



GeoInsight, Inc.
75 Gilcreast Road, Suite 210
Londonderry, NH 03053-3566
TEL 603-434-3116
FAX 603-432-2445
www.geoinsightinc.com

GeoInsight, Inc.
319 Littleton Road, Suite 105
Westford, MA 01886
TEL 978-692-1114
FAX 978-692-1115

GeoInsight, Inc.
Corporate Ten Center
1781 Highland Avenue, Suite 207
Cheshire, CT 06410
TEL 203-271-8036
FAX 203-271-8038

IMMEDIATE RESPONSE ACTION PLAN

**A SUPPLEMENT TO UNIFIED COMMAND'S
IMMEDIATE RESPONSE ACTION: TREATMENT
AND COMPLETION GUIDELINES PLAN**

**BARGE B120 SPILL
BUZZARDS BAY, MASSACHUSETTS
RTN 4-17786**

Prepared For:

Bouchard Transportation Company, Inc.
77 Newbridge Road
Hicksville, NY 11801

Prepared By:

GeoInsight, Inc.
319 Littleton Road, Suite 105
Westford, Massachusetts 01886
Phone: (978) 692-1114
Fax: (978) 692-1115
www.geoinsightinc.com

September 15, 2003

TABLE OF CONTENTS

| | |
|---|-----------|
| 1.0 INTRODUCTION..... | 1 |
| 2.0 RELEASE BACKGROUND AND ENVIRONMENTAL SETTING..... | 4 |
| 2.1 SHORELINE IDENTIFICATION | 4 |
| 2.2 SHORELINE CLASSIFICATION..... | 5 |
| 2.3 SENSITIVE RECEPTORS..... | 5 |
| 3.0 SHORELINE RECONNAISSANCE | 6 |
| 4.0 PROPOSED ACTIVITIES..... | 7 |
| 4.1 UNOILED SEGMENT EVALUATION | 7 |
| 4.2 OILED SEGMENT EVALUATION..... | 8 |
| 4.2.1 Segments With Buried Oil..... | 8 |
| 4.2.2 Segments That Did Not Pass the Original IRAC Screening..... | 8 |
| 4.2.3 Segments Not Inspected by the IRAC Team | 9 |
| 4.2.4 Salt Marshes..... | 10 |
| 4.3 RESPONSE TO NEW CONDITIONS..... | 10 |
| 5.0 PROPOSED IRA ACCELERATED RESPONSE ACTION CRITERIA..... | 12 |
| 5.1 RESPONSE ACTION SCHEDULE..... | 14 |
| 5.2 REMEDIATION WASTE | 14 |
| 6.0 SUMMARY AND CONCLUSIONS | 15 |

TABLES

| | |
|---------|---------------------------|
| Table 1 | Shoreline Segment Summary |
|---------|---------------------------|

FIGURES

| | |
|----------|----------------------|
| Figure 1 | Oiled Area Locations |
| Figure 2 | Shoreline Segments |

APPENDICES

| | |
|------------|---|
| Appendix A | Immediate Response Action: Treatment and Completion Guidelines Plan |
| Appendix B | Call Log Report Form |
| Appendix C | Shoreline Inspection Form |

IMMEDIATE RESPONSE ACTION PLAN

A SUPPLEMENT TO UNIFIED COMMAND'S IMMEDIATE RESPONSE ACTION: TREATMENT AND COMPLETION GUIDELINES PLAN

BARGE B120 SPILL BUZZARDS BAY, MASSACHUSETTS RTN 4-17786

1.0 INTRODUCTION

GeoInsight, Inc. (GeoInsight) prepared this Immediate Response Action Plan on behalf of Bouchard Transportation Company, Inc. ("Bouchard" or "RP") for the release of oil into Buzzards Bay, Massachusetts. This Plan was prepared in response to the September 8, 2003 *Request for IRA With Interim Deadline* letter from the Massachusetts Department of Environmental Protection (MADEP).

