

**Raytheon**

# Public Involvement Meeting

March 3, 2004

Former Raytheon Facility  
Wayland, Massachusetts

Presented by:  
Edwin P. Madera

# Purpose of Meeting

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- **Groundwater**
  - Phase IV Addendum - Southern Area
  - Update on Northern Area Groundwater Investigations
- **Wetland Excavation and Remediation Status**
- **Public Involvement Plan Revision**
- **Upcoming Reports**
- **Question and Answer Period**







PCBs  
PAHs  
Metals



CVOCs

CVOCs





# Groundwater Phase IV Addendum

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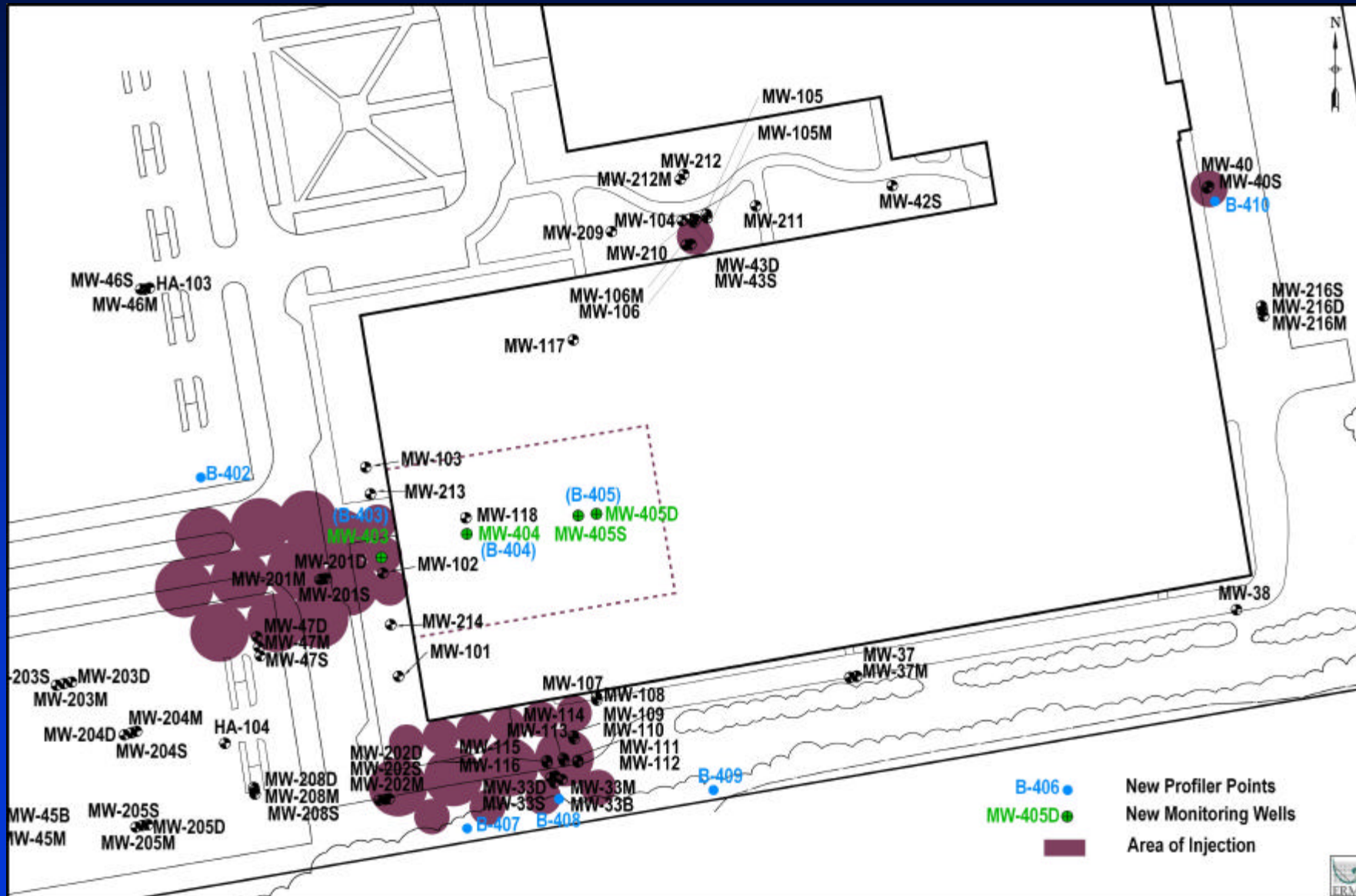
- Pilot studies completed as part of Release Abatement Measure Plan (RAM) activities
- Pilot demonstrated permanganate is effective at destroying chlorinated volatile organic compounds (VOCs) in groundwater
- Sodium permanganate as preferred oxidant
- Pressure injection techniques provide increased radius of influence
- Groundwater Monitoring Program
  - Baseline
  - Post-injection
    - Quarterly – Field Parameters
    - Semi-Annual Monitoring

