

# **PUBLIC INFORMATION SESSION PROGRESS OF CORRECTIVE ACTION**

**Cavenham Forest Industries, LLC**



**Presented by:**



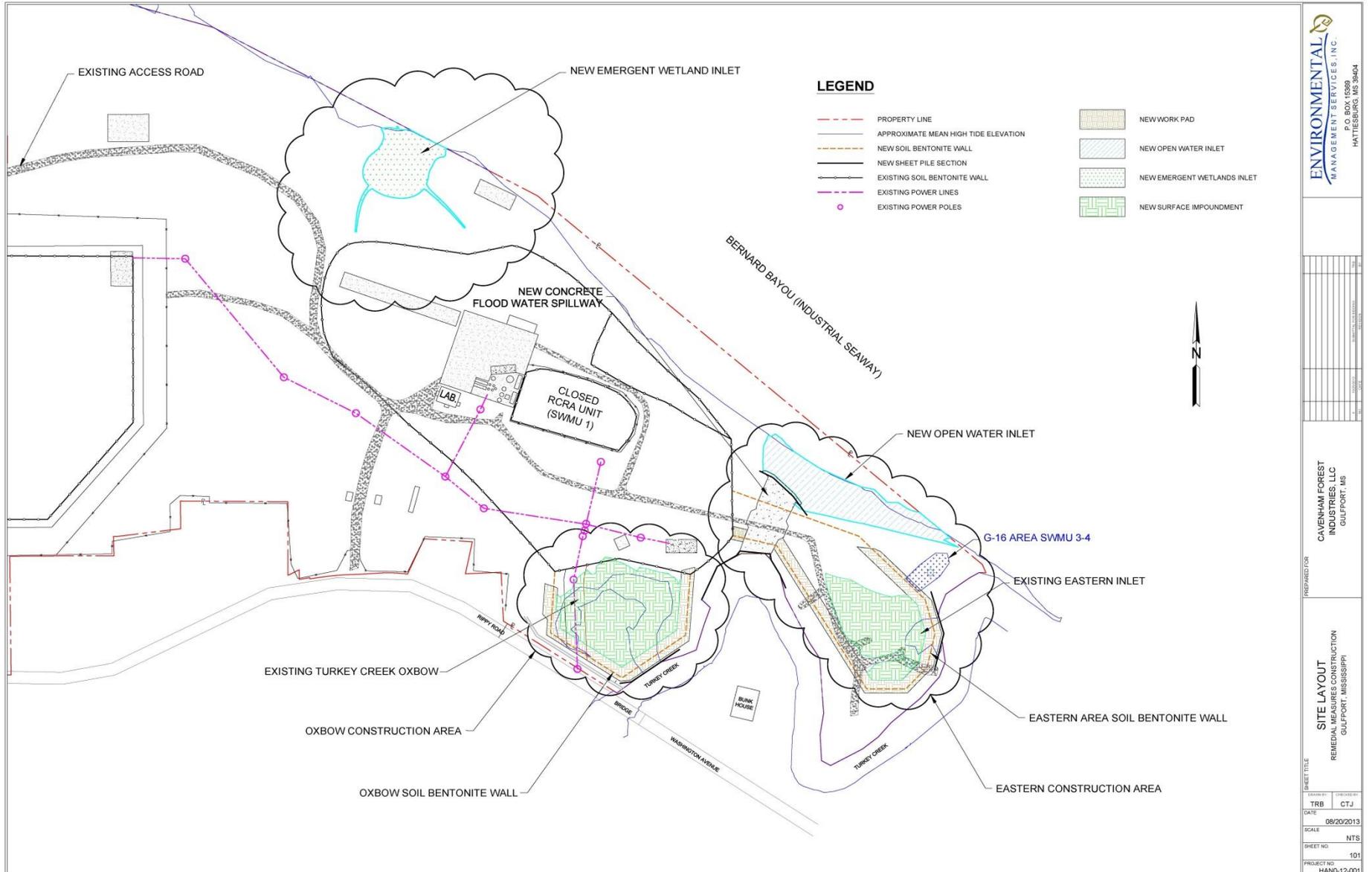
**August 20, 2013**



NOTICE:  
KEYPAD CANNOT  
BE USED AS A  
TELEPHONE

05/06/2013 13:03

# Original Site Goal



DATE	SCALE	SHEET NO.	PROJECT NO.