This Plan is intended to provide additional response actions to supplement the activities conducted in accordance with the May 23, 2003 Immediate Response Action: Treatment and Completion Guidelines Plan (IRATCGP) that was developed for the release by Unified Command. A copy of the IRATCGP is attached as Appendix A. Unified Command is comprised of representatives from the United States Coast Guard (USCG), the MADEP, and the responsible party. Field activities conducted as part of the IRATCGP were completed as of September 3, 2003. This Plan is intended to serve as a bridge document and describes the activities and procedures to be conducted in the transition period from when the IRATCGP activities were completed to the performance of post-IRA response actions conducted under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000 and the Oil Pollution Act of 1990 (OPA 1990).

The objectives of the IRATCGP were primarily to remove gross oiling from the shorelines, visible oil on sandy beaches, and mobile or “wipeable” oil from rocky areas to permit recreational use of the shoreline during the summer months and to reduce impacts to wildlife, particularly endangered and threatened shorebirds. While the IRATCGP objectives were to remove as much oil as practical on the shore, some residual oil may remain in areas where it is not feasible or necessary to remove or clean the impacted material. The rationale for leaving some residual oil on the shore is that the potential for additional exposure or environmental damage as a result of the cleanup activities is greater than the alternative of leaving residual oil on the shore. For example, oil may be introduced into the marine food chain if response actions are conducted that mobilize otherwise immobile oil from the shoreline into the subtidal zone. Additionally, aggressive cleanup activities can sometimes create unintended injury to natural resources beyond that caused by the oil. The IRATCGP objectives were designed to balance the needs of shoreline cleanup for human use along with minimizing impacts to the marine ecosystem (and associated fishing and shellfish industries) and also reducing impacts to non-marine species such as shorebirds.

The objectives of this IRA Plan are to address potential Imminent Hazards and to respond to time-critical conditions that necessitate immediate response actions. These objectives were developed to meet the applicable General Provisions for Immediate Response Actions listed in 310 CMR 40.0411(1), which are to assess the release, threat of release, or site conditions and, where appropriate, contain, isolate, remove or secure a release or threat of release of oil in order to:

- (a) abate, prevent or eliminate any Imminent Hazard to health, safety, public welfare or the environment; and/or
- (b) respond to any other time-critical release, threat of release and/or site conditions.

As the objectives of this IRA are met for individual shoreline segments, the IRA activities will be complete. However, it is important to recognize that this IRA evaluation will not be the final evaluation of the shoreline segments and that the IRA response actions are not the final response actions that will be conducted. The segments will be further evaluated as part of post-IRA

response actions and additional response actions beyond the scope of this IRA that may be conducted. The need for additional response actions will be considered as part of the post-IRA activities to achieve a Condition of No Significant Risk under the MCP and to comply with the requirements of OPA 1990.

A Natural Resources Damages Assessment (NRDA) is being conducted by ENTRIX, an environmental consulting firm, in accordance with the requirements of OPA 1990. The NRDA will include monitoring of the impacted resources, an assessment of injury to natural resources caused by the release, and their subsequent recovery to baseline conditions. The NRDA is being conducted as a cooperative assessment between the responsible party and the natural resource trustees. The Commonwealth of Massachusetts is one of the NRDA trustees, along with the National Oceanic and Atmospheric Administration, United States Fish and Wildlife Service, the State of Rhode Island and the Wampanoag Tribe of Gay Head.

2.0 RELEASE BACKGROUND AND ENVIRONMENTAL SETTING

On April 27, 2003, a release of No. 6 fuel oil from Bouchard Barge #120 into Buzzards Bay, Massachusetts was reported. The exact area where the release occurred is unknown, but the approximate location of the original oil slick that was spotted on the water surface is shown on Figure 1. Wind and current moved the oil primarily to the north, northwest, and northeast and the oil came ashore on sections of shoreline in Westport, Dartmouth, New Bedford, Fairhaven, Mattapoisett, Marion, Wareham, Buzzards Bay, Bourne, and Falmouth. Reports of isolated occurrences of tar balls/patties to the south and southeast on the Elizabeth Islands and in Rhode Island to the west were also received. Figure 1 illustrates the approximate areas in Massachusetts that were oiled as a result of the release.

