



**BOUCHARD B120 RELEASE  
SHORELINE SEGMENT SUMMARY**

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GeoInsight Project Number 3871-002

SEGMENT IDENTIFICATION: **W1F-03**

SEGMENT NAME: **Brandt Island East**

SEGMENT LOCATION: **Mattapoissett, Massachusetts** (*Map attached*)

MAXIMUM DEGREE OF INITIAL OILING: Heavy (Oiling Score: 3.07)

SEGMENT INSPECTION STATUS: Did not pass IRAC criteria endpoints on 09/02/2003; no further treatment feasible. Passed MCP IRA Inspection on 08/24/2004.

**SITE-SPECIFIC INFORMATION**

**PHYSICAL CHARACTERISTICS:**

Primary Shoreline Type/ Geology:

- 1D: Rip rap seawalls, bulkheads, piers, docks, and pilings.

Secondary Shoreline Type/ Geology:

- 1B: Less utilized semi-public and private sand beaches;
- 1C: Mixed sand and gravel (pebble to boulder) and rip rap groins (jetties); and
- 1F: Salt marshes.

Hydrogeology:

- Brandt Island Cove is located to the east, Nasketucket Bay to the west, and Buzzards Bay to the south. Salt marsh wetlands are located on a portion of the segment and adjacent to the segment to the north.

Bedrock Geology:

- Bedrock underlying this segment is identified as "Alaskite" bedrock formation. This bedrock consists of mafic-poor gneissic granite commonly containing muscovite (Zen, 1983).

**ENVIRONMENTAL SENSITIVE RECEPTORS (Identified within 500 feet of segment):**

Aquifer: None at segment.

Protected Open Space: None.

Public Ground Water Supply Wells: None at segment.

Public Surface Water Supply Wells: None at segment.

Areas of Critical Environmental Concern (ACEC): None at segment.

Vernal Pools: None at segment.

Priority Habitats of Rare Species: Adjacent to segment: Buzzards Bay aquatic environment.

Estimated Habitats of Rare Wildlife: Adjacent to segment: Buzzards Bay aquatic environment.

Floodplains: At segment: 100-year floodplain.

HUMAN SENSITIVE RECEPTORS (Identified within 500 feet of segment):

Segment Use: Private and public area. Residential dwellings are located within 500 feet of the segment. A portion of segment is accessible via roadway.

Frequency of Use: Presumably seasonal and year round residential use.

### **SUMMARY OF INSPECTION ACTIVITIES**

#### **WRF INSPECTIONS**

(Wildlife Field Reconnaissance- Shoreline or On-Water Observations; Bird Transect Study.)

WRF inspections pertaining to this segment were not conducted.

#### **NRDA FIELD ACTIVITIES SUMMARY**

(Natural Resource Damage Assessment)

Note: Includes Shoreline Cleanup Assessment Team (SCAT) inspections and activities. SCAT forms were completed by field inspection teams working under the direction of Unified Command.

DATE	SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM
05/20/2003	Trace oil staining on cobbles and on the east side of rip rap was observed. Shellfish tissue samples collected and analyzed.
06/05/2003	In general, oil observed at the segment was sporadic, and approximately 1% to 10% surface oil coverage was observed at the segment. More specifically, some splatter was observed in marsh on southeastern tip of Brandt Island and on areas of gravel.
06/10/2003	Shellfish tissue samples collected and analyzed.
07/10/2003	Shellfish tissue samples collected and analyzed.
08/27/2003	Shellfish tissue samples collected and analyzed.

#### **IRAC INSPECTIONS**

(Unified Command Immediate Response Action Completion inspections and activities.)

DATE	SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM
08/22/2003	Splatter tacky to the touch. Segment did not meet IRAC criteria endpoints and further treatment was feasible. Additional cleanup activities were warranted.
09/02/2003	Segment did not meet IRAC criteria endpoints.

#### **MCP FIELD ACTIVITIES SUMMARY**

(Massachusetts Contingency Plan inspections and activities under the direction of the Licensed Site Professional-of-Record.)