PREPARED FOR  
**CANERHAM FOREST INDUSTRIES, LLC**  
GULFPORT, MS

**SITE LAYOUT**  
REMEDIAL MEASURES CONSTRUCTION  
GULFPORT, MISSISSIPPI

DATE	SCALE	SHEET NO.	PROJECT NO.
08/20/2013	NTS	101	MAN-12-001



02/08/2013 08:17









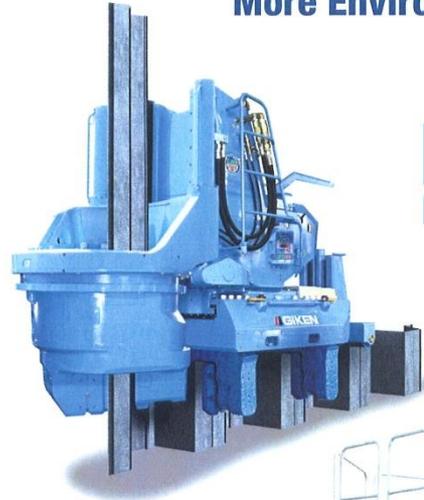
02/14/2013 08:23

New

# SILENT PILER®

for Wider Z & U Sheet Piles and  
More Environmentally-Friendly Piling

SILENT PILER ECO700S / 1400S



SILENT PILER **ECO700S**

 for Single piles



SILENT PILER **ECO1400S**

for Double piles 

 **GIKEN**













03/19/2013 11:30





04/29/2013 14:39



04/18/2013 10:28



04/16/2013 08:44



04/18/2013 14:55



05/28/2013 17:46





04/29/2013 16:34



05/09/2013 19:39



05/20/2013 15:20



05/15/2013 16:59



05/21/2013 15:53



05/29/2013 16:16



04/24/2013 09:41



05/24/2013 14:17



06/01/2013 09:47



06/01/2013 09:49



05/24/2013 14:19



05/24/2013 14:19



08/15/2013 09:03



04/02/2013 16:59





04/26/2013 09:53



06/29/2013 14:17



05/06/2013 15:48



05/21/2013 08:42



06/05/2013 08:01





06/29/2013 09:18



PORT-A-PUG

BECK'S

CAT

BECK'S

BECK'S  
PFT-10

DO NOT  
ENTER  
NO  
ENTRADA

06/29/2013 14:15



07/30/2013 13:25



07/30/2013 17:17



08/01/2013 07:37



H-17

Spa leck

SPL 134206

MANTIS

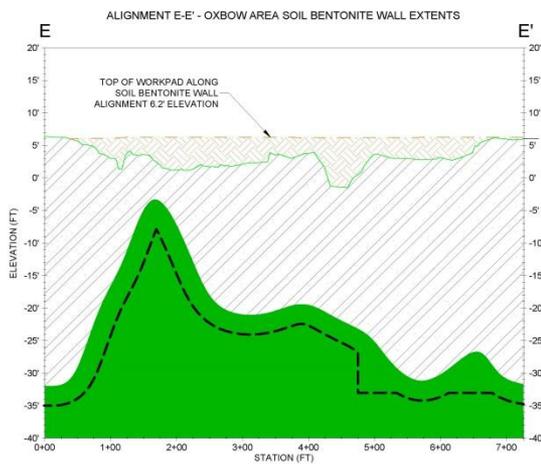
14010

BECK

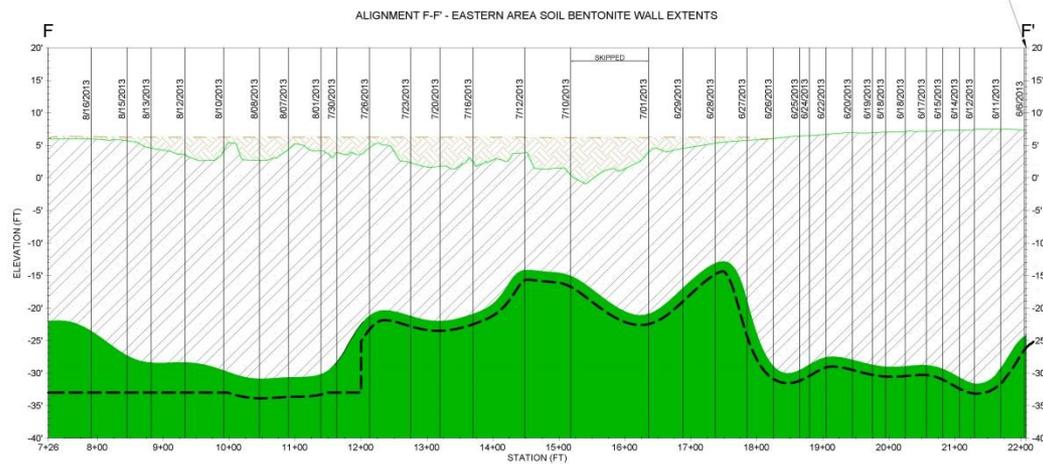
08/14/2013 07:17



# Slurry Wall Cross Section



10X VERTICAL EXAGGERATION



- LEGEND**
- EXISTING GRADE
  - TOP OF TEMPORARY WORK PAD
  - LIMIT OF SOIL BENTONITE WALL EXCAVATION
  - WORK PAD FILL
  - INSITU SOILS
  - ESTIMATED H4 CLAY LOCATION

SOIL-BENTONITE WALL SPECIFICATIONS

Soil-Bentonite Wall Section	Depth of Wall Below Top of Work Pad
Station 0+00 to 4+75	3 feet penetration into marine clay
Station 4+75 to 12+00	3 feet penetration into marine clay OR 39 feet deep whichever is deeper
Station 12+00 to 22+00	3 feet penetration into marine clay



ENVIRONMENTAL  
MANAGEMENT SERVICES, INC.  
P.O. BOX 15389  
HATTESBURG, MS 38644

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CAVENHAM FOREST INDUSTRIES, LLC GULFPORT, MS	REMEDIAL MEASURES CONSTRUCTION GULFPORT, MISSISSIPPI
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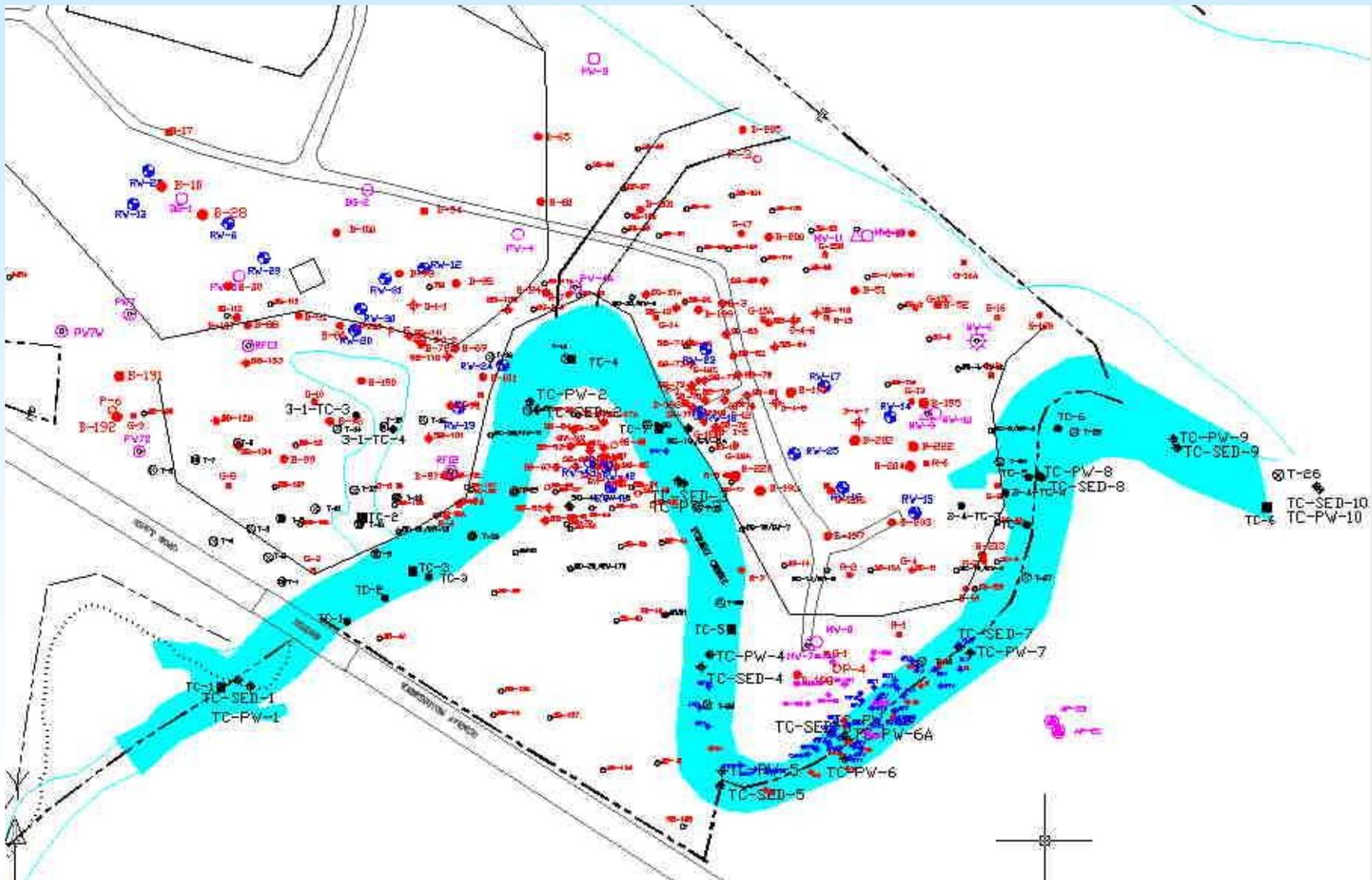
SHEET TITLE: SOIL BENTONITE WALL CONSTRUCTION  
 PREPARED FOR: SOIL BENTONITE WALL CONSTRUCTION  
 DRAWN BY: TRB  
 CHECKED BY: CTJ  
 DATE: 06-19-2013  
 SCALE: AS SHOWN  
 SHEET NO.: 1000  
 PROJECT NO.: HAND-12-001



