

# **Overview of Pilot Capping Monitoring**

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MEC Analytical Systems, Inc.**

# Topics

- Objectives & Schedule
- WQ Monitoring (MEC)
- SPI surveys (Germano & Assoc.; MEC)
- Fixed Instrument Arrays (Sanders & Assoc.; MEC)
- Sediment Cores (Navy DPW; MEC)
- GIS Database (Sanders & Assoc.; MEC)

# Monitoring Objectives

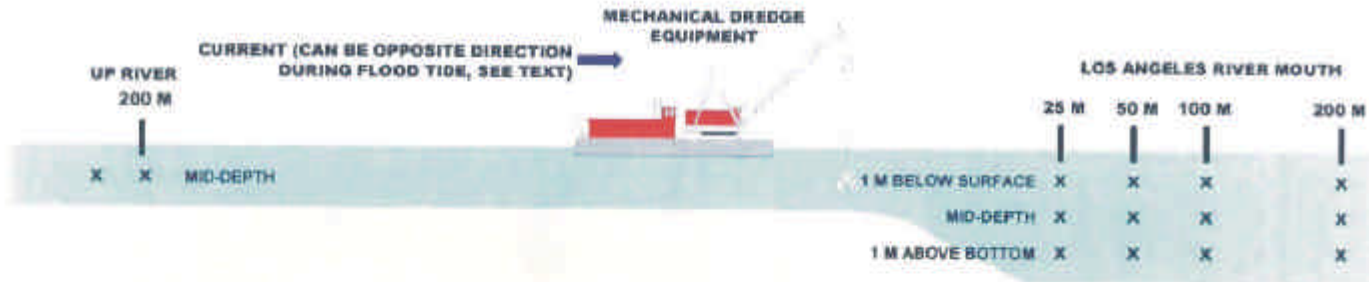
- Gather data (turbidity, transmission, TSS, metals, and organics) during dredging and disposal operations to support ongoing efforts to improve compliance monitoring.
- Evaluate accuracy of contaminated sed. and cap placement via SPI surveys.
- Evaluate cap thickness and any potential mixing of cap and underlying contam. material via collection and analysis (chem. and grain size) of sed. cores.

# Monitoring Objectives

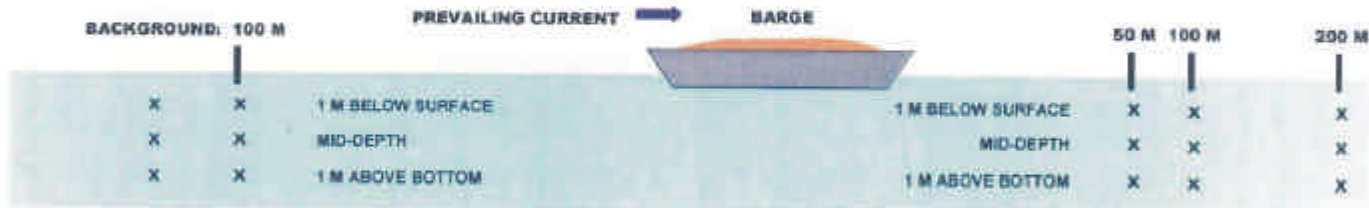
- Establish baseline conditions for cap thickness (sediment cores), material spread outside of disposal site (SPI survey), contaminant distribution (analysis of sediment cores and surficial sediment samples), and surrounding area surface sediment chemistry (surficial sediment samples) for comparison to future monitoring at the site.