DATE	SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM
08/24/2004	Site reconnaissance: A trace amount of sporadic tacky splatter was observed in the intertidal zone and was concentrated at the southern tip of Brandt Island. One tar patty (approximately 2 inches in diameter) was removed at N41°37.463' W70°49.0445'. A tar-like splatter (not related to the B120 release) was observed on rock surfaces in an approximate 4 by 5 foot area at N41°37.728' W70°49.297'

Note: GeoInsight did not receive IRA citizen calls pertaining to this segment.

**TABLE 1**  
**SAMPLE SUMMARY**  
**BUZZARDS BAY, MASSACHUSETTS**  
**SEGMENT: W1F-03**  
**Brandt Island East, Mattapoissett**

Sample ID	Date Collected	Matrix	Analysis	Laboratory	Sampling Program	Sample Location Coordinates		Sample Location Description	Comments
						Latitude	Longitude		
BIMT-OY-1-A, B, and C	5/20/2003	Tissue	PAH	B&B	NRDA Pre-Assessment	N41°37.709'	W71°10.706'	Brandt Island	Shellfish-Oyster
BIMT-OY-2-A, B, and C	6/10/2003								
BIMT-OY-3-A, B, and C	7/10/2003								
BIMT-OY-4-A, B, and C	8/27/2003								
BIMT-QH-1-A, B, and C	5/20/2003					N41°37.708'	W71°10.706'	Shellfish-Quahog	
BIMT-QH-2-A, B, and C	6/10/2003								
BIMT-QH-3-A, B, and C	7/10/2003								

NOTES:

1. B&B: B&B Laboratories.

TABLE 2  
SUMMARY OF ANALYTICAL RESULTS  
BUZZARDS BAY, MASSACHUSETTS  
SEGMENT: WIF-03  
Brandt Island East, Mattapoisett

