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**IMMEDIATE RESPONSE ACTION
PLAN MODIFICATION**

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

Prepared For:

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1.0 INTRODUCTION

GeoInsight, Inc. (GeoInsight) prepared this Immediate Response Action (IRA) Plan Modification to remove hardened residual oil (i.e., pavement) along the western side of the southern portion of Long Island (also known as Hoppy's Landing) in Fairhaven, Massachusetts. This IRA Plan Modification is a supplement to an April 23, 2004 IRA Plan Modification that proposed to remove hardened residual oil from outside salt marsh areas on Hoppy's Landing. The pavement remaining in this area is present in and near marshes or marsh grass vegetation, and the proposed actions will likely damage the marsh to some extent. After the remedial actions are completed, marsh grass will be planted in the disturbed areas to repair damage caused by the excavation work. Refer to Figure 1 for the approximate location of the proposed work area. The pavement is believed to be from the spill of No. 6 fuel oil from Bouchard Barge #120 (B120) in Buzzards Bay, Massachusetts on April 27, 2003.



2.0 BACKGROUND

On April 27, 2003, a release of No. 6 fuel oil was reported from Bouchard Barge B120 into Buzzards Bay, Massachusetts. Wind and current moved the oil primarily to the north, northwest, and northeast and the oil came ashore on sections of shoreline abutting Buzzards Bay in Westport, Dartmouth, New Bedford, Fairhaven, Mattapoisett, Marion, Wareham, Bourne, and Falmouth.

Initial reconnaissance and cleanup activities were conducted under the direction of Unified Command, which was comprised of representatives from the United States Coast Guard, the Massachusetts Department of Environmental Protection (MADEP), and the responsible party (Bouchard Transportation Company, Inc.). These initial response actions were conducted until September 3, 2003, and are summarized in a September 12, 2003 status report and a November 10, 2003 status and completion report. Response actions conducted after September 3, 2003 were completed in accordance with a September 15, 2003 IRA Plan and an April 23, 2004 IRA Plan Modification prepared by GeoInsight. A summary of response actions and relative degree of oiling on the shoreline is presented in the May 3, 2004 Phase I Initial Site Investigation and Conceptual Site Model Report.



3.0 COMPLETED UNIFIED COMMAND RESPONSE ACTIONS

Long Island is a small island located between Sconticut Neck and West Island in Fairhaven, and is bisected by Causeway Road that divides the island into northern and southern sections. This IRA Plan Modification focuses upon the southern section of Long Island (south of Causeway Road) that is known as Hoppy's Landing. The western side of Hoppy's Landing was characterized as an area of relatively heavy oiling compared to the other oiled areas in Buzzards Bay. The shoreline in this area is composed primarily of gravel, cobble and lesser amounts of sand, with small areas of salt marsh that are located generally near the southern tip of Long Island. Initial response actions consisted of wiping oil from the rocks with sorbent material, which had limited effectiveness. Pilot testing of alternative remedial strategies, including using hot water under low pressure to attempt to rinse oil off the rocks, was also unsuccessful. Unified Command subsequently chose to excavate oil-impacted rocks and sediment from the most impacted portions of the shoreline, and replace the material with sand and cobble of similar size and rounding. The removal and replacement operations were conducted in June 2003 in the approximate area indicated on Figure 2.

The rock removal and replacement operations were not conducted near the southern tip of the island because of concerns that the field operations would damage the salt marshes in this area. Cleanup in the marsh was conducted through wiping and clipping the most heavily oiled vegetation. The Unified Command chose to limit intrusive cleanup methods in the marsh area to minimize impacts and allow the oiled marsh area to naturally weather. Although the southern tip of Long Island generally received less oil than the area that was selected for excavation, small, discontinuous areas of residual oil bound to the shoreline sand and gravel (known as "pavement") are present near the southern tip. Oil is also present in marsh areas near the southern tip of the island and as "splatter" on some of the rocks near these marshes. Although there has been a reduction in the amount of oil in these areas since last year, the oiled areas did not naturally weather over the past year as much as expected.



4.0 COMPLETED IRA RESPONSE ACTIONS

An IRA Plan Modification dated April 23, 2004 was submitted to MADEP to remove pavement in the sand and cobble shoreline, outside the salt marsh areas. Remedial activities were conducted on May 18 and May 19, 2004 by field staff using hand tools, and approximately 3,000 pounds of pavement were removed from four general areas at the southern portion of Long Island. Pavement was not removed from areas judged by the field team as having the potential to damage the salt marsh areas. Additional information regarding the IRA activities will be presented in the forthcoming IRA status report.

Although previous cleanup activities have removed most of the pavement, some pavement was not removed because of the potential to damage the marsh. Photographs of the remaining pavement are attached as Appendix A. Evaluation subsequent to the IRA cleanup activities indicated that this residual oil present in the marsh areas was tacky and could affect the recreational use of this shoreline (the subject property is owned by the Town of Fairhaven and is open to the public). Although additional cleanup will likely damage marsh vegetation to a limited degree, the presence and amount of residual pavement warrant additional cleanup (as described below) to reduce potential impact to recreational users.