# WQ Monitoring

# WQ Monitoring Locations



## LOS ANGELES RIVER



## NEIBP (LOS ANGELES RIVER SEDIMENT PLACEMENT AND CAP PLACEMENT)



## SEIBP



19C0601 LAC033-01 ppt 000109-01

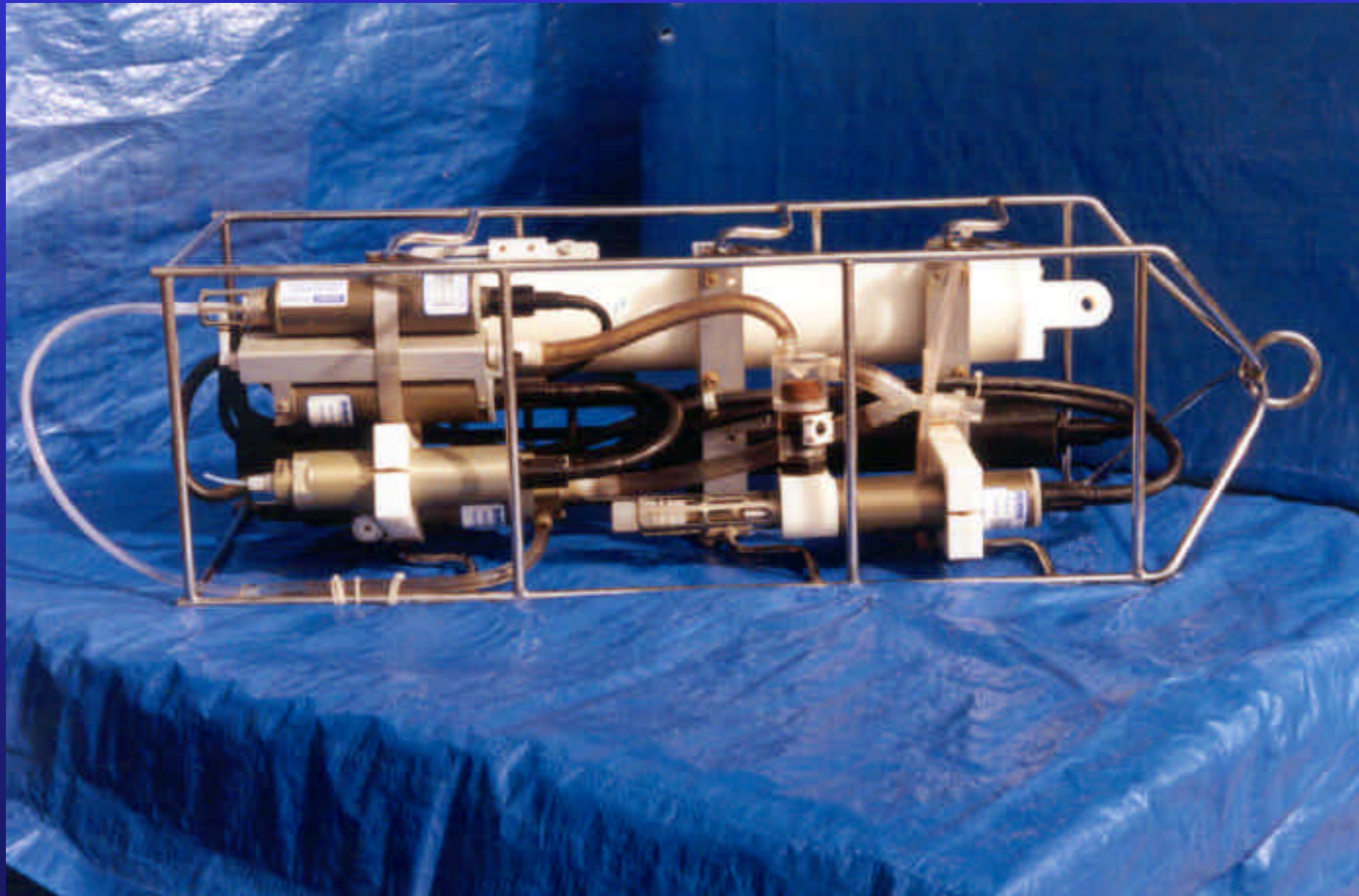
NOT TO SCALE

X Sampling Location

# WQ Instrumentation-ADCP

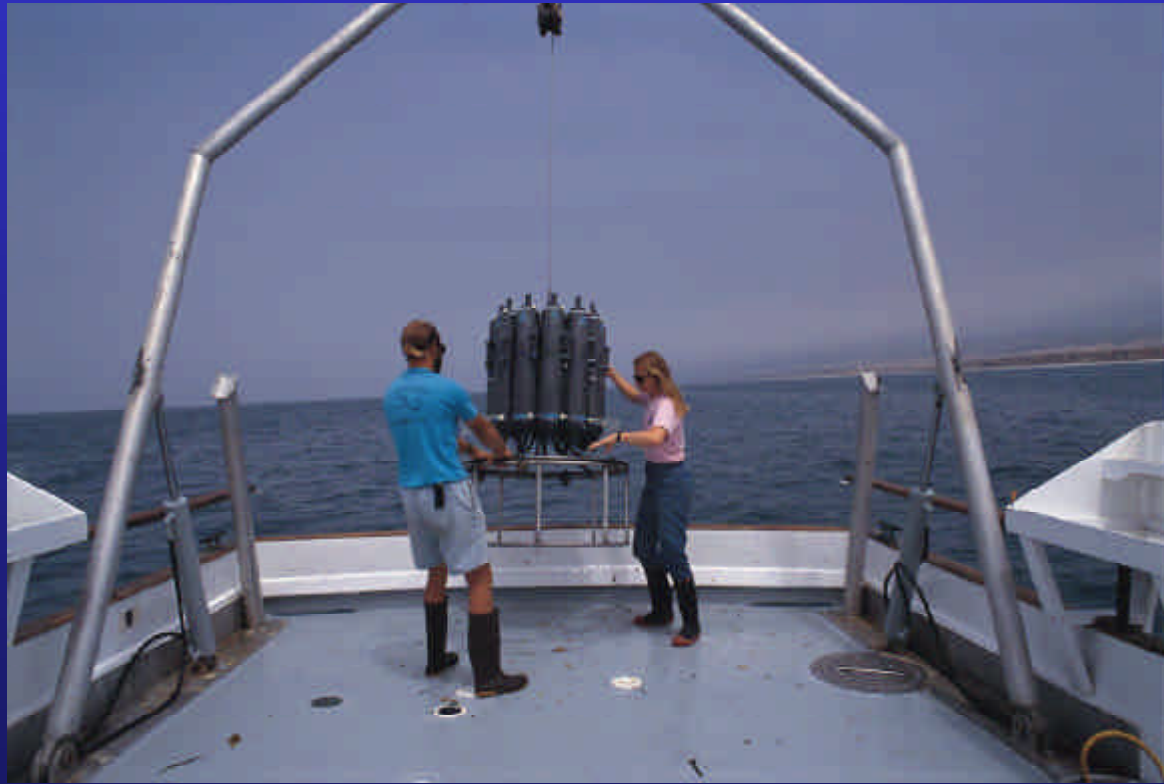


# WQ Instrumentation-CTD





# WQ Sample Collection- Rossette Sampler



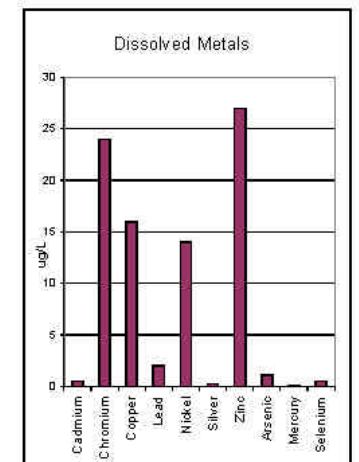
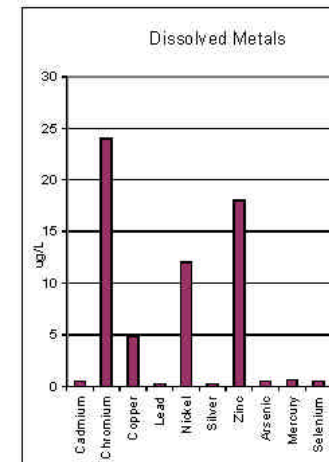
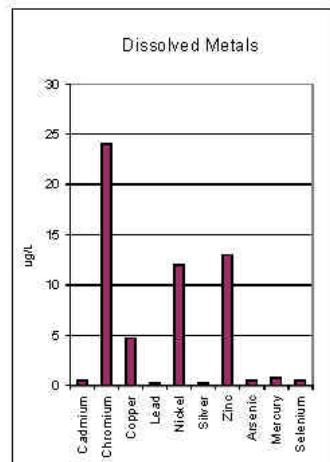
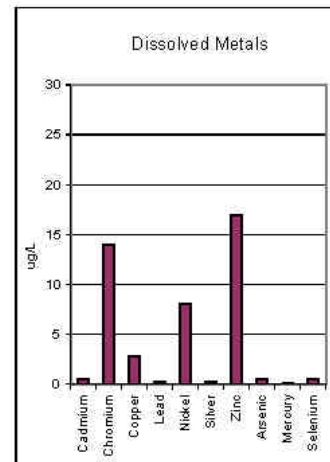
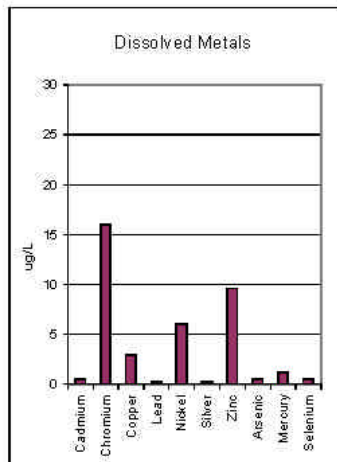
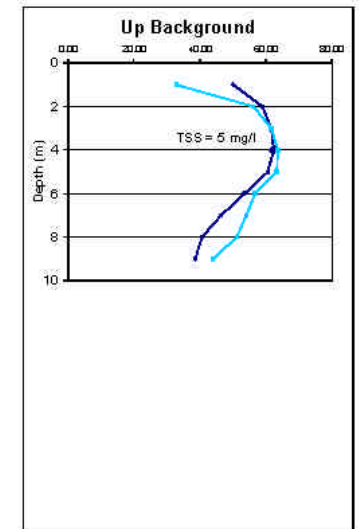
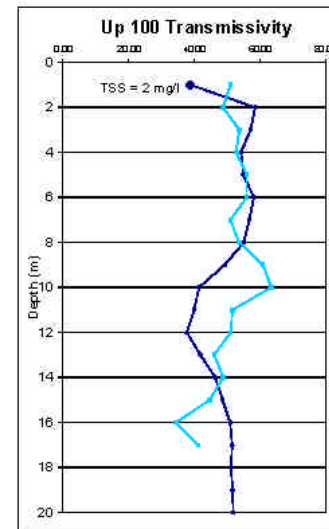
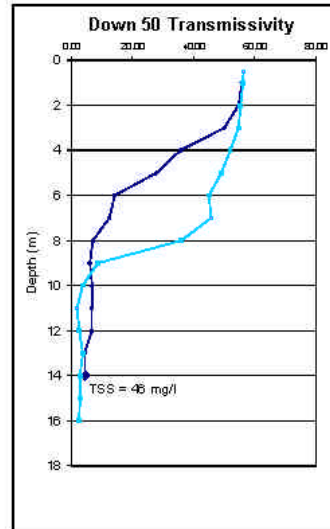
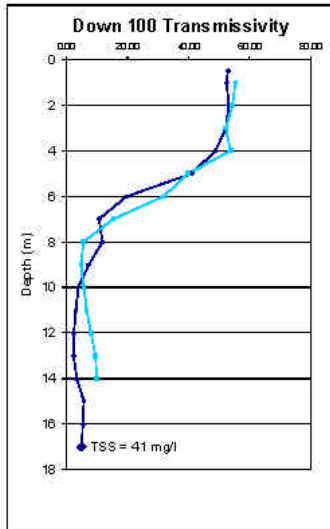
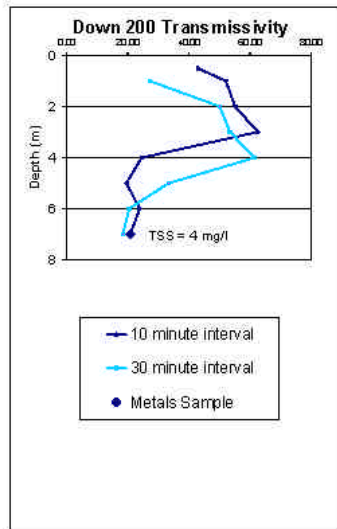
# WQ Monitoring Results

# WQ Parameters Sampled

Sampling Parameter	Phase I		Phase II	
	LARE	NEIBP	SEIBP	NEIBP
CTD Casts	87	210	74	193
TSS Samples	96	186	76	161
Total Organic Samples	7	0	0	7
Dissolved Organic Samples	29	21	0	19
Total Metals	18	15	0	33
Dissolved Metals	41	45	0	53
Total	<b>278</b>	<b>477</b>	<b>150</b>	<b>466</b>

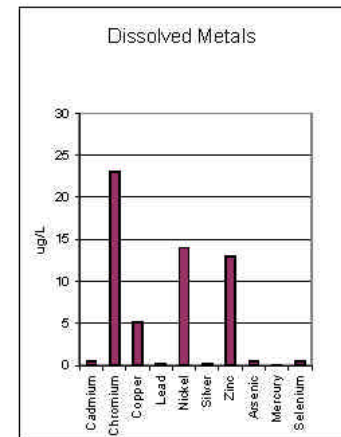
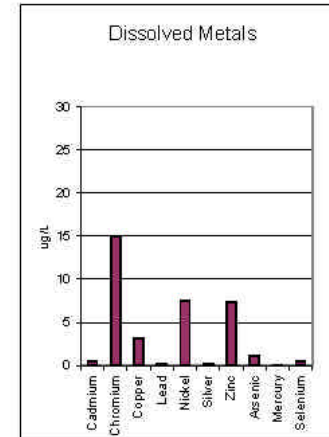
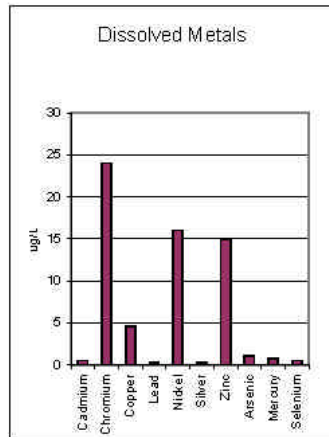
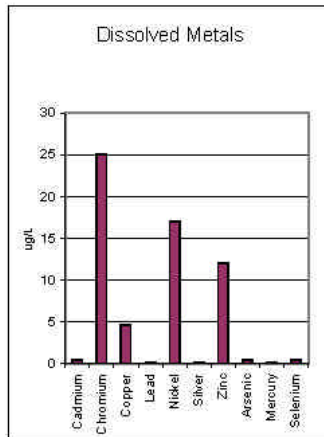
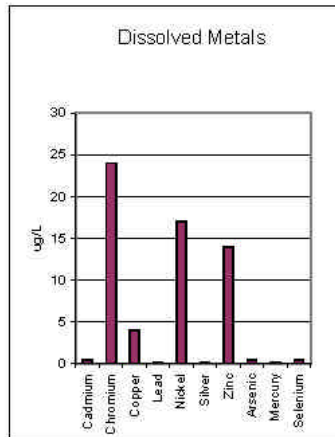
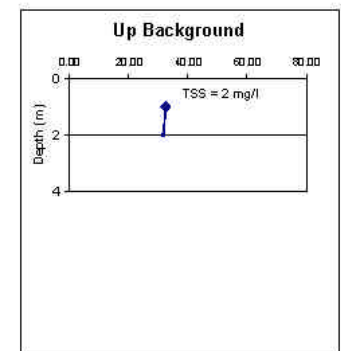
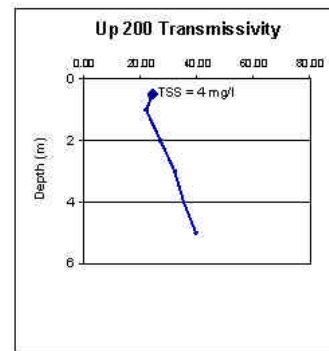
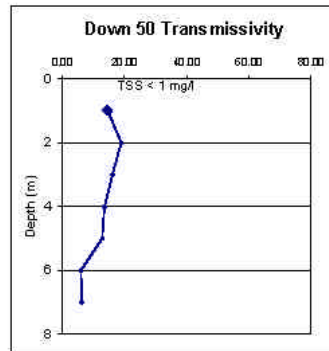
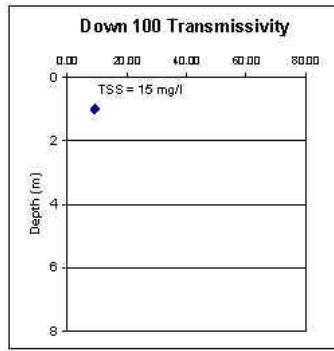
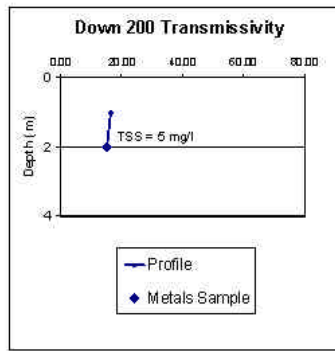
# WQ Monitoring Results