Analyte	BIMT-OY-1-A, B, and C	BIMT-OY-2-A, B, and C	BIMT-OY-3-A, B, and C	BIMT-OY-4-A, B, and C	BIMT-QH-1-A, B, and C	BIMT-QH-2-A, B, C, and D	BIMT-QH-3-A, B, and C
	Oyster	Oyster	Oyster	Oyster	Quahog	Quahog	Quahog
	5/20/2003	6/10/2003	7/10/2003	8/27/2003	5/20/2003	6/10/2003	7/10/2003
<b>PAH by GC/MS-SIM by method 8270C</b>							
Naphthalene	<b>0.0042</b>	<b>0.0052</b>	<b>0.0025</b>	<b>0.0045</b>	<b>0.0019</b>	<b>0.0025</b>	<b>0.002</b>
2-Methylnaphthalene	<b>0.0102</b>	<b>0.0055</b>	<b>0.0024</b>	<b>0.0042</b>	<b>0.0043</b>	<b>0.0025</b>	<b>0.0016</b>
Acenaphthylene	<b>0.0006</b>	<b>0.0003j</b>	<b>0.0002j</b>	<b>0.0002j</b>	<b>0.0002j</b>	<b>0.0001j</b>	<b>0.0001</b>
Acenaphthene	<b>0.0009</b>	<b>0.0007</b>	<b>0.0005</b>	<b>0.0014</b>	<b>0.0005</b>	<b>0.0004</b>	<b>0.0003</b>
Fluorene	<b>0.0019</b>	<b>0.0007</b>	<b>0.0005</b>	<b>0.0007</b>	<b>0.0010</b>	<b>0.0004j</b>	<b>0.0003</b>
Phenanthrene	<b>0.0321</b>	<b>0.0061</b>	<b>0.0023</b>	<b>0.0022</b>	<b>0.0145</b>	<b>0.0025</b>	<b>0.0012</b>
Anthracene	<b>0.0008</b>	<b>0.0006</b>	<b>0.0004</b>	<b>0.0003</b>	<b>0.0003</b>	<b>0.0002</b>	<b>0.0002</b>
Fluoranthene	<b>0.0225</b>	<b>0.0100</b>	<b>0.0057</b>	<b>0.0037</b>	<b>0.0082</b>	<b>0.0045</b>	<b>0.0019</b>
Pyrene	<b>0.0553</b>	<b>0.0173</b>	<b>0.0071</b>	<b>0.0033</b>	<b>0.0277</b>	<b>0.0089</b>	<b>0.0026</b>
Benzo(a)anthracene	<b>0.0360</b>	<b>0.0190</b>	<b>0.0063</b>	<b>0.0012</b>	<b>0.0128</b>	<b>0.0045</b>	<b>0.0007</b>
Chrysene	<b>0.139</b>	<b>0.0834</b>	<b>0.0143</b>	<b>0.0028</b>	<b>0.0639</b>	<b>0.0266</b>	<b>0.0038</b>
Benzo(b)fluoranthene	<b>0.0115</b>	<b>0.0144</b>	<b>0.0040</b>	<b>0.0026</b>	<b>0.0068</b>	<b>0.0075</b>	<b>0.0009</b>
Benzo(k)fluoranthene	<b>0.0046</b>	<b>0.0031</b>	<b>0.0008</b>	<b>0.0007</b>	<b>0.0040</b>	<b>0.0024</b>	<b>0.0002</b>
Benzo(a)pyrene	<b>0.0039</b>	<b>0.0019</b>	<b>0.0007</b>	<b>0.0003</b>	<b>0.0036</b>	<b>0.0028</b>	<b>0.0003</b>
Indeno(1,2,3-c,d)pyrene	<b>0.0005j</b>	<b>0.0007</b>	<b>0.0005j</b>	<b>0.0003j</b>	<b>0.0011</b>	<b>0.0016</b>	<b>0.0003</b>
Dibenzo(a,h)anthracene	<b>0.0005</b>	<b>0.0008</b>	<b>0.0002j</b>	<b>0.0001j</b>	<b>0.0004</b>	<b>0.0006</b>	<b>0.0001</b>
Benzo(g,h,i)perylene	<b>0.0007</b>	<b>0.0011</b>	<b>0.0007</b>	<b>0.0004</b>	<b>0.0017</b>	<b>0.0030</b>	<b>0.0005</b>
<b>Total PAH</b>	<b>3.799</b>	<b>1.733</b>	<b>0.297</b>	<b>0.158</b>	<b>1.905</b>	<b>0.7220</b>	<b>0.108</b>

NOTES:

1. Results in mg/Kg (milligrams per kilogram).
2. EPH: Extractable Petroleum Hydrocarbons.
3. ND(x): Constituent not detected at practical quantitation limits (PQL) noted in parentheses.
4. PAH by GC/MS-SIM: Polynuclear Aromatic Hydrocarbon analysis by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring.
5. j: Estimated concentration/ detected below standard laboratory reporting limits.
6. Bold values exceed laboratory PQL.