# Groundwater Phase IV Addendum

- **ISCO Injections Planned for four areas at Site:**

- MW-102 Area
  - Low and high pressure injections
  - Multiple injection points
- MW-40 Area
  - Low Pressure Injection
  - One injection point
- MW-43 Area
  - Low pressure injection
  - One injection point
- MW-33 Area
  - Low and high pressure injection
  - Multiple injection points
- Building Area
  - Being Evaluated

# Proposed Oxidant Injection Locations





# Groundwater Northern Area Investigation

# Groundwater – Northern Area

- **Northern Area (RTN 3-22408)**

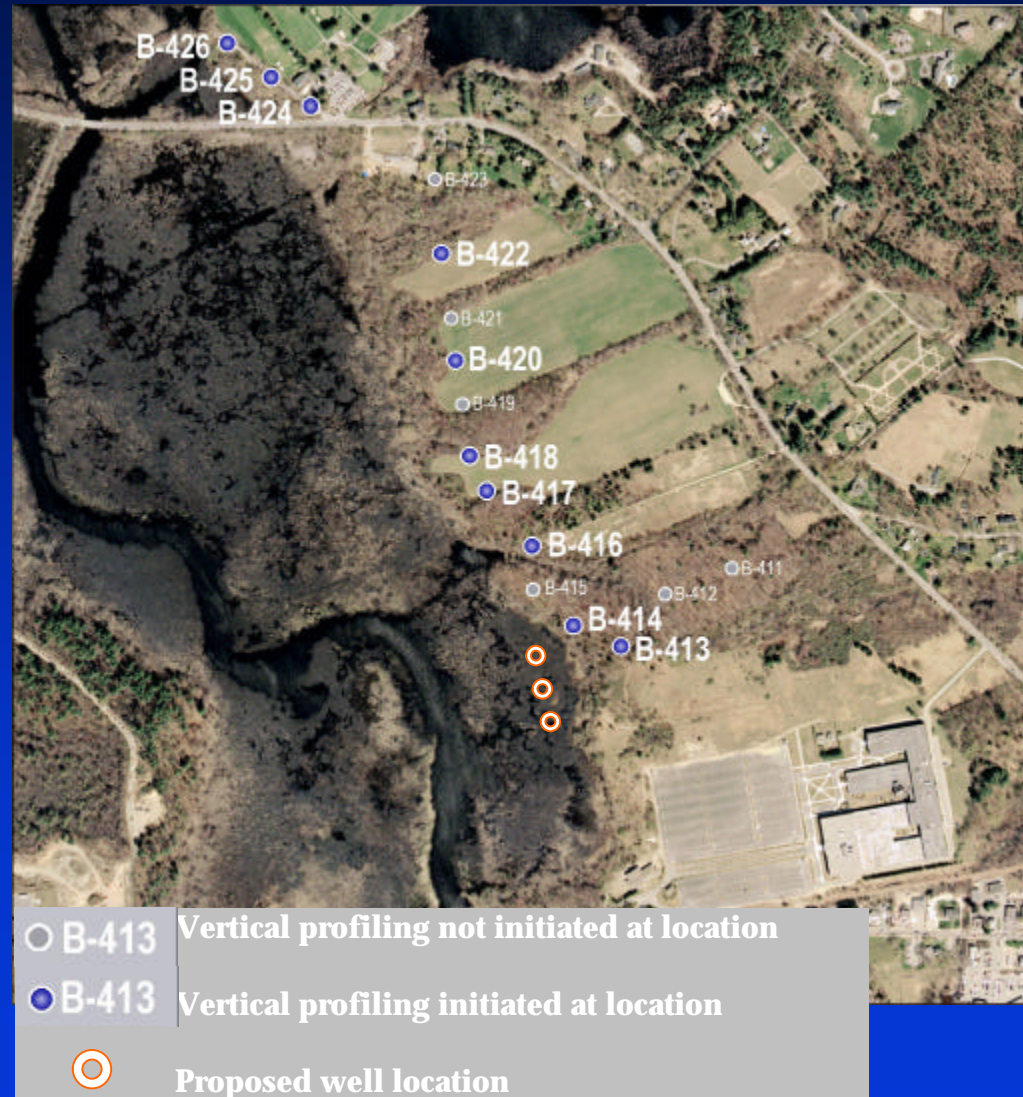
- Tier IB Permit Presumptively approved

- **Vertical Profiling**

- Currently conducting vertical profiling in accordance with Scope of Work
- Ten locations initiated
- Approximately 50 groundwater samples collected for analysis of volatile organic compounds
- Approximately 900 feet advanced

- **Wetlands Well Installation**

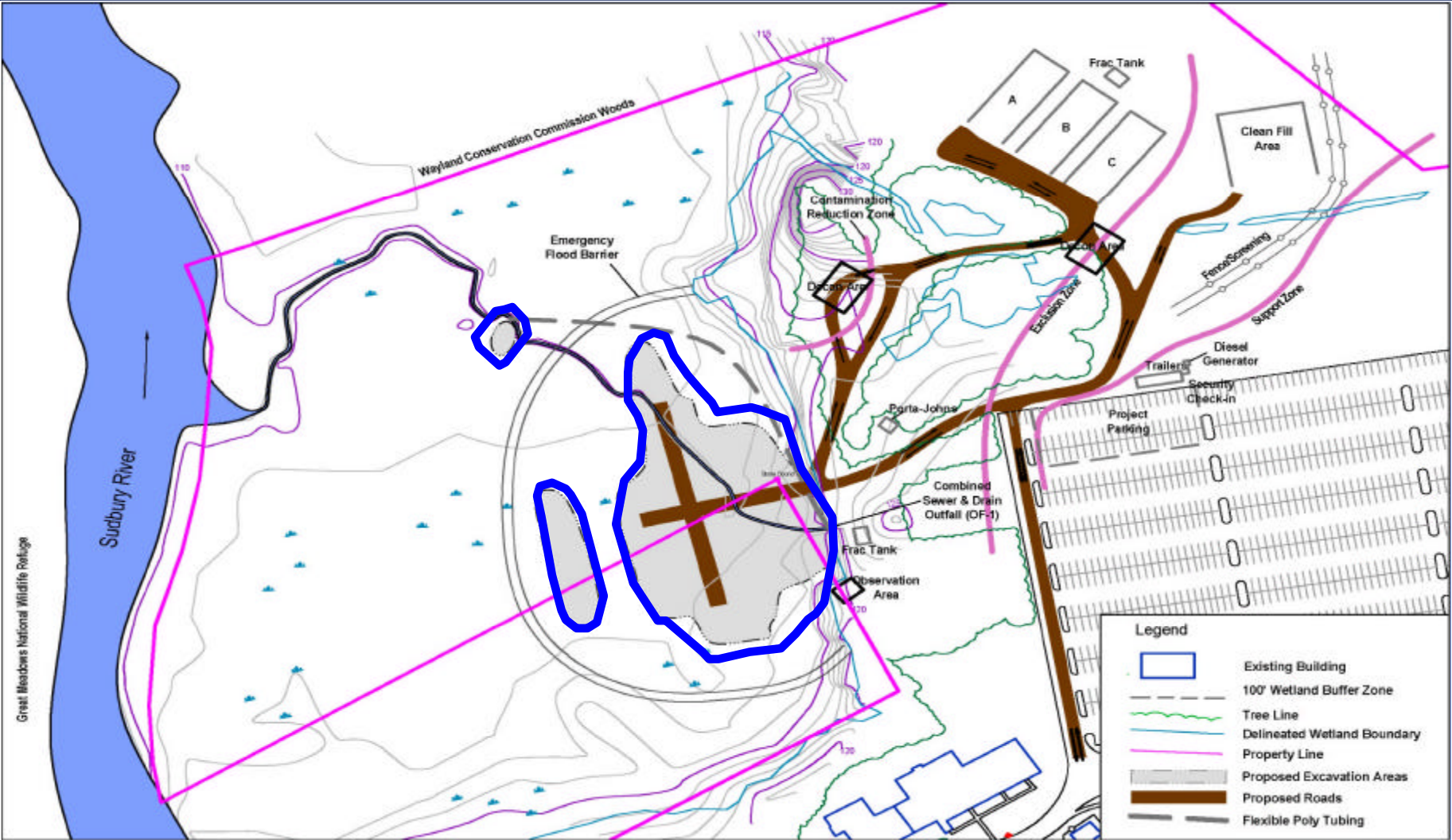
- Will commence either Spring or Fall pending Natural Heritage & Endangered Species Program approval