Turkey Creek-Sedimite™  
and  
Ecological Risk Assessment

# Solid Waste Management Units

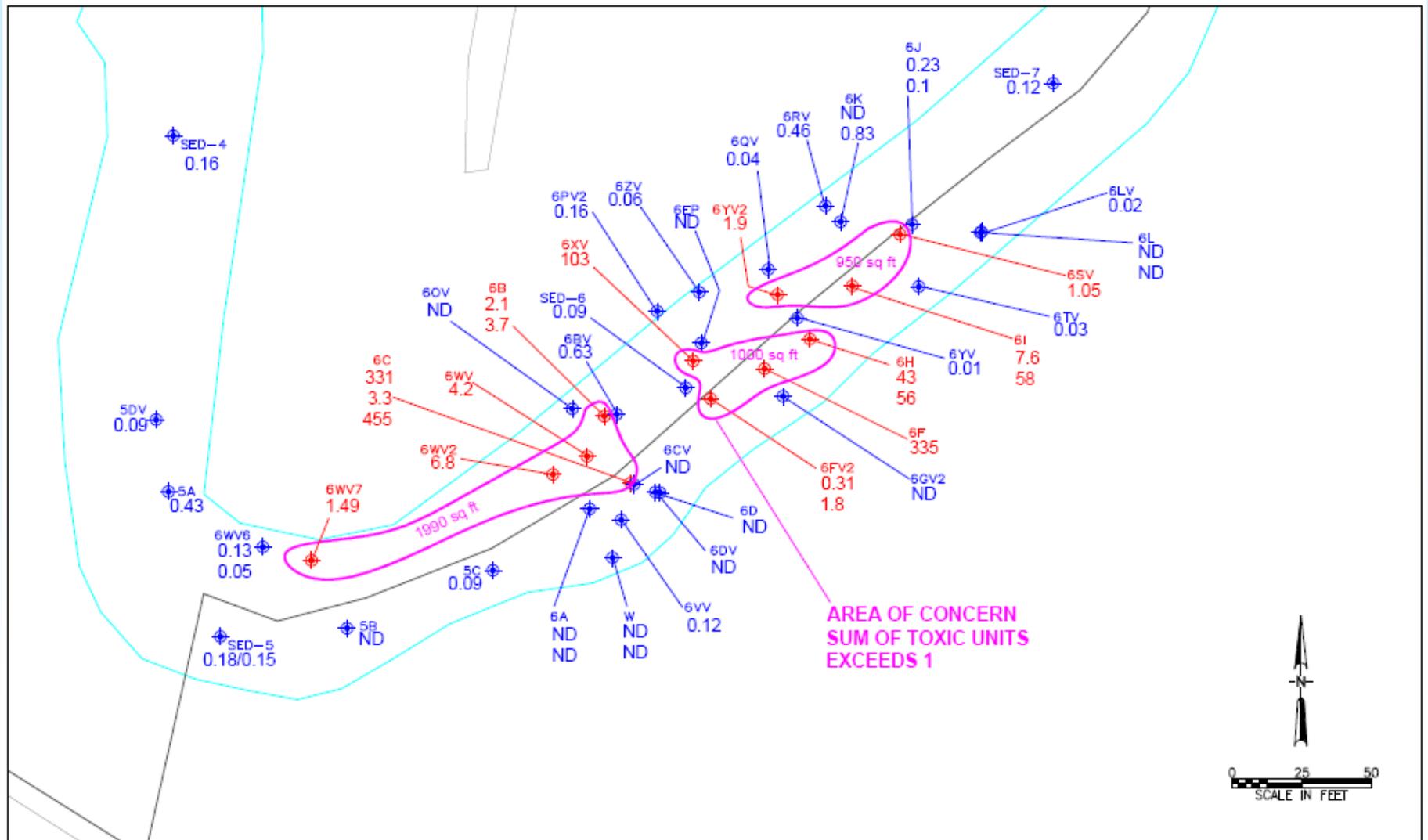




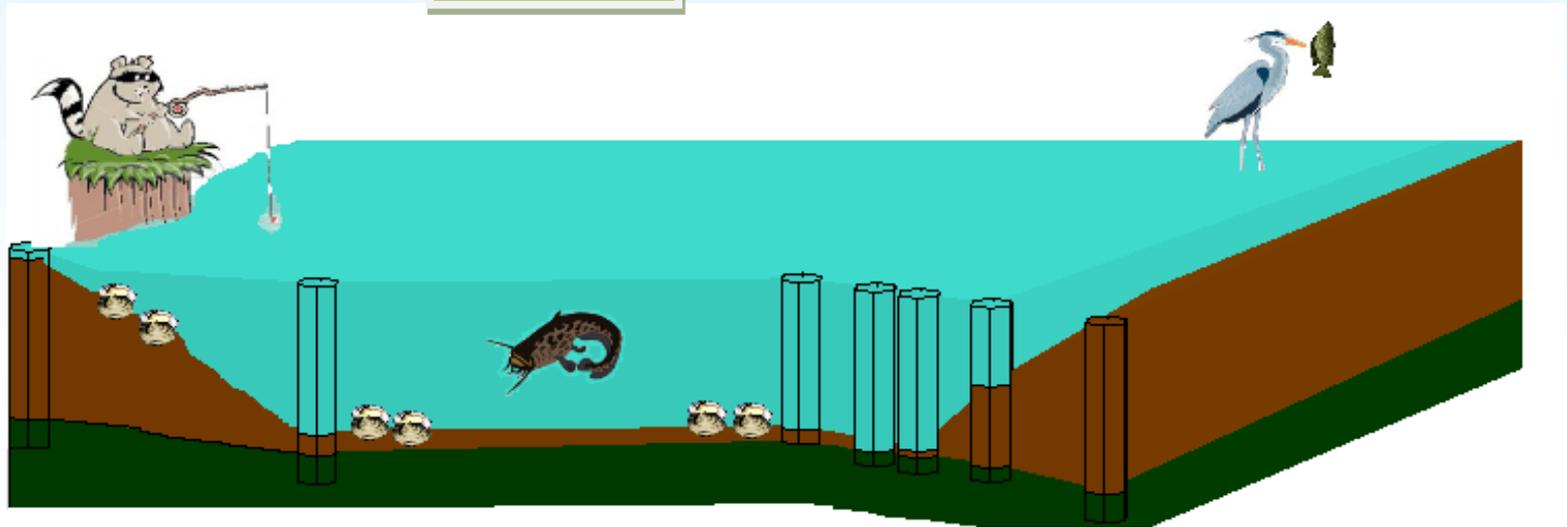
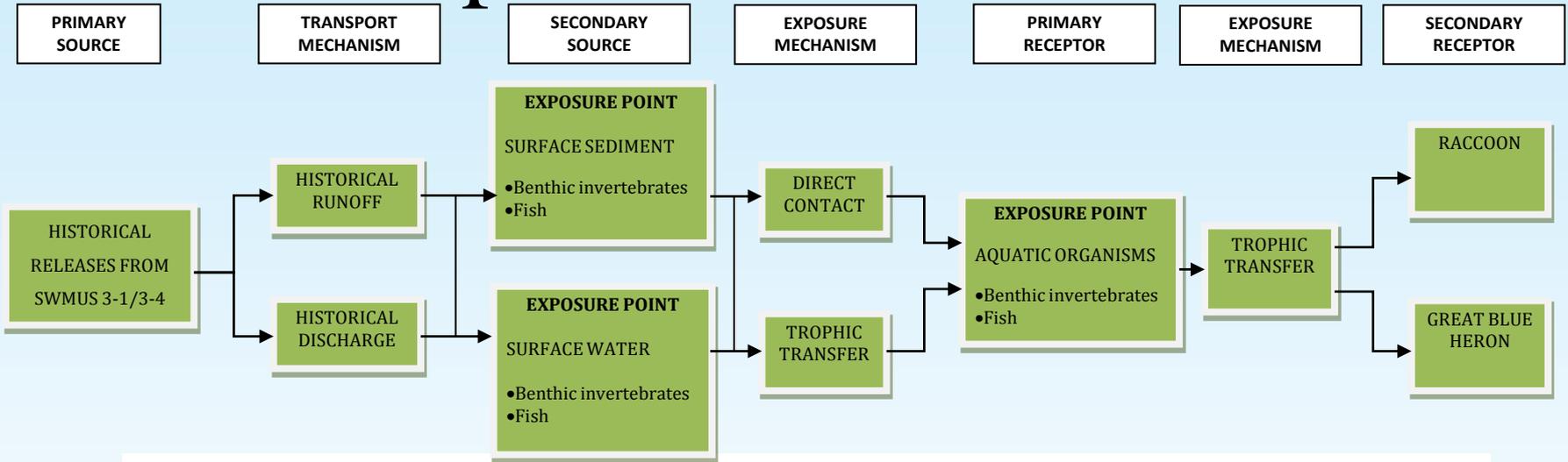
# Sediment and Pore Water Sampling March 3 2010 Report



