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Record of Decision for the United States Coast Guard South Weymouth Buoy Depot Site South Weymouth, Massachusetts

United States Coast Guard
Civil Engineering Unit – Providence
300 Metro Center Boulevard
Warwick, Rhode Island 02886

FINAL

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PART 1—DECLARATION FOR THE RECORD OF DECISION

1.1 SITE NAME AND LOCATION

United States Coast Guard (USCG) South Weymouth Buoy Depot Site
Trotter Road (also known as Rear Main Street)
Weymouth (South Weymouth), Massachusetts 02190
United States Environmental Protection Agency (EPA) ID No.: MA0690330758
National Priorities List (NPL) Status: Part of the South Weymouth Naval Air Station NPL Site (the parent site); listed in 1994

1.2 STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected Remedial Action for the three Areas of Concern (AOCs) at the USCG South Weymouth Buoy Depot Site, located in South Weymouth, Massachusetts. The Buoy Depot Site is comprised of the USCG Buoy Depot property in South Weymouth as well as the stormwater drainage swale and the affected portion of the downstream wetland located to the south on adjacent property controlled by the United States Navy (Navy).

The Selected Remedy includes No Further Action for AOC 1 (Building and Adjacent Areas to the South), No Action for AOC 2 (Septic System Tank, Piping, and Leach Field), and Land Use Controls (LUCs) (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews for AOC 3 (Buoy, Equipment, and Scrap Metal Storage Area). The three AOCs, as defined in Section 1.4, comprise the "Site" addressed by this ROD. The three AOC remedies combine to form the whole Site Response Action. This Remedial Action was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC § 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300 *et seq.*, as amended. The regulatory program performed under the context of these combined laws and regulations is commonly referred to as "Superfund."

This decision is based on the Administrative Record, which has been developed in accordance with Section 113(k) of CERCLA, and which is available for review at the USCG Civil Engineering Unit (CEU) Providence office located in Warwick, Rhode Island, and at the Department of the Navy Caretaker Site Office (CSO) located at the Former Naval Air Station (NAS) South Weymouth, Massachusetts. Public information repositories are also kept at the Tufts Library in Weymouth, Massachusetts; the Abington Public Library in Abington, Massachusetts; the Hingham Public Library in Hingham, Massachusetts; and the Rockland Memorial Library in Rockland, Massachusetts. The Administrative Record Index (Appendix E) identifies the documents comprising the Administrative Record upon which the selection of this decision is based.

This Remedial Action has been selected by the USCG and EPA. The Massachusetts Department of Environmental Protection (MADEP) statement regarding the Selected Remedy is presented in Appendix A.

1.3 ASSESSMENT OF THE SITE

The Remedial Action selected in this ROD is necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment. The use of lead-based paints and primers on buoys in the 1970s and early 1980s has had an impact on soil at the Buoy Depot Site, which includes the Buoy Depot property and a stormwater swale and portion of a wetland area located on adjacent property controlled by the Navy. The USCG has conducted several removal actions at the Site to clean up the areas of greatest concern. The USCG has excavated lead-contaminated soil from around a former dust collection system, removed and decommissioned the building's floor drain system, and excavated soil posing unacceptable human health and ecological risks in the stormwater drainage swale and wetland area on abutting Navy property. The swale and wetland portions of the Site have been cleaned up to residential standards and ecological remediation goals and, therefore, are suitable for unlimited use and unrestricted exposure.

The current and planned future use of the USCG property is industrial and, based on the results of the Human Health Risk Assessment (HHRA), the environmental conditions of the Buoy Depot property are suitable (*i.e.*, do not exceed CERCLA risk benchmarks) for continued industrial operations. However, EPA and the USCG have agreed that the buoy storage area portion of AOC 3 may not be suitable for unlimited use and unrestricted exposure due to the remaining lead concentrations and paint chips (potentially lead-based) present in surface soil. Based on data from the Remedial Investigation (RI), the average lead concentration in surface soil in the buoy storage area does not exceed EPA's 400 milligrams per kilogram (mg/kg) action level for residential use. However, in a hypothetical future scenario in which the Buoy Depot property is transferred and then subdivided and/or redeveloped into small residential lots, average lead concentrations in soil could be higher in some small lots if soil lead conditions are not further mitigated. Paint chips are present in surface soil throughout the buoy storage area. Some of these paint chips may contain lead and could pose a hazard under a future reuse scenario where young children are present.

The selected Response Action addresses these concerns by preventing land use that could result in unacceptable exposure to lead or paint chips in soil by sensitive receptors (*i.e.*, certain non-commercial/industrial uses as specified in Section 2.12.2.2.1 of this ROD), and by preventing migration of soil from the buoy storage area to adjacent property. Once the remedy is in place, all necessary remedial actions will have been taken to ensure protection of human health and the environment at the Buoy Depot and on the adjacent Navy property.

1.4 DESCRIPTION OF THE SELECTED REMEDY

This ROD sets forth the Selected Remedy *i.e.*, Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews, for the Buoy Depot Site. The Selected Remedy, combined with the completed removal actions, comprises a comprehensive remedy. The risks, if any, at all three AOCs at the Buoy Depot Site as defined in the Federal Facility Agreement (FFA) will be completely addressed through a combination of the completed removal actions and this Remedial Action.

AOC 1, defined as the "Building and Adjacent Areas to the South" requires No Further Action. The USCG has removed lead-contaminated soil around a former dust collection system by the southwest corner of the facility building. As requested by EPA, the USCG documented the removal as a Time-Critical Removal Action (TCRA) in a retroactive Action Memorandum. In accordance with an EPA approved Engineering Evaluation/Cost Analysis (EE/CA) and Action Memorandum, the USCG also completed a CERCLA Non-Time Critical Removal Action (NTCRA) to remove/decommission the facility building's floor drain system.

AOC 2, defined as the "Septic System Tank, Piping, and Leach Field" requires No Action. The USCG has demonstrated through the RI that the septic system received sanitary waste and was not a source of Chemicals of Potential Concern (COPCs) at the Site.

AOC 3, defined as the "Buoy, Equipment, and Scrap Metal Storage Area" includes the buoy storage area located on the Buoy Depot property as well as the abutting stormwater drainage swale and wetland area located on adjacent property controlled by the Navy that the USCG addressed under the aforementioned NTCRA. As part of the NTCRA, the USCG removed metals-contaminated soil in the drainage swale and wetland area on Navy property to address unacceptable human health and ecological risks. The swale and wetland portions of AOC 3 have been restored to allow for unlimited use and unrestricted exposure. Remaining concerns at AOC 3 for the buoy storage area are addressed through LUCs (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews to complete the response action.

The Selected Remedy addresses the remaining risk concerns associated with lead and lead-based paint chips in surface soil under certain reuse scenarios. Specifically, this Remedial Action specifies LUCs that include (1) establishment of Institutional Controls to prohibit current and future uses that could result in unacceptable risks to certain potentially sensitive receptors, and (2) Engineering Controls to manage potential migration of soil from the buoy storage area to the drainage swale and wetland on adjacent Navy property. The remedy also specifies Long-Term Monitoring and Five-Year Reviews to ensure the long-term effectiveness of the remedy. The LUCs will apply to the USCG Buoy Depot property portion of the Site. Long-Term Monitoring would be conducted on USCG-controlled property and in the drainage swale and wetland area on the adjacent, Navy-controlled property. The Five-Year Reviews, which apply to the USCG Buoy Depot property due to the identified risk concerns, will also include an evaluation of the data from the monitoring program on Navy property as a means to evaluate the effectiveness of

the LUCs on USCG property. The remedial measures will allow the USCG to continue its mission-critical industrial operations at the Buoy Depot for the U.S. Department of Homeland Security, as well as to protect human health and the environment.

The major components of this remedy are summarized in the following sections:

1.4.1 Land Use Controls

The USCG will establish LUCs that apply to the USCG Buoy Depot property. The LUCs will consist of (1) Institutional Controls and (2) Engineering Controls. Subsequent to the ROD, the USCG will develop a Land Use Control Implementation Plan (LUCIP) prepared as a Remedial Action Work Plan under the FFA. The USCG will submit the LUCIP to EPA for approval and to MADEP for comment.

1.4.1.1 Institutional Controls

The USCG will implement Institutional Controls in the form of a USCG Instruction delineating the property use restrictions while the property is controlled by the USCG and deed restrictions in the event of any transfer of the Buoy Depot property. These controls will prohibit future uses of the Buoy Depot property for which lead and paint chips in soil may be unacceptable. As detailed in Section 2.12.2.2.1 of this ROD, these uses include residential use, certain recreational uses, agricultural use, use involving facilities with children under the age of 6 such as daycare centers or playgrounds, or use as wildlife habitat without further evaluation. The Institutional Controls will remain in effect unless and until mitigation measures are taken to reduce lead concentrations in soil to levels that allow for unlimited use and unrestricted exposure on the property. The Institutional Controls will be implemented in accordance with the LUCIP.

1.4.1.2 Engineering Controls

The USCG will implement Engineering Controls on the Buoy Depot property to prevent unauthorized access and manage potential migration of soil from the buoy storage area to the drainage swale and wetland on adjacent Navy property. These Engineering Controls will include continuing operation and maintenance (O&M) of the stormwater control system, facility fencing and gates, soil management procedures for operations or construction activities that could disturb soil in the buoy storage area, and procedures for managing the future refurbishment of those limited number of buoys with residual lead-based paint coating. The USCG has submitted the O&M Plan for the stormwater control system to EPA for approval and to MADEP for comment. The O&M Plan will be incorporated into the LUCIP by reference. The buoy and soil management procedures will be outlined in the LUCIP. Upon approval of the LUCIP, the USCG will issue a USCG Instruction mandating these Engineering Controls. The Engineering Controls will remain in effect unless and until mitigation measures are taken to reduce concentrations of lead in soil to levels that allow for unlimited use and unrestricted exposure on the property. If the property is transferred in the future to another entity by deed, then the USCG would continue

to implement the Engineering Controls (via deed restrictions) unless and until mitigation measures were taken to reduce concentrations of lead in the soil to levels that allow for unlimited use and unrestricted exposure on the property.

1.4.2 Long-Term Monitoring

The USCG will conduct long-term monitoring of the surface soil in the stormwater drainage swale and downstream wetland area located on adjacent property controlled by the Navy. The initial round of this sampling will include several soil samples from the stormwater drainage swale in support of the NTCRA Completion Report. Once prior to the first Five-Year Review, the USCG will conduct a round of groundwater sampling at selected wells for target Chemicals of Concern (COCs). Conceptually, and as feasible, once prior to each Five-Year Review, the USCG will collect surface water samples from the wetland. Sampling will be conducted in accordance with a Long-Term Monitoring Plan (LTMP), which will be developed by the USCG and submitted to EPA for approval and to MADEP for comment.

1.4.3 Five-Year Reviews

The USCG will conduct Five-Year Reviews in accordance with CERCLA and this ROD for as long as the Site conditions are not suitable for unlimited use and unrestricted exposure (*i.e.*, unless and until mitigation measures are taken to reduce concentrations of lead in soil to levels that allow for unlimited use and unrestricted exposure on the Site). The USCG will provide Five-Year Review reports to EPA for approval and to MADEP for comment.

1.5 STATUTORY DETERMINATIONS

The Selected Remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the Remedial Action, and is cost-effective. As part of the U.S. Department of Homeland Security, the USCG needs to continue its important industrial operations at the Buoy Depot into the future. Based on the results of the completed risk assessments and CERCLA Removal Actions, the environmental conditions at the Buoy Depot are acceptable (*i.e.*, do not exceed EPA risk thresholds) for continued commercial/industrial use without further treatment or restriction. The Selected Remedy is significantly less disruptive to facility operations than either excavation or treatment.

This remedy results in lead remaining on Buoy Depot property at levels that do not allow for unlimited use and unrestricted exposure. Therefore, LUCs are necessary, and Five-Year Reviews will be conducted by the USCG to ensure that the remedy continues to provide adequate protection of human health and the environment. The first Five-Year Review will be conducted five years after the date this ROD is signed by USCG and EPA. The Five-Year Review Reports will be prepared by the USCG and submitted to EPA for approval and to MADEP for comment.

1.6 ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this Record of Decision. Additional information can be found in the Administrative Record file for this Site.

1. COCs and their respective concentrations.
2. Baseline risk represented by the COCs.
3. Cleanup levels established for COCs and the basis for the levels.
4. Current and future land and groundwater use assumptions used in the baseline risk assessment and ROD.
5. Land and groundwater uses that will be available at the Site as a result of the Selected Remedy.
6. Estimated capital, O&M, and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected.
7. Decisive factor(s) that led to selecting the remedy.

1.7 AUTHORIZING SIGNATURES

This ROD documents the Selected Remedy for the Buoy Depot Site. This remedy was selected by the USCG and EPA. MADEP's position on the Selected Remedy is presented in Appendix A of this ROD.

Concur and recommended for immediate implementation:

U.S. Coast Guard

By: _____ Date: 18 SEP 2006
Chief of Staff, U.S. Coast Guard

U.S. Environmental Protection Agency, Region 1

By: Susan Studlien Date: 09/29/06
Director, Office of Site Remediation and Restoration

PART 2—DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

The USCG South Weymouth Buoy Depot is located on Rear Main Street (also known as Trotter Road), which intersects Route 18 in the City of Weymouth (South Weymouth), Massachusetts (Figure 1). The national Superfund electronic database identification number for the Site is MA0690330758. The Buoy Depot property was formerly part of the NAS South Weymouth and the Site is part of the NAS South Weymouth NPL Site. The USCG leased this property from the Navy beginning on 1 March 1972. In October 2000, the USCG Buoy Depot property was transferred to the USCG from the Navy through a Federal Agency to Federal Agency Transfer. Upon transfer of the property from the Navy, the USCG also assumed responsibility for the CERCLA investigation of the Buoy Depot Site.

The Buoy Depot Site is comprised of the USCG Buoy Depot property in South Weymouth as well as the stormwater drainage swale and the affected portion of the downstream wetland located to the south on adjacent property controlled by the Navy (Figure 2). The USCG currently has access to this property through a license agreement with the Navy. USCG is the lead agency, and EPA is the support agency, for Site investigation and restoration under CERCLA. In 1999, the USCG and EPA entered into a Federal Facility Agreement (FFA) for conducting environmental investigations and response actions under CERCLA at the Buoy Depot. The USCG is the sole source of funding for the investigation and response actions at the Site.

The Buoy Depot is the USCG's principal facility in the northeast for the storing, cleaning, repairing, and painting of navigational buoys. The Buoy Depot facility is located on the USCG's property (Buoy Depot property) and is approximately 5 acres in size. The adjacent land is mostly forested to the north and south. There are wetlands to the south and southeast, an open field to the east, and a commuter rail line and commercial businesses to the west (Figure 2). A chain link fence with lockable gates surrounds the Buoy Depot property. There is a two-story, steel and concrete block building occupying approximately 20,000 square feet (ft^2) on the northwestern portion of the property. Asphalt and concrete paved driveways surround the building. Most of the property is a dirt and gravel-covered buoy storage area to the south and east of the building. The property is relatively flat with topographic relief gently sloping toward a wetland area to the southeast. A drainage swale (a low-lying area or ditch) abuts the southern fence line of the Buoy Depot property and receives intermittent stormwater runoff from the Buoy Depot storage area. The drainage swale runs from west to east and discharges stormwater to the intermittent, forested wetland. The stormwater drainage swale and a portion of the wetland on Navy property had been impacted by the Buoy Depot facility operations and are, therefore, part of the Buoy Depot Site. The USCG remediated the swale and wetland soil through a NTCRA in 2005.

A more complete description of the Site can be found in Section 2.1 of the Remedial Investigation Report (EA 2001).

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.2.1 History of Site Activities

Since facility construction was completed (1972/1973), Buoy Depot operations have included buoy rehabilitation *(e.g.*, "shot blasting" to remove old paint, welding, painting, electrical wiring); minor vehicle and equipment maintenance; waste generation (steel shot blast residue, waste oils, paint-related waste) and fuel storage; warehousing; outdoor scrap metal storage; and administrative use. Most of the buoys are constructed of steel and range in size from 3 ft to greater than 30 ft in length and can weigh up to 20,000 lb. Old or damaged buoys that are beyond repair are stored at Buoy Depot pending sale as scrap metal.

As a result of facility operations (buoy storage, refurbishment, scrapping), lead and paint chips are present in surface soil of the buoy storage area. Due to stormwater runoff, surface soil of an adjacent drainage swale and wetland were impacted with metals, primarily lead, from the buoy storage area. The USCG stopped buying lead-based paint and primers for buoys in 1986. The USCG was required to deplete this existing paint inventory by 1988. Most buoys are refurbished every 6 to 8 years. Therefore, most of the USCG's buoys in the storage area and that are now received at the Buoy Depot already have been cycled through the system and have been repainted with non-lead-based paint. As part of the LUCIP, the USCG will develop and implement procedures to manage the limited number of buoys with residual lead-based paint coating that may be processed at the Buoy Depot in the future.

A more detailed description of the Buoy Depot history can be found in Section 2.2 of the Remedial Investigation Report (EA 2001).

2.2.2 History of Federal and State Investigations and Removal Actions

Previous investigations and the enforcement activities at the Buoy Depot Site are summarized in Table 2-1 of this ROD. More detailed descriptions can be found in the reference documents cited for each activity listed in Table 2-1.

2.2.3 History of CERCLA Enforcement Activities

In May 1994, the USCG Buoy Depot was listed on EPA's NPL as part of the listing for the overall NAS South Weymouth Site, thereby indicating that the USCG Buoy Depot property was a priority for environmental investigation and cleanup. The USCG has conducted environmental studies and activities at the Buoy Depot Site in accordance with CERCLA and the NCP. Based on the designation of the Buoy Depot Site as an NPL Site, an FFA was executed by the USCG and EPA in 1999. This agreement establishes the USCG as the lead agency for the investigation

and cleanup of the Buoy Depot Site, with EPA providing oversight. MADEP is not a party to the FFA. However, in accordance with CERCLA and the NCP, MADEP has participated in ongoing discussions and strategy sessions and has provided additional regulatory oversight and guidance through its review of the USCG's CERCLA documents.

2.3 COMMUNITY PARTICIPATION

The USCG has kept the community and other interested parties apprised of Site activities through informational meetings, press releases, public meetings, and contact with local officials. The USCG has participated in the Restoration Advisory Board (RAB) established by the Navy for the NAS South Weymouth NPL Site. The RAB meets on a regular basis (usually monthly) to discuss the status and progress of the environmental investigations at the NAS, including the USCG Buoy Depot. The RAB is comprised of representatives from the neighboring communities to the NAS. Representatives from the Navy, EPA Region 1, MADEP, and local *government have attended the public meetings and hearings. The following is a brief chronology of public outreach efforts.

- The USCG has provided brief updates of the investigations/actions at the Buoy Depot Site at the RAB meetings held from 1999 to the present.
- On 8 April 1999, 12 October 2000, 12 April 2001, 14 February 2002, 13 June 2002, 10 April 2003, 10 June 2004, and 13 January 2005, the USCG held technical presentations for the RAB to describe the ongoing plans/results of the RI/Feasibility Study (FS) and the Removal Actions.
- On 25 October 1999, the USCG placed a public notice in the *Boston Globe* newspaper announcing the signing of the FFA for the Buoy Depot Site.
- On 3 June 2002, the USCG placed a public notice in the *Boston Globe* and the *Patriot Ledger* newspapers announcing the draft Engineering Evaluation/Cost Analysis for the Removal Actions at the Buoy Depot.
- In June 2004, the USCG placed a public notice in the *Patriot Ledger* and the *Weymouth News* newspapers announcing the Action Memorandum for the Dust Collection System Removal Action.
- Since 2000, the USCG has maintained and made the Administrative Record available for public review at various Information Repositories including the Navy's CSO at the NAS South Weymouth and the public libraries in the City of Weymouth and the Towns of Abington, Rockland, and Hingham, Massachusetts.
- On 1 December 2004, the USCG notified the South Shore Tri-Town Development Corporation (SSTTDC), a stakeholder, that the U.S. Government has no plans to transfer the Buoy Depot property and plans to continue the ongoing USCG industrial operations.

The letter was issued in response to a draft revised Reuse Plan for NAS South Weymouth which incorrectly depicts the USCG Buoy Depot property as available for residential development. As of the date of this ROD, the SSTTDC has not responded to the USCG letter.