NEIBP - August 13, 2001



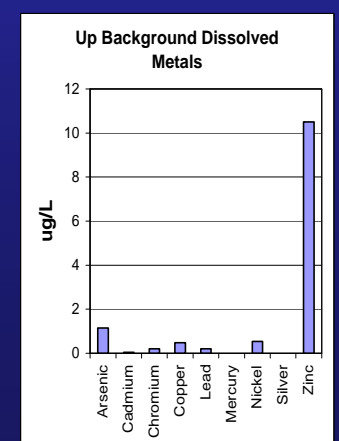
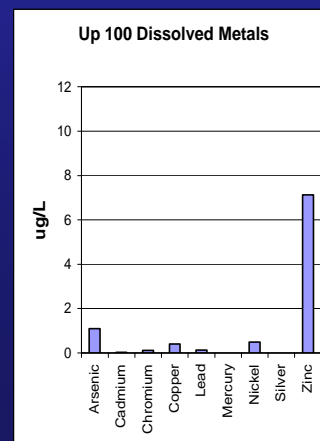
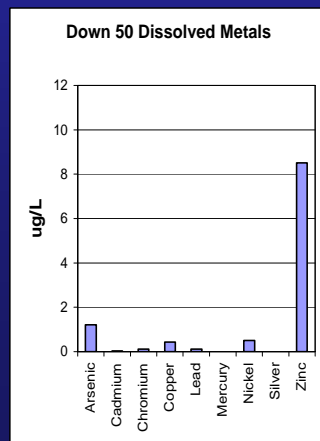
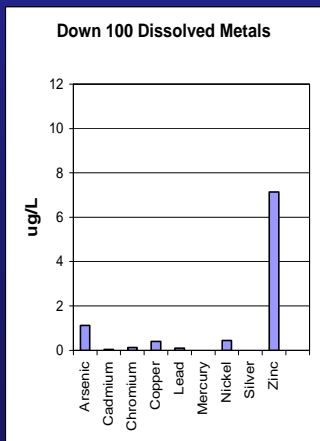
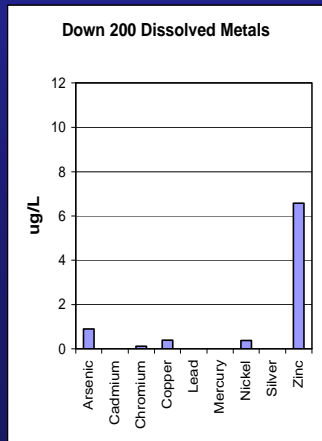
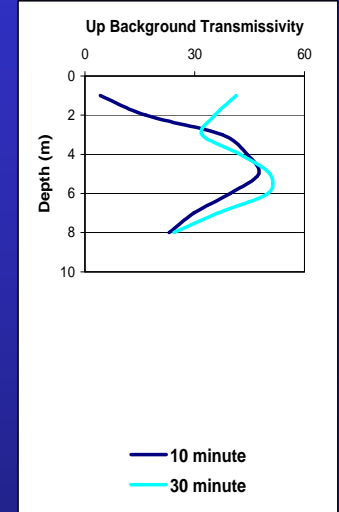
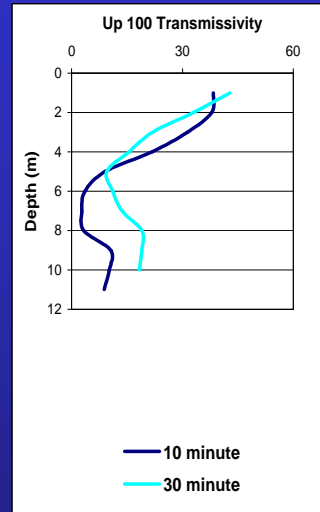
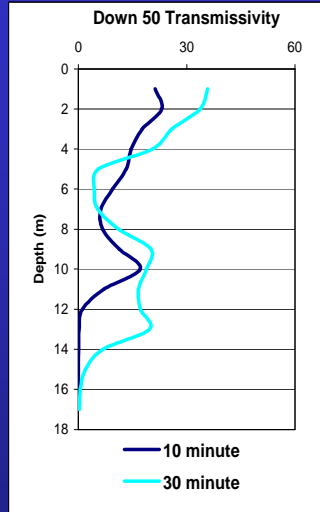
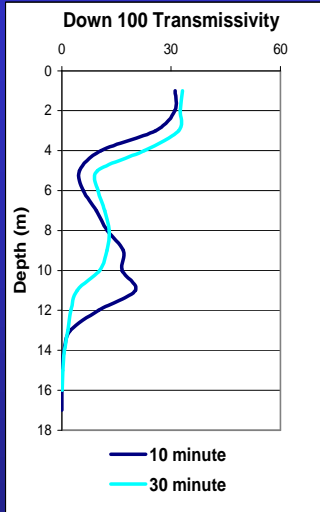
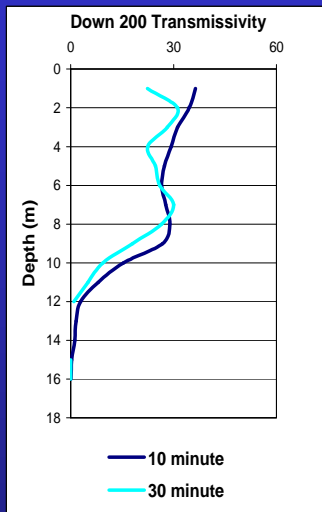
# WQ Monitoring Results

LARE - August 13, 2001



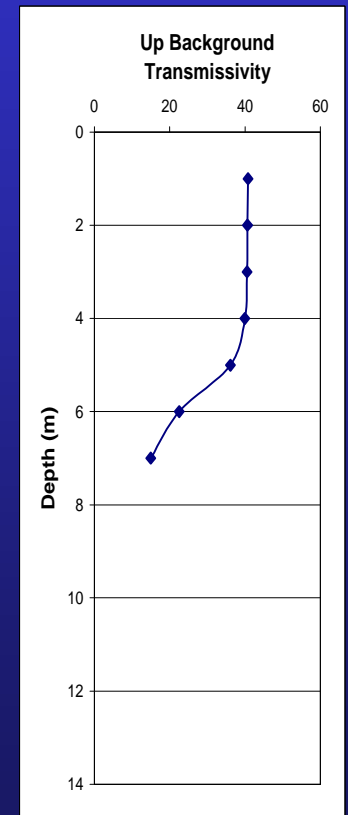
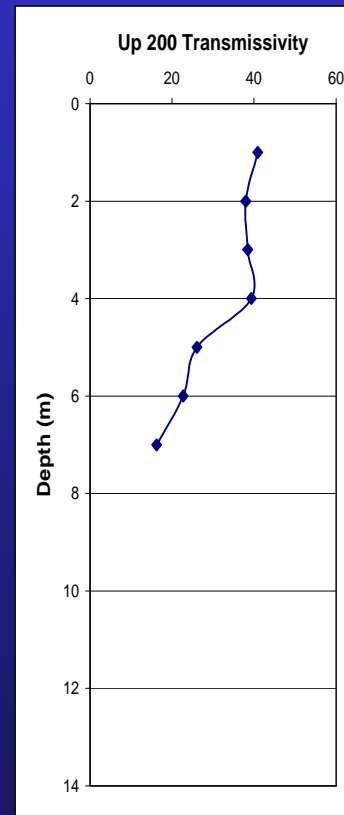
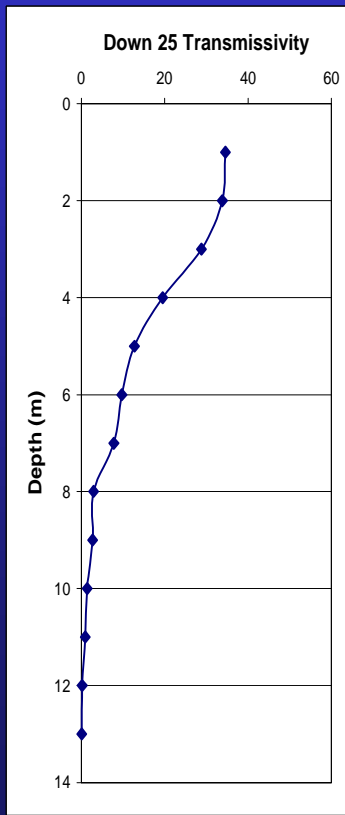
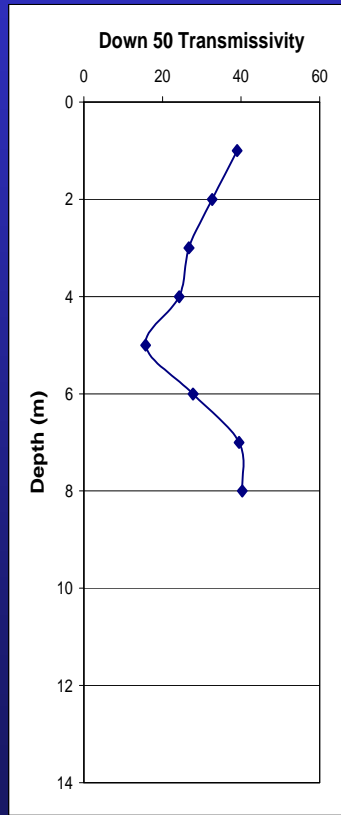
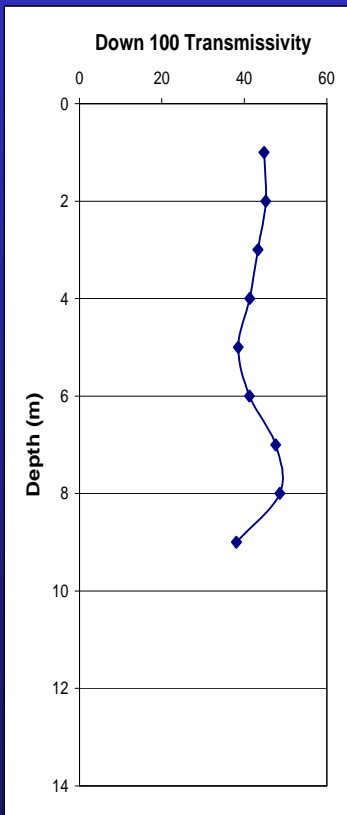
# WQ Monitoring Results

NEIBP - January 10, 2002



# WQ Monitoring Results

SEIBP - January 11, 2002



# WQ Monitoring Results – LARE Dredging & Placement

- CTD results indicated no exceedances ( $\downarrow$  40% rel. to Bkgd) in light transmission at the LARE dredging site
- TSS @ LARE site: range 2 to 48 mg/L; median= 8 mg/L ; 90 percentile value = 20 mg/L; Bkgd range = 2 to 14 mg/L; Bkgd median = 8 mg/L.
- TSS @ NEIB site: range 1 to 117mg/L; median = 7 mg/L ; 90 percentile value = 97 mg/L; Bkgd range = 2 to 42 mg/L ; Bkgd median = 5 mg/L.



# WQ Monitoring Results – Cap Dredging & Placement

- TSS @ SEIB site: range 3 to 88 mg/L; median = 9 mg/L ; 90 percentile value = 34 mg/L; Bkgd range = 1 to 19 mg/L; Bkgd median = 3 mg/L.
- TSS @ NEIB site: range 1 to 123mg/L; median = 8 mg/L ; 90 percentile value = 54 mg/L; Bkgd range = 1 to 106 mg/L ; Bkgd median = 3 mg/L.

# WQ Monitoring Results

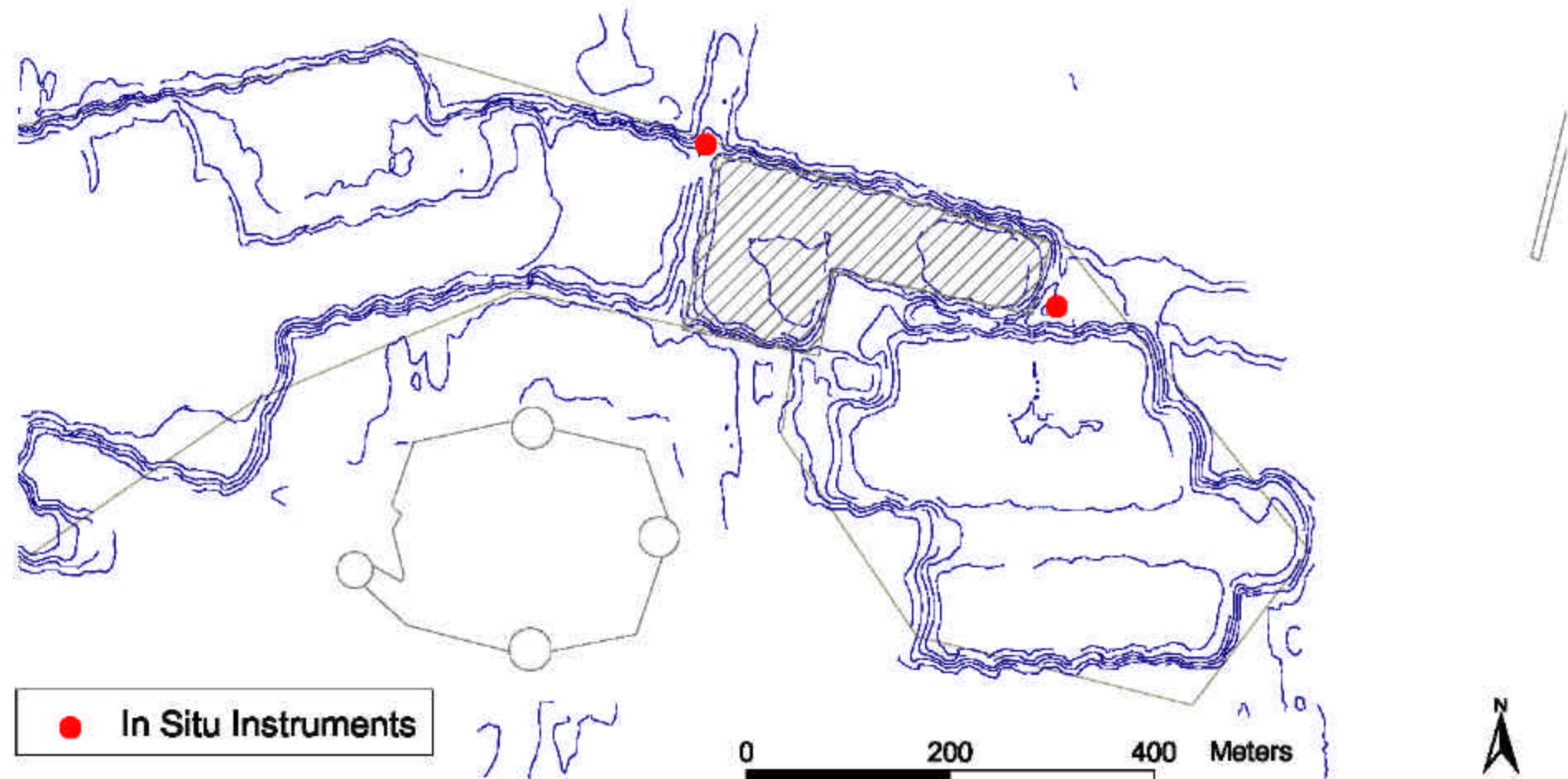
- No organics detected (dissolved or total) at either the LARE or NEIB sites (Not monitored at SEIB).
- Metals detected (dissolved and total) but at levels  $\leq$  Bkgd. (Not monitored at SEIB).