# Sediment PAHs Toxic Units



# Exposure Evaluation

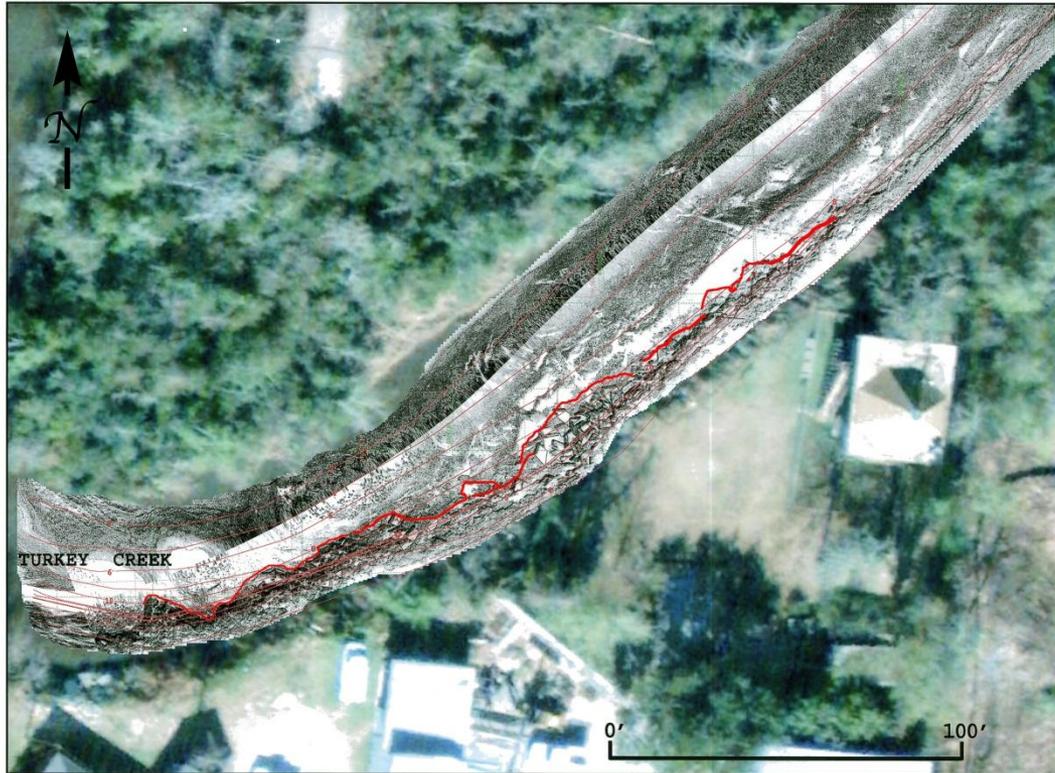




# Concrete in creek



# SideScan Sonar Survey



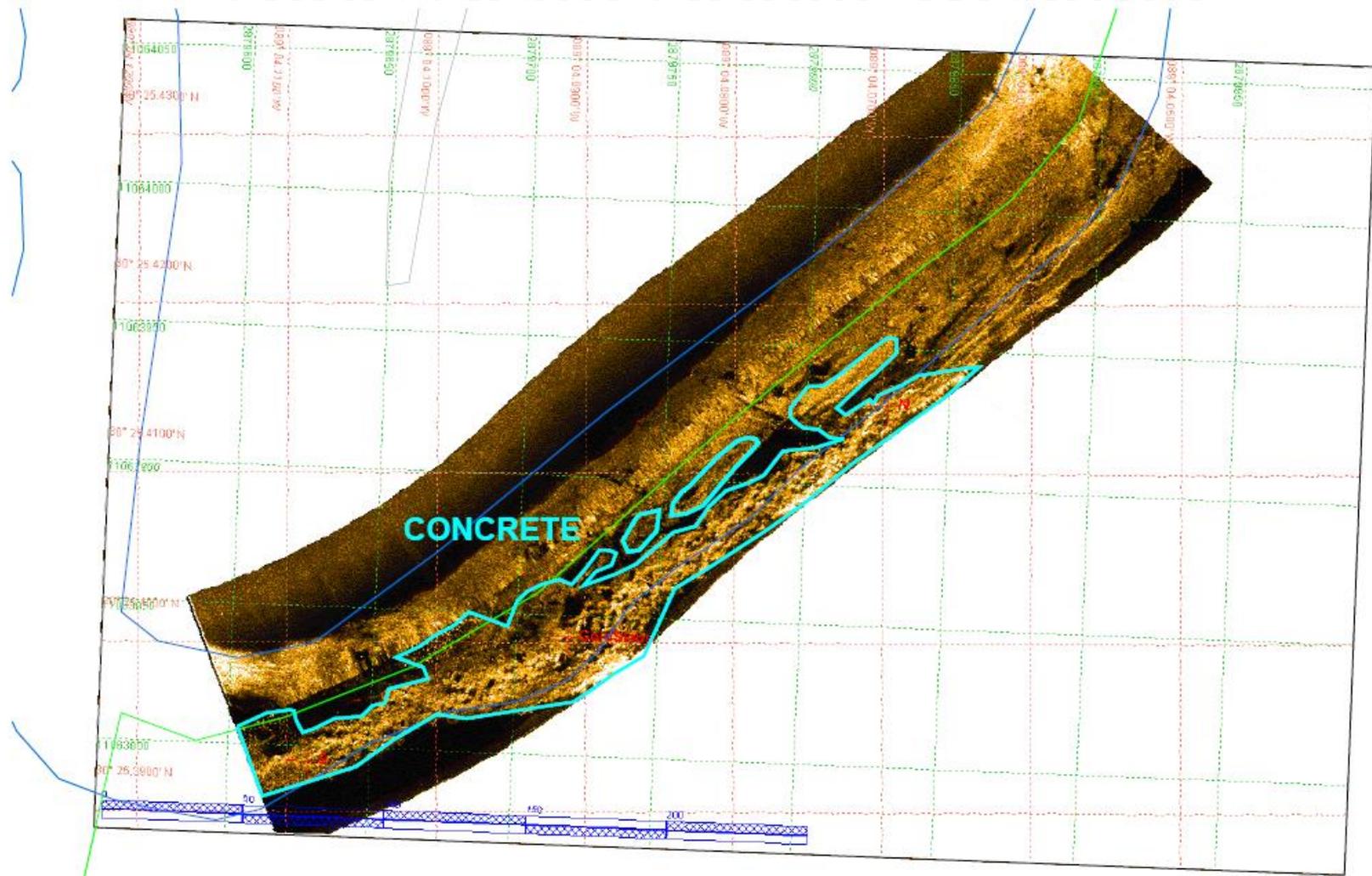
 - Depth Contours

Environmental Management Services, Inc.  
SideScan Sonar Survey  
Turkey Creek Remediation Site  
Gulfport, Mississippi

SideScan Sonar Overlay  
Water Bottom Depth Contours,  
Characteristics & Obstructions