- In May 2005, the USCG published a public notice in the *Patriot Ledger, Weymouth News,* and *Abington/Rockland Mariner* newspapers to announce the availability of the Proposed Plan for public review.
- On 16 May 2005, the USCG distributed copies of the Proposed Plan to a mailing list of nearly 400 community members and interested parties, including the aforementioned Information Repositories.
- From 16 May 2005 to 15 June 2005, the USCG held a 30-day public comment period to accept public comments on the alternatives presented in the FS and the Proposed Plan and on any other documents previously released to the public. Comments were received from MADEP.
- On 26 May 2005, the USCG held a public informational meeting/presentation to discuss the results of the RI and the cleanup alternatives presented in the FS and to present the USCG's Proposed Plan to a broader community audience than those that had already been involved at the Site. At this meeting, representatives from the USCG, EPA, and MADEP were present to answer questions from the public.
- On 26 May 2005, the USCG held a public hearing to accept any oral comments on the Proposed Plan. Comments were received from one person. A transcript of this meeting is included as Appendix F of this ROD. The USCG's responses to the public comments received during the public hearing are included in a Responsiveness Summary, which is included as Part 3 of this ROD.

2.4 SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

The Buoy Depot property was formerly part of the NAS South Weymouth. Upon transfer of the property from the Navy to the USCG in 2000, the USCG also assumed responsibility for the CERCLA investigation of the Buoy Depot Site. In 1999, the USCG and EPA entered into an FFA for conducting environmental investigations under CERCLA at the Buoy Depot Site. The following three AOCs were identified in the FFA:

- AOC 1 (building and adjacent areas to the south) addresses the building floor drains and the lead-contaminated soil around a former dust collection system.
- AOC 2 (septic system tank, piping, and leach field) addresses potential undocumented releases of paint or paint thinner/remover to the building's septic system, which is intended for sanitary wastewater use.

- AOC 3 (buoy, equipment, and scrap metal storage area) addresses the buoy storage area, as well as the drainage swale and the immediate downstream wetland area located adjacent to the south fence line of the Buoy Depot property. The swale and wetland are located on Navy property and have been impacted by USCG operations through stormwater runoff of eroded soil from the buoy storage area.

The USCG has addressed AOC 1 through removal actions in 1999 and 2003. The USCG concluded in the RI (2001) that no further action was required for AOC 2 because the septic system was not a release point or a source of hazardous substances. The USCG is addressing AOC 3 through a removal action conducted in 2004-2005 and through the Selected Remedy outlined in this ROD. The removal actions are summarized below:

CERCLA Time-Critical Removal Action (TCRA)—In 1999, the USCG excavated and removed soil containing up to 26,417 mg/kg of lead near a former dust collection system by the southwest corner of the building (Figure 2). The soil was disposed offsite, effectively addressing the dust collection system portion of AOC 1. The former dust collection system was removed and replaced with a new system located inside the operations building. The USCG conducted additional confirmatory sampling during the RI fieldwork in 1999 to confirm that the removal action had been effective. A maximum of 219.2 mg/kg of lead in soil was found in this area, which is less than the 400-mg/kg risk-based screening value. The USCG initially did not perform the soil removal as a response action under CERCLA. Rather, in 1999, before the FFA was signed by the USCG and EPA, the USCG had to remove soil during the replacement of the dust collection system as part of an upgrade to the active facility. The USCG had to expedite the planned replacement of the dust collection equipment after a fire rendered the system inoperable. Because the USCG had found and removed lead-contaminated soil at that time, EPA later decided that the removal appropriately represented a CERCLA TCRA and requested that the USCG prepare an Action Memorandum in order to document it. The USCG documented the removal action in an Action Memorandum, which also serves as the Removal Action Completion Report for the TCRA (EA 2003).

CERCLA Non-Time-Critical Removal Action (NTCRA)—The USCG prepared an EE/CA (EA 2002) and an Action Memorandum (EA 2003) to expedite a NTCRA for the most significant concerns identified at AOCs 1 and 3 based on the site characterization and risk assessments of the RI (2001) and supplemental sampling conducted in January 2002. The USCG conducted the NTCRA in several stages.

- In 2003, the USCG removed the building's floor drain system. During the RI, a sludge sample from one of the floor drains (FD002) contained more COCs at higher concentrations than in any other subsurface soil samples from the remainder of the Site. The detected concentration of lead in FD002, 13,500 mg/kg, was three orders of magnitude greater than in much of the surrounding soil. There was no evidence of migration of COCs from under the building, and unacceptable risk to onsite workers was

not associated with exposure to this sludge identified under the building. However, in order to confirm the extent of the presence of the sludge and to close the floor drain system properly, the USCG chose to remove the sludge and any impacted soil. In February 2003, the USCG removed the floor drain system, the contents (sludge/ sediment), and some of the piping and surrounding soil. Acceleration of the floor drain closure was deemed to be important in order to confirm that the potential sources of releases of hazardous constituents to the environment had been fully assessed and that the monitoring well network of 17 wells was adequate to assess potential releases to groundwater. Confirmatory samples from the walls and floor of the floor drain excavation area were analyzed for Target Analyte List/Target Compound List (TAL/TCL) analytes to ensure that any impacted material was removed. During the excavation of the eastern floor drain, it was observed that the floor drain material sampled at FD002 during the RI had been contained within the floor drainpipe structure and there was no evidence that it had been released to the environment. Excavated materials were transported offsite for final disposal. The building floor was repaired. No new floor drains were installed. The results are documented in the final *Closure Report: Non-Time Critical Removal Action (Floor Drain Removal) at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts* (Nobis 2004). Following the completed removal action for the building's floor drains, the average subsurface soil concentration of lead across the Buoy Depot was reduced to 25.5 mg/kg, which was well below the 400 mg/kg risk-based screening value.

- In 2004/2005, the USCG installed a new stormwater control system for the buoy storage area as a protective measure for the swale/wetland because the existing operations will continue at the Buoy Depot. The new system included a Vortechs treatment unit to prevent soil particulates and paint chips from being discharged to the drainage swale via stormwater runoff from the buoy storage area. Stormwater flow from the storage area is now directed to this sediment trap by three new catch basins located across the Buoy Depot. One catch basin discharges to an infiltration gallery prior to the Vortechs unit. Asphalt berms, a polydrain, and catch basins were installed north of the building to collect the stormwater from the building area and convey the stormwater to the infiltration trench constructed to the west of the building. The surface soil was regraded and earthen berms were constructed along the fence line to prevent stormwater from exiting the Buoy Depot property except through the Vortechs unit. Details regarding the construction of the new stormwater control system are presented in the *Final Removal Action Completion Report, Stormwater System Installation and Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands* (Nobis 2006). The USCG has prepared an *Operations and Maintenance Manual for Stormwater Management System* (Nobis 2005) specifying the inspection, maintenance, and cleanout protocols for the stormwater system.

- In 2004/2005, the USCG excavated metals-contaminated soil from the offsite drainage swale and wetland area. The USCG achieved the cleanup goals, and the average concentration of lead in soil was reduced to 28 mg/kg in the swale and 92 mg/kg in the wetland, which are well below the 301 mg/kg ecological risk-based action level for lead and the 400 mg/kg human health action level. The excavated area of the wetland was backfilled with a high organic content soil and is being revegetated with a New England wetland seed mix in accordance with the Removal Action Work Plan. The concentrations of metals on the swale and wetland portion of AOC 3 have been reduced to below cleanup goals; therefore, these areas are acceptable for unlimited use and unrestricted exposure.

The Selected Remedy was developed by combining components of different source control options, along with the previously completed Removal Actions, to obtain a comprehensive approach for Site remediation and to mitigate the unacceptable risks at the Site. The Remedial Action includes LUCs to address the remaining risk concerns for hypothetical future uses of the Buoy Depot property portion of the Site as well as Long-Term Monitoring and Five-Year Reviews to ensure that the remedy remains protective of human health and the environment.

2.5 SITE CHARACTERISTICS

Chapter 1 of the FS contains an overview of the RI results. The significant findings of the RI (EA 2001) are summarized herein.

2.5.1 Site Description

The Buoy Depot is the USCG's principal facility in the northeast for the storing, cleaning, repairing, and painting of navigational buoys. The Buoy Depot property is approximately 5 acres in size and is adjacent to mostly forested land to the north and south, an open field to the east, and a commuter rail line and commercial businesses to the west (Figure 2). A chain-link fence surrounds the Buoy Depot facility and property. There is a two-story, steel and concrete block building occupying approximately 20,000 ft^2 on the northwestern portion of the property. Asphalt and concrete paved driveways surround the building. Most of the property is comprised of a dirt and gravel-covered buoy storage area to the south and east of the building. The Buoy Depot Site is comprised of the USCG Buoy Depot property as well as the stormwater drainage swale and the affected portion of the downstream wetland located to the south on adjacent property controlled by the Navy.

2.5.2 Geographical and Topographical Information

The Buoy Depot property is relatively flat with topographic relief gently sloping toward the southeast. During construction of the Buoy Depot in the early 1970s, the topography was altered to redirect surface drainage (overland flow) to a drainage swale (a low-lying area or ditch) that

abuts the southern fence line of the Buoy Depot. The drainage swale runs from west to east and discharges the stormwater to an intermittent, forested wetland, approximately 7 acres in size.

The wet area has shallow standing water for short periods during the year but is not classified as a vernal pool. The swale and wetland are on property controlled by the Navy and are part of the former NAS South Weymouth. The boundary of the swale is defined by steep slopes. The substrate of the swale is sand with infrequent gravel. Prior to the NTCRA, the swale gradient was less than 2 percent and now, subsequent to the NTCRA (Section 2.4), is approximately 0.7 percent. Surrounding areas include a rubble pile and gravelly area that consists of boulders and fill material, and deciduous palustrine forested wetland. Stormwater discharged to the wetland infiltrates into the ground surface. In 2004/2005 as part of the NTCRA, the USCG constructed a new stormwater control system at the Site that included a Vortechs unit to remove particulates from the stormwater flow prior to discharging to the drainage swale.

2.5.3 Sampling Strategy

The purpose of the RI conducted in 1999 was to evaluate the nature and extent of chemical constituents related to AOCs identified in previous investigations that might pose a threat to public health and the environment, and to quantify the potential risk to human health and the environment from exposure to these chemicals (EA 2001). The RI included site characterization, human health and ecological risk assessments, an evaluation of chemical fate and transport, and preliminary identification of potential remedial alternatives. The RI Conceptual Site Model (CSM) was designed to address the following potential contaminant migration pathways.

- Air Pathway—Brief failures of the dust collection system over the years may have caused releases and accumulation of particulates containing lead. These particulates would have been deposited on the surface around the dust collection system area and in the prevalent downwind direction and would then have been available for transport via overland flow.
- Overland Flow—Particulates deposited by air or contaminants deposited on the ground through spills may have been transported via runoff (*i.e.,* overland flow) and redeposited in depositional areas of the drainage system.
- Site Regrading—The sampling strategy took into consideration that the Buoy Depot property was regraded circa 1996 and looked at the current grading as well as the former drainage patterns. Regrading of the property might have caused COCs adhering to the surface soil or sediment to have been buried in the subsurface, especially in former drainage ditches in the buoy storage area. Selected sample locations were targeted at specific depths and locations to investigate this possibility.
- Infiltration—Infiltration of COPCs from the surface into the subsurface with precipitation was a concern at the Site. Fuel constituents, if present, were likely to migrate in this way. Metals, such as lead, were less likely to migrate via this mechanism, especially in the

form of paint chips. This was demonstrated by results from the X-Ray Fluorescence (XRF) screening phase of the RI that showed levels of lead above regulatory levels in surface soil samples, but not in the subsurface soil samples.

- Migration on the Water Table—Fuel constituents that are lighter than water (Light Non-Aqueous Phase Liquids [LNAPLs]) might reach and float on the water table, migrating with groundwater flow, although there was no evidence at the time of the RI that floating product was present at this Site. The RI investigation was designed to assess whether soil samples collected from the capillary fringe zone, above the water table, were impacted by LNAPL migration on the water table.
- Migration with Groundwater—COPC that become dissolved in infiltrating precipitation might reach the water table and continue to migrate with groundwater to impact a Potentially Productive Aquifer (PPA).

Field activities for the RI included field screening for metals in soil (using XRF) and volatile organic compounds (VOCs) in groundwater using a Geoprobe; sampling and analysis of soil, groundwater, and soil of the drainage swale/wetlands (called sediment or hydric soil in the RI) for full TAL/TCL constituents; monitoring well and piezometer installation; groundwater gauging and water level measurements; hydraulic conductivity testing; and a professional land survey of the sampling locations and monitoring wells.

Analytes for which health-based screening criteria were exceeded were assessed against background and carried through a risk assessment. A full baseline HHRA was conducted for the Site and included a separate evaluation for lead. Current and future use scenarios were evaluated.

A Tier I Ecological Risk Assessment (ERA) was conducted for the swale and wetland portion of the Site. Much of the buoy storage part of the USCG property is either paved or covered with gravel and provides no viable habitat for wildlife species. Along the outside fence line, there is ample habitat consisting of mixed deciduous forest, moist habitat, and open fields. The swale south of the Buoy Depot is an intermittent stream/wet area habitat. The swale and adjacent wetlands were the only Site-related areas identified as potential habitat for terrestrial receptors and were evaluated for ecological risk.

In January 2002, the USCG conducted supplemental sampling in support of the FS. The investigation consisted of the following activities:

- Sampling of shallow subsurface soil in the buoy storage area and analysis for methyl isobutyl ketone (MIBK, or 4-methyl-2-pentanone) to address MADEP concerns regarding a previous detection of that compound at location SB-017.

- Sampling of soil within the drainage swale and analysis for six metals identified as COCs in the draft FS to delineate impacts and support selection of the appropriate remedial alternative.
- Sampling of hydric soil and surface water to assess the extent of impacts in the wetland. Sample locations were selected by a technical team comprised of representatives from the USCG, EPA, MADEP, and EA Engineering, Science, and Technology (EA) to target low areas in the wetland where deposition would be likely to occur. Soil sampling was performed, but there was insufficient precipitation to allow for collection of surface water samples.
- Installation of two additional monitoring wells (MW-09D and MW-10D) and sampling of the new and existing monitoring wells to support the risk assessments for groundwater. The compound 1,4-dioxane was added to the analyte list at the request of MADEP.

The protocols and results of the supplemental sampling event are detailed in the Final EE/CA (EA 2002), which included an updated HHRA and ERA.

2.5.4 Conceptual Site Model

The original Conceptual Site Model (CSM) for the Buoy Depot, as presented in the RI (Figures 3 and 5), depicted the potential pathways of concern without regard to COCs. The CSM provides a "picture" of Site conditions that illustrates contaminant sources, release mechanisms, exposure pathways, migration routes, and potential human and ecological receptors. The CSM documents current and potential future Site conditions and shows what is known about human and environmental exposure through contaminant release and migration to potential receptors. Potential receptors at the Site were onsite workers, adolescent trespassers, child recreational receptors, resident adults, and resident children. Exposure pathways evaluated for each receptor are presented in the RI.

The CSM has been revised to reflect potential pathways of concern based on COCs and removal actions that have occurred since the RI (Figure 5). As presented in Section 2.4, a TCRA and a NTCRA were performed to mitigate human health and ecological risks associated with the Site. However, potential lead-based paint chips and lead in surface soil remain at the site in the buoy storage area. The CSM presents current and potential exposure pathways that may pose a human health concern at the Site. There are no remaining unacceptable ecological risks associated with the site. The Selected Remedy for surface soil at the Buoy Depot Site AOC 3 is based on the CSM presented in Figure 5.

2.5.5 Principal and Low-Level Threat Wastes

Principal threat wastes are defined as those source materials considered to be highly toxic or highly mobile which generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. The manner in

which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied. Wastes generally considered to be principal threats are liquid, mobile, and/or highly toxic source material. The USCG has already mitigated the principal threats associated with lead at the former dust collection system and in the swale through the completion of a TCRA and a NTCRA as described in Section 2.4 of this ROD.

Low-level threat wastes are defined as those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure. Wastes generally considered to be low-level threat wastes include non-mobile contaminated source material of low to moderate toxicity, surface soil containing COCs that are relatively immobile in air or groundwater, low leachability contaminants, or low toxicity source material. Given the completion of the TCRA and NTCRA at the Site, the Selected Remedy in this ROD addresses the remaining low-level threats pertaining to residual lead and paint chips in surface soil of the buoy storage area (see description of the remaining risk concerns in Section 2.7.1 of this ROD).

The known or suspected sources of contamination in the buoy storage area include (1) flaking paint from buoy storage, (2) past failure of the building's dust collection system, and (3) buoy scrapping (crushing) operations conducted in the buoy storage area. Such operations have resulted in lead contamination and the presence of paint chips in surface soil of the buoy storage area. Overland runoff (stormwater transport) had resulted in metals contamination (primarily lead) of the drainage swale and wetland to the south of the Buoy Depot property. The USCG conducted a NTCRA in 2005 to remediate the swale and wetland area to a condition suitable for unlimited use and unrestricted exposure. Lead and paint chips (potentially lead-based) remain in surface soil of the buoy storage area at levels that may be unacceptable for certain hypothetical future reuse scenarios. In the buoy storage area, the overall average concentration of lead in surface soil on the facility was 297 mg/kg (less than the 400 mg/kg risk-based screening value), with sample results ranging from 6 to 1,790 mg/kg. Site conditions are suitable for continued USCG industrial operations, and no ecological habitat is present onsite that could be adversely affected by the lead in soil.

In 2004/2005, the USCG constructed a new stormwater control system at the Site to reduce the potential for the future migration of COCs from surface soil of the buoy storage area. By 1988, the USCG stopped using lead-based paint. Additionally, the USCG typically cycles every buoy through the refurbishment process (which includes shot-blasting and repainting) approximately every 6 years. Hence, the vast majority of buoys have been refurbished with non-lead based paint. The USCG will develop procedures to manage any remaining buoys still coated with lead-based paint as part of the LUCIP. Groundwater quality is consistent with background conditions; therefore, groundwater is not a medium of concern at the site. The principal and low-level threat wastes associated with the Buoy Depot Site are summarized in Table 2-2.

2.6 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

2.6.1 Site Land Use

The current land use of the Buoy Depot property is industrial. Since 1972, the Buoy Depot has been the USCG's principal facility in the northeast for the storing, cleaning, repairing, and painting of navigational buoys. The USCG plans to continue the current industrial operations at the Buoy Depot property.

The portion of the Site on Navy property (*i.e.*, the stormwater drainage swale and wetland areas that were remediated under the NTCRA) is currently open space. The Navy plans to transfer this property to the local re-development authority (*i.e.*, the SSTTDC) in accordance with the Base Realignment and Closure Act (BRAC). The SSTTDC is working on various plans for redevelopment, including potential residential use, for the property abutting the USCG facility. Under the current reuse plan and approved zoning and reuse bylaws, the wetland and a portion of the swale that is within 50 ft (buffer zone) of the delineated wetland boundary is now zoned as Open-Space-Weymouth District. The portion of the swale that is not within the 50 ft of the delineated wetland is currently zoned Village Center District. The swale and wetland portions of the Site have been cleaned up to residential standards and, therefore, are suitable for unlimited use and unrestricted exposure.

The Buoy Depot property itself was already transferred from the Navy to the USCG in accordance with BRAC, and is not currently available for transfer to the SSTTDC. USCG has no plans to transfer the Buoy Depot property, and as the property remains governmentally owned, it is exempt from local zoning requirements. If it were transferred at sometime in the future, the land would be zoned as Village Center District.

2.6.2 Abutting Land Use

Current land use surrounding the Buoy Depot Site includes forested land to the north and south, a wetland to the south and southeast, an open field to the east, and a commuter rail line and commercial businesses to the west. The land to the north, east, and south is currently controlled by the Navy and is part of the former NAS South Weymouth. In accordance with the federal BRAC, the Navy property is to be transferred back to the local communities. The SSTTDC is the state-approved agency that will receive and be responsible for the redevelopment of the abutting Navy property. As noted in Section 2.6.1, the currently approved zoning plan for the property abutting the Buoy Depot Facility includes both Open Space – Weymouth District and Village Center District.