2.1 SHORELINE IDENTIFICATION

The oiled areas of shoreline were initially divided into 15 geographical divisions to facilitate cleanup operations. The divisions to the Elizabeth Islands and Cape Cod east of the Cape Cod Canal were labeled with an “E” prefix, and the divisions to the West of the Cape Cod Canal were labeled with a “W” prefix. The initial divisions were subdivided into individual shoreline segments in mid-May so that these individual segments could be evaluated separately during Shoreline Cleanup Assessment Team (SCAT) reconnaissance visits. For example, shoreline segment W1E-04 corresponds to Crescent Beach in Mattapoisett. The shoreline was divided into a total of 149 segments, including approximately 35 segments that are adjacent to oiled areas but were not directly oiled as a result of the release. Shoreline segments are shown on Figure 2.

2.2 SHORELINE CLASSIFICATION

Individual shoreline segments were classified based upon the shoreline composition, public use, and vegetation. As described in the IRATCGP, the shoreline in the vicinity of the release area was divided into the following shoreline classifications:

| Shoreline Classification | Shoreline Type |
|--------------------------|--|
| 1A | Heavily utilized, public recreational sand beaches |
| 1B | Less utilized, semi-public and private sand beaches |
| 1C | Mixed sand and gravel, gravel (pebble to boulder) and rip rap groins (jetties) |
| 1D | Rip rap seawalls, bulkheads, piers, docks, and pilings |
| 1E | Rocky shorelines |
| 1F | Salt marshes |
| 2 | Roseate tern habitat (Ram Island, Bird Island, and Penikese Island, in particular) |
| 3 | Piping plover habitat |

2.3 SENSITIVE RECEPTORS

Visual oil impacts to shoreline areas have occurred primarily between the high and low tide zones, with generally minor impacts in the supertidal zone. People use the shoreline primarily for seasonal recreational purposes, such as swimming, fishing, or walking.

The shoreline is also a habitat for animal species, such as shorebirds, marine invertebrates, and plants. Portions of the Buzzards Bay area are nesting habitat for two bird species: the roseate tern (*Sterna dougallii*), which is listed as an endangered species under Massachusetts and Federal law, and the piping plover (*Charadrius melodus*), which is listed as a threatened species under Massachusetts and Federal law.

3.0 SHORELINE RECONNAISSANCE

Reconnaissance activities were initially conducted by SCAT to characterize oil impacts with the objective of directing cleanup operations. In general, the SCAT collected most of the data visually by noting the presence or absence of oil, measuring length and width of the impacted areas, and measuring oil thicknesses or percentage of oiling present on the shoreline. The SCAT primarily inspected the surface of the shoreline for oil and excavated test pits in selected sandy sections or turned over rocks to inspect for buried oil. SCAT generally inspected each shoreline segment at least once, and most shoreline segments were inspected multiple times by the SCAT to observe the progress of cleanup operations and to check for possible re-oiling of the shoreline. SCAT activities were conducted until June 6, 2003.

Beginning on June 10, 2003, the reconnaissance activities changed in scope because the cleanup objectives had been completed for some of the shoreline segments and the reconnaissance activities changed to evaluating closing shoreline segments under the IRATCGP cleanup objectives. The title of the reconnaissance teams beginning on June 10, 2003 changed from SCAT to IRAC teams, to reflect the change in focus from assessment to Immediate Response Action Closure. IRAC inspections were conducted until September 3, 2003.

Additional shoreline reconnaissances have been conducted by the environmental unit, which consists of personnel from ENTRIX, Gallagher Marine Services, RAM Environmental Engineering Services, or other subcontracted personnel working for the responsible party. These reconnaissance activities have consisted of a variety of tasks, including observing shoreline segments prior to IRAC team inspection, surveying unoiled segments, evaluating salt marshes as part of the NRDA process, and conducting inspections in response to reports of oil on shorelines.

4.0 PROPOSED ACTIVITIES

The primary focus of this IRA is to evaluate shoreline segments that were not inspected relative to the IRATCGP criteria and also to evaluate the shoreline segments that did not pass the IRATCGP criteria. Shoreline segments where Unified Command representatives indicated that these segments met the IRATCGP criteria will not be evaluated as part of this IRA Plan, with the exceptions listed below. Of the 149 identified shoreline segments, 91 of these segments passed the IRATCGP criteria and were signed off by representatives from Unified Command. A summary of the current status of the shoreline segments is attached as Table 1.