Robert P. Waldron, Incorporated 10/2010

# Side Scan Sonar Results





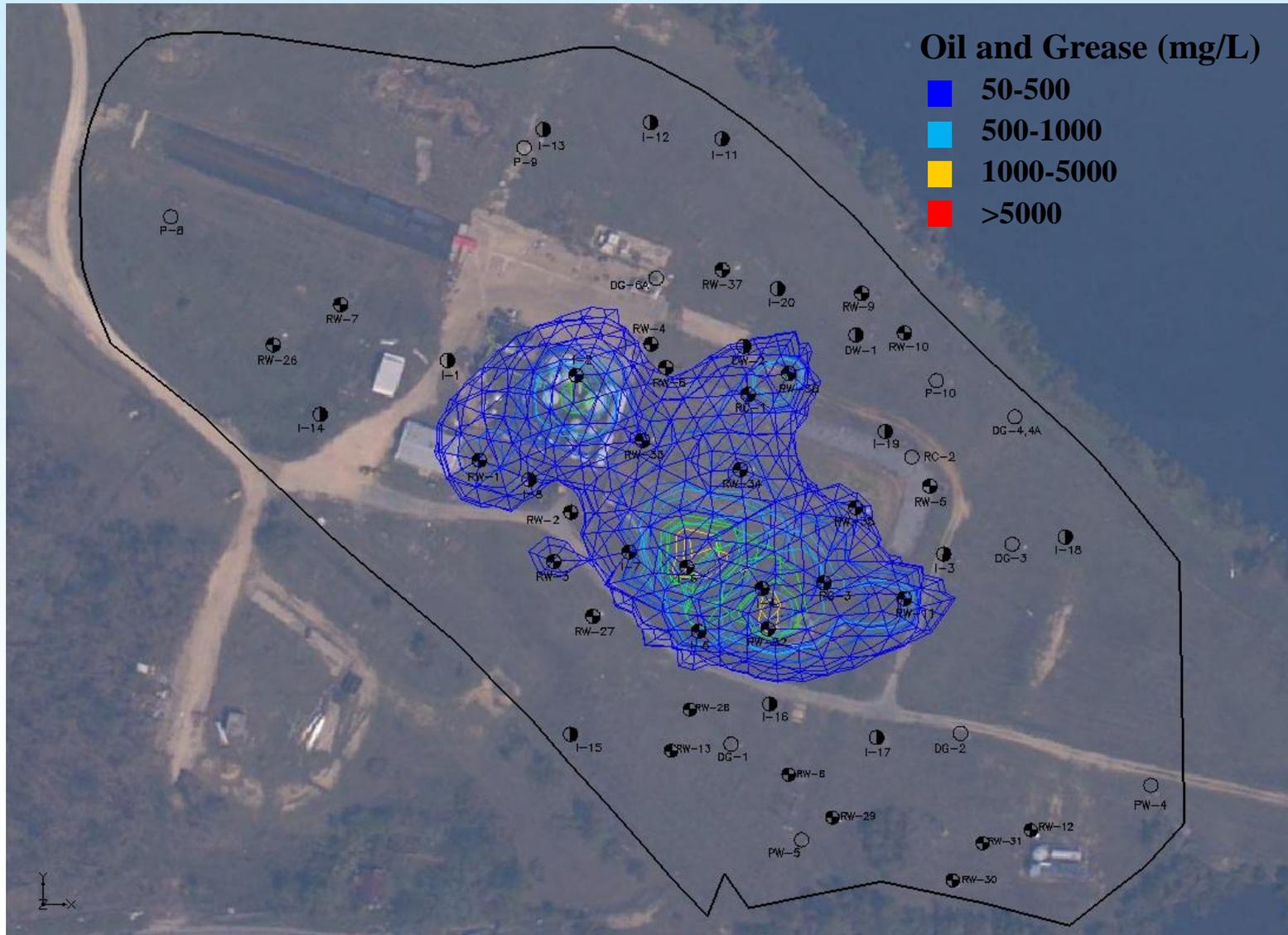


# Groundwater Recovery and Treatment

# GULFPORT

## OIL AND GREASE GROUNDWATER SURVEY

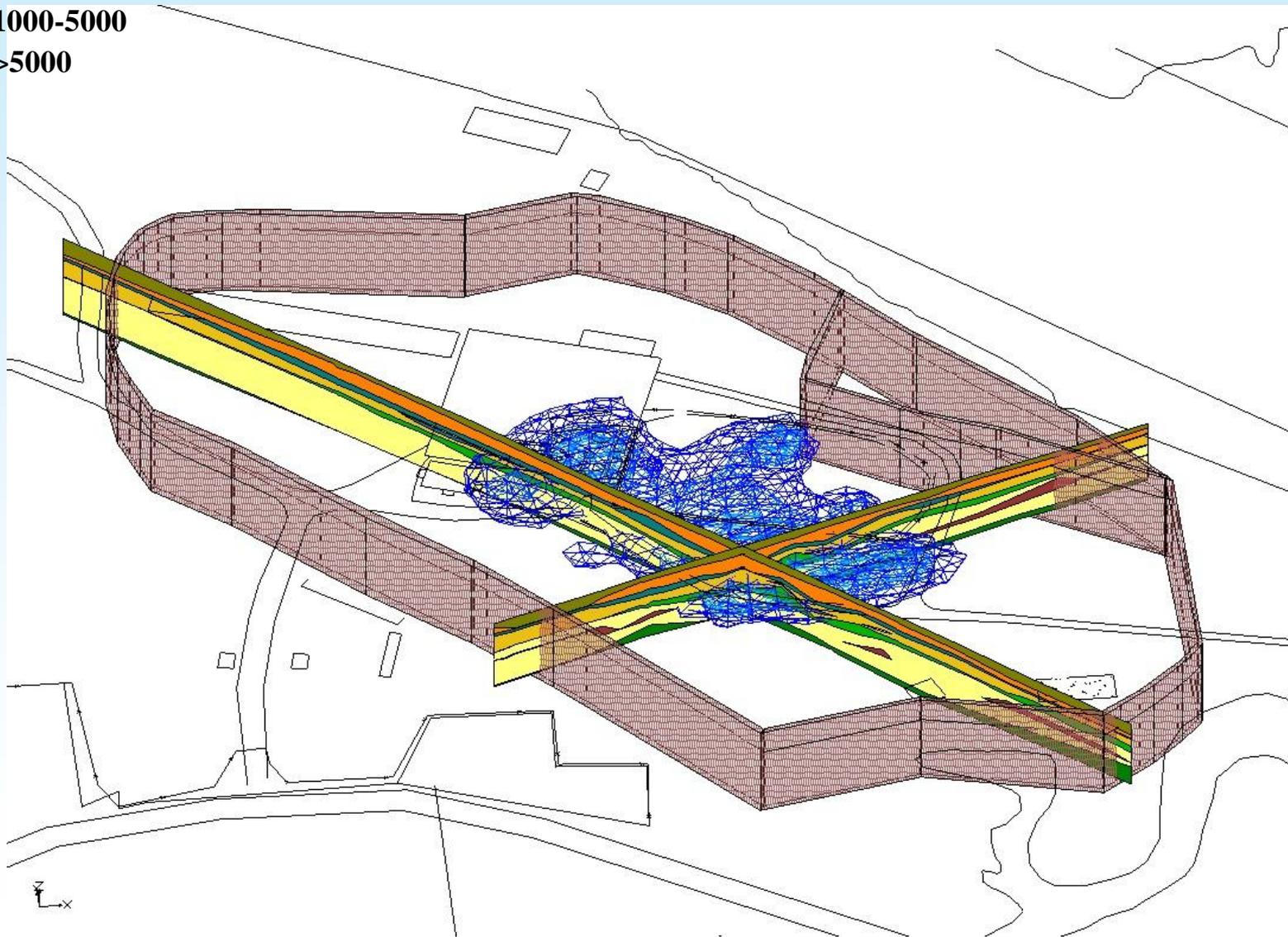