2.6.3 Groundwater Use

The groundwater aquifer beneath the Buoy Depot Site (including the abutting swale/wetlands) currently is not used as a source for drinking water or other applications. The wetland to the

southeast of the Buoy Depot Site is in an area classified as a potentially productive medium-yield aquifer. The SSTTDC is evaluating the potential use of the aquifer to the south of the Buoy Depot Site as a supplemental source for the new development at the former NAS South Weymouth. The USCG has already conducted a NTCRA to clean up the swale/wetland area to allow for unlimited use and unrestricted exposure of that area. The USCG's site characterization during the RI and supplemental sampling events has indicated that groundwater quality at the Site is consistent with background conditions; therefore, groundwater is not a medium of concern at the Site.

2.7 SUMMARY OF SITE RISKS

A baseline HHRA and an Ecological Risk Assessment (ERA) were performed to estimate the probability and magnitude of potential adverse human health and environmental effects from exposure to contaminants of concern (COCs) associated with the Site if no remedial actions were taken. The assessments provide the basis for taking action and identify the COCs and exposure pathways that need to be addressed by the remedial action.

The HHRA and ERA were initially performed in 2000/2001 as part of the RI and were updated as part of the EE/CA in 2002. By the time the HHRA was performed, lead-contaminated soil had already been removed from the dust collection system area. Thus, data collected for that area prior to that Removal Action were not included in the risk assessment. A summary of the baseline HHRA and a discussion of remaining risk issues following the NTCRA associated with current conditions are provided below, followed by a summary of the ERA in Section 2.7.2.

2.7.1 Human Health Risk Assessment

2.7.1.1 Risk Approach

The HHRA followed a four-step process: (1) hazard identification, which identified those hazardous substances that, given the specifics of the Site, were of significant concern; (2) exposure assessment, which identified actual or potential exposure pathways, characterized the potentially exposed populations, and determined the extent of possible exposure; (3) toxicity assessment, which considered the types and magnitude of adverse health effects associated with exposure to hazardous substances; and (4) risk characterization and uncertainty analysis, which integrated the three earlier steps to summarize the potential and actual risks posed by hazardous substances at the Site, including carcinogenic and non-carcinogenic risks and a discussion of the uncertainty in the risk estimates.

A full baseline HHRA for the entire Site was conducted for all COPCs and included a separate evaluation for lead. Both non-carcinogenic and carcinogenic risks were evaluated. The 2002 HHRA update provided in the EE/CA included results of a second round of groundwater samples and additional soil, swale, and wetland samples.

Potential exposure pathways were developed to reflect the potential for exposure to hazardous substances based on the present uses, potential future uses, and location of the Site (see Table 2-3). The current and planned future use of the Buoy Depot property is industrial. However, a residential scenario was analyzed in accordance with EPA guidance.

The media of concern evaluated were surface soil, subsurface soil, sediment (in the swale and the wetland) and air. The term "sediment" as used in the risk assessment referred to the surface soils in the swale and wetland, which have subsequently been referred to as soil and hydric soil, respectively.

Twenty chemicals detected at the Site were selected for evaluation in the HHRA as COPCs. In groundwater, COPCs included arsenic, barium, manganese, heptachlor epoxide and bis (2-ethylhexyl) phthalate, acetone, benzene, and chloroform. In soil, COPCs included arsenic, antimony, nickel, zinc, chromium, copper, lead, manganese, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-CD)pyrene, and heptachlor epoxide. In the sediment, (including the swale and wetland soil), the COPCs included aluminum, arsenic, antimony, chromium, copper, lead, manganese, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-CD)pyrene, and polychlorinated biphenyls (PCBs).

COPCs were selected to represent potential Site-related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment. These data can be found in Tables 6-2.1 through 6-2.4 of the RI (EA 2001) and updated in Table C-2 of the EE/CA (EA 2002).

Because there are no slope factors available for lead, potential human health effects associated with exposure to lead are modeled using site-specific media concentrations to estimate blood lead concentrations in potential human receptors. Modeled blood level results are compared to established cutoff values that are considered protective of human health.

The EPA's Integrated Exposure and Uptake Biokinetic (IEUBK) Model was used to evaluate the hazard potential posed by exposure of infants and young children, less than 7 years of age, the most vulnerable population. EPA's Technical Review Workgroup (TRW) adult lead model assesses lead risk associated with non-residential adult exposures to lead in soil by estimating fetal blood lead concentrations in women of childbearing age exposed to lead contaminated soil. The adult model was used to evaluate potential risks from exposure to lead to developing or future fetuses of site workers.

Lead risk modeling was performed based on average soil lead concentrations, consistent with EPA guidance. Surface soil was not evaluated in the lead models in the RI (EA 2001). Instead, subsurface soil was evaluated in the lead models because there was a higher mean lead concentration detected in subsurface soil than in surface soil. The default values were used in the IEUBK Lead Model and were taken directly from EPA guidance (USEPA 1994). Indoor

dust lead concentrations were conservatively estimated at 70 percent of this value using IEUBK recommendations (USEPA 1994). The default values were used in the TRW adult lead model and were taken directly from EPA guidance (USEPA 1996).

2.7.1.2 Results of the HHRA

Potential risks associated with the COPCs are summarized in Table 2-4. For the whole Site, non-carcinogenic risks exceeded EPA's threshold of 1.0 for potential residential adult and child receptors under the Reasonable Maximum Exposure (RME) scenario. Risk was driven primarily by ingestion of groundwater. In groundwater, non-cancer risk Hazard Quotients (HQs) exceeding the threshold of 1.0 for potential future resident adult and child receptors under RME conditions were identified for manganese and arsenic. Manganese concentrations in groundwater are consistent with southeast Massachusetts regional background concentrations and NAS South Weymouth background concentrations.

Cancer risks in groundwater exceeded the target risk range for residents, and were primarily driven by arsenic. The maximum detected concentration of arsenic in groundwater, 7.9 micrograms per liter (μg/L), does not exceed the planned Maximum Contaminant Level (MCL) for arsenic (10 μg/L). Also, arsenic was detected in only 1 of 34 groundwater samples (in a sample from an upgradient well) and, therefore, could be eliminated as a COPC based on frequency of detection less than 5 percent in accordance with EPA guidance (USEPA 1989). Generally, lead was not detected in groundwater except at trace concentrations in a few samples (up to 2 μg/L as compared to an EPA action level of 15 μg/L). Groundwater quality is consistent with background conditions and, therefore, no groundwater remediation is required.

For the other pathways/media, cancer risks for the whole Site were all within or below the EPA acceptable risk range of 10^{-6} to 10^{-4} for all receptors.

Lead is the only COC for which significant risks were identified. A COC is a site-related analyte for which significant current or future risks were identified. The adult lead model indicated that there is unacceptable risk associated with swale sediment and subsurface soil for residential exposures. The IEUBK Lead Model revealed risks above the EPA acceptable threshold for resident child exposure to subsurface soil and swale sediment. Exposure Point Concentrations (EPCs) for lead are summarized in Table 2-5.

The outcome of the IEUBK Model for swale sediment revealed that greater than 99 percent of child receptors aged 0 to 84 months were at greater than the EPA threshold value of 10 μg lead per deciliter (dL) blood. As a result, there were concerns for adverse effects to residents from exposure to this sediment.

For sediment (from the swale), the adult central estimate of blood lead concentration was 31.94 μg/dL. This adult blood lead concentration resulted in a fetal blood lead level of

89.90 μg/dL. This level is significantly higher than the acceptable threshold of 10 μg/dL. As a result, swale sediment also presented a risk for non-residential exposures to lead (and therefore was subsequently remediated as part of the NTCRA).

The outcome of the IEUBK Model for subsurface soil revealed that 5.3 percent of child receptors aged 0 to 84 months were at greater than the EPA threshold value of 10 μg lead/dL blood. This percentage is slightly above the established risk cutoff of 5 percent exceeding 10 μg lead/dL blood. As a result, there were some concerns for adverse effects to residents from exposure to subsurface soil.

For subsurface soil, the outcome of the TRW adult lead models revealed that the adult central estimate of blood lead concentration was 2.30 μg/dL. This adult blood lead concentration resulted in a fetal blood lead level of 6.49 μg/dL. This level is below the established threshold of 10 μg/dL. It is EPA policy to protect 95 percent of the sensitive population against blood lead levels in excess of 10 μg/dL blood. Therefore, there were no concerns for non-residential exposures to subsurface soil lead contamination.

The HHRA demonstrated that there was acceptable risk associated with non-residential exposure to lead in subsurface soil in the buoy storage area. The average concentration of lead in surface soil was lower than the average concentration of lead in subsurface soil, and the higher number (subsurface soil) was used as the exposure point concentration in the risk analysis as a conservative measure. Since there is acceptable risk associated with non-residential exposures to lead in subsurface soil, it follows that there is also acceptable risk associated with non-residential exposure to surface soil, even though that exposure pathway was not explicitly evaluated during the RI.

2.7.1.3 Risk-Based Cleanup

The EPA's IEUBK Model was used to derive a risk-based Preliminary Remediation Goal (PRG) for residential children with the potential to be exposed to lead in surface soils. Using site-specific exposure input values, the model was used to derive a soil concentration that will be protective of resident children by predicting a modeled blood lead concentration of less than 10 μg/dL for 95 percent of the resident population. The IEUBK Model predicts that an average concentration of 400 mg/kg will result in modeled blood lead concentrations that are less than 10 μg/dL for 96.76 percent of the resident child population, with a geometric mean blood lead concentration of 4.2 μg/dL.

The NTCRA was conducted for the elevated concentrations of lead (and several other metals that were ecological COCs) in soil of the drainage swale and wetland portion of the Buoy Depot Site. Following the excavation of soil during the NTCRA, the average concentration of lead in soil was reduced to 28 mg/kg in the swale and 92 mg/kg in the wetland, which is well below the

400 mg/kg human health PRG for lead. These concentrations result in acceptable risks for residential receptors (and recreational users, by proxy[1]) based on the results of the EPA IEUBK Lead Model.

In addition, the USCG also removed the sludge-like material identified in the building's floor drain system during the RI and closed the floor drain system. This material associated with RI sample FD002 contained lead at a concentration of 13,500 mg/kg, the maximum reported in subsurface soil. During the floor drain removal, additional confirmatory samples for lead were collected. The mean concentration of lead in subsurface soil was recalculated because soil associated with some previous samples (notably FD002) had been removed, and some new confirmatory samples were added. Subsequent to the Removal Action, the average subsurface soil lead concentration was 26 mg/kg and subsurface soil risks were reassessed for residents. This concentration results in acceptable risks for residential receptors (and recreational users, by proxy[1]) based on the results of the EPA IEUBK Lead Model.

Since the new confirmatory samples from the floor drain removal were all from subsurface soil, the mean concentration for surface soil did not significantly change. The mean surface soil concentration on the Buoy Depot facility (excluding the swale and wetland) is 300.7 mg/kg. Similar to the subsurface soil reevaluation, surface soil risks were reassessed for residents based on the average surface soil lead concentration of 301 mg/kg. This concentration results in acceptable risks for residential receptors (and recreational users, by proxy). Therefore, based on EPA's IEUBK Model, lead in surface and subsurface soil at the site, following the NTCRA, does not pose a threat (unacceptable risk) to recreational users.

2.7.1.4 Remaining Concerns

After the completed removal actions, there are two remaining risk concerns regarding the results of the HHRA and the condition of surface soil in the buoy storage area: (1) the assumed soil exposure area used for evaluating human risks associated with lead, and (2) the presence of paint chips in surface soil, some of which may be lead-based.

- Based on the results of EPA's IEUBK Model, lead exposure in surface soil does not pose a threat to human health for any receptors at the Buoy Depot property. The use of the average lead concentration on the Buoy Depot property as the EPC for current and future commercial worker exposures was appropriate because Buoy Depot workers are likely to access all areas of the 5.5-acre facility during ongoing industrial facility operations. The EPC was calculated in accordance with EPA risk assessment protocol. However, EPA and MADEP expressed concerns that the EPC used for surface soil in the HHRA might not be representative of a hypothetical future scenario in which the Buoy Depot property

1 The Model only includes evaluations of residents and commercial (industrial) workers. Therefore, the recreational user scenario was evaluated based on residents, which is the more conservative evaluation scenario.

were transferred and then subdivided and/or redeveloped into small residential lots. With a heterogeneous distribution of lead across the buoy storage area, a higher or lower EPC might be calculated for a particular, unmitigated subparcel of the property, as compared to the EPC derived from the lead average across the buoy storage area. The sampling data from the RI included some results that exceeded the IEUBK Model benchmark of 400 mg/kg of lead, and thus, it is possible that the average lead concentration in a hypothetical, small residential lot could result in unacceptable risk within that lot[2].

- Paint chips are present in surface soil throughout the buoy storage area (likely as a result of deteriorating paint from buoys that were painted with lead-based paint). Paint chips could pose a potential hazard under a future reuse scenario that included the presence of young children who might come in contact with surface soil.
- The current and planned future use of the facility is industrial. The USCG does not plan to transfer the Buoy Depot property in the future. There are no unacceptable risks to commercial/industrial workers from exposure to COCs in surface soil in the buoy storage area, and therefore, the Buoy Depot property is suitable for continued industrial use. The buoy storage area is potentially unsuitable for residential or recreational use because (1) there are some areas where lead in surface soil may exceed an average of 400 mg/kg, which could be associated with future hypothetical lot size, and (2) some of the paint chips present in surface soil may be lead-based.

2.7.2 Ecological Risk Assessment

An ERA was conducted to estimate the potential risks to ecological receptors from chemicals in the environment. The ERA was first presented in the RI (EA 2001). The USCG issued an "Addendum to the Baseline Ecological Risk Assessment" as part of the Final EE/CA (EA 2002). The ERA addendum reevaluated the ecological risk by incorporating the results of the supplemental sampling event conducted in January 2002 in support of the FS (EA 2004). A Step 1, 2, and partial[3] Step 3 ERA was conducted and reported in the RI (EA 2001).

2.7.2.1 Step 1: Problem Formulation

The USCG collected and evaluated information about the Site conditions (*e.g.,* type of habitat, and plant and animal species at the Site), the COPCs, and the potential exposure pathways.

2 If the site were transferred and developed for residential use, it is likely that the current surface soil would be mixed with subsurface soil and new topsoil, resulting in a new soil configuration that does not reflect current site conditions.

3 The "partial" Step 3 refers to the modification of exposure assumptions utilized in the food web analysis. It consisted of using bioavailability factors from soil (sediment) into food, accounting for dry to wet weight factors, and utilizing area use factors. The modified exposure assumptions provided a more realistic exposure estimate than those utilized for the Step 2 food web analysis.

The Buoy Depot facility itself is covered with a building, pavement, concrete pads, and gravel. Within the fence line, there is little vegetation, and few wildlife species were observed in this area. The area represents a poor habitat and, therefore, was not assessed for ecological risk. A forested area containing a variety of plant and wildlife species is located to the south and southeast of the Buoy Depot facility on Navy property. Stormwater runoff from the Buoy Depot facility discharged through a culvert into a swale along the southern fence line of the USCG property and emptied into the wetland to the southeast. The wetland at this location contains shallow water for short periods during the year but is not classified as a vernal pool. During two site visits by biologists and regulators in 2000 and 2001, no obvious evidence of plant or animal stress was observed in either the swale or the wetland area. The swale soil and a portion of the wetland soil had been impacted by runoff from the Buoy Depot facility operations. These areas were the focus of the ERA. The ecological habitat is not classified as a sensitive environment and there are no endangered, threatened, or otherwise listed species.

As shown in Table 2-6, 13 inorganics were identified as COPCs in swale and wetland soil. One pesticide (methoxychlor, identified due to the absence of a screening value), one semivolatile organic compound (SVOC) (carbizole, identified due to the absence of a screening value), and 6 VOCs (due to the absence of screening values) were conservatively identified as COPCs in swale and wetland soil. Although all identified COPCs were carried through the ERA, the focus of the risk assessment was on metals associated with releases of paint from the Site.

Risk was characterized for the following ecological receptors of concern in the habitable areas at the site: terrestrial plants, terrestrial soil invertebrates, mammals (short-tailed shrew, white-footed mouse, Eastern cottontail, red fox), and avian species (American robin, Carolina wren, and American kestrel).

The potential routes of exposure evaluated included direct uptake from surface soil by terrestrial plants, ingestion of soil by terrestrial invertebrates, and ingestion by vertebrate wildlife of surface soil and food items that may contain accumulated chemicals from surface soil and sediment. The exposure pathways, as well as the assessment and measurement endpoints used in the ERA, are presented in Table 2-7. The CSM used during the RI is depicted in Figure 4.

2.7.2.2 Step 2: Exposure and Effects Assessment

The exposure assessment estimated the amount of a COPC to which a receptor may be exposed. For plants and soil invertebrates, this amount was the concentration determined by directly sampling soil from the swale and wetlands. For vertebrate wildlife, which ingest soil and food items that may contain accumulated chemicals from soil, exposure was estimated in simple food chain models that start with the measured concentrations in soil and take into account other exposure factors such as bioaccumulation and the dietary composition, ingestion rate, home range, and body weight of the animal.

The ecological effects assessment described the potential adverse effects to ecological receptors from the COPCs. Generally, potential effects include mortality and effects on growth and development. Toxicity benchmarks, which are levels of chemicals designed to be protective of the receptor, were taken from the scientific literature for use as a measure of these potential effects.

2.7.2.3 Step 3: Risk Characterization

The exposure estimates and toxicity benchmarks determined in Step 2 were used to estimate the potential for adverse effects to the ecological receptors at the Site. The risk to ecological receptors is expressed as an HQ, which is calculated by dividing a receptor's exposure estimate by the toxicity benchmark. When the HQ is below 1.0 (exposure estimate is less than toxicity benchmark), toxicological effects are unlikely to occur; therefore, unacceptable risk is not present. When the HQ is above 1.0 (exposure estimate is greater than toxicity benchmark), there is a potential for unacceptable risk to be present.

Because significantly larger numbers of samples were available to characterize risk, separate risks have been evaluated for the drainage swale and wetland based on the combined dataset. This reassessment was performed using standard ERA practice, and is based on the 95 percent Upper Confidence Limit on the Mean (UCLM) and no observed adverse effect level (NOAEL). On the basis of this ERA, arsenic, chromium, copper, lead, nickel, and zinc were identified as COCs for one or more of these receptors. Lead was the only COC found to present risk to all receptors. The results obtained from the risk characterization are shown in Tables 2-8 and 2-9.

2.7.2.4 Removal Action

The USCG completed a NTCRA for the swale and wetlands, which mitigated the potential risks to ecological receptors and improved the ecological environment of the area. A summary comparison of the conditions after the cleanup, as determined by confirmatory sampling, to the risk-based cleanup goals is shown in Table 2-10.

Accordingly, no risk concerns remain for ecological receptors. The USCG also reduced the potential for recontamination of the swale and wetland through the construction of the new stormwater control system, which will greatly reduce the transport of soil particulates and paint chips from the buoy storage area to the drainage swale. The Selected Remedy of this ROD includes Long-Term Monitoring to ensure the long-term protectiveness of ecological receptors in the swale and wetland areas of the Site.

2.7.3 Basis for Response Action

As described in Section 2.7.1, some remaining risk concerns have been identified for hypothetical, future, non-commercial/industrial reuse scenarios associated with residual lead

and paint chips in surface soil of the buoy storage yard. The presence of lead and paint chips in surface soil, if not addressed by implementing the response action selected in this ROD, may present an endangerment to public health, welfare, or the environment.

The response action selected in this ROD will mitigate the identified remaining risk concerns and also will monitor the effectiveness of the selected remedy for preventing recontamination of the adjacent stormwater drainage swale and downstream wetland area.

2.8 REMEDIATION OBJECTIVES

Based on preliminary information relating to types of environmental media of concern and potential exposure pathways, Response Action Objectives (RAOs), both Removal Action Objectives and Remedial Action Objectives, were developed to aid in the development and screening of alternatives. These RAOs were developed to mitigate, restore, and/or prevent existing and future potential threats to human health and the environment. The following goals were developed during the EE/CA (EA 2002) for the NTCRA completed in 2005:

- Prevention, to the extent practicable, of direct contact with and ingestion of surficial soil that presents unacceptable risks to human health and/or ecological receptors (*i.e.,* the soil of the swale and wetlands).
- Prevention of potential future impacts to groundwater beneath the Site through removal of impacted soil and sludge associated with existing floor drains beneath the Site building.
- Mitigation of ongoing migration of metals (primarily lead) from the buoy storage area to the adjacent drainage ditch and the downstream wetland, and prevention of future migration to the extent possible.