# Fixed Instrument Arrays

# WQ Fixed Instrument Arrays

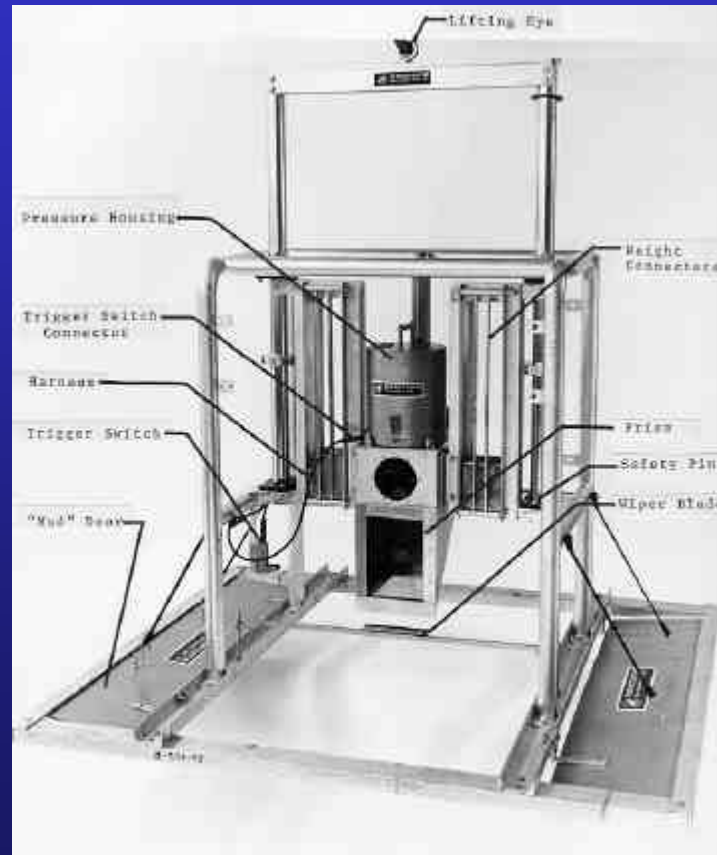


# Location of Fixed Arrays

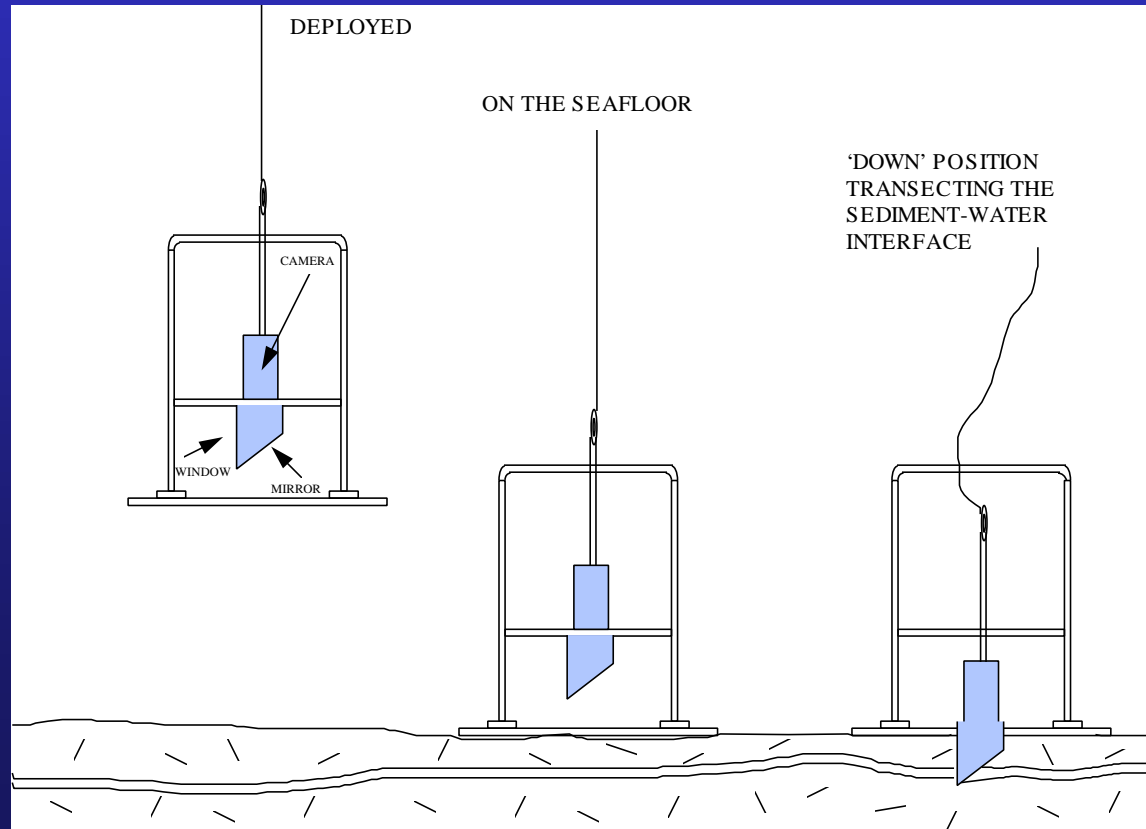


# **Sediment Profile Imaging (SPI) Surveys**

# Sediment Profile Imaging

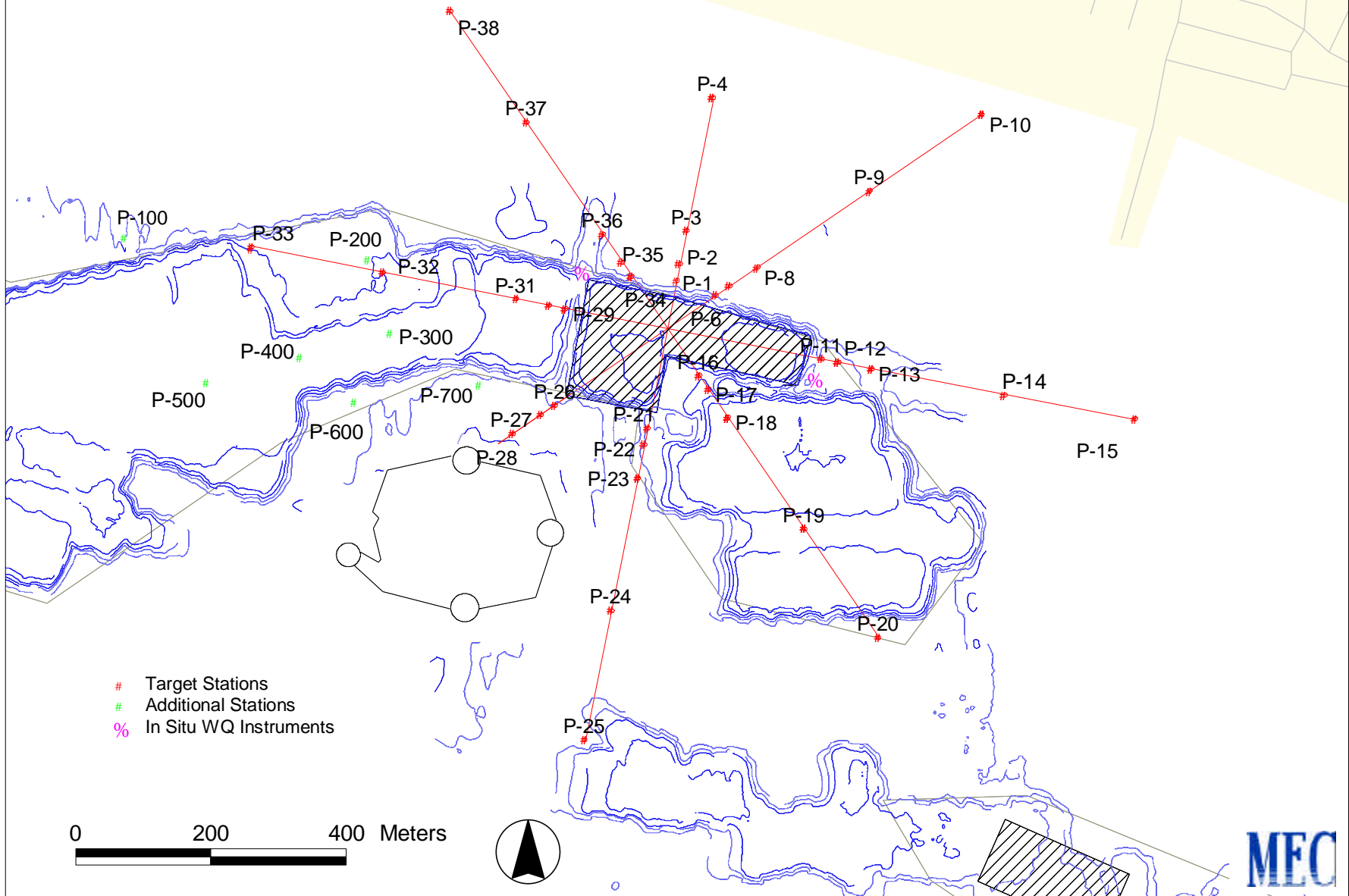


# Sediment Profile Imaging





# Pre and Post-LARE Disposal SPI Survey Locations



# **SPI Survey Results**

# SPI Results – LARE placement

- Results indicate some newly deposited material in adjacent pit areas.
- Preliminary results from additional sampling and analysis indicates newly deposited material is likely material displaced from the pit during initial placement of the LARE material.