# 2004



# Oil and Grease (mg/L)

- 50-500
- 500-1000
- 1000-5000
- >5000

2004

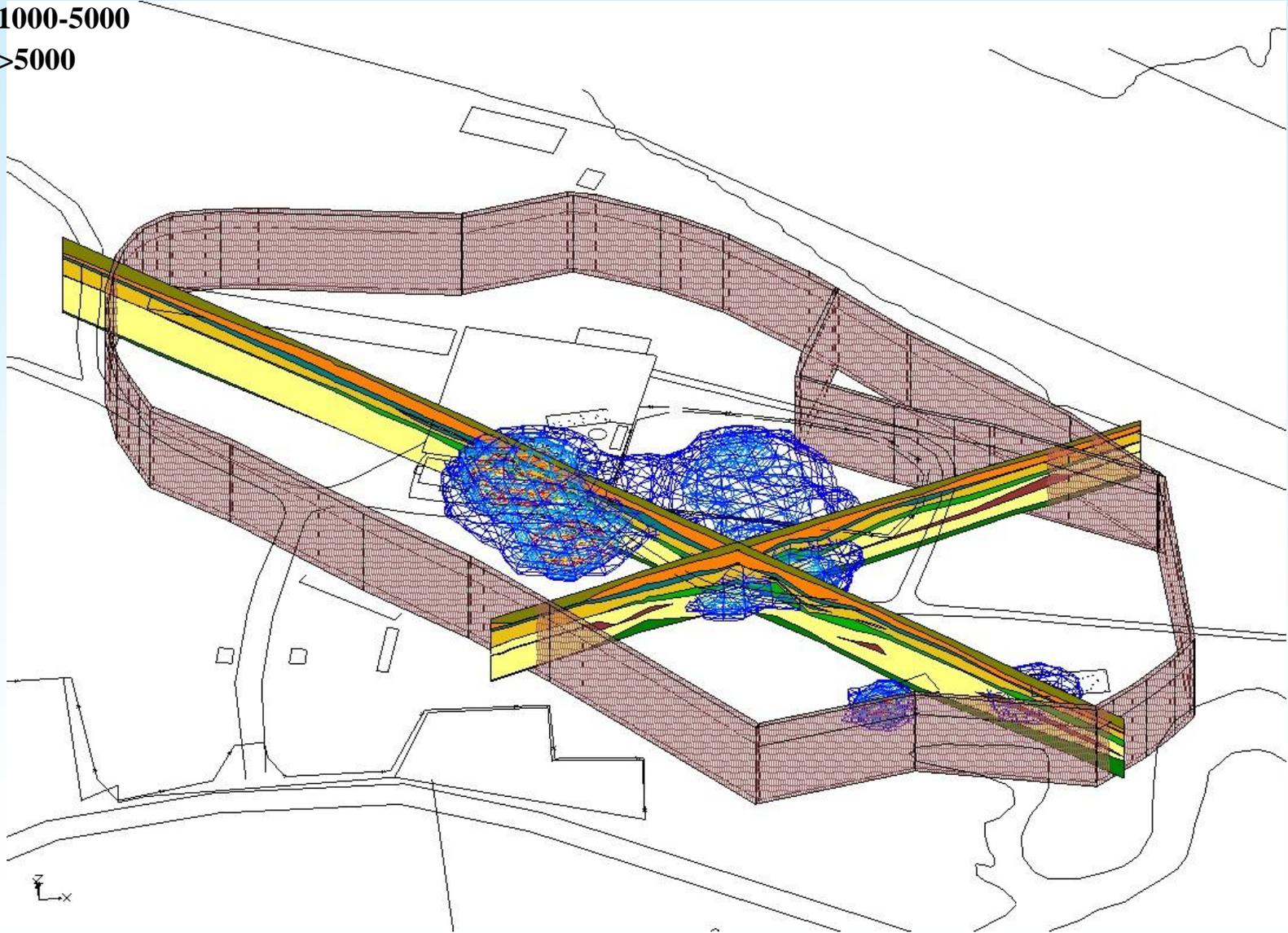




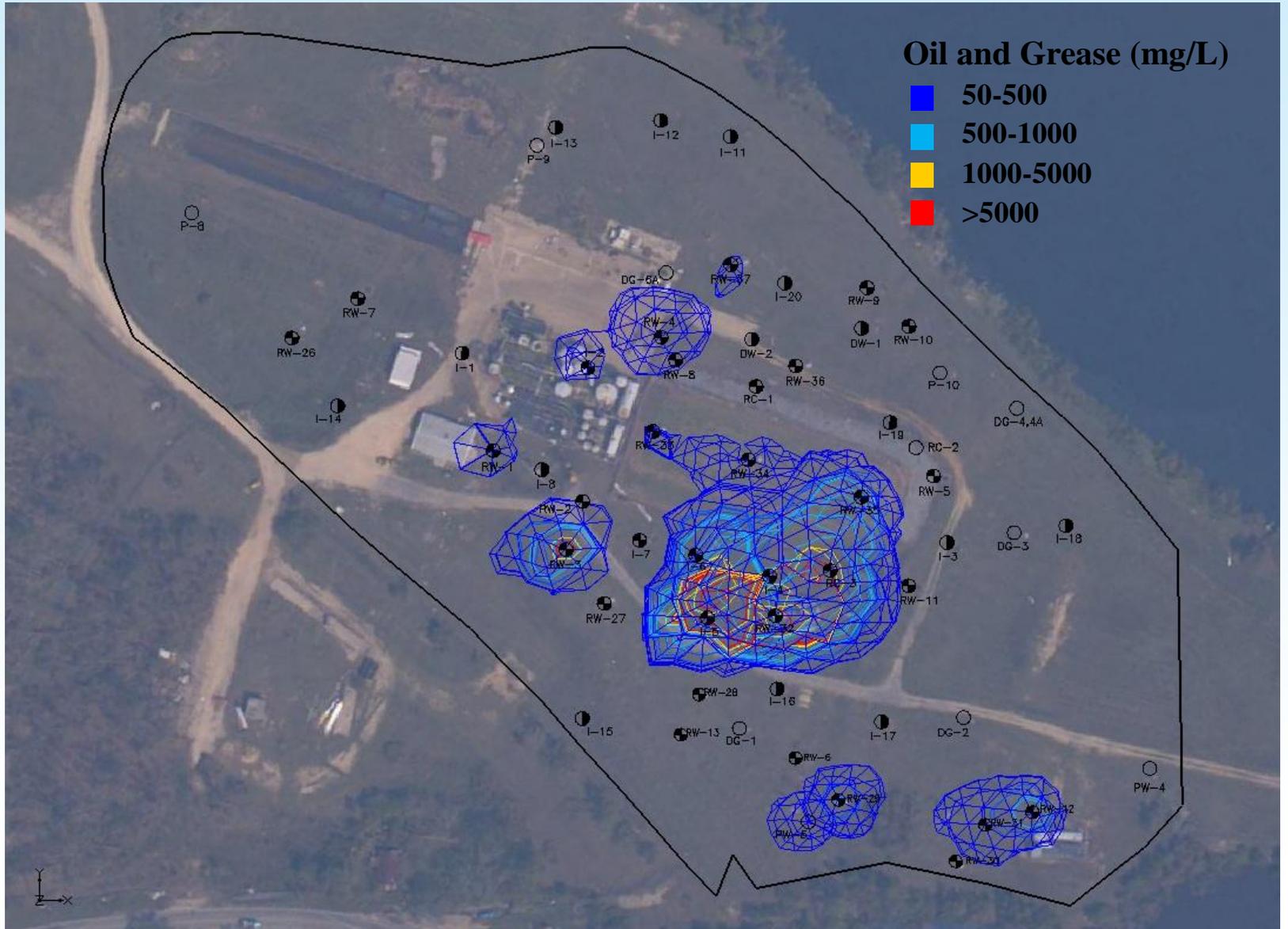
# Oil and Grease (mg/L)