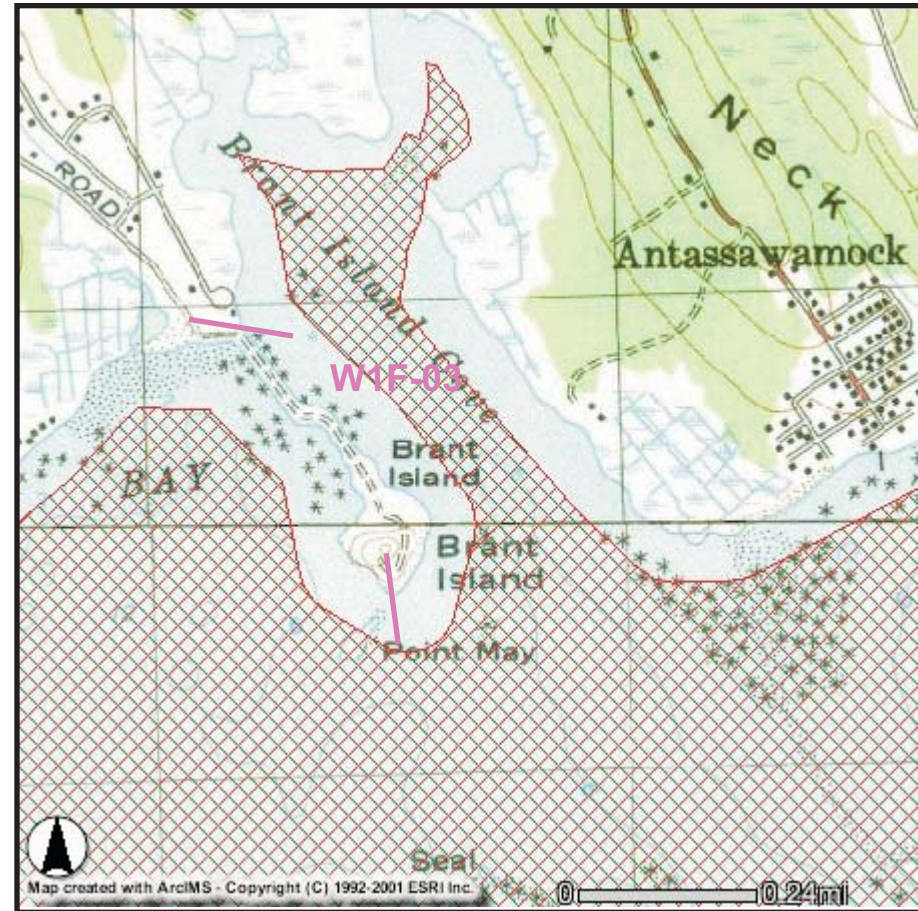


**ENTRIX**

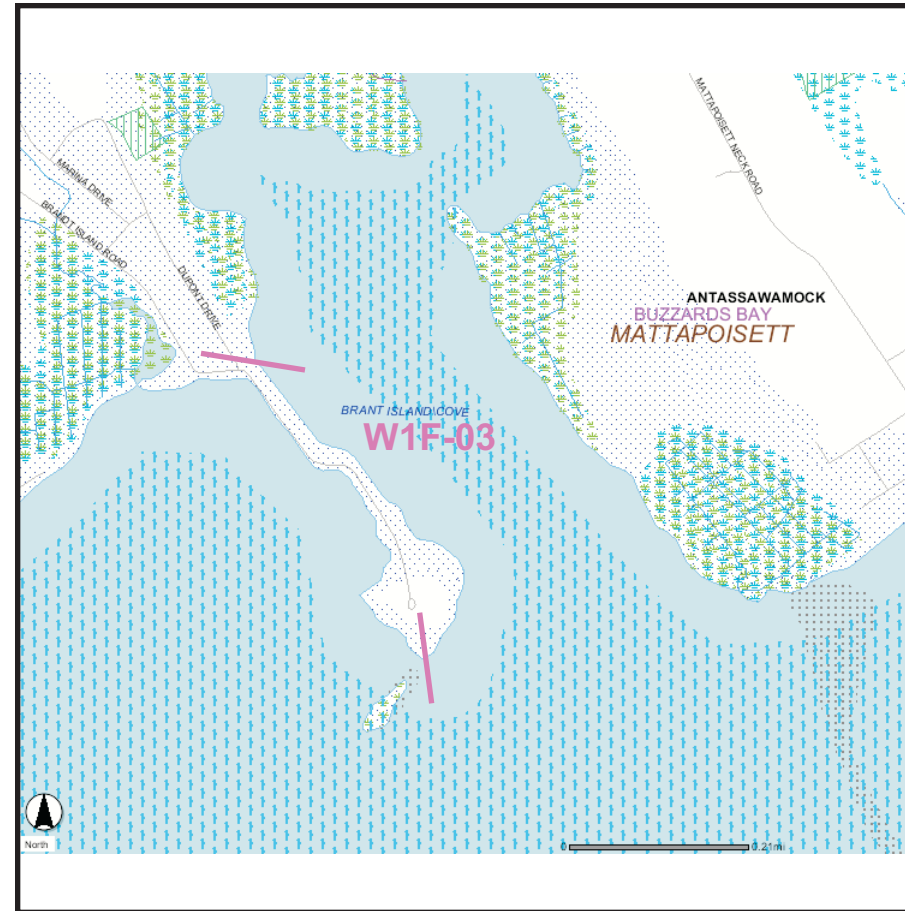
**W1F-03**  
**Brandt Island East**  
**Bouchard B No. 120 Oil Spill**  
**Buzzards Bay, MA**