# Representative SPI Images

Station 32



July 2, 2001  
Pre-placement

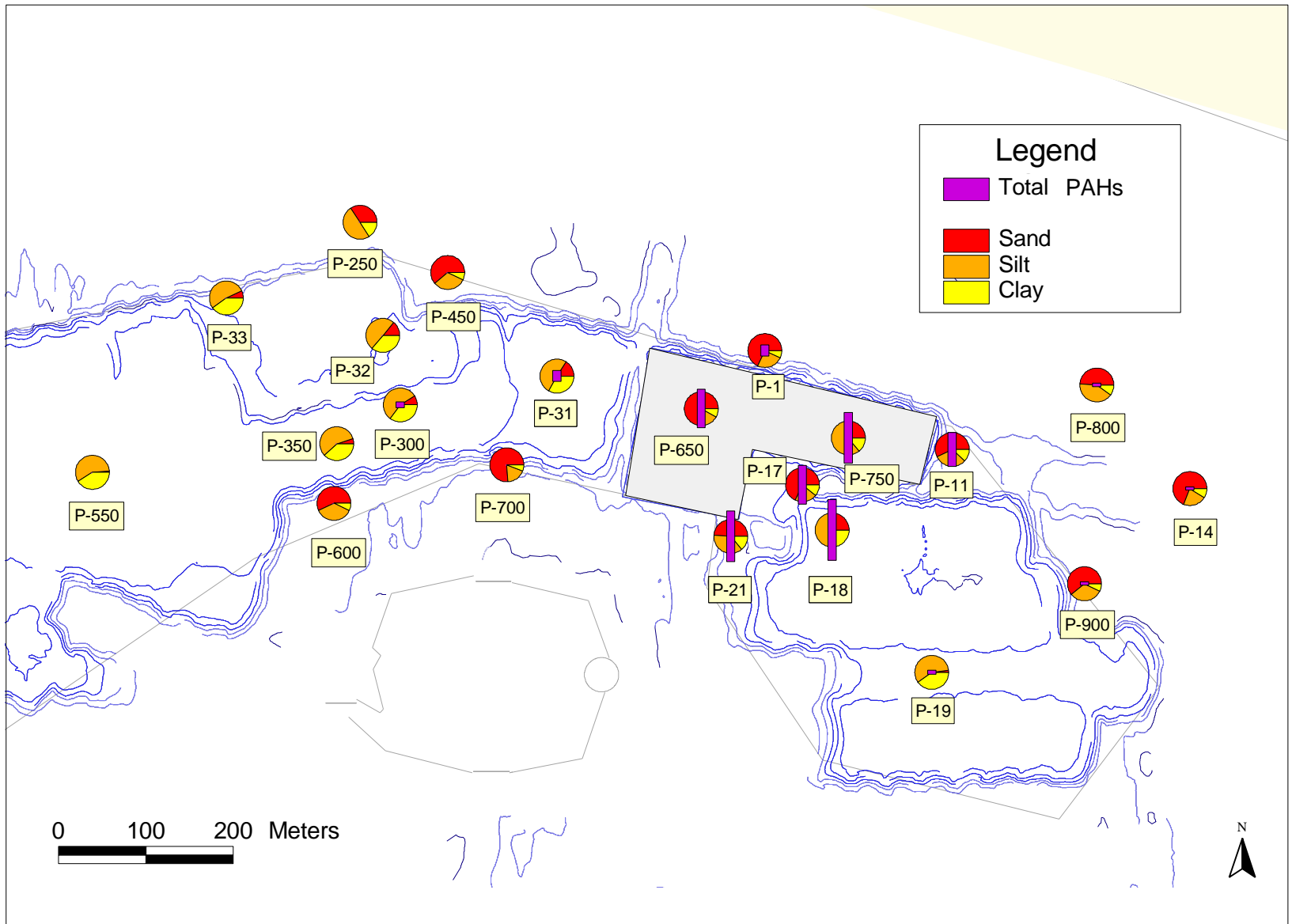


September 19, 2001  
Post-placement

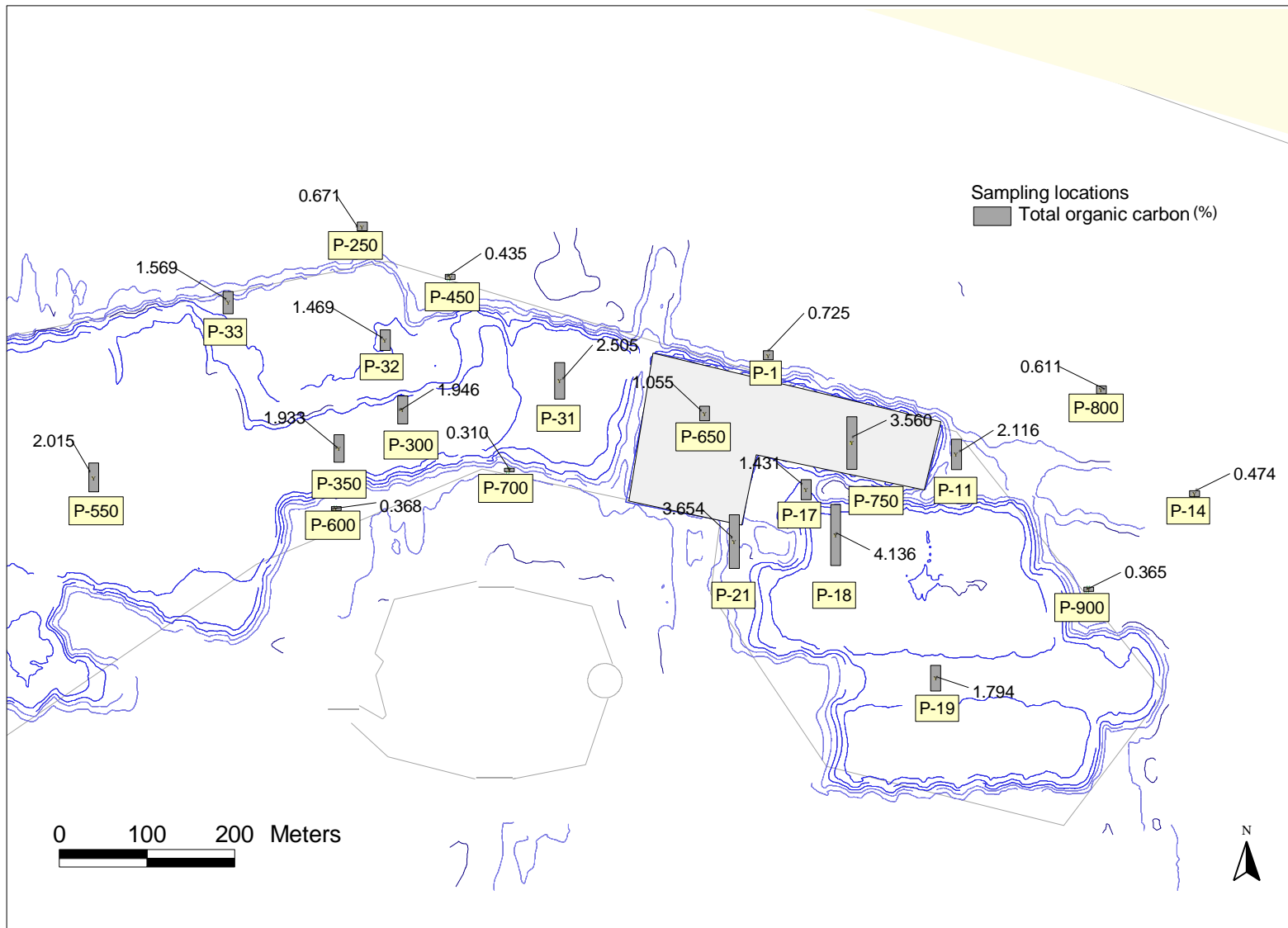
# **Additional Sampling to Augment SPI Survey Results**

- Collection of 21 surface grab samples at selected locations including some SPI monitoring locations where new deposition was indicated.
- Analysis of samples for grain size and PAHs.