- 50-500
- 500-1000
- 1000-5000
- >5000

# 2008



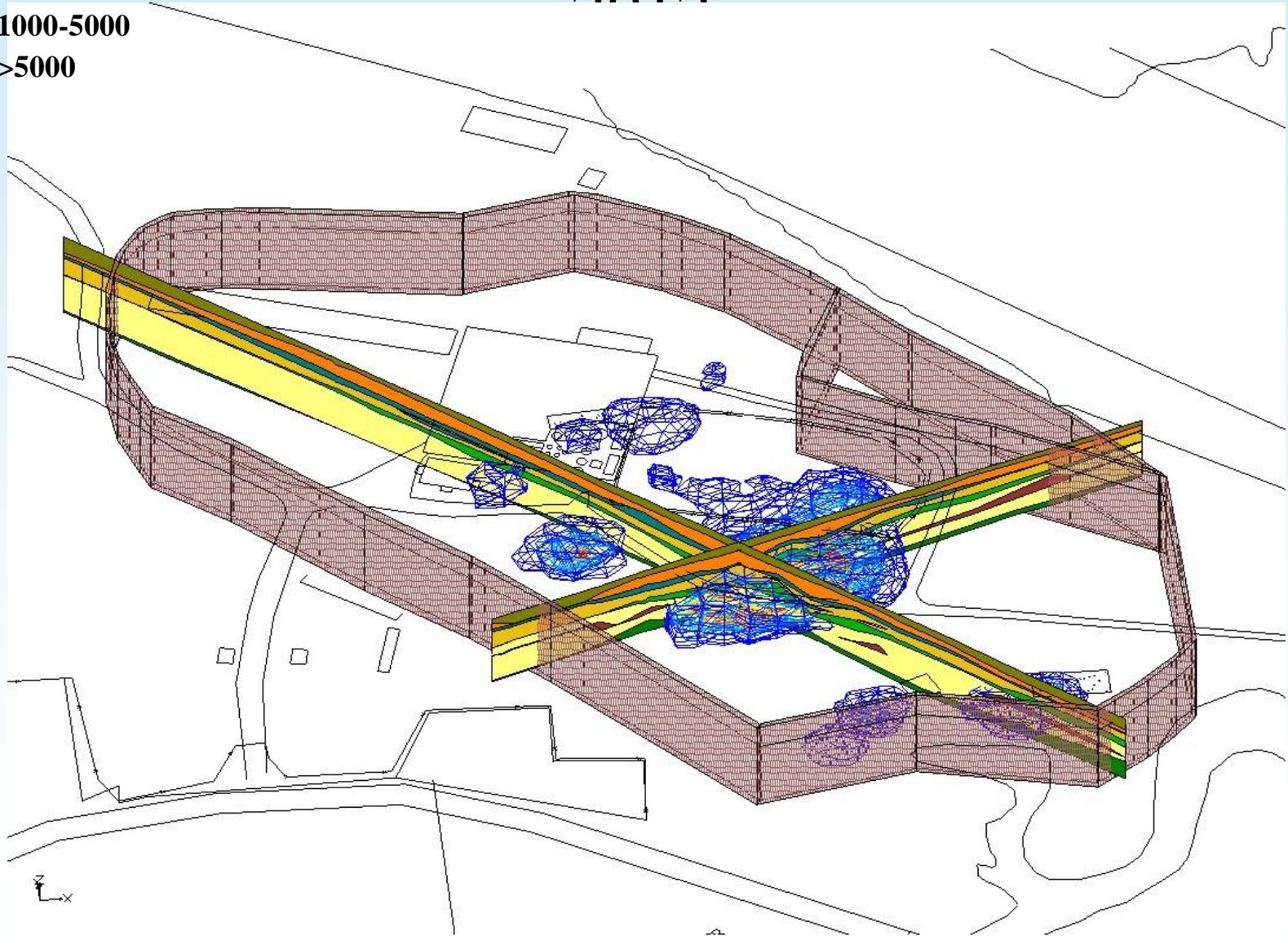
# 2012



# Oil and Grease (mg/L)

- 50-500
- 500-1000
- 1000-5000
- >5000

2010



# Gulfport RCRA Closure Oil and Grease Survey

- Reduction in volume of 49% between 2008 and 2012
- Reduced 10% between 2004 and 2008
- Reduced 54% between 2004 and 2012

# Human Health Risk Assessment



# Comments from CTEH

**Surface Water** (Swimming exposure- following pathways evaluated: ingestion, dermal contact, inhalation (volatiles))

- PAHs – detections of naphthalene, fluoranthene, pyrene, benzo(a)anthracene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene
  - all detections below the federal ambient water quality criteria (AWQC) and USEPA Nov 2011 Tapwater regional screening level (RSL); this indicates that PAHs are not chemicals of concern in surface water for the swimmer.
- Dioxins – all detections below the MCL but above the AWQC for “water + organism” and “organism only” values
  - Preliminary risk estimates lifetime cancer risks from exposure to dioxins in surface water for the swimmer will be below  $1 \times 10^{-6}$  (the USEPA target lifetime cancer risk)

# Comments from CTEH (continued)

## **Sediment** (Pathways considered: ingestion, dermal contact)

- PAHS – some detections in background and site samples above the USEPA Nov 2011 Residential Soil RSL
  - Preliminary risk estimates indicate that lifetime cancer risks from direct contact with PAHs in sediment will be between  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  for the swimmer ingesting sediment and exposed to sediment on the skin; this range is within the range of lifetime cancer risks considered acceptable by USEPA.
  - Noncancer risks will be acceptably low for the swimmer exposed to PAHs in sediment.
- Dioxins – all detections below the USEPA Nov 2011 Residential Soil RSL; this indicates that dioxins are not chemicals of concern in sediment for the swimmer.

# HHRA Approval



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4

61 Forsyth Street, S.W.  
Atlanta, Georgia 30303-8960

OCT 16 2012

RECEIVED  
OCT 22 2012

BY: .....

SCANNED  
11/2012

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Clyde Woodward, President  
Environmental Management Services, Inc.  
Cavenham Forest Industries, LLC.  
Post Office Box 15369  
Hattiesburg, Mississippi 39404-5369

Re: Revised Turkey Creek Human Health Risk Assessment Report  
Cavenham Forest Industries, LLC.  
Gulfport, Mississippi  
EPA ID. No. MSD 057 226 961  
HSWA Permit Effective Date July 26, 1996

Dear Mr. Woodward:

The Environmental Protection Agency has received the Revised Turkey Creek Human Health Risk Assessment Report (HHRA) dated September 19, 2012, submitted by Cavenham Forest Industries, LLC (CFI), Gulfport, Mississippi. The revised HHRA Report was submitted in response to EPA comments dated July 2012 on the HHRA Report dated March 16, 2012 and the agreements reached during the conference call on August 22, 2012 regarding CFI's draft response dated August 15, 2012.

The HHRA Report evaluated human chemical exposures from eating fish, dermal contact and ingestion of sediment and surface water both for a noncancer hazard index (HI) and life time cancer risk (LCR) for benzo(a)pyrene (BaP) toxic equivalent quotient (TEQ) compounds and Dioxins/Furans TEQ in a recreational setting. The risks categories were biased towards children's health as being at a higher risk. Sixteen different species of fish were collected in Turkey Creek, Bernard Bayou and Old Fort Bayou (the background location used by Mississippi Department of Environmental Quality (MDEQ).

The noncancer risk (health effects for target organs) from dermal exposure to surface water by swimming and contact with sediments was well below the hazard index (HI) of 1. Greater than 1 indicates a higher risk and concern. The LCR from incidental ingestion of water/sediment and dermal exposure was less than  $1.5E-06$ . The consumption of fish had one exceedance of HI 1 for a noncancer risk for the Blue Catfish. While the noncancer risk for consumption of Stripped Mullet had a HI of 4.4 in Old Fort Bayou it exceeded the HI 1 at the background sampling location. The overall cancer risk for fish tissue consumption is in the risk range of  $1.5E-06$  to  $2.4E-05$ . The range of the average LCR for fish consumption at the background sampling location in Old Fort Bayou (12 miles from Turkey Creek) and Bernard Bayou is from  $1.7E-05$  to  $1.9E-06$ . The highest concentration in Bernard Bayou was just downstream from the confluence of Turkey Creek.

The location specific hazards for a child consuming Blue Catfish at Turkey Creek Adjacent to/Downstream of Site, is slightly above 1.

Upstream & Adjacent to the Site in Turkey Creek; Upstream & downstream in Bayou Bernard  
Cancer risks (average of all fish):  **$1.9E-06$  and  $1.2E-05$**  (within EPA's acceptable risk range)  
Noncancer hazards (average of all fish): **HI = less than 1**

Highest cancer risk (Striped Mullet @ Turkey Creek-adjacent) =  $9.3E-05$   
Highest non-cancer HI (Blue Catfish @ Turkey Creek adjacent) = 1.1; main COC is dioxin TEQ

Background  
Cancer risks (average of all fish):  **$1.7E-05$  and  $1.8E-05$**  (within EPA's acceptable risk range)  
Noncancer hazards (average of all fish): **HI = less than 1**

Highest cancer risk (striped mullet) =  $9.7E-05$   
Highest non-cancer HI (striped mullet) = 4.4; main COC is dioxin TEQ

The sum of the cancer risks for adult/child is  $1.5E-06$  (within EPA's acceptable risk range of  $1E-06$  to  $1E-04$ ). The sum of the noncancer hazards for the child is 0.002 (less than HI=1).