The NTCRA achieved the above goals through excavation of the swale soil and wetland hydric soil, removal of the building's floor drain system, and installation of the stormwater management system. Subsequent to the NTCRA, the USCG issued an FS to address the remaining portion of the AOC that was not yet addressed through the completed removal actions (*i.e.,* the buoy storage area of AOC 3). The FS presented the following RAOs for AOC 3:

- Prevent future human (residential) exposure to lead and potential lead-based paint chips in soil of the buoy storage area
- Prevent COCs in onsite soil from migrating off the Buoy Depot property.

Achieving the combination of all these goals provides for a complete Site remedy, which is protective of human health and the environment and which complies with Applicable or Relevant and Appropriate Requirements (ARARs). The completed Removal Actions mitigated the unacceptable human health (cancer and non-cancer) and ecological risks associated primarily

with lead in soil at the Site. The Selected Remedy effectively mitigates the remaining risk concerns associated with various hypothetical future use scenarios to lead and/or paint chips in surface soil of the buoy storage area (see Section 2.7.1). At present, the USCG has no plans to transfer the Buoy Depot property, and the current industrial operations will continue into the future. The Removal Actions have already restored the swale/wetland areas so that potential risks to human health or the environment do not exceed EPA's threshold risk levels for any of the evaluated use scenarios. Therefore, the swale/wetland areas of the Buoy Depot Site are deemed to be acceptable for unlimited use and unrestricted exposure. Furthermore, the risk assessments demonstrated that the Buoy Depot property portion of the Site is suitable for continued industrial use because risk levels do not exceed EPA's threshold risk levels for a commercial/industrial use scenario. The Selected Remedy mitigates the remaining risk concerns via LUCs that include (1) Institutional Controls to ensure proper (acceptable) use of the property in the future, and (2) Engineering Controls to maintain preventative measures for the migration of lead and paint chips in buoy storage area soil to offsite areas via stormwater runoff. No RAOs were required for groundwater because the identified risks in groundwater were associated with COPC concentrations that were consistent with background levels.

2.9 DEVELOPMENT AND SCREENING OF ALTERNATIVES

2.9.1 Statutory Requirements/Response Objectives

Superfund requires that the USCG effectuate a Remedial Action that is protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences, including: (1) a requirement that the remedial action, when complete, must comply with all federal and more stringent state environmental and facility siting standards, requirements, criteria or limitations (unless a waiver is invoked); (2) a requirement that the remedial action is cost effective and utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (3) a preference for remedies in which treatment that permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances is a principal element over remedies not involving such treatment. Response alternatives were developed to be consistent with these Congressional mandates.

2.9.2 Technology and Alternative Development and Screening

CERCLA and the NCP set forth the process by which remedial actions are evaluated and selected. In accordance with these requirements, a range of alternatives was developed for the Site. The RI/FS developed a range of alternatives that included (1) an alternative that would remove or destroy hazardous substances to the maximum extent feasible, thereby eliminating or minimizing to the degree possible the need for long-term management; (2) an alternative that would involve little or no treatment, but that would provide protection through LUCs (engineering and institutional controls) and (3) a No Action alternative.

Based upon the results of the site characterization and the HHRA, it was determined that no groundwater remediation is required for the Site. Therefore, no groundwater response action was developed during the RI/FS.

As discussed in Section 3.1 of the FS, soil treatment technologies and process options were identified, assessed, and screened based on implementability, effectiveness, and cost. These technologies were combined into remedial alternatives. Section 3.3 of the FS presented the remedial alternatives developed by combining the technologies identified in the previous screening process in the categories identified in Section 300.430(e)(3) of the NCP. The purpose of the initial screening was to narrow the number of potential remedial actions for further detailed analysis while preserving a range of options. Each alternative was then evaluated in detail in Chapter 4 of the FS.

In summary, of the three remedial alternatives screened in Section 3.3 of the FS, each was retained as a possible option for addressing the remaining risk concerns for the Site and was carried forward for detailed analysis.

2.10 DESCRIPTION OF ALTERNATIVES

This section provides a narrative summary of each remedial alternative evaluated during the RI/FS and presented in the Proposed Plan. No management of migration alternative was required for this Site because no RAOs were developed for groundwater (see Section 2.8). The following remedial alternatives were analyzed for the Site:

- Alternative 1 – No Further Action.
- Alternative 2 – Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews.
- Alternative 3 – Excavation with Offsite Disposal.

Each of the three alternatives is summarized below. A more complete, detailed presentation of each alternative is found in Chapter 4 of the FS.

2.10.1 Alternative 1 – No Further Action

Description

Pursuant to Section 300.430(e)(6) of the revised NCP, a "No Action" alternative is required to be developed to provide a baseline against which the other remedial alternatives are to be compared. At the USCG Buoy Depot, a CERCLA NTCRA has already been completed to address the identified unacceptable risks associated with the swale/wetland area and to close the building's floor drain system (see Sections 2.4 and 2.7.1). Because an action has already been taken, Alternative 1 becomes "No Further Action."

By definition under the NCP and EPA guidance, this No Further Action alternative includes no remedial actions or long-term monitoring. In accordance with CERCLA Section 121(c) and Section 300.430(f)(4)(ii) of the revised NCP, the USCG would conduct Five-Year Review(s) at the USCG Buoy Depot Site under Alternative 1 because hazardous substances would remain at the buoy storage area above levels that allow for unlimited use and unrestricted exposure. The USCG would submit the Five-Year Review report to EPA for approval and to MADEP for comment.

2.10.2 Alternative 2 – Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews

In the FS report, this alternative was entitled "Institutional Controls and Monitoring." The description below of the alternative under the new title of "Land Use Controls (LUCs) (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews" is consistent with what was presented in the FS.

Description

To supplement the removal actions already completed (Section 2.2.2), Alternative 2 includes the following additional activities to achieve RAOs at the USCG Buoy Depot site:

- Implement LUCs that include (1) Institutional Controls to prohibit future non-commercial/industrial uses of the Buoy Depot property, and (2) Engineering Controls to maintain the ongoing industrial use of the property and to prevent the offsite migration of soil from the buoy storage area.
- Conduct Long-Term Monitoring of the surface soil in the stormwater drainage swale and downstream wetland area, as well as material captured by the new stormwater control system to ensure the long-term effectiveness of the remedy for protecting human health and the environment.
- Conduct Five-Year Reviews to ensure that the remedy remains protective. In support of the first Five-Year Review, the USCG would conduct at least one additional round of groundwater sampling within five (5) years of signing this ROD.

Once the Remedial Action is in place, all necessary actions would be taken to ensure protection of human health and the environment at the Buoy Depot Site. The current environmental conditions at the Buoy Depot are suitable for the continuation of the USCG's industrial operations, and the remaining risk concerns identified in Section 2.7.1 would be addressed by the components of Alternative 2. Further details of the components of Alternative 2 are presented below and in Section 2.12.2 of this ROD.

Land Use Controls

The current and planned future use of the USCG's Buoy Depot property is industrial. Based on the results of the risk assessments and Removal Actions, the current environmental conditions at the Buoy Depot are suitable (*i.e.*, do not exceed CERCLA risk benchmarks) for continued Buoy Depot operations. However, they are not suitable for unlimited use and unrestricted exposure due to the remaining risk concerns for lead and paint chips in surface soil of the buoy storage area under certain hypothetical residential, recreational, open space, or wildlife habitat reuse scenarios. Under Alternative 2, the USCG would implement LUCs that apply to the USCG Buoy Depot property portion of the site (Figure 2) in order to mitigate the remaining risk concerns. The LUCs would remain in effect unless and until mitigation measures were taken to reduce concentrations of lead in soil to levels that would allow for unlimited use and unrestricted exposure on that portion of the site.

Subsequent to the ROD, the USCG would develop a LUCIP prepared as a Remedial Action Work Plan under the FFA. The USCG would submit the LUCIP to EPA for approval and to MADEP for comment. This ROD establishes the specific LUCs performance objectives to be achieved by the USCG under the Selected Remedy. The LUCIP would detail the activities to achieve the performance objectives. The USCG would conduct LUC compliance inspections and provide annual LUC compliance reports to EPA for approval and to MADEP for comment. The LUCs would consist of the following:

- Institutional Controls—The USCG would implement Institutional Controls in the form of a USCG Instruction (Section 2.12.2.2.3) delineating the property use restrictions on the Buoy Depot property, while the property was controlled by the USCG, and deed restrictions in the event of any transfer of the Buoy Depot property. These controls would prohibit future uses of the Buoy Depot property for which lead and paint chips in soil might be unacceptable. As detailed in Section 2.12.2.2.1 of this ROD, these uses would include residential uses, certain recreational uses, agricultural use, uses involving facilities with children under the age of six such as daycare centers or playgrounds, or use as wildlife habitat without further evaluation. The Institutional Controls would remain in effect unless and until mitigation measures were taken to reduce lead concentrations in soil to levels that allowed for unlimited use and unrestricted exposure on the property. The Institutional Controls would be implemented in accordance with the LUCIP.
- Engineering Controls—The USCG would implement Engineering Controls on the Buoy Depot property to prevent unauthorized access and manage potential migration of soil from the buoy storage area to the drainage swale and wetland on adjacent Navy property. These Engineering Controls would include continued operation and maintenance (O&M) of a stormwater control system, facility fencing and gates, soil management procedures for operations or construction activities that could disturb soil in the buoy storage area, and procedures for managing the future refurbishment of those limited number of buoys with residual lead-based paint coating. The USCG would submit the O&M Plan for the

stormwater control system to EPA for approval and to MADEP for comment. The O&M Plan would be incorporated into the LUCIP by reference. The buoy and soil management procedures would be outlined in the LUCIP. Upon approval of the LUCIP, the USCG would issue a USCG Instruction mandating these Engineering Controls.

The Engineering Controls would remain in effect unless and until mitigation measures were taken to reduce concentrations of lead in soil to levels that allowed for unlimited use and unrestricted exposure on the property. If the property were transferred in the future to another entity by deed, then the USCG would continue to implement the Engineering Controls (via deed restrictions) unless and until mitigation measures were taken to reduce concentrations of lead in the soil to levels that allow for unlimited use and unrestricted exposure on the property.

The EE/CA (EA 2002) indicated that a "Facility Management Plan" would be developed and implemented to track and manage the future handling of those few buoys with residual lead-based paint coating. Also, the Facility Management Plan proposed in the EE/CA was to include procedures for managing soil in the buoy storage area during construction or other activities that could result in soil disturbance. In accordance with this ROD, these procedures would be provided in the LUCIP, rather than in a separate Facility Management Plan as noted in the EE/CA.

Long-Term Monitoring

Alternative 2 includes Long-Term Monitoring to ensure that the remedy remains effective. During the RI and subsequent sampling events, elevated concentrations of some COCs (metals, primarily lead) were found in the swale and wetland located adjacent to the Buoy Depot facility. The USCG conducted a NTCRA to address contaminated soil in the swale and wetland area and restored those areas to a condition suitable for unlimited use and unrestricted exposure (Section 2.4). Under the NTCRA, the USCG also installed a new stormwater management system in the buoy storage area to reduce the potential for eroded soil from the Buoy Depot property to reach the swale and wetland via overland runoff. Lead and paint chips would remain in surface soil of the buoy storage area. Therefore, Alternative 2 includes Long-Term Monitoring that would verify that the system functioned properly and confirm that COCs were not bypassing the stormwater sediment trap and adversely impacting the swale and wetland area.

The USCG would conduct long-term monitoring of the surface soil in the stormwater drainage swale and downstream wetland area located on adjacent property controlled by the Navy, as well as of the material captured by the new stormwater control system located on Buoy Depot property, to ensure the long-term effectiveness of the remedy for protecting human health and the environment. The USCG would develop a LTMP as part of the Remedial Action Work Plan subsequent to the ROD and would submit it to EPA for approval and to MADEP for comment.

The LTMP would specify factors such as the number of samples required, their locations, the analytical parameters, and the sampling frequency. At least once prior to the first Five-Year Review, the USCG would conduct surface water sampling in the swale and wetland, to the extent practicable, and an additional round of groundwater sampling at the Site for target COCs. Prior to the first Five-Year Review, the USCG would collect additional sediment samples from the stormwater drainage swale in support of the NTCRA Completion Report (Nobis 2006).

Five-Year Reviews

Under Alternative 2, the environmental conditions on the Buoy Depot property would be suitable for the continued industrial use by the USCG, but would not be suitable for unlimited use and unrestricted exposure (*e.g.,* residential use). The risk concerns associated with lead and paint chips in surface soil of the buoy storage area would remain. Therefore, in accordance with CERCLA and the NCP, the USCG would conduct Five-Year Reviews of the Site to assess the long-term effectiveness of Alternative 2 for the protection of human health and the environment. The USCG would submit the Five-Year Review report to EPA for approval and to MADEP for comment. The Five-Year Review would evaluate the results of the monitoring program and the effectiveness of the LUCs (*e.g.*, LUCs compliance reports). The Five-Year Reviews would be conducted until the Buoy Depot portion of the Site was deemed to be suitable for unlimited use and unrestricted exposure (*i.e.*, unless and until mitigation measures were taken to reduce concentrations of lead in soil to levels that allow for unlimited use and unrestricted exposure). Although the USCG has already remediated the swale and wetland portion of the Site to residential standards and has achieved ecological remediation goals through the NTCRA (*i.e.*, suitable for unlimited use and unrestricted exposure), the Five-Year Reviews would include evaluations of the monitoring results from those areas as part of the evaluation of the effectiveness of the Engineering Controls for preventing the overland runoff of lead from buoy storage area surface soil to the adjacent areas.

2.10.3 Alternative 3 – Excavation with Offsite Disposal

Description

To supplement the removal actions already completed (Section 2.2.2), Alternative 3 includes the following additional activities to achieve RAOs at the USCG Buoy Depot Site:

- Excavation of surface soil from the buoy storage area, and;
- Disposal of excavated materials at an offsite, permitted landfill/treatment, storage, or disposal facility (TSDF).

Following successful implementation of the specified actions, the Buoy Depot Site would be rendered suitable for unlimited use and unrestricted exposure. No unacceptable risks to human health or the environment would remain, and the remaining risk concerns (Section 2.7.1) would

be mitigated. No LUCs, monitoring, or Five-Year Reviews would be required under Alternative 3. Further details of the components of Alternative 3 are presented below and in Section 2.12.2 of this ROD.

Excavation

Alternative 3 specifies the excavation of the top 6 in. of surface soil from across the buoy storage area (approximately 126,000 ft^2, or 2.9 acres). This would result in the removal of approximately 2,333 cubic yards (yd^3) of soil.[4]

Following excavation from the buoy storage area, confirmatory samples would be collected and analyzed for lead content prior to backfilling and restoration. Grab samples would be collected from the surface soil centered on a 30-ft grid (*i.e.,* at a frequency of one sample per 900 ft^2), as well as at 50 ft intervals along the outer excavation perimeter. Excavation would be expanded in a particular area if the confirmatory samples from that area were found to contain lead in excess of 400 mg/kg, which is the value predicted by the IEUBK Lead Model to represent a safe exposure level for resident children.

Offsite Disposal

Prior to transportation for offsite disposal, the excavated soil would be stockpiled into roll-offs. Samples would be collected from the stockpiled soil at a frequency of one per roll-off. Each roll-off sample would be a composite of several locations within that roll-off. The samples would be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals for purposes of waste characterization. The excavated soil would then be transported offsite to a permitted landfill or TSDF for final disposal. Some of the material might be suitable for use as a daily cover at a solid/municipal waste landfill, depending on waste characterization results.

After excavation, the locations would be backfilled with clean fill purchased from an offsite source and then compacted and graded. Finally, the buoys and other stored equipment would be returned.

2.11 SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

Section 121(b)(1) of CERCLA requires that the USCG consider several factors in its assessment of alternatives for the Buoy Depot Site. In addition, the NCP articulates nine evaluation criteria to be used in assessing the individual remedial alternatives.

The USCG conducted a detailed analysis of the alternatives using the nine evaluation criteria in order to select a Site remedy. The following is a summary of the comparison of each

4 The total volume targeted for removal under this alternative may differ from 2,333 yd^3, because some surface soil has already been removed as part of the stormwater system construction under the NTCRA. The actual final volume would also vary depending on the results of confirmatory sampling following excavation.

alternative's strength and weakness with respect to the nine evaluation criteria. These criteria are summarized as follows:

Threshold Criteria

The two threshold criteria described below must be met in order for the alternatives to be eligible for selection in accordance with the NCP:

1. **Overall protection of human health and the environment.** This criterion addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. **Compliance with ARARs.** This criterion addresses whether or not a remedy will meet all federal environmental and more stringent state environmental and facility siting standards, requirements, criteria, or limitations (unless a waiver is invoked).

Primary Balancing Criteria

The following five criteria are utilized to compare and evaluate the elements of one alternative to another that meet the threshold criteria:

3. **Long-term effectiveness and permanence.** This criterion assesses alternatives for the long-term effectiveness and permanence they afford, along with the degree of certainty that they will prove successful.

4. **Reduction of toxicity, mobility, or volume through treatment.** This criterion addresses the degree to which alternatives employ recycling or treatment that reduces toxicity, mobility, or volume, including how treatment is used to address the principal threats posed by the Site.

5. **Short-term effectiveness.** This criterion addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup goals are achieved.

6. **Implementability.** This criterion addresses the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

7. **Cost.** This criterion includes estimated capital and O&M costs, as well as present-worth costs.

Modifying Criteria

The modifying criteria are used for the final evaluation of remedial alternatives. These criteria are considered after the USCG has received public comments on the RI/FS and Proposed Plan:

8. **State acceptance.** This criterion addresses the state's position and key concerns related to the preferred alternative and other alternatives, and the state's comments on ARARs (or the proposed use of waivers).

9. **Community acceptance.** This criterion addresses the public's general response to the alternatives described in the Proposed Plan and RI/FS report.

Following the detailed analysis of each individual alternative, a comparative analysis focusing on the relative performance of each alternative against the nine criteria was conducted. This comparative analysis can be found in Section 4.6 and Tables 4-4 and 4-5 of the FS, and attached to this ROD as Tables 2-11 and 2-12.

The sections below present the nine criteria and a brief narrative summary of the alternatives and their relative strengths and weaknesses, based on the detailed and comparative analysis presented in the FS. The three alternatives are as follow:

- Alternative 1 – No Further Action.
- Alternative 2 – Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews.
- Alternative 3 – Excavation with Offsite Disposal.

2.11.1 Overall Protection of Human Health and the Environment

Alternatives 2 and 3 would be protective of human health and the environment, whereas Alternative 1 would not be protective of human health and the environment under all possible reuse scenarios. Alternative 3 is somewhat more protective than Alternative 2.

The HHRA demonstrated that the current environmental conditions are suitable for continued commercial/ industrial use of the Buoy Depot property. The USCG has no plans to transfer the Buoy Depot property and plans to continue the existing facility operations into the future. In that sense, the three Alternatives are equally protective with respect to existing Buoy Depot operations. Alternative 3 would be the most protective of human health because the Site would be remediated to a level that allows for unlimited use and unrestricted exposure. The remaining human health risk concerns for a hypothetical residential reuse scenario (Section 2.7.1) would be mitigated through the removal of soil with lead at concentrations above the 400 mg/kg IEUBK

value predicted to represent a safe exposure level of lead for resident children (the most sensitive receptor evaluated), and through the removal of paint chips in soil. Alternative 2 mitigates the associated human health risk concern through LUCs that include a prohibition on future residential reuse of the Buoy Depot property.

The identified unacceptable ecological risks associated with metals (primarily lead) in the soil of the drainage swale and wetland already has been mitigated through the NTCRA (Section 2.2.2), which rendered that area suitable for unlimited use and unrestricted exposure. Alternative 3 would offer the most additional protection for ecological receptors through the removal of the remaining potential source area of COCs for the ecological habitat (surface soil of the buoy storage area). Alternative 2 instead specifies LUCs (which include Engineering Controls) as well as Long-Term Monitoring and Five-Year Reviews to ensure that the swale and wetland are protected over time (*e.g.,* by maintaining and verifying the effectiveness of the newly installed stormwater control system). Alternative 1, however, lacks provisions to ensure the continued protection of ecological receptors in the swale and wetland areas.

2.11.2 Compliance with Applicable or Relevant and Appropriate Requirements

Section 121(d) of CERCLA requires that remedial actions at CERCLA sites comply with legally applicable or relevant and appropriate federal and state requirements, standards, criteria, and limitations, which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA Section 121(d)(4).