# Grain Size and Total PAH Results



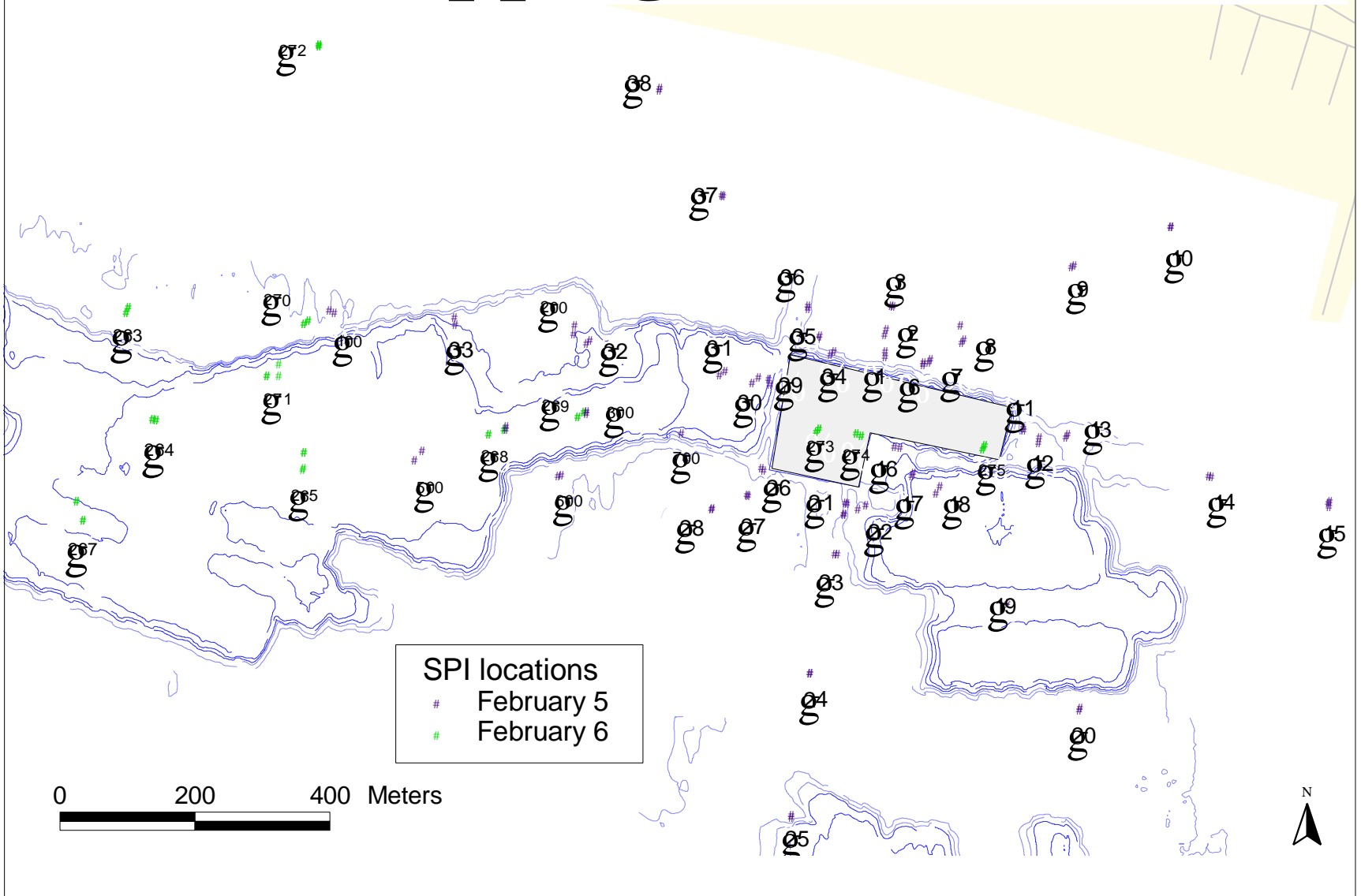
# TOC Results



# **Post – Cap Placement Monitoring**



# Post-Capping SPI Locations



# Representative SPI Images

Station 32



July 2, 2001  
Pre-placement

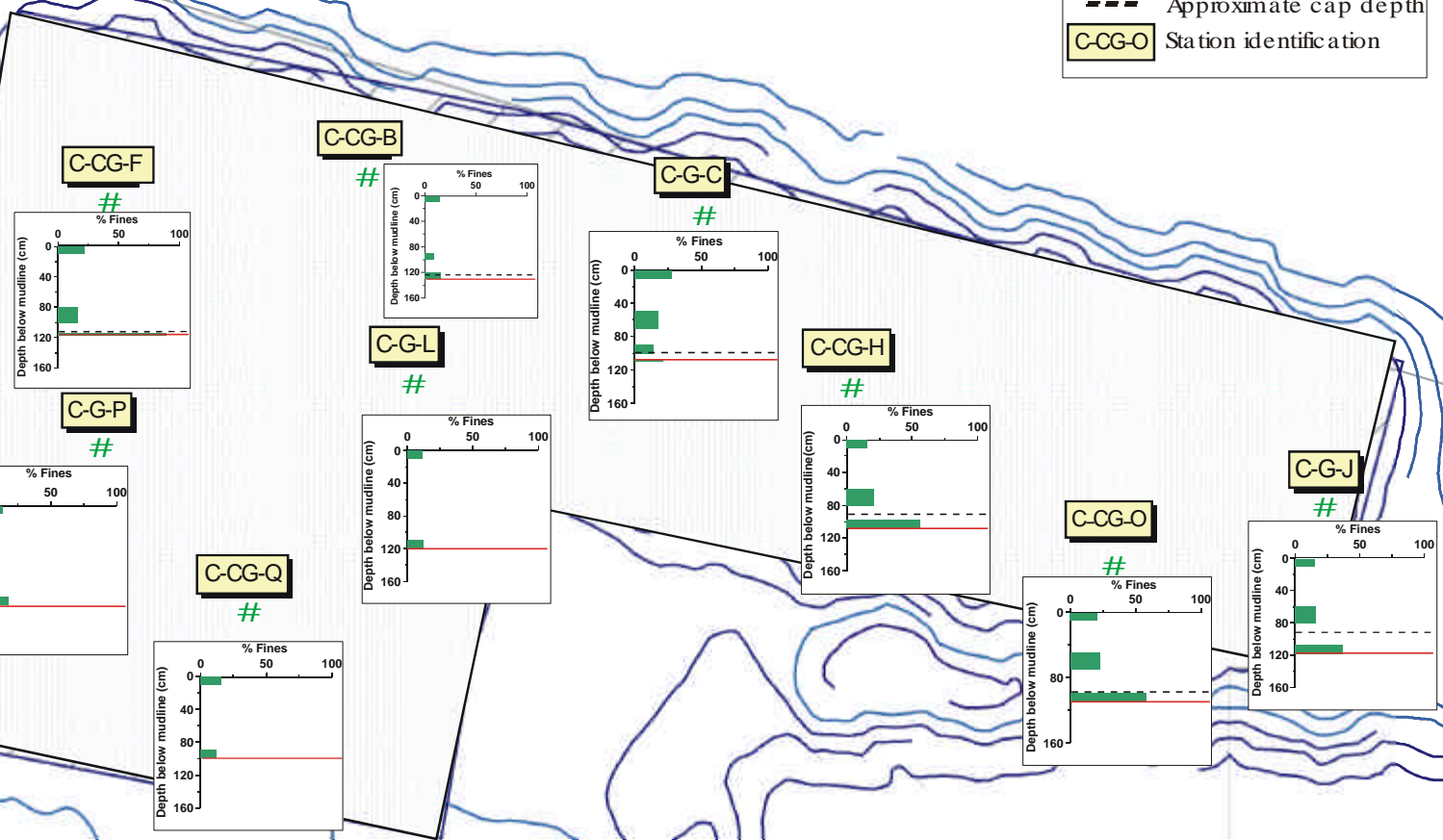
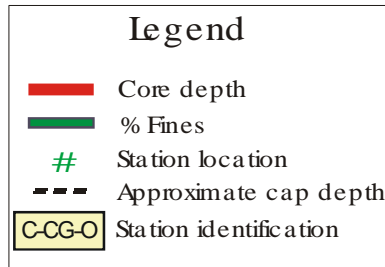


September 19, 2001  
Post-placement



February 5, 2002  
Post-Capping

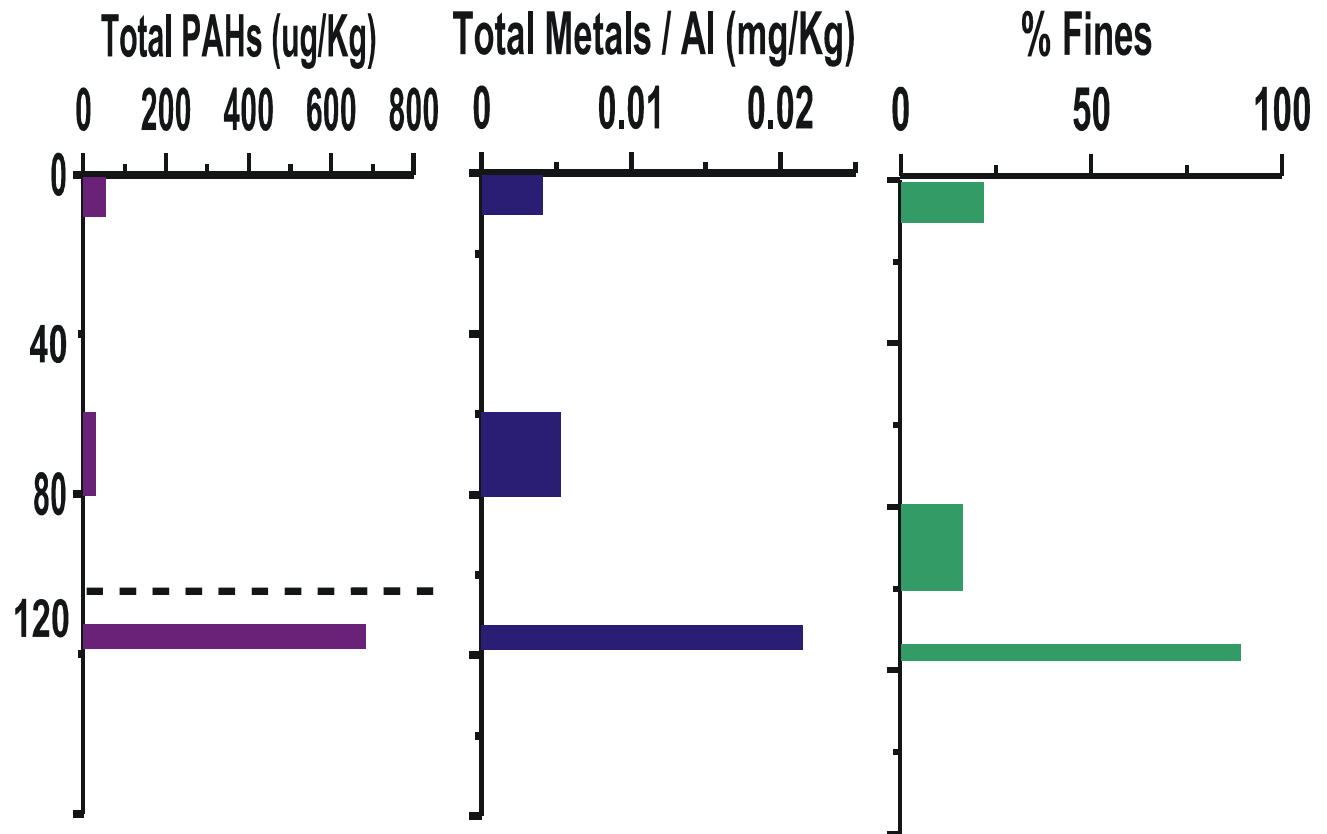
# Piston Core Results



# Piston Core Results

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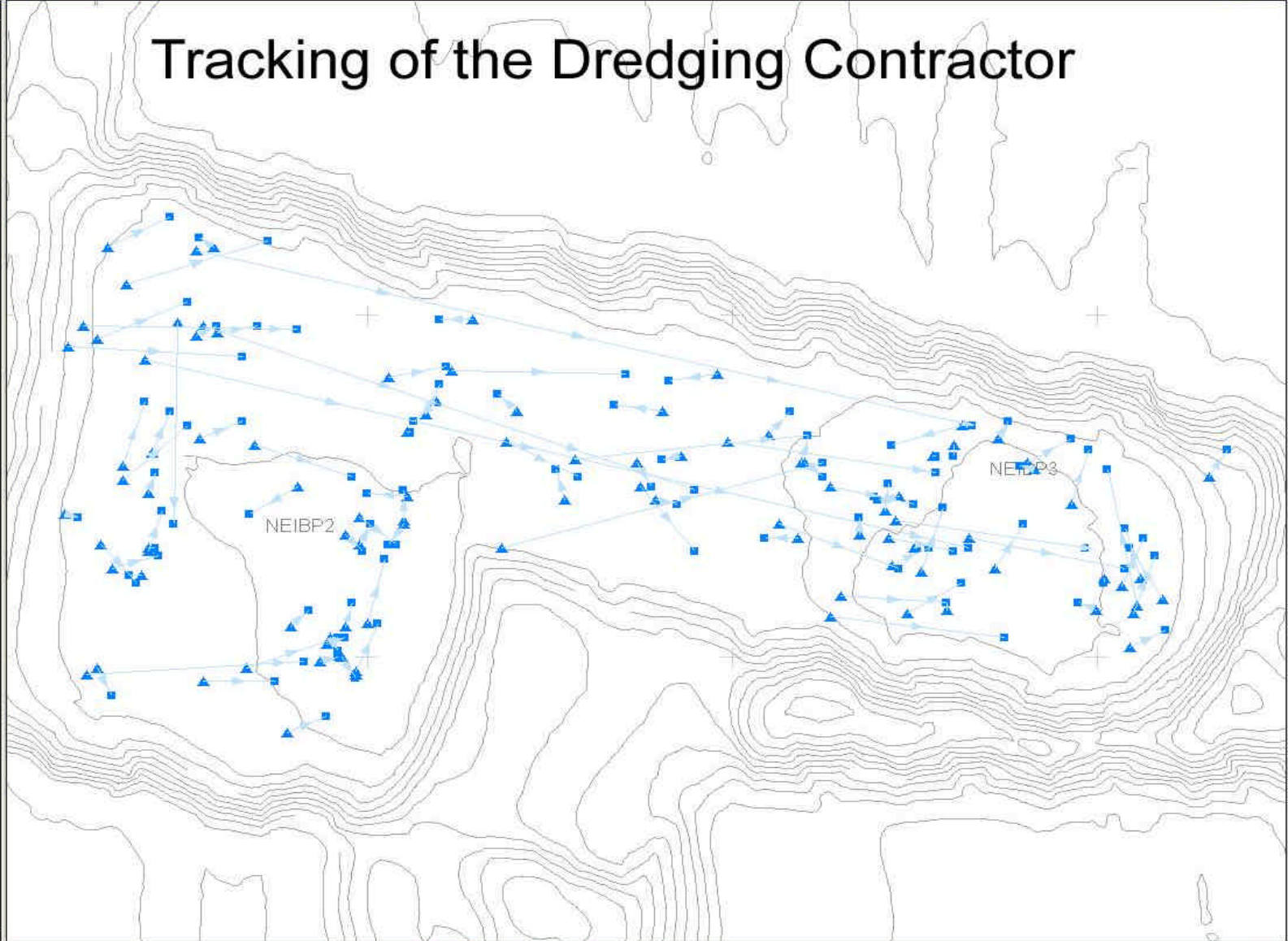
Date: 3-14-02



# GIS Database

# Tracking of the Dredging Contractor

- Contractor Tracks
- Contractor Start
- Contractor Stop
- Metals
- TSS
- Organics
- Water Quality
- In Situ Probes
  - Instrument
  - Spreader Weight
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing



- Contractor Tracks
- Contractor Start
- Contractor Stop
- Metals
- TSS
- Organics
- Water Quality
- In Situ Probes
  - Instrument
  - Spreader Weight
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing

Choose a date from the list...