5.0 PROPOSED IRA PLAN MODIFICATION

GeoInsight proposes to remove pavement near and in the salt marsh areas using hand tools and absorbent material. The pavement is generally present as discrete patches that typically measure about one to two square feet in area, with a few areas that are slightly larger in size. Based upon field measurements, the approximate total (non-contiguous) area requiring additional remediation is approximately 450 square feet. Note that the pavement in some of these areas may be discontinuous, and the area listed above is larger than the estimated area covered by pavement. During the operations, care will be taken to minimize damage to the nearby marsh plants. An algal mat that is black in color and superficially resembles oil is present in some portions of the marsh. Small tarballs are present in some portions of the algal mat zone, and these tarballs will be removed by hand, where feasible; however, the remainder of the algal mat will not be disturbed during the proposed operations. Photographs of the algal mat and tarballs are included in Appendix A.

Assuming that approximately 4 inches of material will be removed from the work area listed above, the total volume of material to be removed is approximately 6 cubic yards. However, it is recognized that additional material may need to be removed, depending upon the results of the cleanup activities. To be conservative, GeoInsight estimates that less than 20 cubic yards (approximately 30 tons) of pavement, oiled rocks, and oiled absorbent materials will be generated by this operation. A depiction of the work areas is attached as Figure 3.

GeoInsight anticipates that the proposed cleanup will be conducted by approximately six to ten workers using hand tools (e.g., buckets, hand shovels) only; mechanized equipment will not be used to remove the impacted material. Removed pavement will be placed by the field crew into polyethylene bags for transport out of the work area to a staging area, where the waste will be loaded onto trucks for off-site disposal in accordance with applicable requirements. At the completion of the cleanup activities, snare (also known as “pom pom”) will be staked in the work areas to remove small amounts of oil not addressed by the cleanup. Absorbent boom will also be placed around the perimeter of the work areas to contain sheen that may develop during the work activities. Solid (containment) boom and absorbent pads will be present on-site and



will be used if the snare and absorbent boom described above is not sufficient to remove sheen generated by the cleanup operation. GeoInsight anticipates that the proposed cleanup will require approximately five days of work and will likely be completed by July 15, 2004.

Although this area is open to the public, the proposed activities are expected to pose only little (if any) inconvenience because only a small number of people use the area and the limited scope of work is expected to have only a minor impact to public use.



6.0 MARSH RESTORATION

The objective of the marsh restoration is to repair damage to the marsh caused by the proposed IRA remedial activities. Marsh restoration activities will be supervised by field biologists from ENTRIX, the environmental consulting company involved with the Natural Resource Damage Assessment (NRDA) process that is being conducted under the Oil Pollution Act of 1990. The marsh restoration will consist of transplanting smooth cordgrass (*Spartina alterniflora*) into the post-remediation shoreline or marsh substrate. The plant material will be commercially grown *Spartina alterniflora* purchased from Cape Cod Organic Farms in Barnstable, Massachusetts. Plants will be installed on approximate 18-inch centers with 3 sprigs per planting hole.

For areas exhibiting higher potential for shoreline erosion, the planting density may be adjusted by planting two sprigs per hole on 12-inch centers. This determination will be made in the field at the time of planting by the ENTRIX biologist supervising the work. The planting of multiple sprigs per hole is specified to help mitigate potentially higher mortality rates sometimes associated with mid-to late-season plantings. It is also anticipated that marsh plants adjacent to the work areas will recolonize the work area by rhizomonous spread.

Planting will occur at low tide after the completion of IRA remedial actions. Planting holes will be opened with a dibble bar, spade, or similar tool in a manner which minimizes disturbance of surrounding vegetation, root mat, or other substrate that protects the shoreline from erosion. Slow-release fertilizer (Osmocote® 14-14-14 3-month formulation) will be added to each planting hole at a rate of 15 grams (0.5 oz) per hole before inserting the sprigs. Planting holes will be tightly closed by hand or foot to prevent sprigs from washing out and eliminate air pockets in the root zone. Above-ground growth will be clipped to minimize wave energy against the newly-planted sprigs.



7.0 SENSITIVE RECEPTORS

The area of proposed work is located in the upper intertidal zone adjacent to Buzzards Bay and the work will be conducted in salt marshes located at the proposed work areas. Schools and residences are not located in the vicinity of the proposed work area. The proposed work area is not in a protected open space or an Area of Critical Environmental Concern. The proposed work area is not located within a Zone II, an interim wellhead protection area, a potentially-productive aquifer or a sole-source aquifer. No sensitive receptors are identified in the project area according to the Priority Resource Map obtained from MassGIS (Appendix B).



8.0 PERMITS

No permits are anticipated to be needed or required for the proposed work activities. The proposed field activities will be conducted under the current emergency order that was issued by the Fairhaven Conservation Commission in response to the initial spill.



9.0 REMEDIATION WASTE

Remediation waste generated during the proposed operations is expected to consist of less than 20 cubic yards of pavement (oiled sand and gravel), oiled absorbent material, and oiled personal protective equipment (e.g., gloves, tyvek suits). In accordance with applicable requirements, remediation waste will be transported under Bill of Lading to the American Ref-Fuel (SEMASS) facility in Rochester, Massachusetts for incineration.