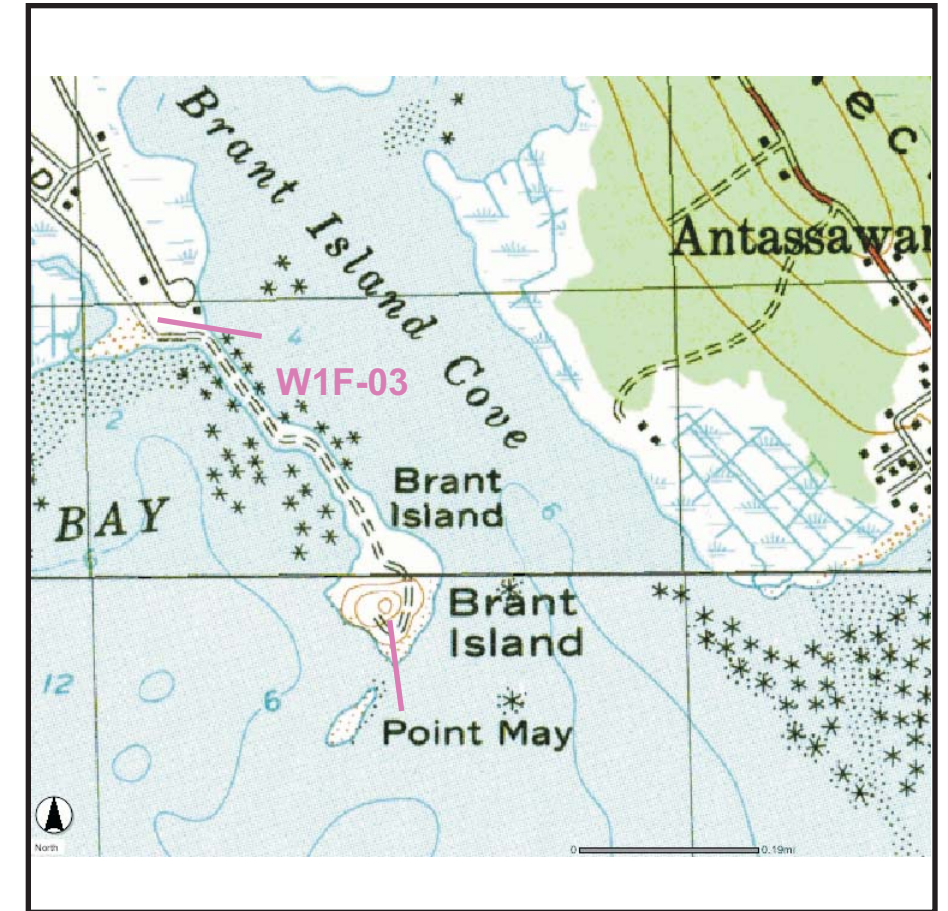
NATURAL HERITAGE AND ENDANGERED SPECIES MAP





21E PRIORITY RESOURCE MAP








































TOPOGRAPHIC MAP




LEGEND

-  NHESP 2005 MA PRIORITY HABITATS FOR STATE-PROTECTED RARE SPECIES
-  NHESP 2005 MA ESTIMATED HABITATS OF RARE WILDLIFE

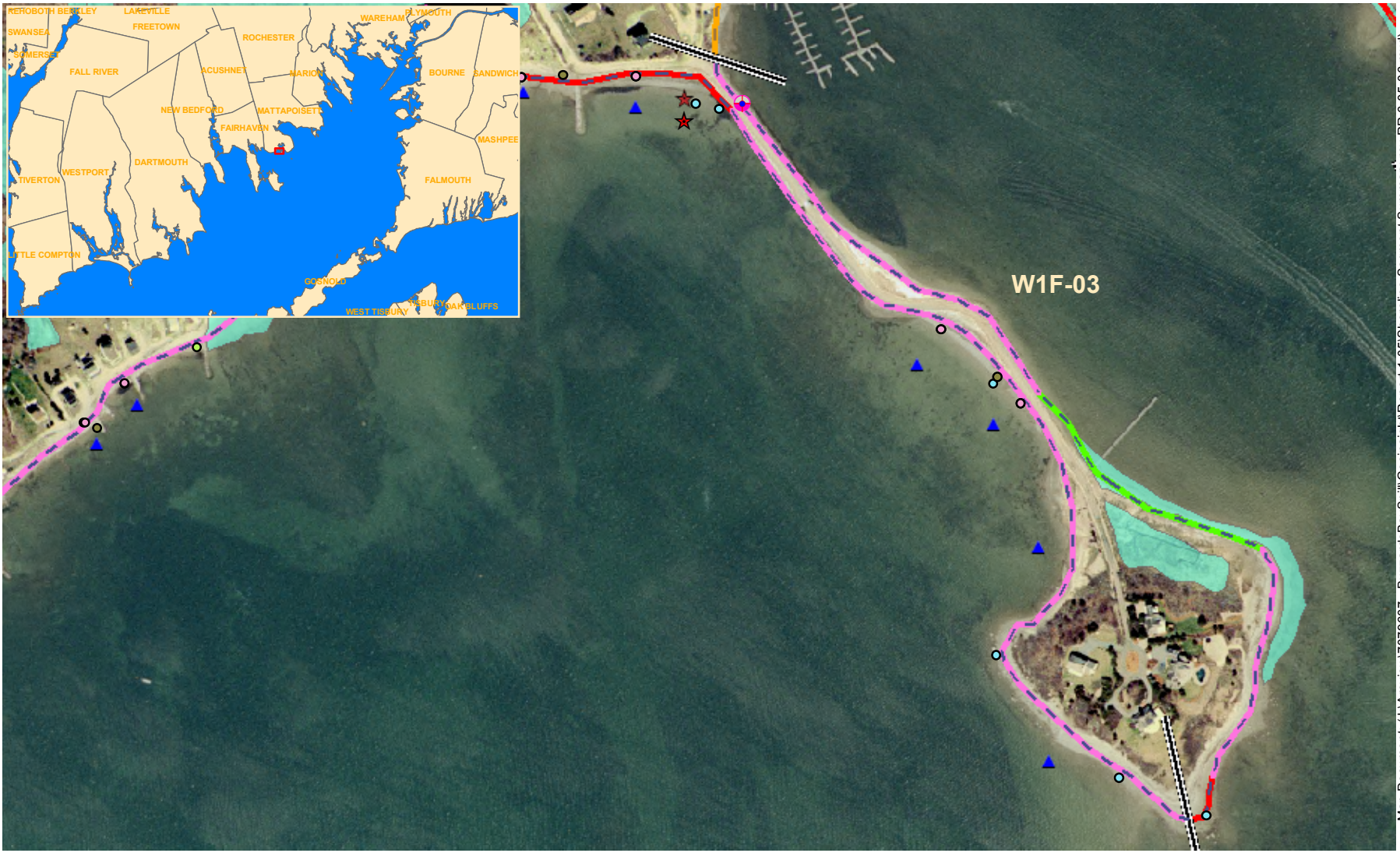
DEP MCP 21e Map Legend

-  Zone IIs
  -  IWPAs
  -  Zone A
  -  Sole Source Aquifers
  -  Solid Waste Sites
  -  Protected Openspace
  -  ACECs
  -  NHESP Estimated Habitat of Rare Wildlife in Wetland Areas
  -  Certified Vernal Pools 2003 NHESP
  -  Subbasins
  -  Mass Major Basins
  -  DEP Region
  -  Town Arcs
  -  County Boundaries
- Aquifers, By Yield**
  -  HIGH YIELD
  -  MEDIUM YIELD
  - Non Potential Drinking Water Source Area**
  -  HIGH YIELD
  -  MEDIUM YIELD
  - FEMA Floodplains**
  -  100 YEAR FLOODPLAIN
- Hydrography**
  -  WATER
  -  RESERVOIR
  -  WETLANDS
  -  SALT WATER WETLANDS
  -  FLATS SHOALS