**Available Dates**

Please select a date from below:

August 02, 2001

August 02, 2001

August 03, 2001

August 04, 2001

August 06, 2001

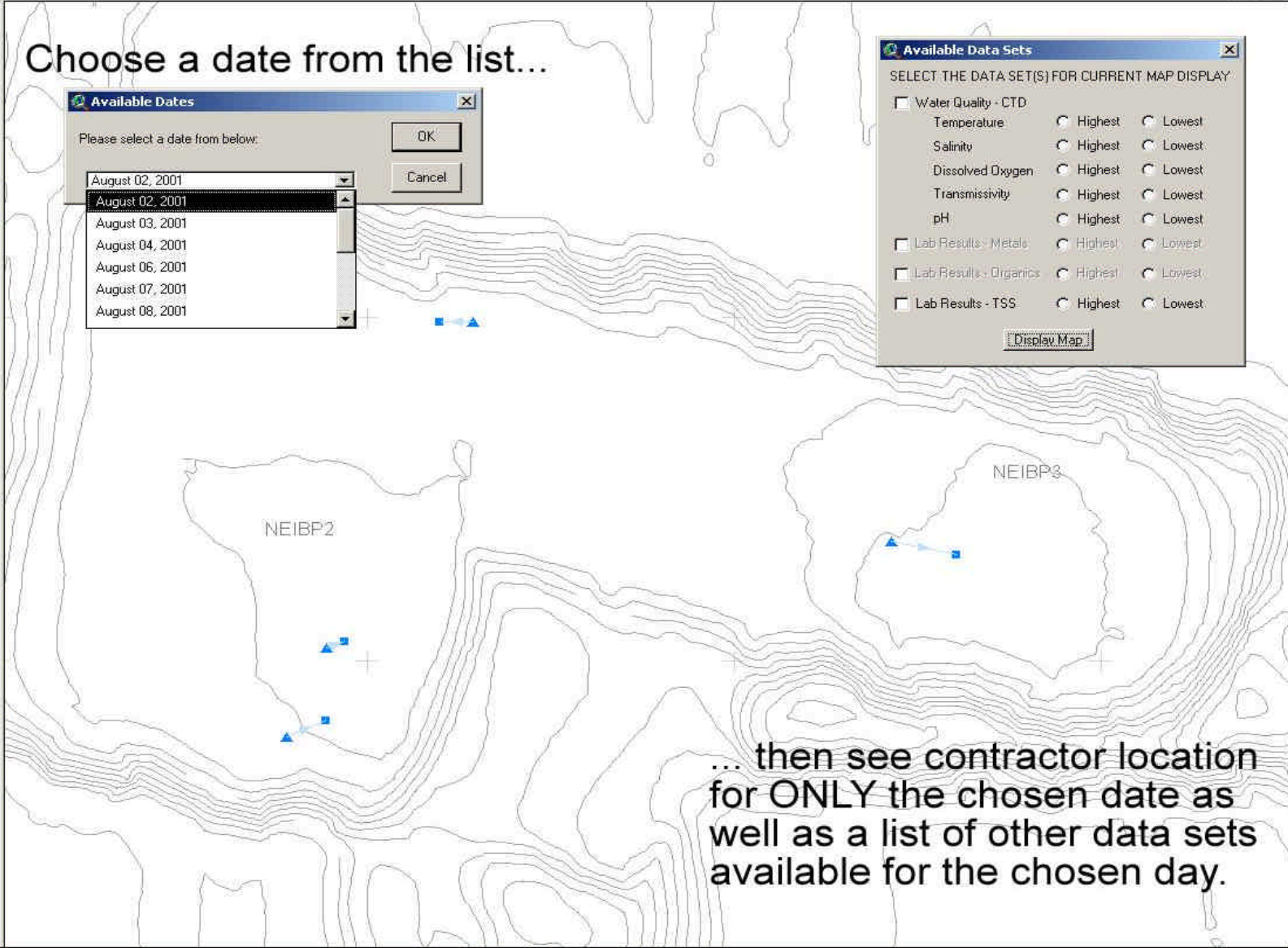
August 07, 2001

August 08, 2001

**Available Data Sets**

SELECT THE DATA SET(S) FOR CURRENT MAP DISPLAY

<input type="checkbox"/> Water Quality - CTD	<input type="radio"/> Highest	<input type="radio"/> Lowest
Temperature	<input type="radio"/> Highest	<input type="radio"/> Lowest
Salinity	<input type="radio"/> Highest	<input type="radio"/> Lowest
Dissolved Oxygen	<input type="radio"/> Highest	<input type="radio"/> Lowest
Transmissivity	<input type="radio"/> Highest	<input type="radio"/> Lowest
pH	<input type="radio"/> Highest	<input type="radio"/> Lowest
<input type="checkbox"/> Lab Results - Metals	<input type="radio"/> Highest	<input type="radio"/> Lowest
<input type="checkbox"/> Lab Results - Organics	<input type="radio"/> Highest	<input type="radio"/> Lowest
<input type="checkbox"/> Lab Results - TSS	<input type="radio"/> Highest	<input type="radio"/> Lowest



... then see contractor location for ONLY the chosen date as well as a list of other data sets available for the chosen day.

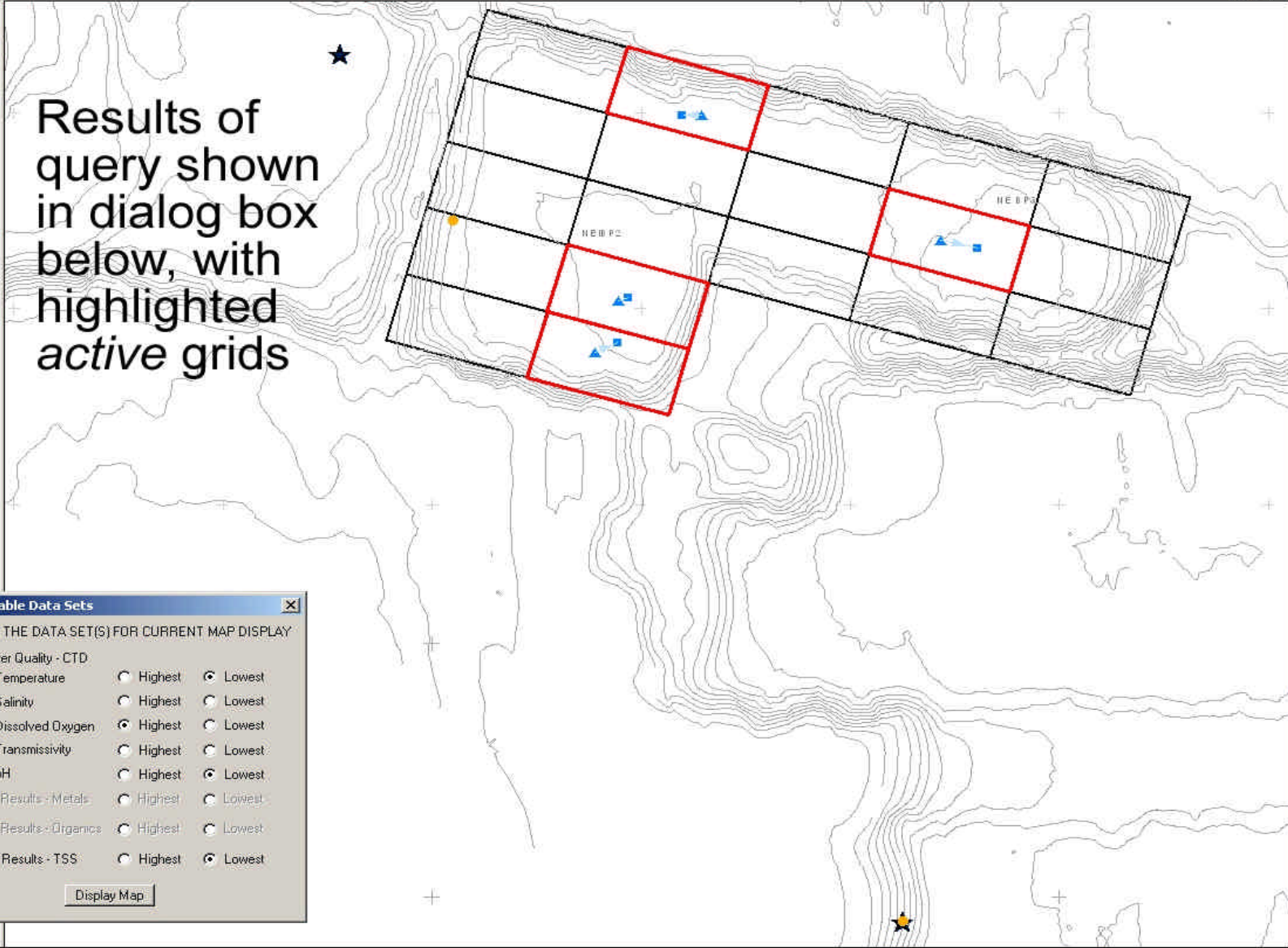
- Contractor Tracks
- Contractor Start
- Contractor Stop
- Metals
- TSS
- Organics
- Water Quality
- In Situ Probes
  - Instrument
  - Spreader Weight
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- AutoCAD Base Drawing
- Disposal Grid

Results of query shown in dialog box below, with highlighted active grids

**Available Data Sets**

SELECT THE DATA SET(S) FOR CURRENT MAP DISPLAY

<input checked="" type="checkbox"/> Water Quality - CTD		
Temperature	<input type="radio"/> Highest	<input checked="" type="radio"/> Lowest
Salinity	<input type="radio"/> Highest	<input type="radio"/> Lowest
Dissolved Oxygen	<input checked="" type="radio"/> Highest	<input type="radio"/> Lowest
Transmissivity	<input type="radio"/> Highest	<input type="radio"/> Lowest
pH	<input type="radio"/> Highest	<input checked="" type="radio"/> Lowest
<input type="checkbox"/> Lab Results - Metals	<input type="radio"/> Highest	<input type="radio"/> Lowest
<input type="checkbox"/> Lab Results - Organics	<input type="radio"/> Highest	<input type="radio"/> Lowest
<input checked="" type="checkbox"/> Lab Results - TSS	<input type="radio"/> Highest	<input checked="" type="radio"/> Lowest