In conclusion, EPA agrees with the findings of CFI that the overall average risks are within the acceptable risk range. There are no significant risks to human health in the consumption of fish tissue in Turkey Creek and Bernard Bayou. The ingestion and dermal contact of PAH TEQ and Dioxin TEQ found in fish tissue, sediment and surface water from Turkey Creek and Bernard Bayou do not present a significant noncancer and/or cancer risk to human health at this time. The Turkey Creek Human Health Risk Assessment Report is hereby approved.

For questions regarding this letter, please contact James H. Smith, Corrective Action Specialist, Corrective Action Section, 404-562-8502 or by electronic mail at [smith.jamesh@epa.gov](mailto:smith.jamesh@epa.gov) or Russ McLean Acting Section Chief at 404-562-8504 or by electronic mail at [mclean.russ@epa.gov](mailto:mclean.russ@epa.gov).

Sincerely,

Russ McLean, Acting Chief  
Corrective Action Section  
Restoration and Underground Storage Tank Branch  
RCRA Division

cc: Ebony Allen, MDEQ

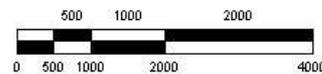
# Sampling Areas



## LEGEND

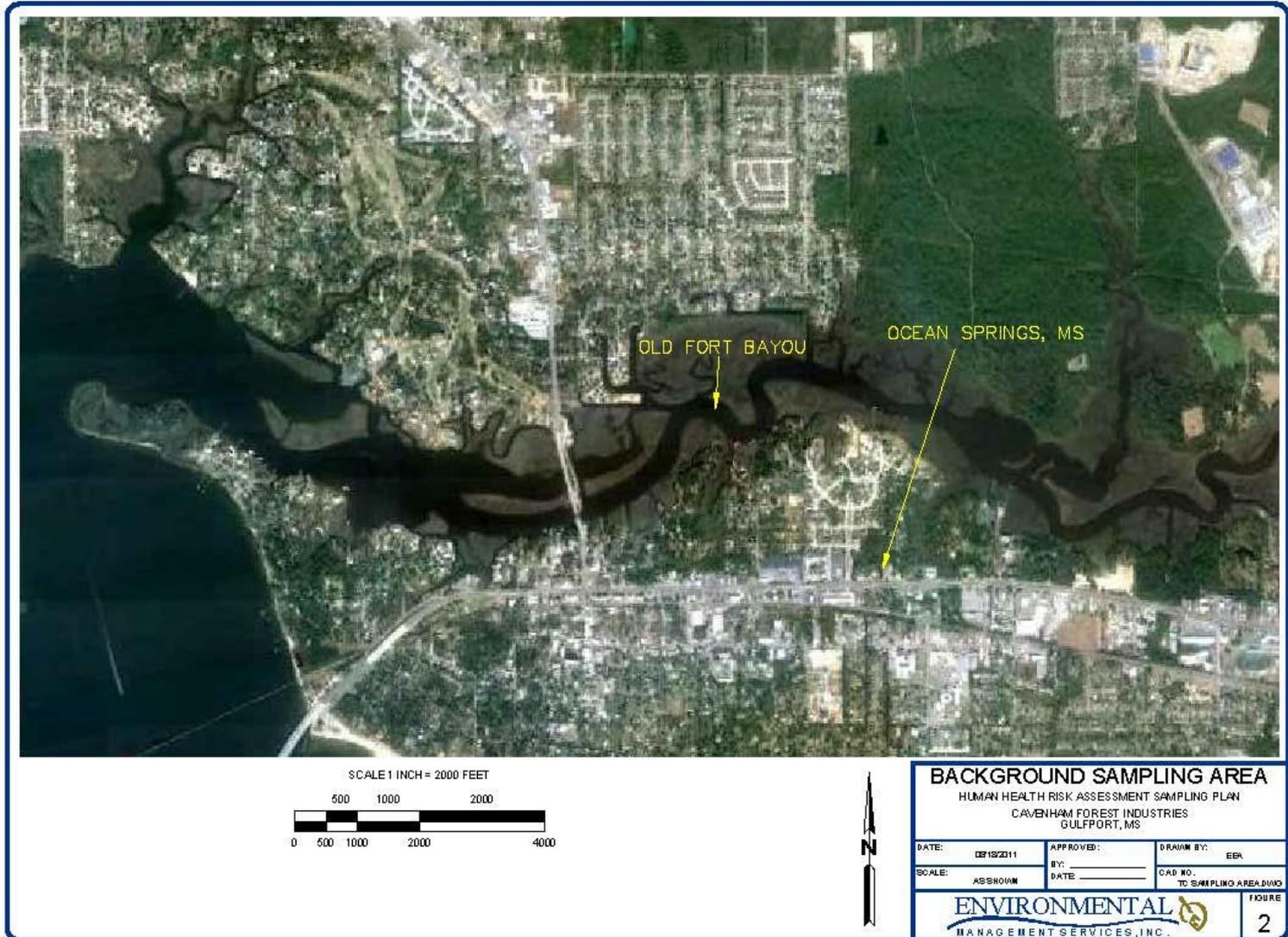
- TCS TURKEY CREEK ADJACENT TO CFI
- TC1 TURKEY CREEK UPSTREAM FROM WASHINGTON AVENUE TO AIRPORT ROAD
- BBU BAYOU BERNARD UPSTREAM
- BBD BAYOU BERNARD DOWNSTREAM

SCALE 1 INCH = 2000 FEET



<b>SAMPLING AREAS</b>			
HUMAN HEALTH RISK ASSESSMENT SAMPLING PLAN CAVENHAM FOREST INDUSTRIES GULFPORT, MS			
DATE: 03/13/2011	APPROVED: _____	DRAWN BY: EEA	
SCALE: AS SHOWN	BY: _____ DATE: _____	CAD NO. _____	TC SAMPLING AREA/DWG
<b>ENVIRONMENTAL</b> MANAGEMENT SERVICES, INC.			FIGURE <b>1</b>

# Background Sampling Area



# Local Fish Survey Questionnaire

Local Fish Survey Questionnaire  
Turkey Creek and Bayou Bernard/Industrial Seaway

Name: Monica L. Bestor  
Address: 14324 Rippy Rd.  
Gulfport, MS 39503

1.) Do you fish in Turkey Creek and/or Bayou Bernard/Industrial Seaway? Yes  No

2.) Do you consume fish, frogs, crawfish, and/or crabs caught in Turkey Creek and/or Bayou Bernard?  Yes  No

3.) If you answered yes to question 2 check the species you consume from Turkey Creek and/or Bayou Bernard.

Check all that apply:

<input checked="" type="checkbox"/> Bass	<input checked="" type="checkbox"/> Mullet	<input type="checkbox"/> Frog
<input checked="" type="checkbox"/> Catfish	<input type="checkbox"/> Crab	<input type="checkbox"/> Other (specify) _____
<input type="checkbox"/> Bream/Perch/Sunfish	<input type="checkbox"/> Crawfish	<input type="checkbox"/> Other (specify) _____

4.) How often do you eat species caught in Turkey Creek and/or Bayou Bernard?

Fish: 1 times per month

Crabs: \_\_\_\_\_ times per month

Frogs: \_\_\_\_\_ times per month

Crawfish: \_\_\_\_\_ times per month

Other (specify): \_\_\_\_\_ times per month

Other (specify): \_\_\_\_\_ times per month

5.) Indicate the number of individuals in household who consume species caught in Turkey Creek and/or Bayou Bernard: 1

Number of children 0 to 2 years old: \_\_\_\_\_

Number of children 2 to 6 years old: \_\_\_\_\_

Number of individuals 6 to 16 years old: \_\_\_\_\_

Number of individuals 16 years old and older: 1

# Fish Species Caught

- Atlantic Croaker
- Blue Catfish
- Black Drum
- Blue Gill
- Common Carp
- Ground Mullet
- Large Mouth Bass
- Pumpkinseed Bream
- Redfish
- Striped Bass
- Orange Spotted Sun Fish
- Sheep Head
- Striped Mullet
- White Trout