  - Rivers and Streams**
  -  PERENNIAL
  -  INTERMITTENT
  -  SHORELINE
  -  MAN MADE SHORE
  -  DAM
  -  AQUEDUCT
- EOT-OTP Roads**
  -  LIMITED ACCESS HIGHWAY
  -  MULTILANE HWY. NOT LIMITED ACCESS
  -  OTHER NUMBERED HWY
  -  MAJOR ROAD - COLLECTOR
  -  MINOR STREET OR ROAD, RAMP
  - Tracks and Trails MHD**
  -  TRACK
  -  TRAIL
  - Transmission Lines**
  -  PIPELINE
  -  POWERLINE
  -  TRAIN



		PROJECT: B120 OIL SPILL		
		LOCATION: BRANDT ISLAND EAST BUZZARDS BAY, MA		
TITLE: PHASE II SUPPORTING MAPS				
DESIGNED: LAC	DRAWN: JKB	CHECKED: KDT	APPROVED: MJW	FIGURE #: <b>WIF-03</b>
SCALE: AS SHOWN	DATE: 01/25/06	FILE: 3871WIF-03	PROJECT #: 3871-002	





**Trench Location**

- 11/2004
- 10/2004
- 09/2004
- 08/2004
- 07/2004
- 06/2004
- 04/2004
- 03/2004
- 01/2004
- 12/2003
- 11/2003
- 10/2003
- 09/2003

- ✿ Nearshore Subtidal Sediment Sampling Location 2004
- ✿ Deep Subtidal Sediment Sampling Location 2004
- ✿ Subtidal Sediment Sampling Location 2003