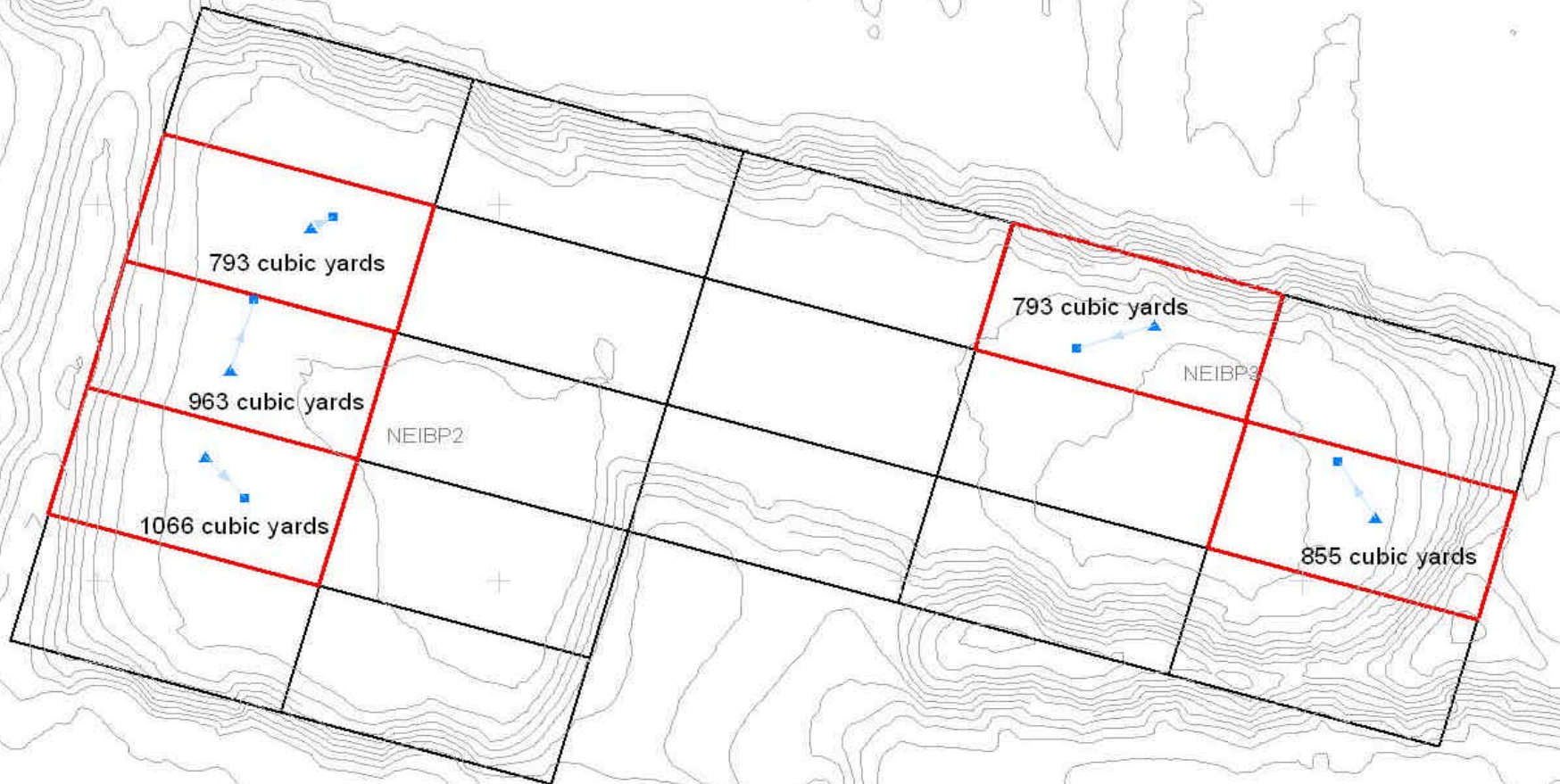


- Sediment Profile Images
  - Contractor Tracks
  - Contractor Start
  - Contractor Stop
  - Metals
  - TSS
  - Organics
  - Water Quality
  - In Situ Probes
    - Instrument
    - Spreader Weight
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - AutoCAD Base Drawing
  - Disposal Grid

Query results of all SPI images indicating drift of dredged material  
Click on an image location to view the picture.



# August 4, 2001 -- Dredge Material Cell Placement

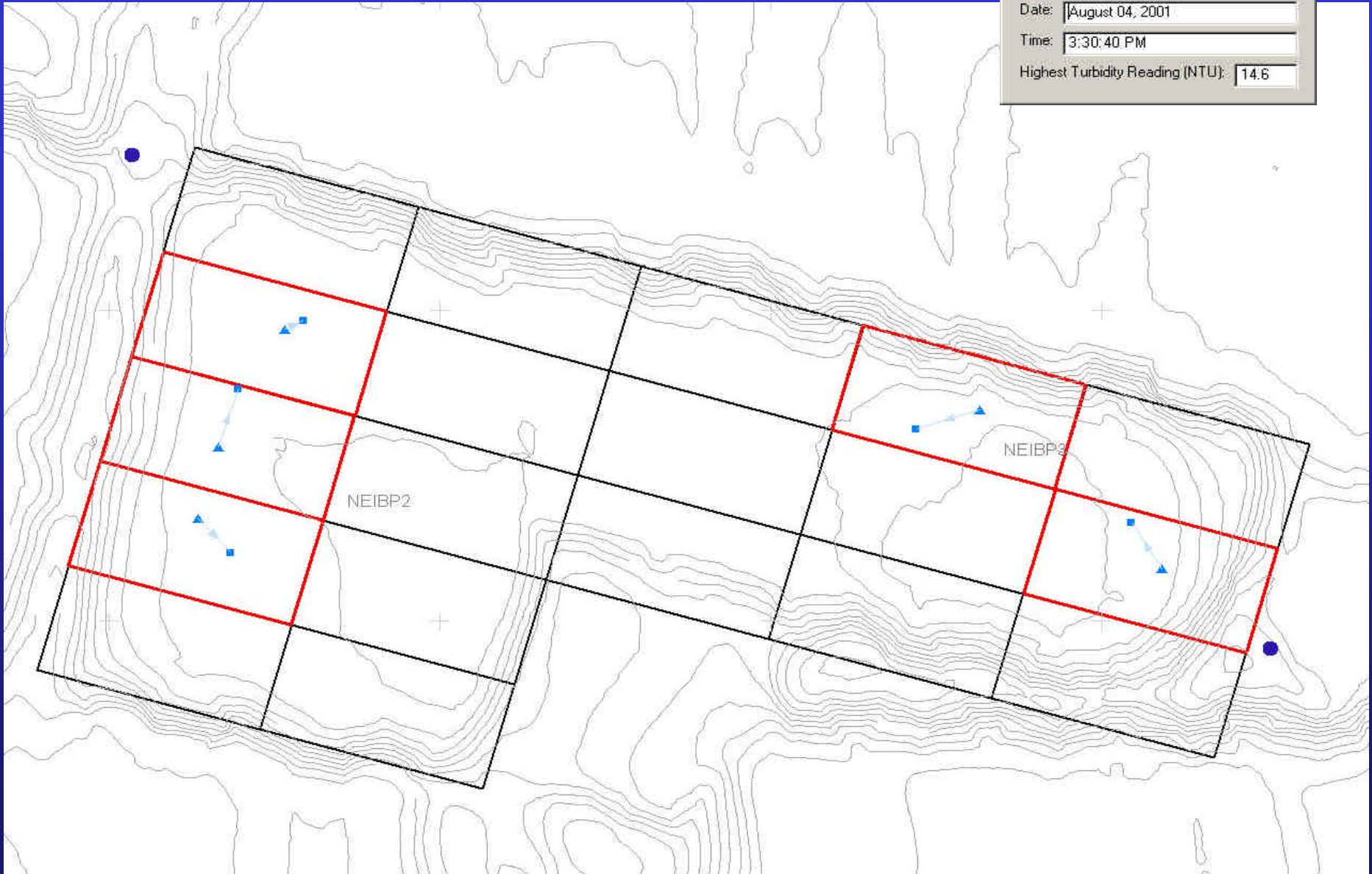


**Insitu Probe Turbidity Query**

Date:

Time:

Highest Turbidity Reading (NTU):

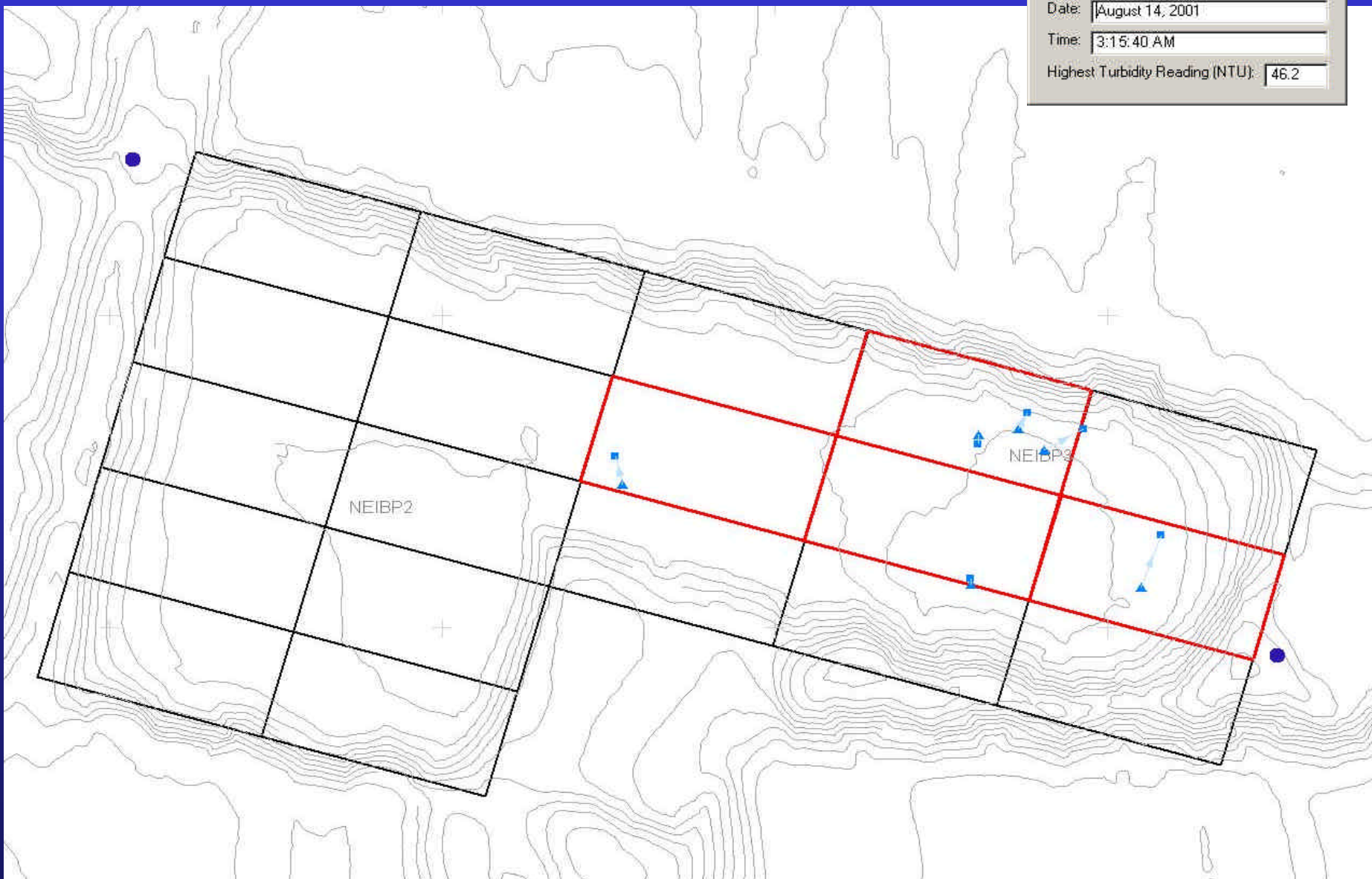


**Insitu Probe Turbidity Query**

Date: August 14, 2001

Time: 3:15:40 AM

Highest Turbidity Reading (NTU): 46.2



NEIBP2

NEIBP2