4.1 UNOILED SEGMENT EVALUATION

GeoInsight will prepare a list of the identified segments that were listed as unoiled. The data collected by the SCAT, IRAC, and environmental unit field inspections for the unoiled segments will be reviewed and the data from the inspections will be used to evaluate if the classification of the segment should remain as unoiled or if the segment was actually oiled as a result of the release. Due to the potential for re-oiling of shoreline segments shortly after the release occurred, inspection data collected within the first month after the release occurred (up until May 27, 2003) will not be used to eliminate a segment from further evaluation, although the inspection reports will be reviewed to confirm that the segments listed as unoiled were not initially oiled.

Representatives from GeoInsight will conduct a reconnaissance of the unoiled segments that were not evaluated after May 27, 2003. Unoiled segments that were inspected by the IRAC teams and found to meet the IRAC endpoint criteria will not be further inspected by GeoInsight. The results of the surveys of unoiled segments conducted by the environmental unit in August 2003 will be assessed and reconnaissance surveys will be conducted, if appropriate, to confirm the results. The reconnaissance activities will be completed by November 1, 2003.

Unoiled segments are not part of the disposal site and do not require response actions in accordance with the MCP. Lightly oiled segments and segments that were listed as unoiled but were subsequently found to be oiled will be evaluated using the criteria described in Section 5.0 below.

4.2 OILED SEGMENT EVALUATION

Additional evaluation will be conducted for the oiled segments that are described below. This evaluation is focused on observing areas that did not pass the IRAC inspection. Additional inspections will be conducted in salt marshes that were not surveyed or areas where buried oil may be exposed.

4.2.1 Segments With Buried Oil

Shoreline segments where buried oil was reported during the IRAC inspections will be observed periodically to evaluate if oil re-appears on the surface of the shoreline segment.

Reconnaissance activities will be conducted November 2003, January 2004, and April 2004 (three reconnaissances) of the selected shoreline segments. Reconnaissances will also be conducted on these segments after significant storm events with beach erosion and in response to homeowner complaints. The reconnaissance activities will consist of a visual inspection of the surface of the shoreline segment at low tide. Up to four test pits will be excavated at each segment to a depth of approximately 6 inches below grade using hand tools to conduct spot checks for additional buried oil. Exposed oil and tar balls will be removed where feasible for off-site disposal.

4.2.2 Segments That Did Not Pass the Original IRAC Screening

Some shoreline segments did not pass the original IRAC inspection team screening and additional evaluation will be considered where appropriate on these shoreline segments.

Sections that did not pass the IRAC inspection were placed into two categories: 1) segments

where further active treatment was not feasible, and 2) segments where further treatment was considered to be feasible by the IRAC inspection team. At locations where further active treatment is not feasible, natural attenuation would be the appropriate treatment for these segments.

The additional evaluation for these segments that did not pass the original IRAC screening will, where appropriate, consist of representatives from GeoInsight conducting field reconnaissances of these shoreline segments and evaluating the segments relative to the IRA target criteria described below in Section 5.0. If the IRA criteria are met for the selected segments, the IRA activities will be closed and the segments will transition to post-IRA response actions. If the selected segments do not meet the IRA target criteria, then additional immediate response actions will be conducted and the effectiveness of the response actions will be monitored relative to the IRA target criteria.

4.2.3 Segments Not Inspected by the IRAC Team

Some shoreline segments and small islands in Buzzards Bay were not included in the IRAC team inspection schedule for several reasons, including the potential for the IRAC teams to disturb nesting piping plovers (*Charadrius melodus*), which is listed as a threatened species under Massachusetts and Federal law. For example, cleanup activities and IRAC inspections were halted by Unified Command at the Barney's Joy segment in Dartmouth. IRAC surveys were also not conducted in the segments on the Elizabeth Islands due in part to concerns about endangered or threatened bird species.