Applicable requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address hazardous substances, the remedial action to be implemented at the site, the location of the site, or other circumstances present at the site. Relevant and appropriate requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law which, while not applicable to the hazardous materials found at the site, the remedial action itself, the site location, or other circumstances at the site, nevertheless address problems or situations sufficiently similar to those encountered at the site that their use is well-suited to the site.

Compliance with ARARs is achieved when a remedy meets all of the ARARs of these federal and state environmental statutes or provides a basis for a waiver of same.

To Be Considered (TBC) guidance documents which pertain to the presence of COCs were identified for the three alternatives. Alternatives 2 and 3 would mitigate the identified remaining risk concerns, whereas Alternative 1 would not. Alternatives 2 and 3 would be conducted in compliance with ARARs that specifically address site location and actions. No ARARs that specifically address site location or actions were identified for Alternative 1 because no actions are specified. Further description of ARARs for the Selected Remedy is presented in Appendix D.

2.11.3 Long-Term Effectiveness and Permanence

Alternatives 2 and 3 would be effective and permanent in the long term, whereas Alternative 1 would not be effective and permanent in the long term and would not achieve RAOs.

The HHRA demonstrated that the current environmental conditions are suitable for continued commercial/ industrial use at the Buoy Depot. The USCG has no plans to transfer the Buoy Depot property and plans to continue the existing facility operations into the future. In that sense, the three Alternatives are equally effective for facilitating the continuance of the Buoy Depot operations. However, Alternative 3 would be the most effective for mitigating the remaining risk concerns associated with lead and paint chips in soil of the buoy storage area with respect to a hypothetical future reuse scenario (Section 2.7.1). Under Alternative 3, the soil in question would be removed and replaced with clean fill material. Alternative 2 would also be effective for mitigating the remaining risk concerns for a future residential reuse scenario by prohibiting future residential reuse. LUCs would be implemented in accordance with the LUCIP and their effectiveness over the long term would be assured through the periodic inspection and reporting requirements outlined in the LUCIP, and through the Five-Year Reviews. Alternative 1 includes no provisions to address the remaining risk concerns for a residential reuse scenario.

The erosion and overland runoff of surface soil from the buoy storage area has been identified as the remaining potential source of COCs to the ecological receptors in the swale and wetland habitats. Alternative 3 would effectively mitigate this concern through the removal of the surface soil. Alternative 2 would provide for Long-Term Monitoring of the swale and wetland to ensure that the runoff from the buoy storage area did not adversely impact those areas in the future. Further impact would be unlikely to occur, since the Engineering Controls would be in place. Alternative 1 fails to ensure the continued protection of ecological receptors over the long term.

2.11.4 Reduction of Toxicity, Mobility, or Volume through Treatment

None of the alternatives specify treatment, although Alternative 3 removes elevated concentrations of residual lead and paint chips from surface soil through excavation and offsite disposal. Alternative 2 uses LUCs and monitoring to address the remaining risk concerns associated with the toxicity and volume of COCs and would ensure that there are no unacceptable future uses of the property. The new stormwater control system installed in 2004/2005 has reduced the mobility of lead and paint chips in surface soil. Alternative 1 includes no additional actions to address the remaining risk concerns associated with the toxicity, mobility, and volume of COCs.

2.11.5 Short-Term Effectiveness

Alternatives 2 and 3 have similar effectiveness in the short term in that RAOs would be achieved quickly (anticipated within 1 year). Alternative 1 would not achieve RAOs. Alternative 2 is

somewhat more effective than Alternative 3 because it generates fewer, less intensive short-term disruptions to Buoy Depot operations and to the local community. Under Alternative 2, the existing operations would continue with no additional interruptions or new risks. Under Alternative 3, no new risks would be generated from the excavation activities, provided that proper Personal Protective Equipment (PPE) and successful Engineering Controls (*e.g.,* dust suppression) are used by the remediation workers. Although likely to be minor, Alternative 3 would generate some dust and noise during buoy relocation, excavation, and site restoration activities. Alternative 3 would cause a temporary increase in truck traffic along Trotter Road (a short road also used for accessing the commuter rail station) and Route 18 (an already congested, main roadway running through several towns including Weymouth). This truck traffic would be associated with the removal of impacted soil and the delivery of clean soil from an offsite source. Based on a removal and replacement of approximately 2,333 yd^3 of soil, well over 100 truckloads of soil would be transported to/from the Buoy Depot along Route 18. Commercial businesses, residential homes, and a hospital are located along Route 18 between the Buoy Depot and the nearest highway (Route 3). Alternative 3 would cause a temporary disruption of USCG buoy refurbishment activities during remedial activities, because the equipment present in the storage area would have to be relocated temporarily so that the underlying soil could be excavated and replaced.

2.11.6 Implementability

In a technical sense, Alternative 1 would be the easiest alternative to implement because it includes no remedial components or controls. Alternative 1 also would not interfere with the current property use or any required future remedial actions. However, this alternative would not be implementable because the remaining risk concerns would not be addressed. Alternative 2 is readily implementable because the storm water control system and most of the other Engineering Controls are already in place. Although excavation is also a standard option for which the required equipment and services are readily available, Alternative 3 would be the most difficult of the remedial alternatives to implement because of the level of effort and amount of coordination required at the active facility. Excavation activities would be complicated by the presence of equipment in the storage area (*e.g.*, large, multi-ton buoys). Unless an offsite location can be identified to temporarily store the equipment, excavation activities may have to be conducted in stages across the storage area so that buoys from each staging area could be shifted as space allows. Currently, little free space is available in the storage area. Alternative 3 also would require greater coordination with facility operators, regulatory agencies, transportation authorities, and the offsite TSDF. Alternative 3 also would require dust control measures for the protection of potential nearby receptors.

2.11.7 Cost

In accordance with CERCLA guidance, the preliminary cost estimates developed during the FS for each alternative are anticipated to be between -30 and +50 percent of the actual costs for completing the remedial actions. For purposes of comparison, cost estimates are compared using

either the anticipated period of performance or a default, hypothetical 30-year period of performance, and assuming standard discount rates in accordance with EPA guidance (USEPA 2000). Detailed cost estimates of the three remedial alternatives were presented in Appendix B of the FS. The costs were subsequently updated as a result of discussions with EPA and MADEP after the FS was finalized. The updated cost summary for the Selected Remedy is presented in Table 2-13 of this ROD.

The Net Present Worth costs of Alternatives 1 through 3 are approximately $51,000 (over a 30-year evaluation period), $360,000 (over a 30-year evaluation period), and $871,000 (completed within 1 year), respectively. The costs of Alternatives 1 and 2 would vary depending on the actual period of performance. The cost of Alternative 3 would vary depending on the amount of facility disruption and the final extent of excavation.

The overall cost of Alternative 3 (Excavation with Offsite Disposal) is substantially higher than the other alternatives due to the capital cost of excavating surface soil from the operational buoy storage area for purposes of rendering the entire Site suitable for unlimited use and unrestricted exposure and unlimited exposure. Alternative 3 would have no O&M costs. Alternative 2 has comparatively low capital costs ($45,000), as they include only LUCs, but greater long-term O&M costs due to the long-term monitoring program.

Alternative 2 is the most cost-effective for the USCG since the Buoy Depot property will continue to be used for industrial purposes.

2.11.8 State Acceptance

See Appendix A of this ROD.

2.11.9 Community Acceptance

During the public comment period, the community expressed its support for the Selected Remedy. See Section 2.3 and Appendix F of this ROD for further details.

2.12 THE SELECTED REMEDY

2.12.1 Summary of the Rationale for the Selected Remedy

The Selected Remedy for the Buoy Depot Site is Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews. Once the Selected Remedy is in place, all necessary remedial actions will have been taken to ensure protection of human health and the environment at the Buoy Depot Site, including the portion of the Site on adjacent Navy property, given the successful completion of the USCG's TCRA and a NTCRA to address the principal threat wastes at the Site. The Selected Remedy effectively addresses the remaining low-level threat wastes at the Site.

As described in the FFA, the Buoy Depot Site was divided into three AOCs when the FFA was established. The USCG has addressed all three AOCs through a combination of removal and remedial actions. The completion of the TCRA and the NTCRA, along with implementation of the Selected Remedy, provides a whole site remedy under this ROD.

AOC 1 (Building and Adjacent Areas to the South) requires No Further Action.

- The USCG conducted a TCRA for lead in soil around a former dust collection system, thereby removing the highest concentrations of lead in surface soil on the Buoy Depot property. The contaminated soil was disposed at an offsite, licensed facility.
- The USCG completed a NTCRA to clean and decommission the building's floor drain system, thereby removing the highest concentrations of COCs in the subsurface on Buoy Depot property.

AOC 2 (Septic System Tank, Piping, and Leach Field) requires No Action.

- The USCG determined through the RI that the septic system only received sanitary waste and was not a source of COPCs at the Site.

AOC 3 (Buoy, Equipment, and Scrap Metal Storage Area) requires Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews.

- The USCG's NTCRA excavated metals-contaminated soil that posed unacceptable human health and ecological risks in the drainage swale and wetlands on the Navy property that abuts the Buoy Depot. The USCG achieved cleanup goals and restored the swale and wetlands to allow for unlimited use and unrestricted exposure of those areas.
- The current and planned future use of the USCG Buoy Depot property is industrial. The USCG's HHRA demonstrates that the environmental conditions at the Buoy Depot are suitable for continued industrial operations. However, they may not suitable for all potential future uses due to risk concerns for lead in surface soil and paint chips under certain hypothetical residential, recreational, open space, or wildlife habitat reuse scenarios.
- The USCG and EPA have determined that LUCs are required as part of the CERCLA Remedial Action to protect human health and the environment from actual or threatened releases of lead and other paint-related constituents. Based on the USCG's completed investigations (including risk assessments) and removal actions, the current environmental conditions at the Buoy Depot are suitable for continued commercial/industrial operations. However, residual lead concentrations and paint chips (potentially lead-based) in surface soil of the buoy storage area may not be acceptable for

some prospective future uses (*e.g.,* residential). The USCG will implement LUCs to address the remaining risk concerns associated with lead and paint chips in soil.

- As part of the LUCs, the USCG will establish Institutional Controls. These Institutional Controls will prohibit certain non-commercial/industrial uses of the USCG Buoy Depot property that may be of concern (see Section 2.12.2.2.1) due to the remaining risk concerns (see Section 2.7.1.4). Institutional Controls will be used to ensure that the prohibitions remain in effect unless and until mitigation measures are taken to reduce lead concentrations in soil to levels that allow for unlimited use and unrestricted exposure on the property. Institutional Controls will be implemented through a USCG Instruction delineating property use restrictions, statutory access rights to the property under Superfund, as well as, in the case of property transfer, deed restrictions including prohibition of identified residential and related uses that could pose an unacceptable risk to human health and the environment (see section 2.12.2.2.1), continued implementation of Engineering Controls, and access rights to the property.
- As part of the LUCs, the USCG will implement Engineering Controls to prevent unauthorized access to the Buoy Depot property and to manage the potential migration of soil from the buoy storage area to the drainage swale and wetland on adjacent Navy property. These Engineering Controls will include O&M of a stormwater control system, facility fencing and gates, soil management procedures for operations or construction activities that could disturb soil in the buoy storage area, and procedures for managing the future refurbishment of those limited number of buoys with residual lead-based paint coating. The USCG has submitted the O&M Plan for the stormwater control system to EPA for approval and to MADEP for comment. The O&M Plan will be incorporated into the LUCIP (Section 2.12.2.2.3) by reference. The buoy and soil management procedures will be outlined in the LUCIP. Upon approval of the LUCIP, the USCG will issue a USCG Instruction mandating these Engineering Controls. The Engineering Controls will remain in effect unless and until mitigation measures are taken to reduce concentrations of lead in the soil to levels that allow for unlimited use and unrestricted exposure on the property. If the property is transferred in the future to another entity by deed, then the USCG would continue to implement the Engineering Controls (via deed restrictions) unless and until mitigation measures were taken to reduce concentrations of lead in the soil to levels that allow for unlimited use and unrestricted exposure on the property.
- The USCG will conduct Long-Term Monitoring pursuant to a LTMP and will submit the results to EPA for approval and MADEP for comment to ensure that the remedy remains effective.
- The USCG will conduct Five-Year Reviews to ensure the long-term effectiveness of the Selected Remedy for protecting human health and the environment. The Five-Year Reviews will be conducted for as long as the Site conditions do not allow for unlimited use and unrestricted exposure (*i.e.,* for as long as LUCs are required).
- Operations at the USCG Buoy Depot Site have not adversely affected groundwater conditions, and no groundwater remediation is required at this Site.

2.12.2 Description of Remedial Components

The Selected Remedy for the Site is Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews. The description that follows expands on the details of the Selected Remedy that were presented in Section 2.10.2.

2.12.2.1 Remedy Description

To supplement the removal actions already completed (Section 2.2.2), Alternative 2 includes the following additional activities to achieve Response Action Objectives (RAOs) at the USCG Buoy Depot:

- Implement LUCs for the USCG Buoy Depot property that include (1) Institutional Controls to prohibit current and future non-commercial/industrial uses of the Buoy Depot property (Section 2.12.2.2.1), and (2) Engineering Controls to prevent the migration of contaminated soil from the buoy storage area (Section 2.12.2.2.2).
- Conduct Long-Term Monitoring of the surface soil in the stormwater drainage swale and downstream wetland area on adjacent property controlled by the Navy to ensure the long-term effectiveness of the remedy for protecting human health and the environment (Section 2.12.2.3).
- Conduct Five-Year Reviews in accordance with CERCLA Section 121(c), as amended, to assure the continued effectiveness of the Selected Remedy (Section 2.12.2.4).

Once the Selected Remedy is in place, all necessary actions will have been taken to ensure protection of human health and the environment at the Buoy Depot Site. The current environmental conditions are suitable for the continuation of the USCG's industrial operations, and the remaining risk concerns identified in Section 2.7.1.4 would be addressed by the components of the Selected Remedy. Further details are presented below.

2.12.2.2 Land Use Controls

In general, the term Land Use Controls or LUCs in regard to real property on federal facilities should be broadly interpreted to mean any restriction or control, arising from the need to protect human health and the environment, that limits use of and/or exposure to any portion of that property, including water resources. This term encompasses Institutional Controls, such as those involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. It also includes Engineering Controls, which are engineered instruments such as physical barriers or constructed/operational control systems that help minimize the potential for human or ecological exposure to site risks by limiting exposure pathways. The LUCs for a facility will provide a blueprint for how its property should be used in order to maintain the level of protectiveness that one or more remedial/corrective actions were designed to achieve.

Under this ROD, the LUCs (Institutional Controls and Engineering Controls) will apply to the USCG Buoy Depot property portion of the Site (Figure 2) in order to address the remaining risk concerns associated with residual lead and paint chips in surface soil of the buoy storage area.

2.12.2.2.1 Institutional Controls

In general, Institutional Controls are non-engineering measures designed to prevent or limit exposure to hazardous substances left in place at a site, or assure effectiveness of the chosen remedy. Institutional Controls are usually, but not always, legal controls, such as easements, restrictive covenants, and zoning ordinances. The USCG will establish Institutional Controls for the USCG Buoy Depot property portion of the Site to prohibit uses that may pose unacceptable risks under CERCLA guidelines. Institutional Controls will be in the form of a USCG Instruction (Section 2.12.2.2.3) delineating property use restrictions, statutory access rights to the property under Superfund, as well as, in the case of property transfer of the Buoy Depot property, deed restrictions including prohibition of identified residential and related uses that could pose an unacceptable risk to human health and the environment, continued implementation of Engineering Controls, and access rights to the property.

The performance objective for the Institutional Controls to be implemented for the Buoy Depot property is as follows:

- To prevent the identified residential and related uses (*i.e.*, the non-commercial/industrial uses and activities defined below) that could pose an unacceptable risk to human health and the environment.

In order to meet the above performance objective, the Institutional Controls will prohibit the following specific uses of the Buoy Depot property:

1. Residential use and/or residential redevelopment of the property (*e.g.*, private homes, condominiums, apartments, trailer parks).

2. Use of the property for facilities frequented by children under the age of six (*e.g.*, daycare, elementary schools, playgrounds, community center, recreation).

3. Agricultural use, including commercial farming and small-scale gardening, intended to provide edible foods or animal feedstock operations without further risk evaluation and approval by EPA.

4. Redevelopment for use as a wildlife habitat or parkland without further evaluation of the potential risks to ecological receptors and approval by EPA.

5. Excavation and removal of soil unless conducted in accordance with EPA-approved soil management procedures (to be submitted as part of the LUCIP).

These components will be integrated into a LUCIP (Section 2.12.2.2.3) in order to capture these administrative requirements associated with the Selected Remedy.

2.12.2.2.2 Engineering Controls

In general, Engineering Controls are engineered instruments such as physical barriers or constructed/operational control systems that help minimize the potential for human or ecological exposure to site risks by limiting exposure pathways. For the Buoy Depot property, the USCG will implement and maintain Engineering Controls on the Buoy Depot property to prevent unauthorized access and manage potential migration of soil from the buoy storage area to the drainage swale and wetland on adjacent Navy property. These Engineering Controls include continued operation and maintenance (O&M) of the stormwater control system, facility fencing and gates, soil management procedures for operations or construction activities that could disturb soil in the buoy storage area, and procedures for managing the future refurbishment of those limited number of buoys with residual lead-based paint coating. The USCG has submitted the O&M Plan for the stormwater control system to EPA for approval and to MADEP for comment. The O&M Plan will be incorporated into the LUCIP by reference. The buoy and soil management procedures will be outlined in the LUCIP. Upon approval of the LUCIP, the USCG will issue a USCG Instruction mandating these Engineering Controls.

The specific performance objectives for the Engineering Controls for the Buoy Depot property are as follow:

1. Prevent unauthorized access of the Buoy Depot property.

2. Prevent the migration of surface soil or paint chips from the buoy storage area via stormwater runoff onto adjacent property.

3. Manage surface soil of the buoy storage area through Best Management Practices (BMPs) in a manner that is protective of human health and the environment.

4. Manage buoys with residual lead-based paint coating through procedures including BMPs.

The USCG will implement the following actions to meet the performance objectives identified for the Engineering Controls:

1. Maintain the existing facility perimeter fencing and security gates to ensure no unauthorized access occurs. Perform periodic inspections of the fence/gate integrity. Document and repair deficiencies as soon as possible.

2. Maintain the new stormwater control system in accordance with the *Operations and Maintenance Manual for Stormwater Management System* (Nobis 2005), as approved by EPA and commented on by MADEP. The stormwater control system includes earthen berms, catch basins, an infiltration trench, and a particulates trap (Vortechs unit) to prevent the migration of soil particulates/paint chips from the Buoy Depot property via overland stormwater runoff. O&M will include inspections, upkeep, repairs, cleanouts, and documentation/reporting requirements.

3. Develop soil management procedures in accordance with BMPs for facility activities that include the disturbance of soil in the buoy storage area (*e.g.*, regrading activities, utility repairs, excavation). These procedures will address worker safety, dust control, stockpiling, and any required sampling and analysis. The procedures will require the proper testing, handling, and reporting of any soil that is to be disposed offsite.

4. Develop procedures in accordance with BMPs to manage the limited number of buoys with residual lead-based paint coating that may need to be refurbished at the Buoy Depot. Include procedures for onsite buoy scrapping operations to specify requirements for the containment and cleanup of materials generated from scrapping operations.

5. Develop reporting procedures relating to the Engineering Controls to be kept on file at the Buoy Depot for use by the USCG for the preparation of the LUC compliance report (see Section 2.12.2.2.7).

6. Issue a USCG Instruction mandating above.

These components will be integrated into a LUCIP (Section 2.12.2.2.3) in order to capture these engineering requirements associated with the Selected Remedy.

2.12.2.2.3 Land Use Control Implementation Plan (LUCIP)

The USCG will submit a LUCIP within ninety (90) days of signature of the ROD to EPA for approval and to MADEP for comment. The LUCIP will be considered a component of the Remedial Action Plan for the purposes of the FFA and, therefore, will be established as a primary document under the FFA.

The LUCIP will be the subject of a USCG Instruction from the USCG Integrated Support Command Boston (ISCB). The Instruction is an agency directive that prescribes authority and assigns responsibility for continued compliance with the LUCIP. The Instruction communicates the USCG policies and practices to ensure implementation of the LUCIP. Non-compliance events will be addressed through the USCG chain-of-command.