- ▲ Qualitative Shellfish Surveys 2004
- ◆ Marsh Sampling Location 2004
- ◆ Marsh Core Sampling Location 2004
- Water Sampling Location 2004
- Water Sampling Location 2003
- ★ Intertidal Sediment Sampling Location 2003
- ★ Intertidal Sediment Sampling Location 2004

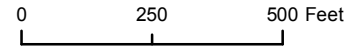
- ✦ Shellfish Sampling Location
- Chain Drag Location 2003
- Chain Drag Location 2004
- Lobster Pot Sampling Location 2003
- Absorbent Pad Sampling Location 2003
- ⚓ Dive Sites
- ⚓ Wetlands
- Nests
- ⊕ Vernal Pool
- ▨ NHESP 2003 Priority Habitats for State-Protected Rare Species

**OILING**

- NO DATA
- CLEAN
- VERY LIGHT
- LIGHT
- MEDIUM
- HEAVY

**IRAC ESI**

- Public-Private Sand Beach (1A/1B)
- Mixed Sand and Gravel (1C)
- Marsh (1F)
- Rocky Shoreline (1E)
- Riprap, Groin, Jetty (1D)
- Visual Inspection of Marsh Area



ENTRIX

**W1F-03**  
**Brandt Island East,**  
**Mattapoisett**  
**Comprehensive Activities**  
**Bouchard B No. 120 Oil Spill**  
**Buzzards Bay, MA**