GeoInsight/environmental unit personnel will inspect these segments that were not previously inspected at a time when the inspection activities will not disturb endangered or threatened wildlife at these segments. The inspections will evaluate the shoreline segments relative to the IRA target criteria specified in Section 5.0 below. If the IRA criteria are met for the selected segments, the IRA activities will be closed and the segments will transition to post-IRA response actions. If the segments do not meet the IRA target criteria, then additional immediate response

actions will be conducted and the effectiveness of the response actions will be monitored relative to the IRA target criteria.

4.2.4 Salt Marshes

GeoInsight will prepare a list of salt marsh locations that were not surveyed by the IRAC teams. It is important to note that some salt marshes were inspected in September 2003 by the NRDA trustees and Joint Assessment Team under OPA 1990. The data collected during the NRDA inspections will also be used to evaluate the degree of oiling. For the salt marsh areas that were not inspected, GeoInsight will conduct a reconnaissance of the salt marshes between November 1 and December 1, 2003 when the marsh vegetation has gone dormant for the season.

Mobile oil and isolated tar balls observed in the salt marsh locations will be removed by the GeoInsight reconnaissance teams for proper off-site disposal. Intrusive cleanup methods, including the removal of oiled wrack, will be evaluated in consultation with the NRDA trustees. A summary of the target criteria for salt marshes under this IRA process is included in Section 5.0.

4.3 RESPONSE TO NEW CONDITIONS

The incident command post has been closed and currently representatives from GeoInsight and Gallagher Marine Systems, Inc. are jointly responding to reports of oil on the shoreline. For future activities, GeoInsight will be the primary point-of-contact for reports of oil regarding the B120 oil spill. During office hours, phone calls will be directed to GeoInsight's Westford, Massachusetts office at (978) 692-1114. After office hours, callers to GeoInsight's Westford office will be informed via an automatic message to hang up and call a 24-hour call center at (877) 902-2493. Staff at the call center will take the caller's name and phone number and then contact GeoInsight personnel to respond to the caller. Responses to phone calls will be coordinated by Kevin Trainer of GeoInsight, who can be reached directly by cell phone at (978) 790-5294. Mr. Trainer can also be contacted at the following mail and e-mail addresses:

Kevin Trainer
GeoInsight, Inc.
319 Littleton Road, Suite 105
Westford, Massachusetts 01886
kdtrainer@geoinc.com.

If calls are received for releases of oil that are not related to the B120 oil spill, GeoInsight will instruct the caller to notify MADEP of the new release condition at (888) 304-1133. An example of an oil release that is not related to the B120 oil spill are sheens on surface water; at this time the B120 oil is not expected to cause a sheen and therefore a sheen represents a new release condition unrelated to the B120 spill. A copy of the Call Log Report used by GeoInsight to record the call information is attached in Appendix B.

For reports of oil confirmed to be from the B120 oil spill, GeoInsight personnel will visit the incident location within 24 hours of the initial phone call. The GeoInsight personnel will observe the impacted area and evaluate the area relative to the IRA target criteria specified in Section 5.0. Field data will be recorded in the Shoreline Inspection Form, an example of which is attached in Appendix C. Immediate response actions will not be conducted on segments that meet the IRA target criteria. If the segments do not meet the IRA target criteria, then additional immediate response actions will be conducted.

If additional immediate response actions are considered to be needed to reach the IRA target criteria, GeoInsight will coordinate cleanup activities with Fleet Environmental Services, LLC (Fleet) of Randolph, Massachusetts. Fleet personnel will conduct the cleanup activities under the direction of GeoInsight personnel until the IRA target criteria have been achieved.

5.0 PROPOSED IRA ACCELERATED RESPONSE ACTION CRITERIA

The objective of the IRA accelerated response action criteria is to establish a standard for removal of oil under this IRA from shoreline segments where oil:

1. represents an Imminent Hazard, as defined in the MCP,
2. may further spread to clean areas or to other unaffected environmental media if not removed immediately, or
3. presents conditions that indicate it is more cost-effective and feasible to implement accelerated response actions during the IRA in comparison to a long-term comprehensive response action approach.