The LUCIP will specifically describe short- and long-term implementation actions, including both Institutional Controls (Section 2.12.2.2.1) and Engineering Controls (Section 2.12.2.2.2), to

Control property use and exposure to lead. The LUCIP will also describe the inspection and reporting process (Section 2.12.2.2.7) to ensure that the LUC performance objectives are met, as well as the USCG procedures for implementing the LUCs for the Buoy Depot Site.

In identifying the activities necessary to demonstrate compliance with the LUCs, the LUCIP will incorporate the O&M Plan for the stormwater control system (by reference) as well as the procedures for maintaining fencing and gates, the management of soil in the buoy storage area, and the management of buoys with residual lead-based paint coating that may need to be refurbished.

Specifically, the LUCIP will include the following elements:

1. Duration of the LUCs.
2. Actions required to implement the LUCs.
3. Notification requirements.
4. LUC compliance inspections and reporting.
5. Provisions for EPA and MADEP participation in LUC compliance activities.
6. Enforcement activities, if necessary, to ensure compliance with the LUCs.
7. Provisions for continuation of the LUCs in the event of property transfer.
8. Provisions for Modifications to LUCs.
9. Provisions for Termination of LUCs.

2.12.2.2.4 Duration of LUCs

The USCG will implement the LUCs described in Sections 2.12.2.2.1 (Institutional Controls) and 2.12.2.2.2 (Engineering Controls) within six (6) months. The USCG will implement the LUCs unless and until mitigation measures are taken to reduce concentrations of lead and paint chips in soil in the buoy storage area to levels that allow for unlimited use and unrestricted exposure of the property (see also Section 2.12.2.2.11).

2.12.2.2.5 Actions to Implement the LUCs

The actions to implement the LUCs described in Sections 2.12.2.2.1 (Institutional Controls) and 2.12.2.2.2 (Engineering Controls) include preparation of the LUCIP described in Section 2.12.2.2.3 (with EPA approval and MADEP comment), preparation of the USCG Instruction, and implementation of the procedures described in the LUCIP, notifications, inspections and reporting, as described in the following sections.

2.12.2.2.6 Notification Requirements

The USCG will notify EPA and MADEP of any activities that are inconsistent with LUC objectives or specific restrictions, or that interfere with the effectiveness of the LUCs for protecting human health and the environment. The USCG will notify EPA and MADEP as soon as practicable, but no longer than ten (10) days after discovery of the activity that is inconsistent

with or could interfere with the effectiveness of the LUCs. Further, the USCG will notify EPA and MADEP regarding how the USCG has addressed or will address these activities within ten (10) days of sending EPA and MADEP notification of the activities. To the extent practicable, the USCG will notify EPA and MADEP forty-five (45) days in advance of changes to any procedures that could affect the LUCs. The USCG will notify EPA and MADEP within forty-five (45) days in advance of any proposed land use change(s) that would be inconsistent with the LUCs or any other component of the Selected Remedy. The USCG will provide notice to EPA and MADEP at least six (6) months prior to any transfer or sale of the Buoy Depot property, and as further described in Section 2.12.2.2.10.

2.12.2.2.7 LUC Compliance Inspections and Reporting

The USCG will be responsible for implementing, maintaining, reporting on, and enforcing the LUCs both during USCG control of the Buoy Depot property and in the event of property transfer (Section 2.12.2.2.10). LUC compliance inspections and reporting requirements will be detailed in the LUCIP.

The USCG will conduct LUC compliance inspections on a yearly basis, or more frequently at the discretion of the USCG based upon facility activities and/or conditions.
The USCG will document, certify, and maintain records to demonstrate continuous compliance with the LUCs. The USCG will submit annual LUC compliance reports to EPA for approval and to MADEP for comment. The annual LUC compliance reports will evaluate the status of the LUCs and how any LUC deficiencies or inconsistent uses have been addressed. The USCG will also evaluate the information contained in the annual LUC compliance reports as part of the Five-Year Review process (Section 2.12.2.4).

2.12.2.2.8 Provisions for EPA and MADEP Participation

In accordance with CERCLA and the FFA, the USCG will provide EPA and MADEP access to the Buoy Depot property and the opportunity to participate in the USCG's LUC compliance inspections (Section 2.12.2.2.7), including the (1) review of USCG certified annual LUC compliance reports, and (2) opportunity to participate in onsite USCG's LUC compliance inspections. The USCG will provide EPA and MADEP with at least one (1) week's advance notice of any LUC compliance inspection to be conducted.

EPA will monitor the USCG's compliance with the FFA, the ROD, and LUCIP unless and until the concentration of lead in the soil is mitigated to allow for unlimited use and unrestricted exposure. In the event that the Buoy Depot property is transferred to another federal agency or to a non-federal entity, (1) EPA will continue to monitor the USCG's compliance with the FFA, the ROD, and LUCIP and (2) the USCG will remain responsible, pursuant to the FFA, ROD, and LUCIP, for ensuring that the LUCIP continues to be implemented.

2.12.2.2.9 Enforcement of LUCs

EPA may enforce the LUCs, including the provisions of the LUCIP and the other components of the Selected Remedy, both during USCG control of the Buoy Depot property and, in the event of property transfer, under the existing provisions of the USCG Buoy Depot FFA and this CERCLA ROD.

2.12.2.2.10 Property Transfer

The USCG has no plans to transfer the Buoy Depot property and will continue the existing industrial operations. However, the USCG will be responsible for implementing, maintaining, reporting on, and enforcing the LUCs, not only during the period of federal control of the Buoy Depot property, but also in the event the Buoy Depot property is transferred out of federal control. Although the USCG may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the USCG will retain ultimate responsibility for remedy integrity.

The USCG will provide notice to EPA and MADEP at least six (6) months prior to any transfer or sale of the Buoy Depot property, including federal-to-federal transfers, so that EPA and MADEP can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective LUCs. If it is not possible for the USCG to notify EPA and MADEP at least six (6) months prior to any transfer or sale, it will be required that the USCG notify EPA and MADEP as soon as possible but no later than sixty (60) days prior to the transfer or sale of any property subject to LUCs. The USCG will provide a copy of the executed deed or transfer documents to EPA and MADEP.

Any transfer of fee title from the United States will include a CERCLA Section 120(h)(3) covenant that includes a description of the residual lead contamination on the property. The United States is required to include this CERCLA Section 120(h)(3) covenant in the deed for any property upon which any hazardous substances were stored for one year or more, known to have been released, or disposed of.

Any deed prepared for purposes of conveying the property, or any portion thereof, out of federal government control will also include the following restrictions and/or covenants:

- A reservation of access to the property for the USCG and EPA and their respective officials, agents, employees, contractors, and subcontractors for purposes of verifying the effectiveness of the Selected Remedy consistent with the LUCIP, ROD, and FFA.
- Provisions to ensure that the LUCs continue to run with the land and are enforceable by the USCG. Concurrent with any transfer of fee title from the USCG to a transferee, information regarding the LUCs will be communicated in writing to the property owners, MADEP, and local agencies to ensure such agencies can factor such conditions into their oversight and decision-making activities regarding the property.

In the event of any contemplated transfer of the property to a non-federal entity, the USCG will draft one or more deed restrictions (a "deed restriction" means a covenant, easement, servitude, a voluntary Notice of Activity and Use Limitation pursuant to Mass. Gen. Laws Ch. 21E, or any comparable instrument under Massachusetts law) that restrict land use in the manner described in the ROD, *i.e.*, restrictions which impose the ROD's LUCs (institutional and engineering controls). The USCG will submit the proposed deed restrictions to the EPA for approval, and to MADEP for comment, at least 90 days before any transfer. EPA will determine, after consultation with MADEP, whether the proposed deed restrictions are (1) sufficiently restrictive to achieve the requirements of the land use controls described in the ROD, and (2) enforceable under Massachusetts state law. In the event that (1) EPA does not approve the proposed deed restrictions, or (2) if the USCG decides not to pursue a transfer encumbered by such deed restrictions, the USCG will be responsible, prior to transfer of the property, for the remediation of the site to residential use standards. In no event may the USCG transfer the property to a non-federal entity without either (1) EPA approval of deed restrictions guaranteeing the continued enforcement of the LUCs described in the ROD, or (2) remediation of the site to residential use standards.

The deed covenants will run with the land and be enforceable by the USCG by virtue of operation of CERCLA Section 120(h), and the deed itself, which will contain covenants delineating (a) obligations that the grantee comply with all LUCs, and (b) that any subsequent transfer convey the same requirements unless and until mitigation measures are taken to reduce concentrations of lead to levels that allow for unlimited use and unrestricted exposure.

Alternatively, if the property is leased to another entity, the LUCs will be implemented by lease terms no less restrictive than the land use restrictions and controls described in this ROD. These lease terms shall remain in place so long as the property is leased.

The annual LUC compliance report will address whether the LUCs were communicated in any deed, whether the owners, MADEP, and the local zoning board, were notified of the LUCs affecting the Buoy Depot property, and the status of compliance with the LUCs.

2.12.2.2.11 Modification of LUCs

The USCG will not modify the LUCs, LUCs implementation actions, or land use without approval by EPA. The USCG will seek prior concurrence with EPA before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

2.12.2.2.12 Termination of LUCs

The LUCs will remain in effect unless and until mitigation measures are taken to reduce concentrations of lead and lead-based paint chips in the soil of the buoy storage area to levels that allow for unlimited use and unrestricted exposure of the property. At such a time, the USCG

will petition EPA for approval to terminate the LUCs. MADEP will be given the opportunity to comment on the petition to terminate the LUCs. Upon EPA approval, the LUCs and LUCIP will be terminated, and no further monitoring or Five-Year Reviews would be conducted by the USCG.

2.12.2.3 Long-Term Monitoring

The USCG will conduct Long-Term Monitoring (*i.e.*, sampling and analysis) for as long as necessary to demonstrate protectiveness of the remedy. The USCG will specify the scope and performance objectives of the monitoring program in an LTMP to be submitted to EPA for approval and to MADEP for comment as part of the Remedial Action Work Plan following the ROD. Monitoring results will be provided to EPA and MADEP for review on an ongoing basis. If it became apparent during the monitoring program or Five-Year Reviews that the performance criteria established in the LTMP were not being met, then the USCG would take additional actions to ensure that the remedy remained protective of human health and the environment.

The current license agreement with the Navy as to the Navy-controlled property (*i.e.*, swale and wetland) at the site will be terminated at some future date, either by virtue of transfer of the Navy property to a non-federal entity or transfer of control to the USCG. The USCG has requested that the Navy consider transfer of the property to the USCG. If transfer is made to a non-federal entity, access rights for monitoring will be provided under the authority of CERCLA Section 120(h).

The medium to be sampled during the long-term monitoring program is the surface soil in the stormwater drainage swale and downstream wetland area located on adjacent Navy property. As described in the O&M Plan for the stormwater system, material captured by the new stormwater control system (Vortechs unit) will be sampled for disposal characterization, not as part of the LTMP. Conceptually and to the extent practicable, surface water from the drainage swale and/or wetland also will be sampled once prior to each Five-Year Review; however, those areas do not regularly contain standing water or flowing water. As a one time event, and prior to the first Five-Year Review, the USCG also will conduct one round of groundwater sampling for target COCs and will collect additional soil samples from the stormwater drainage swale in support of the NTCRA Completion Report.

The LTMP will specify factors such as the number of samples, their locations, analytical parameters, and sampling frequency. Conceptually, the monitoring program will include the following:

- Annual sampling of surface soil of the swale and downstream wetland area on the portion of the Buoy Depot Site currently controlled by the Navy.

- Analyses of soil samples for the human health (lead) and ecological COCs (arsenic, chromium, copper, lead, nickel, and zinc).
- Analyses of surface water samples for the human health (lead) and ecological COCs (arsenic, chromium, copper, lead, nickel, and zinc). Standing water is rarely present in the remediated drainage swale and wetland area. To the extent practicable, one round of surface water sampling will be performed prior to each Five-Year Review.
- One round of groundwater sampling prior to the first Five-Year Review. Analyses of selected groundwater samples for lead and for the groundwater COCs arsenic and manganese.

Sampling of the material from the Vortechs unit and stormwater system catch basins and analysis for target metal for disposal purposes will be conducted as part of the O&M Plan for the stormwater system.

The scope of the sampling program, such as the number of samples, the sampling frequency, and the target analytes, will have some flexibility so that the scope can be revised over time based on the observed data trends. If data trends over time show that COC concentrations are not rebounding in the swale and wetland, then the scope of the monitoring program may be reduced. Conversely, if COC concentrations in soil of the swale and/or wetland rebound after remediation, then the scope of the monitoring program may be expanded to include additional sampling locations, more frequent monitoring events, or measures such as risk evaluation or more soil removal.

Past sampling data from the RI and supplemental sampling to support the FS have demonstrated that the Buoy Depot has not adversely impacted Site groundwater, and no groundwater remediation is required; therefore, long-term monitoring of groundwater is not required. However, the USCG has agreed with EPA to conduct one additional round of groundwater sampling from selected monitoring wells prior to the first Five-Year Review. Groundwater samples will be analyzed for lead, arsenic and manganese.

The USCG will not abandon the existing groundwater wells at the Site until such time as it is determined that they are no longer needed (at least until after the first Five-Year Review). Further groundwater monitoring will not be conducted unless the USCG and EPA determine that additional sampling is warranted based on the results of the groundwater monitoring round conducted in support of the first Five-Year Review.

Following each sampling event, the USCG will provide a field report to EPA for approval and to MADEP for comment to document the methodologies and results of the sampling event and to compare the results to the available dataset.

2.12.2.4 Five-Year Reviews

The USCG's completed NTCRA has rendered the swale and wetland portion of the Buoy Depot Site on Navy property suitable for unlimited use and unrestricted exposure. The Selected Remedy ensures that the USCG Buoy Depot property portion of the Site remains in continued industrial usage by the USCG, but does not render the property suitable for unrestricted (*e.g.*, residential) usage. The USCG will conduct Five-Year Reviews unless and until mitigation measures are taken to reduce concentrations of lead in soil to levels that allow for unlimited use and unrestricted exposure.

Each review will involve inspections of Site use and abutting property to determine property use, reviews of LUC compliance reports, and analyses of the results of the long-term monitoring program. The USCG will document the results of the Five-Year Review in a report to be submitted to EPA for its approval and to MADEP for comments.

The first Five-Year Review will be held no later than five (5) years following signature of this ROD.

2.12.3 Summary of the Estimated Remedy Costs

Table 2-13 presents a summary of the estimated major capital and annual O&M cost elements for the Selected Remedy. The cost summary includes the major implementation and O&M activities required for components of the Selected Remedy, along with their associated unit and total costs.

For the purpose of cost estimation, a 30-year period of performance is assumed. The total cost will vary depending on the actual period of performance, which could be extended beyond 30 years. Data obtained during the remedial action will be utilized to refine long-term O&M cost estimates during Five-Year Reviews.

The information presented in the cost summary in Table 2-13 is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the design and implementation of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost for the evaluated period of performance.

2.12.4 Expected Outcomes of the Selected Remedy

The USCG's completed NTCRA has already rendered the abutting stormwater drainage swale and wetland suitable for unlimited use and unrestricted exposure. The primary expected outcome of the Selected Remedy is that the Buoy Depot property will continue to be acceptable for industrial operations and that the remaining risk concerns pertaining to lead and paint chips

in surface soil for some hypothetical future use scenarios (*e.g.,* residential) will be effectively mitigated. It is estimated that approximately one (1) year will be required to implement the necessary LUCs and long-term monitoring program to achieve the goals consistent with the Site use. With the completion of the NTCRA, no further Site cleanup is required to allow for the continued industrial use of the Buoy Depot property.

The Selected Remedy will also provide environmental and ecological benefits in that the Engineering Controls and Long-Term Monitoring will ensure that the conditions in the abutting drainage swale and wetland, which were remediated as part of the NTCRA, will remain protective of potential human and ecological receptors.

2.13 STATUTORY DETERMINATIONS

The remedial action selected for implementation at the USCG Buoy Depot Site is consistent with CERCLA and, to the extent practicable, the NCP. The Selected Remedy is protective of human health and the environment, will comply with ARARs, and is cost-effective.

2.13.1 The Selected Remedy is Protective of Human Health and the Environment

The remedy at this Site will adequately protect human health and the environment by eliminating, reducing, or controlling exposures to human and environmental receptors through the completed Removal Actions and the Selected Remedy, which includes Land Use Controls (LUCs) (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews. More specifically, the USCG has already completed a TCRA and a NTCRA (Section 2.2.2) to mitigate the principal threats at the Site. Through the NTCRA, the USCG has rendered the downstream stormwater drainage swale and wetland on Navy property suitable for unlimited use and unrestricted exposure and has constructed a new stormwater management system to prevent the migration of lead and paint chips from the buoy storage area surface soil to any off-property areas. Accordingly, the current environmental conditions pose no unacceptable risks for continued USCG Buoy Depot industrial operations. With the completion of the TCRA and NTCRA, the potential human health risk levels at the Site do not exceed EPA's acceptable risk range of 10^{-4} to 10^{-6} for incremental carcinogenic risk, and potential non-carcinogenic hazards are below a level of concern. The remaining risk concerns (Section 2.7.1) for some hypothetical future uses (*e.g.,* residential) associated with lead and paint chips in surface soil of the buoy storage area will be mitigated through the implementation of LUCs. The Long-Term Monitoring and Five-Year Reviews will be conducted to verify that the Selected Remedy is protective of human health and the environment. Groundwater quality is consistent with background conditions and no groundwater remedial action is required. The long-term monitoring program will include one additional round of groundwater monitoring to verify this conclusion. Implementation of the Selected Remedy will not pose any unacceptable short-term risks or cause any cross-media impacts.

2.13.2 The Selected Remedy Complies with ARARs

The Selected Remedy will comply with all federal and any more stringent state ARARs that pertain to the Site. A discussion of why these requirements are applicable or relevant and appropriate may be found in Sections 2.2 and 4.4.3 of the FS Report, and are summarized in Appendix D of this ROD.

2.13.3 The Selected Remedy Is Cost-Effective

In the USCG's judgment, the Selected Remedy is cost-effective because the remedy's costs are proportional to its overall effectiveness, in accordance with 40 CFR 300.430(f)(1)(ii)(D). This determination was made by evaluating the overall effectiveness of those alternatives that satisfied the threshold criteria (*i.e.,* that were protective of human health and the environment and complied with all federal and any more stringent ARARs). Overall effectiveness was evaluated by assessing three of the five balancing criteria: long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness, in combination. The overall effectiveness of each alternative was then compared to the alternative's costs to determine cost-effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs and hence represents a reasonable value for the money to be spent.

Of the three remedial alternatives developed in the FS (Section 2.10), Alternative 2 (the Selected Remedy) and Alternative 3 (Excavation and Offsite Disposal) satisfied the two threshold criteria and were retained for further consideration. A similar effectiveness for Alternatives 2 and 3 was found from a consideration of the five balancing criteria, although Alternative 3 had some additional long-term advantages in that the whole Site would be rendered suitable for unlimited use and unrestricted exposure. However, a projected total cost of approximately $360,000 over a 30-year period of performance for Alternative 2 was deemed to be more cost-effective for the Buoy Depot than an up-front lump sum cost of approximately $871,000 required to render the Site suitable for residential use, because the planned future use of the Buoy Depot will remain industrial.

2.13.4 The Selected Remedy Utilizes Permanent Solutions and Alternative Treatment or Resource Recovery Technologies to the Maximum Extent Practicable

Of the remedial alternatives that attain the threshold criteria of compliance with ARARs and protectiveness of human health and the environment, EPA has a preference for alternatives that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. At the Buoy Depot Site, the USCG has already completed a TCRA and a NTCRA to mitigate the principal threats. The Removal Actions included the excavation and offsite disposal of the most contaminated materials and the installation of a new stormwater management system to prevent the migration of soil associated with the remaining low-level threats at the Site. Excavation of the most contaminated materials at the Site (floor drain material, surface soil around the former dust collection system, surface soil of the drainage swale and downstream wetland) provided a permanent solution to the risks associated with potential exposure to the COC concentrations that were present in those areas.

The current and planned future use of the Buoy Depot property is industrial, and the current conditions pose no unacceptable risks for that use scenario. The LUCs to be implemented under the Selected Remedy will effectively address the remaining risk concerns associated with various, hypothetical, future, non-industrial use of the Buoy Depot property portion of the Site.

