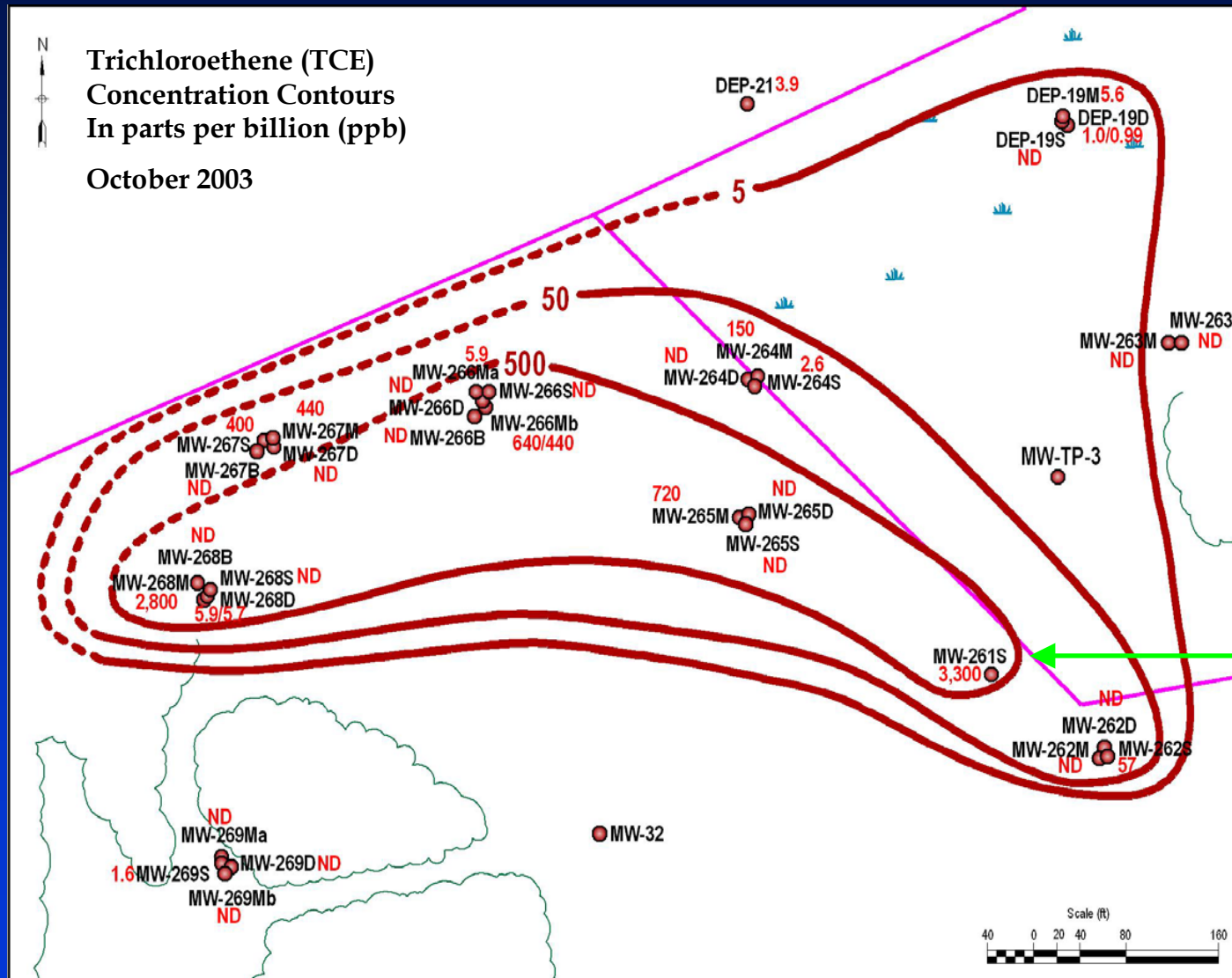
- **Draft Phase II – CSA Scope of Work will be submitted on 10 March 2005**
 - Public comments on Draft Phase II – CSA Scope of Work due on 10 April 2005 to:
Edwin P. Madera
Raytheon Company
Mail Stop 1880
528 Boston Post Road
Sudbury, MA 01776
- **RAO and AUL for Former Hamlen Property will be submitted on 10 March 2005**
- **TSCA Closure Report**
- **Release Abatement Measure (RAM) Plan**

Q & A

Investigation Activities Conducted to Date

- Chlorinated Volatile Organic Compounds (CVOCs) have been investigated in the Northern Area using the following techniques:
 - Source area soil borings
 - Waterloo profiler borings
 - Seismic refraction surveys
 - Monitoring wells, including well clusters
 - Groundwater gauging and sampling
- Documents submitted to MA DEP
 - Final Scope of Work, 13 June 2003
 - Phase I – Initial Site Investigation, 17 December 2003
 - Tier Classification,

Contour Map from Phase I Report



- Shallow and deep groundwater flow generally to the west towards Sudbury River
- Suspected source in region of MW-261S