This approach is focused on removing short-term threats to human and environmental risks as well as to stabilize existing conditions. This approach will allow time for adequate post-IRA assessment of environmental conditions and appropriate response actions that may be necessary to address potential risk to human health, safety, public welfare, and the environment. Post-IRA assessment of environmental conditions and appropriate response actions will be performed in accordance with the MCP and OPA 1990 NRDA process.

These areas include public and non-public sandy beaches, mixed sand and gravel shorelines, gravel shorelines, groins, jetties, seawalls, bulkheads, piers, docks, pilings, and rocky shorelines (shoreline types 1A, 1B, 1C, 1D, and 1E). There are two target strategies for these shorelines:

1. Remove mobile oil (oil that has the potential to mobilize and impact other areas); and
2. Address potential Imminent Hazards to human health, public welfare, safety, and the environment.

Response actions will be conducted for the Imminent Hazard criteria listed in 310 CMR 40.0321. However, based on the current nature of this release and the cleanup activities that have been conducted, it is unlikely that the Imminent Hazard criteria listed in 310 CMR 40.0321 are present.

With respect to the discovery of mobile oil, an evaluation will be made regarding the potential for mobile oil to exacerbate current environmental conditions if not removed immediately. An example of a condition that may warrant accelerated response actions under this IRA includes potentially buried oil that is exposed to the surface during storm erosion that could migrate to other areas causing new oiling of that area or oiling of unaffected environmental media in the immediate area. If mobile oil is discovered that could exacerbate existing environmental conditions, the oil will be removed, as feasible, using techniques outlined in the IRATCGP. In addition, if tar balls and/or oil patties are discovered during inspections of these areas, the inspection team will pick them up during the inspection, if feasible.

Rock surfaces in areas such as rocky shorelines, groins, jetties, etc. that may still contain “wipeable” oil as defined in the Unified Command's IRATCGP document may be left for natural attenuation and scouring during the upcoming fall and winter storm season, and re-inspected during post-IRA MCP and/or OPA 1990 assessments.

Tar balls or oil patties discovered in salt marsh areas that are inspected under this IRA will be removed during the inspection. Care will be taken not to materially disturb or damage the

resource. If the potential exists for significantly disturbing or damaging the resource, the tar balls/oil patties will be left in place for further consultation with the NRDA trustees regarding the appropriate response action.

5.1 RESPONSE ACTION SCHEDULE

The schedule for evaluation of the shoreline types is listed below. A schedule for response actions will be compiled in the future based upon the inspection data.

| Shoreline Segment | Schedule for Inspection Completion |
|--------------------------------------|---|
| Unouled | November 1, 2003 |
| Salt marshes | December 1, 2003 |
| Buried oil | April 30, 2004 |
| Did not pass original IRAC screening | December 31, 2003 |
| Not inspected by IRAC team | December 31, 2003 |

Reconnaissance activities and response actions will be summarized in IRA status reports that will be submitted to MADEP 120 days after approval of this IRA Plan and every six months thereafter, until an IRA Completion Report is submitted.

5.2 REMEDIATION WASTE

Remediation waste generated during IRA cleanup activities will be transported under Bill-of-Lading by Fleet Environmental Services, LLC to either the American Ref-Fuel (SEMSS) facility in Rochester/West Wareham, Massachusetts or to the Aggregate Industries facility in Stoughton, Massachusetts, depending on the characteristics of the waste material.

6.0 SUMMARY AND CONCLUSIONS

This IRA Plan is intended to serve as a bridge document in the transition period from the IRATCGP activities and conducting post-IRA response action under the MCP and OPA 1990. The objectives of this IRA Plan are to address potential Imminent Hazards and respond to time-critical conditions that necessitate immediate response actions. The primary focus of this IRA is to evaluate shoreline segments that were not inspected relative to the IRATCGP criteria and also to evaluate the shoreline segments that did not pass the IRATCGP criteria. Shoreline segments where Unified Command representatives indicated that these segments met the IRATCGP criteria will not be evaluated as part of this IRA Plan, with the exception of shorelines where buried oil was subsequently encountered.