2.13.5 The Selected Remedy Does Not Satisfy the Preference for Treatment as a Principal Element

The USCG has already conducted a TCRA and a NTCRA to excavate the materials associated with the principal threats at the Site, thereby mitigating the identified unacceptable risks to human health and the environment associated with exposure to COCs in Site soil. With the completion of the Removal Actions, the current conditions are suitable for continued Buoy Depot industrial operations, although there are some remaining risk concerns (Section 2.7.1) associated with lead and paint chips in soil on the Buoy Depot property associated with various, hypothetical, future reuse scenarios (*e.g.,* residential). The planned future use of the Buoy Depot is for continued industrial operations. No further remediation of Site soil is warranted to support that planned use. The Selected Remedy will include LUCs to ensure that the future property use is acceptable. The LUCs and Long-Term Monitoring also will verify that the Site conditions pose no unacceptable risks to human health or the environment.

2.13.6 Five-Year Reviews of the Selected Remedy are Required

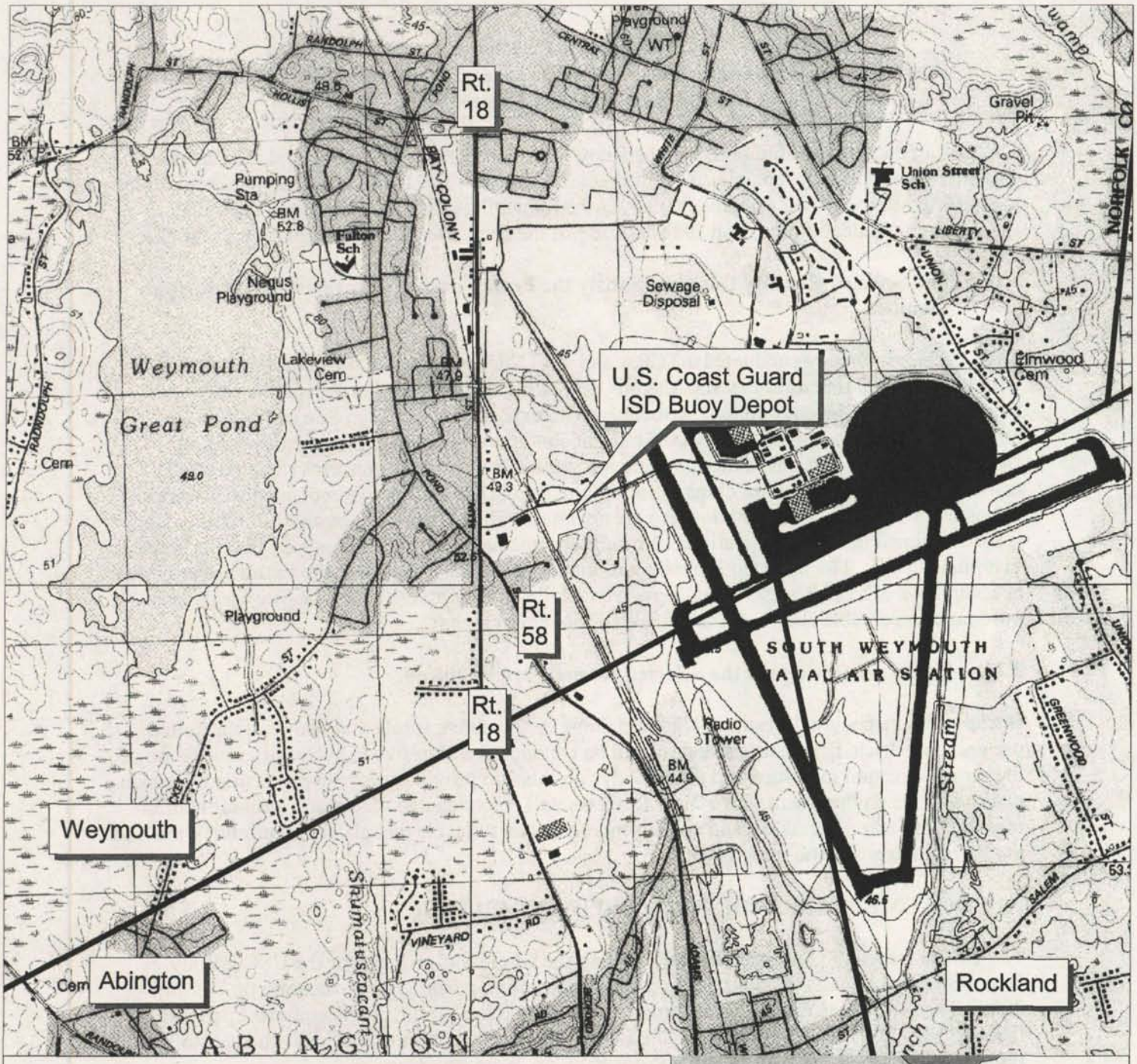
Because this remedy will result in lead remaining onsite above levels that allow for unlimited use and unrestricted exposure, a review will be conducted within five (5) years after initiation of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. Five-Year Reviews will be conducted unless and until mitigation measures are taken to reduce lead concentrations in soil to levels that allow for unlimited use and unrestricted exposure on the property.

2.14 DOCUMENTATION OF NO SIGNIFICANT CHANGES

The USCG issued the Proposed Plan describing the whole Site remedy for the USCG Buoy Depot Site on 16 May 2005 and held a public information meeting/public hearing on 26 May 2005. The USCG has reviewed all comments submitted during the public comment period held from 16 May 2005 to 15 June 2005. The USCG determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary.

2.15 STATE ROLE

The State's letter describing their position on the Selected Remedy is attached as Appendix A of this ROD.



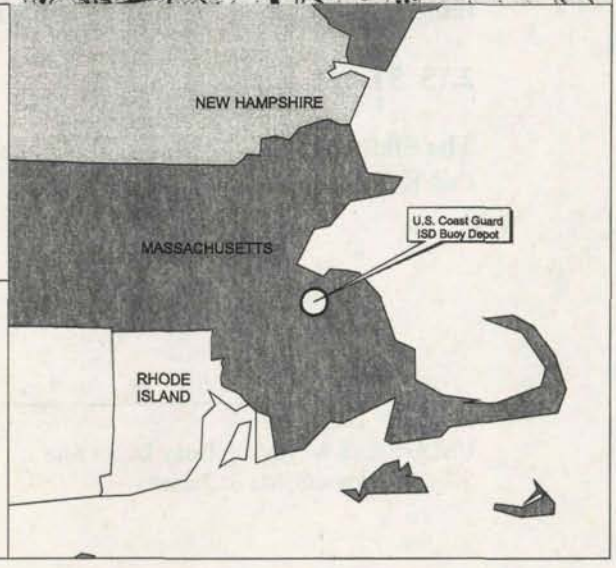
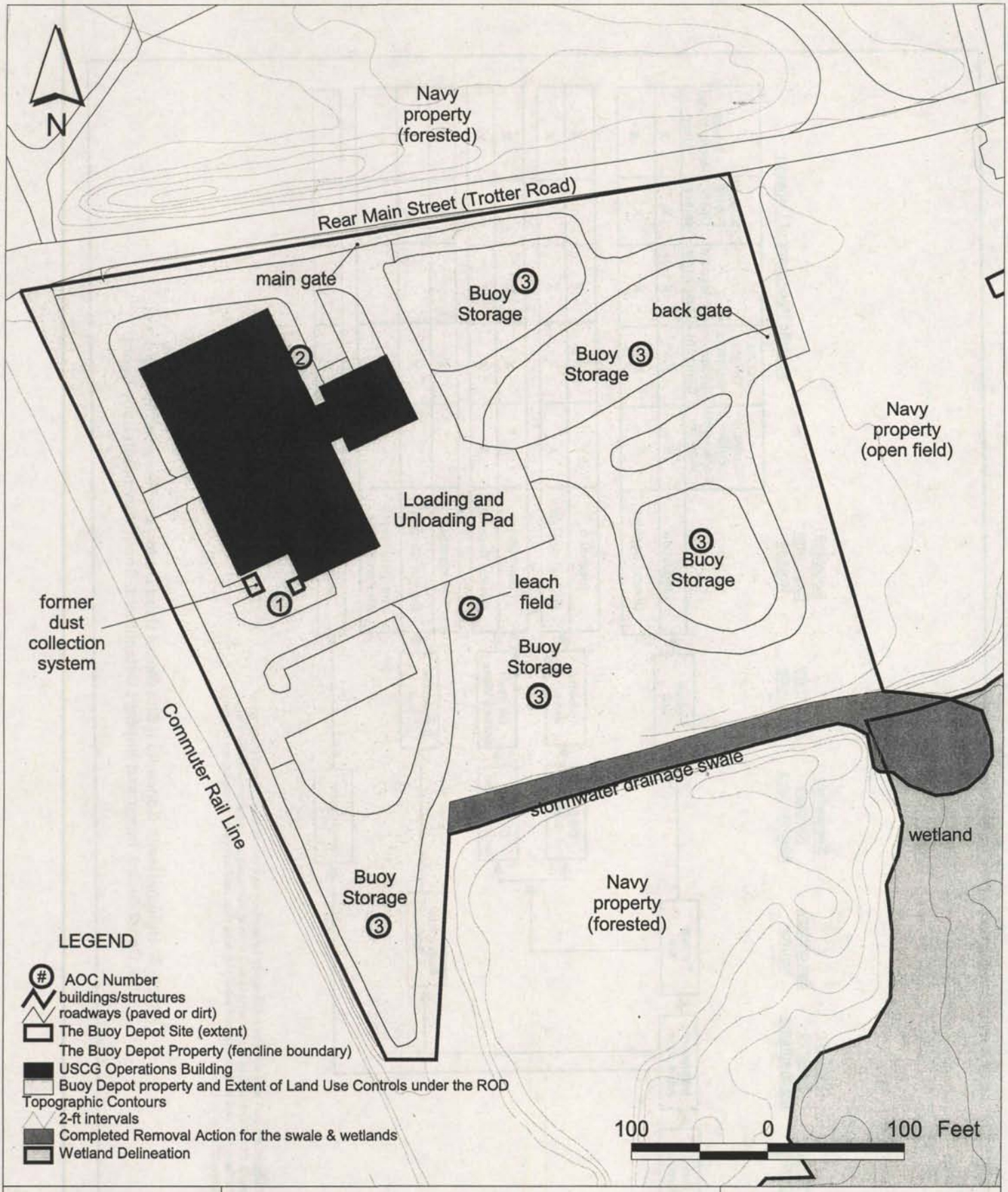
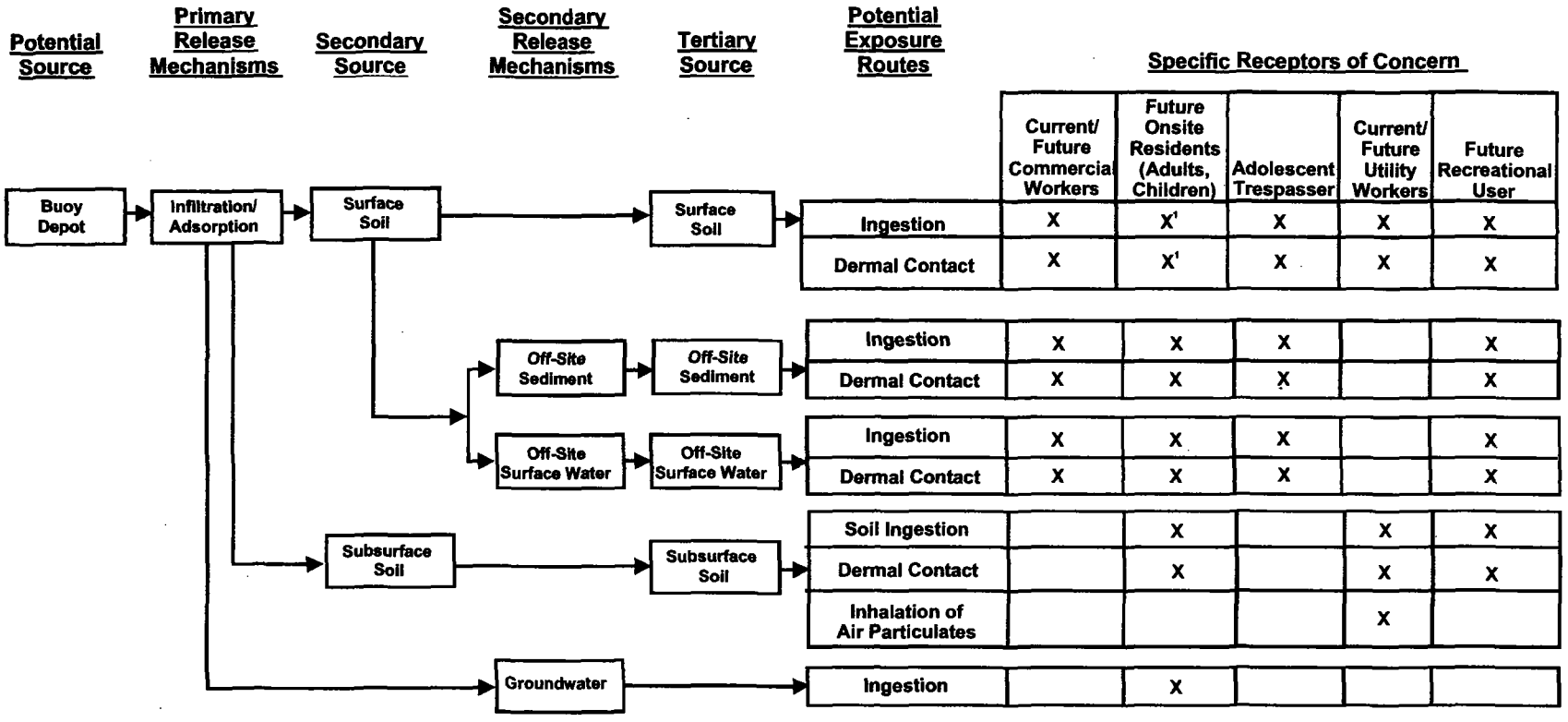


Figure 1
U.S. Coast Guard
ISD Buoy Depot
Location Map
South Weymouth, MA



U.S. Coast Guard Buoy Depot Site
South Weymouth, MA

Figure 2
Site Plan and Extent
of Remedial Action



Potential Exposure Routes	Current/ Future Commercial Workers	Future Onsite Residents (Adults, Children)	Adolescent Trespasser	Current/ Future Utility Workers	Future Recreational User
Ingestion	X	X[1]	X	X	X
Dermal Contact	X	X[1]	X	X	X
Ingestion	X	X	X		X
Dermal Contact	X	X	X		X
Ingestion	X	X	X		X
Dermal Contact	X	X	X		X
Soil Ingestion		X		X	X
Dermal Contact		X		X	X
Inhalation of Air Particulates				X	
Ingestion		X			

[1]- Subsurface soil was used as a surrogate for surface soil due to the fact that there were more COPCs identified in subsurface soil than in surface soil, and concentrations in surface soil and subsurface soil varied by less than half an order of magnitude for only a few COPCs.

Figure 3. Human Health Conceptual Site Model Used During the Remedial Investigation U.S. Coast Guard, Integrated Support Detachment, South Weymouth Buoy Depot.

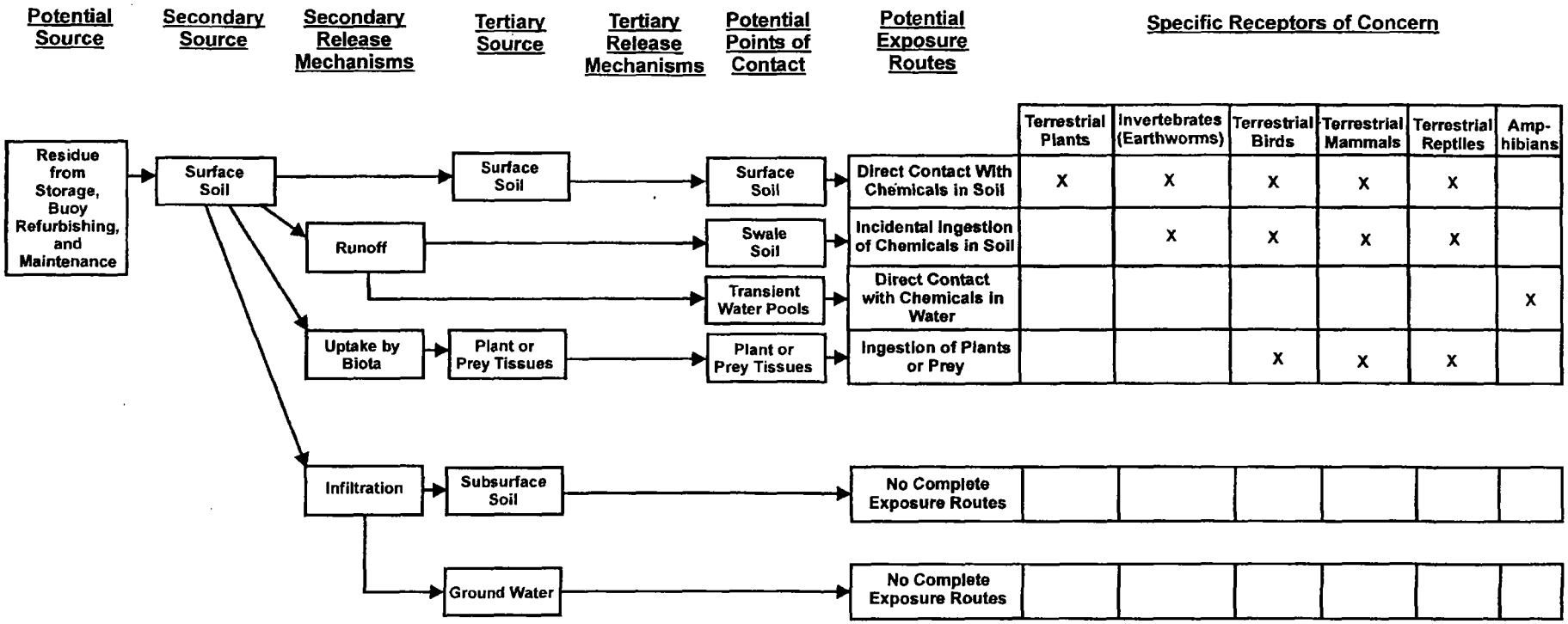


Figure 4. Ecological Conceptual Site Model Used During the Remedial Investigation U.S. Coast Guard, Integrated Support Detachment, South Weymouth Buoy Depot.

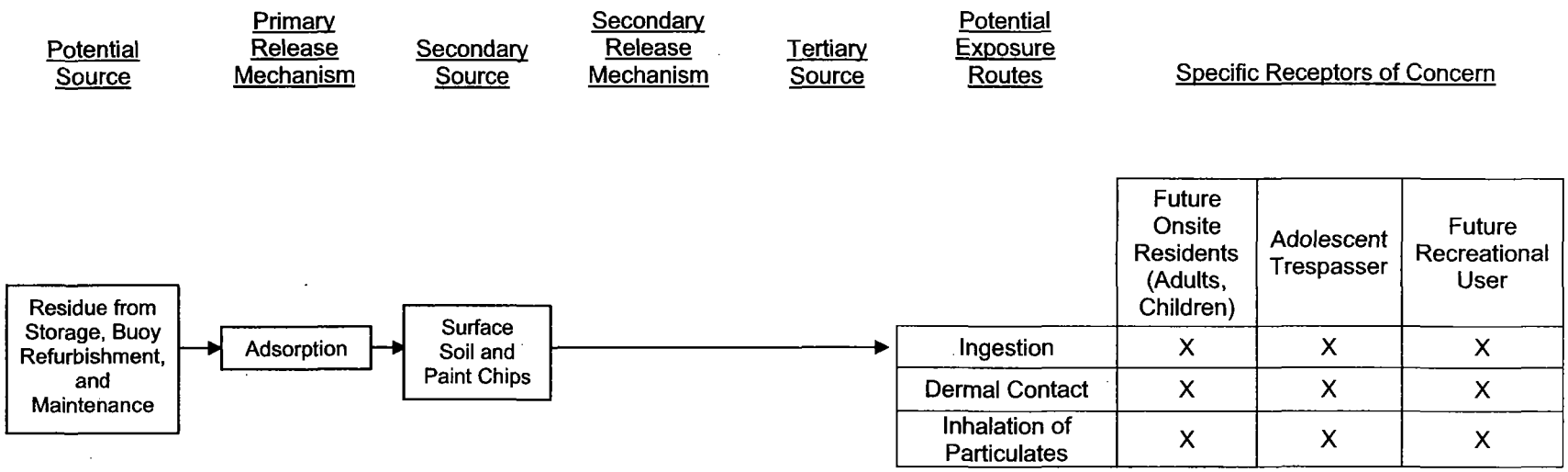


Figure 5. Conceptual Site Model Based on Current Conditions
U.S. Coast Guard, Integrated Support Detachment, South Weymouth Buoy Depot.