# **Wetland Remediation and Restoration**



# Construction Layout

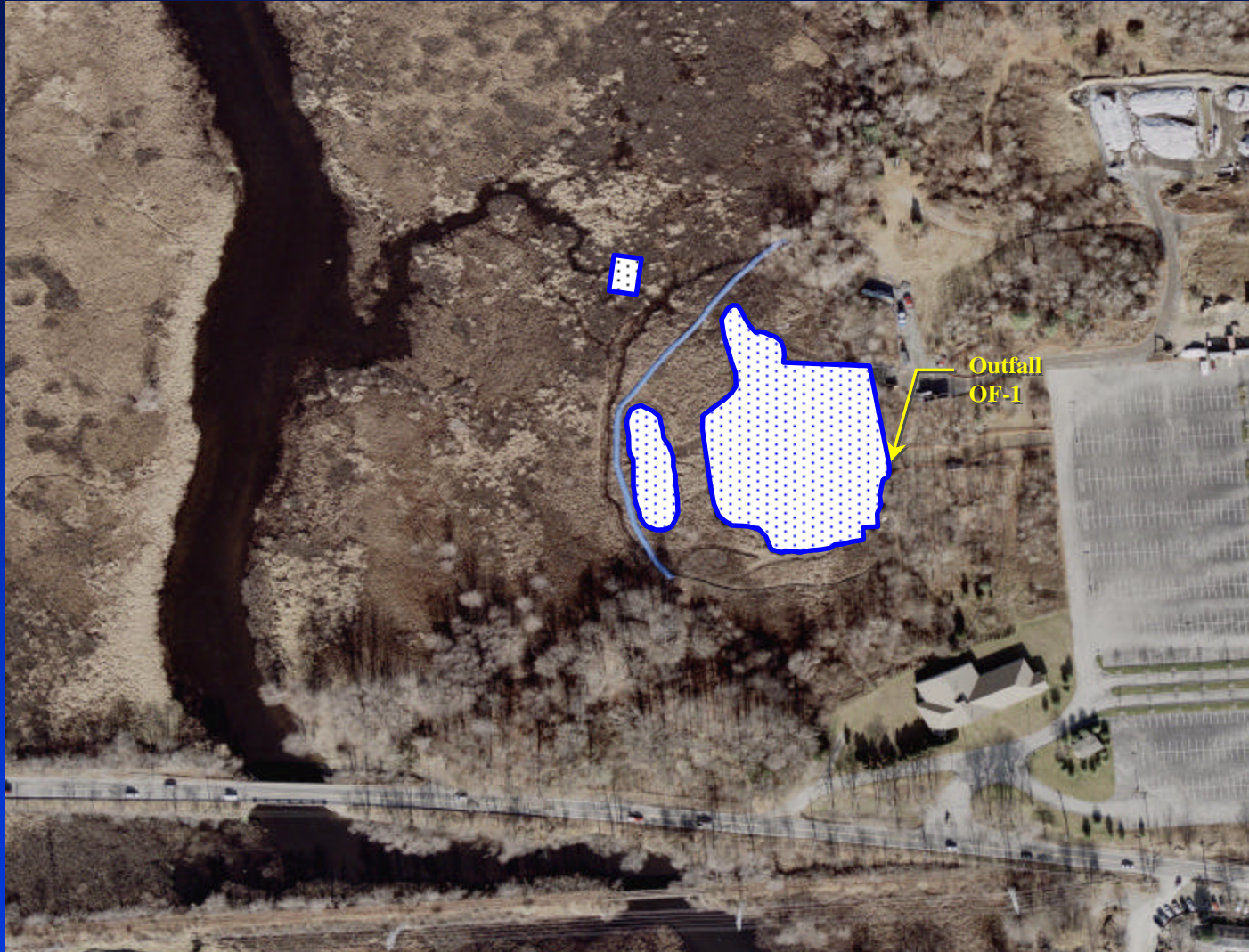


**Aerial Photo - October 2003**





**Aerial Photo - November 2003**

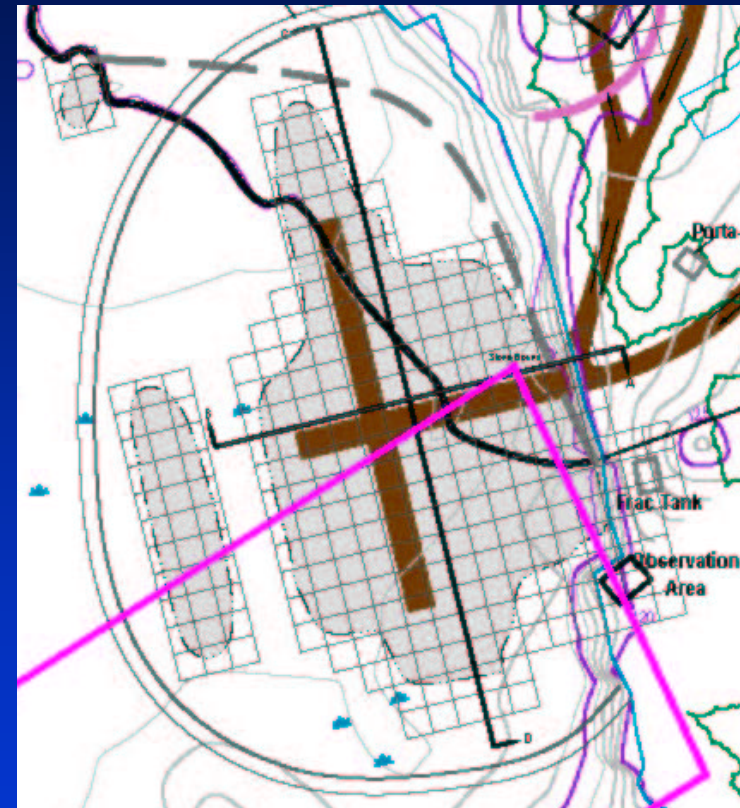




# Verification Sampling

# Verification Sampling

- 20' x 20' grid across excavation areas
- Over 225 composite samples (proposed 200 composite samples)
- Over 55 perimeter locations (proposed 47 perimeter samples)
- Target analytes
  - PCBs
  - PAHs
  - Metals



# Verification Sampling

<b>Compounds of Concern</b>	<b>Remedial Goal (mg/kg)</b>	<b>Average Residual Concentration</b>
<b>PCBs</b>	<b>2.0</b>	<b>0.31</b>
<b>PAHs</b>	<b>9.0</b>	<b>1.6</b>
<b>Arsenic</b>	<b>11</b>	<b>8.1</b>
<b>Chromium</b>	<b>332</b>	<b>55.7</b>
<b>Copper</b>	<b>372</b>	<b>57.5</b>
<b>Lead</b>	<b>210</b>	<b>14.7</b>
<b>Silver</b>	<b>13</b>	<b>1.6</b>



# Removal Actions To Date

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- **Excavation of 2.0 acres of wetland soil/sediment**
- **Treated approximately 7,335,000 gallons of water as part of de-watering activities**
- **Stabilized and transported off-site approximately 5,000 cubic yards of impacted soil**
- **Achieved remedial goals**
- **Re-soiled excavation area and planted approximately 71,000 wetland species plants**
- **Transitioning into wetland monitoring phase**

# Wetland Restoration Project **Raytheon**



Spreading of New Soil



↑  
Adding New Soil



# Wetland Restoration Project **Raytheon**



Wetland Plants in Trays

Wetland Bulb





# Wetland Restoration Project **Raytheon**



Wetland Species Seeds

Planting →





# Wetland Restoration Project



Meandering Channel



Redesigned Outfall

# Public Involvement Plan Revision

# Revision to PIP

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- **Public Involvement Plan (PIP) updated due to the addition of Northern Area RTN 3-22408**
- **Primary Changes to PIP:**
  - Update to Site history
  - Summary of past PIP activities
  - Extend public comment period from 21 days to 30 days
- **One Public Involvement Plan for entire Site**



# Upcoming Reports

# Upcoming Reports/Documents

- **Northern Area Investigation (RTN#3-22408)**
  - Phase II Scope of Work, Summer/Fall 2004
- **Wetlands Remedial Action Closure Reports**
  - Spring/Summer 2004
- **Public comments**
  - Phase IV Addendum due April 5, 2004
  - PIP Revisions due (TBD)
  - Comments addressed to:

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# Q & A