TABLE 2-1 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS

Author	Report Title	Date Issued	Summary of Investigation
USCG	Potential Hazardous Waste Site Preliminary Assessment (PA) Report, U.S. Coast Guard Buoy Depot, South Weymouth, Massachusetts	16 April 1988	The report identified the facility's EPA identification number as MA069033078. The PA reported the use and generation of "solvents," "paint chips," and residue from "sandblasting," "lead-based paint," and "waste lubrication oil." The report noted that there were "about 30 square ft of soil that appeared to have been contaminated by waste oil from the facility. Indications are that it was less than 55 gallons and that it only affected the surface soil."
Baker Environmental for the Navy	Site Investigation at NAS South Weymouth	December 1991	The Site Investigation Report, based on a limited number of monitoring wells, suggested that groundwater flowed generally towards the northeast in the vicinity of the Navy's West Gate Landfill. Baker Environmental reported no significant levels of groundwater contaminants present in two monitoring wells located hydrologically upgradient of the Landfill. These two wells are located downgradient of the Buoy Depot.
USCG	Environmental Compliance Evaluation	April 1993	This brief self-evaluation indicated that painting-related solvents were being recycled and that the "sandblasting" waste generated on the site was non-hazardous. The report indicates a description of the use of waste oil as a form release agent for concrete buoy sinker castings. The report indicates that no waste paint or waste solvent was generated, and that small amounts of batteries were occasionally collected and recycled.
PSI, Inc. for the Navy	Initial Assessment Survey	February 1996	This report contains most of the features of a Phase I Environmental Site Assessment or EBS type investigation including a site inspection, interviews, and records review. The report recommended performance of a subsurface evaluation due to the age (1973) of the building. Figures and photographs indicated that the southernmost portion of the Buoy Depot had not been filled and brought to its current grade at the time of this inspection. Also the small swale, which formerly directed surface water flow from east to west across the southern end of the Buoy Depot, and the former railroad spur were still present.
Stone and Webster under contract to EA Engineering, Science, and Technology, Inc. for the Navy	Navy Environment Baseline Survey	November 1996	The report presents the findings of the EBS for the entire NAS and includes a section on the USCG Buoy Depot (identified in "Zone F"). The Phase I EBS identified three Phase II review item areas (RIAs) pertaining to the Buoy Depot. RIA 57 was listed as waste oil-stained soil associated with concrete sinker fabrication. A removal action was completed in accordance with the Massachusetts Contingency Plan [MCP]; RIA 58 was listed as a second onsite septic system. (does not exist and no further action required); and RIA 59 was listed as a reported hazardous waste container storage (no further action has been proposed).

Author	Report Title	Date Issued	Summary of Investigation
USCG	Environmental Inspection	April 1997	The report identified a "6-ft diameter area of contaminated soil outside of the paint mixing area" related to past fueling practices where diesel fuel was formerly dispensed from a 55-gallon drum.
Navy	Environmental Compliance Evaluation	June 1997	The report indicates that the petroleum-impacted (i.e., diesel fuel) soils mentioned in previous reports would be removed on 18 June 1997. The report states that the process of plugging floor drains with concrete was being performed (although they had been reportedly plugged with debris for some time).
REW Environmental Consultants	Release Abatement Measure Completion Report, RNF, and RAO	28 July 1997	The Release Tracking Number (RTN) associated with the 1997 Release Abatement Measure was 3-15182. The Class A-2 Response Action Outcome (RAO) was submitted 7/28/97. The report details the excavation, sampling, and disposal of the surficially impacted soils (diesel fuel) identified in several previous reports. The impacted area was found to be roughly 18 ft in width and length and extended to a depth of 8 ft below grade. The report concludes that although low levels of fuel constituents were still present in soil and groundwater, applicable remediation standards had been met and the expenses associated with additional remediation were not warranted. 185.47 Tons or 115 cy of soil were removed.

Author	Report Title	Date Issued	Summary of Investigation
HRP Associates Inc.	USCG Environmental Baseline Survey	March 1998	This initial EBS was performed as part of an evaluation of the 5.5 acres of land that was under lease by the USCG from the NAS South Weymouth in anticipation of acquiring the land when the Base closed. The EBS identified eight Areas of Environmental Concern (AECs). • AEC 1 (Building and adjacent areas to south) - use/storage of paint, thinners, and oils, as well as the former generation of D008 hazardous wastes. • AEC 2 (Septic tank) - the potential discharges of hazardous substances to the septic tank. • AEC 3 (Possible former septic system) - potential discharges of hazardous substances to a septic system. Found not to have been installed. • AEC 4 (Sandblast residue piles) required appropriate characterization and disposal. Residue from sandblasting was observed beneath the dust collector located on the southwest corner of the building and piles of apparent sandblast wastes were noted immediately west of this area. • AEC 5 (Staining around dust collection system) pertains to rust-colored staining observed on the concrete pad beneath the former dust collection system, as well as on the adjacent asphalt and process stone surfaces. The USCG determined that this staining originated from rusting steel grit that was used for sandblasting. • AEC 6 (Soil remediation area) was remediated/closed as part of a Release Abatement Measure (RAM) completed in July 1997 in accordance with the MCP. Also, in 1981 the USCG filed a Part A Permit for the storage of waste batteries containing potassium hydroxide electrolyte. This permit filing indicated that a 12,100-gallon tank had been used for storage of electrolyte. The EBS research indicated that the permit was filed under the incorrect assumption that the cumulative volume of electrolyte in individual batteries and subsequently, the total volume of caustic electrolyte to be stored, constituted hazardous waste container storage (i.e., tank storage). No storage tank was actually present onsite and no releases of electrolyte fluid were noted or reported during HRP's EBS. Therefore, no additional investigation of this hazardous waste container storage area was required. • AEC 7 (Septic leach field) pertains to unknown potential discharges, including former floor drain discharges. According to USCG, the floor drains near the overhead doors in the main building never discharged to the septic leach field, as was formerly believed. Soil and groundwater samples were recommended to be collected directly beneath these two floor drains and beneath a third floor drain which formerly discharged via pipeline from the Electrical Room to the former drainage swale along the western property boundary. • AEC 8 (Buoy, equipment, and scrap metal storage area) pertains to historic flaking of lead-based paint on buoys and in the construction debris disposal area, drums of metal turnings, and former solvent still present in the area. According to USCG, the container observed on the southeast corner of the Buoy Depot during the EBS was incorrectly identified as a solvent still. Solvent still bottoms are accumulated in a 90-day storage room inside the southeast corner of the building.

Author	Report Title	Date Issued	Summary of Investigation
HRP Associates Inc.	Phase II Environmental Site Assessment (ESA)	September 1998	The ESA was conducted in July 1998 to determine the environmental impact, if any, from the AECs documented in the EBS. Onsite activities included a ground-penetrating radar (GPR) investigation and the installation of test borings to collect soil and groundwater samples. Groundwater conditions in the area of the suspected former septic system/leach field could not be evaluated due to the presence of buoys. A record search identified "as-built" drawings with only one leach field installed in the existing location. On 2 November 1998, the USCG excavated a trench in the assumed location of the suspected former septic system/leach field (AEC 3). No gravel or piping was encountered in the trench and no other visible evidence of a septic system/leaching field was observed, thereby confirming that a leaching field was not installed in this area. At the time of the Phase II EBS, the operations at the USCG Buoy Depot and surrounding properties placed the Buoy Depot's soil and groundwater in MCP reporting categories RCS-2 and RCGW-2, respectively. Based upon the results of this investigation, there were some surficial lead concentrations in soil above 2,000 mg/kg. In the area of the dust collector and in the southeast corner of the property, lead concentrations exceeded the MCP's RCS-2 value of 600 mg/kg. Lead was also reported in four groundwater samples (GW3-1, GW3-2, GW7-2, and GW8-8) above the RCGW-2 reporting limit of 0.03 mg/L. Accordingly, HRP recommended additional investigation and that the scope should include the installation of permanent monitoring wells. The lead was reported in turbid, unfiltered groundwater samples that were collected using direct-push techniques. Therefore, the results may not have been representative of the actual conditions in groundwater (lead concentrations may potentially have been in the soil matrix but reported in groundwater due to the sampling technique). Since the time when the EBS report was published, MADEP assigned the GW-1 classification to groundwater beneath the Buoy Depot and has determined that the facility is located within an aquifer protection district. Details were provided in MADEP's "Groundwater Use and Value Determination" (letter to EPA dated 13 January 1999).
State of Massachusetts	USCG Septic System Inspection	February 1999	The State of Massachusetts inspected the existing subsurface sewage disposal system on 5 February 1999. The documentation indicates that the system passed an onsite Subsurface Sewage Disposal System Inspection; therefore, the septic system meets the State of Massachusetts Title V requirements. The recommendation called for slight regrading to eliminate ponding in the leach field area.

Author	Report Title	Date Issued	Summary of Investigation
Tetra Tech, Inc. for the Navy	Phase I Initial Site Investigation Report	March 1999	Tetra Tech NUS, Inc. issued a Phase I Report on the Jet Fuel Pipeline Site. This site is located approximately 150 ft from the Buoy Depot's eastern gate. The results of this investigation concluded that residual petroleum concentrations contained within the soil and groundwater are in excess of applicable MCP Method 1 standards. Further investigations were recommended.
EA Engineering, Science, and Technology, Inc.	Groundwater Flow Evaluation	1999	EA collected water levels at 36 wells and piezometers in the area. However, only one well was located on the USCG property. Given the locations of the available data points, the study was limited. Based on the available data, EA interpreted the groundwater flow to be generally to the southeast across the Buoy Depot.
Clean Harbors Environmental Services, Inc. for the USCG	USCG Paint Chip Removal Action	1999	The USCG contracted Clean Harbors to conduct soil testing and a final "vacuum sweep" outside of the USCG Buoy Depot's property boundary. Prior to removal of the paint chips, Clean Harbors collected two soil samples and two paint chip samples and sent them to the laboratory to be analyzed for TCLP-lead.
Unified Contracting Corporation	USCG Dust Collection System Removal Action	1999	TGG Environmental Inc. (TGG) was contracted by Unified to summarize and evaluate information generated by a sampling subcontractor, South Shore Lead Paint, and Logano Waste Management, the waste transporter and landfill management company. During construction activities associated with the replacement of the dust collection system, soil was excavated and stockpiled in drums, on 6-mil polyethylene sheeting and subsequently in rolloff containers. Prior to any excavation, in March 1999 contractors collected 4 soil samples from the perimeter of the original concrete pad holding the baghouse. Total lead content of these samples ranged from 10,748 to 26,417 mg/kg. On 29 March 1999, Unified received permission from the USCG to remove soil. Reportedly, in April, soil and gravel to a depth of 15 in. were removed from a 2-ft area surrounding the concrete pad and placed in 6 steel drums and then to rolloffs. Unified removed another 6 in. of soil in the 44 × 50 ft area, prior to installing the concrete pad now in place. The USCG issued a final Time-Critical Removal Action Memorandum in June 2004 to retroactively document the decision for the completed removal action.
Stone and Webster for the Navy	Phase II EBS Field Reports	June 1999	The Navy limited the investigation to surface water and sediment sample collection and analysis south of the USCG parcel and installation of two wells, one well at the southwestern corner of the USCG property, and one offsite and upgradient of the parcel.

Author	Report Title	Date Issued	Summary of Investigation
EA Engineering, Science, and Technology, Inc.	Remedial Investigation (RI) Report	February 2001	The purpose of the RI was to evaluate the nature and extent of chemical constituents related to AOCs identified in previous investigations that may pose a threat to public health and the environment and to quantify the potential risk to human health and the environment from exposure to these chemicals. The RI included site characterization, baseline human health and ecological risk assessments, an evaluation of chemical fate and transport, and preliminary identification of potential remedial alternatives. Field activities for the RI included field screening for metals in soil and volatile organic compounds (VOCs) in soil, groundwater, and hydric soil sampling; monitoring well and piezometer installation; groundwater gauging and water level measurements; hydraulic conductivity testing; and a professional land survey of the sampling locations and monitoring wells.
EA Engineering, Science, and Technology, Inc.	Supplemental Sampling to Support the Feasibility Study	January 2002	Supplemental sampling was performed by EA in January 2002 in support of the Feasibility Study for the Buoy Depot. This investigation consisted of the following activities: • Sampling of shallow subsurface soil on-depot and analysis for methyl isobutyl ketone (MIBK, or 4-methyl-2-pentanone) to address MADEP concerns regarding a previous detection at location SB017. • Sampling of hydric soil within the drainage swale and analysis for six COC metals to delineate impacts and support selection of the appropriate remedial alternative. • Sampling of hydric soil and surface water to assess the extent of impacts in the wetland. Soil sampling was performed but, to date, insufficient precipitation has occurred to allow collection of surface water samples. • Installation of two additional monitoring wells and sampling of the new and existing monitoring wells to support the risk assessments for ground water. The compound 1,4-dioxane was added to the analyte list at the request of the MADEP.
EA Engineering, Science, and Technology, Inc.	Engineering Evaluation/Cost Analysis (EE/CA)	December 2002	The EE/CA was conducted in accordance with CERCLA/SARA to provide the basis for a Non-Time Critical Removal Action (NTCRA) for hydric soil/sediment in the swale and wetland area as well as subsurface soil around the floor drain system of the Buoy Depot building. The USCG also incorporated the results of the supplemental sampling round and the updated human health and ecological risk assessments.

Author	Report Title	Date Issued	Summary of Investigation
EA Engineering, Science, and Technology, Inc.	Wetland Assessment, Appendix A of the Non-Time Critical Action Memorandum	January 2003	The Wetland Assessment was conducted in the swale and wetland area in late 2002 to support the non-time critical removal action and evaluate potential impacts of the action.
Nobis Engineering, Inc.	Closure Report: Non-Time Critical Removal Action (Floor Drain Removal)	August 2004	In February 2003, the USCG conducted a CERCLA Non-Time Critical Removal Action that included the removal of the building's floor drain system, the floor drains' contents (sludge/sediment), and some of the surrounding soil. Excavated materials were transported offsite for final disposal.
Nobis Engineering, Inc.	Final Removal Action Completion Report, Stormwater System Installation and Hydric Soil Excavation and Offsite Treatment/ Disposal, Swale and Wetlands	April 2006	From November 2004 to May 2005, the USCG implemented the NTCRA for installation of a new stormwater management system at the Buoy Depot site as well as the remediation of metals-contaminated soil of the off-property drainage swale and wetland area.

TABLE 2-2 SUMMARY OF PRINCIPAL AND LOW-LEVEL THREAT WASTES ASSOCIATED WITH THE BUOY DEPOT SITE

Threat Wastes	Medium of Concern	Contaminant(s)	Action To Be Taken
		PRINCIPAL	
Elevated levels of lead in soil posing unacceptable human health and ecological in the upper end of the drainage swale	Surface soil (hydric soil)	Lead	Completed a NTCRA in 2005 reducing lead concentrations to levels acceptable for unrestricted use. Long-term monitoring as part of the Selected Remedy.
Lead in soil near the dust collection system at levels that would have posed unacceptable human health risk.	Surface soil	Lead	Completed a TCRA in 1999 prior to HHRA. No further action required.
		LOW-LEVEL	
Elevated levels of metals in soil in the drainage swale and wetland posed potentially unacceptable risk to ecological receptors	Surface soil (hydric soil)	Lead Arsenic Chromium III Copper Nickel Zinc	Completed a NTCRA in 2005 reducing metals concentrations to levels acceptable for ecological receptors. Long-term monitoring as part of the Selected Remedy.
Elevated levels of lead posing unacceptable human health risks in the drainage swale and wetland	Surface soil (hydric soil)	Lead	Completed a NTCRA in 2005 reducing lead concentrations to levels acceptable for unrestricted use. Long-term monitoring as part of the Selected Remedy.
Elevated COPC concentrations detected in building floor drains	Solid material accumulated in the facility's floor drain system	Arsenic Lead Benzo(a)pyrene Heptachlor epoxide	Completed a NTCRA as a voluntary, proactive measure in 2003. No further action required.
Lead in soil and paint chips under hypothetical future residential uses of the Buoy Depot Storage Area	Surface soil	Lead Paint chips (potentially lead-based)	The Selected Remedy of Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews.

TABLE 2-3 POTENTIAL EXPOSURE PATHWAYS FOR HUMAN HEALTH RISK ASSESSMENT

Media	Receptor	Exposure Pathway
Surface Soil	Adolescent Trespasser	Incidental ingestion of surface soil
		Dermal contact with surface soil
		Inhalation of particulate from surface soil[b]
	Current/Future Commercial/Industrial Workers	Incidental ingestion of surface soil
		Dermal contact with surface soil
		Inhalation of particulate from surface soil[b]
	Future Onsite Resident (adult, child):	[a]
	Future Recreational User	[a]
Subsurface Soil	Future Onsite Resident (adult, child):	Incidental ingestion of subsurface soil
		Dermal contact with subsurface soil
		Inhalation of particulate from subsurface soil[b]
	Current/Future Utility Worker	Incidental ingestion of subsurface soil
		Dermal contact with subsurface soil
		Inhalation of particulate from subsurface soil[b]
	Future Recreational User	Incidental ingestion of subsurface soil
		Dermal contact with subsurface soil
		Inhalation of particulate from subsurface soil[b]
Groundwater	Future Onsite Resident (adult, child)	Ingestion of groundwater
Sediment (*i.e.*, swale, wetland soil)	Adolescent Trespasser:	Incidental ingestion of sediment
		Dermal contact with sediment
	Future Onsite Resident (adult, child):	Incidental ingestion of sediment
		Dermal contact with sediment
	Current/Future Commercial/Industrial Workers:	Incidental ingestion of sediment
		Dermal contact with sediment
	Future Recreational User	Incidental ingestion of sediment
		Dermal contact with sediment
Air	Current/Future Utility Worker	Inhalation of chemical of potential concern (COPC) entrained with soil particles
	Future Onsite Resident (adult, child)	Inhalation of VOCs from subsurface soil

NOTES:
(a) Subsurface soil contamination was determined to be greater than surface soil and, as a conservative measure, these receptors were evaluated for subsurface soil exposure rather than surface soil exposure.
(b) The inhalation pathway was not quantitatively evaluated in the USCG South Weymouth Buoy Depot HHRA, except for the COPC lead. The quantitative evaluation for inhalation exposure to lead in soil was evaluated through the use of the IEUBK and Adult Lead Models.

TABLE 2-4 SUMMARY OF POTENTIAL HUMAN HEALTH RISKS ASSOCIATED WITH THE COPCs

Receptor	Cancer Risk Exceeds Range (10^{-4} to 10^{-6})	Hazard Quotient >1	Blood Lead > 10 µg/dL
Commercial Worker	No[1]	No	Yes[5]
Utility Worker	No	No	Not evaluated
Adolescent Trespasser	No[1]	No	Not evaluated
Onsite Resident	Yes[2]	Yes[4]	Yes[6]
Recreational User	No[3]	No	Yes[7]

NOTES:
1 No individual COPC exceeded 10^{-6} but total risk slightly exceeded 10^{-6}.
2 Groundwater risks exceed 10^{-4}. COPCs with risks greater than 10^{-6} in groundwater are arsenic, heptachlor epoxide, and bis(2-ethylhexyl)phthalate. Risks for subsurface soil and sediment did not exceed 10^{-4}. COPCs in subsurface soil and sediment with risks greater than 10^{-6} are arsenic and benzo(a)pyrene.
3 Risks associated with arsenic and benzo(a)pyrene exceeded 10^{-6} in subsurface soil and sediment.
4 Hazard Quotient for arsenic in groundwater exceeds 1.0. Manganese in groundwater was found to be consistent with background.
5 Media evaluated included surface soil and sediments. Unacceptable risks were found for exposure to offsite swale sediments.
6 Media evaluated included subsurface soil and sediments. Unacceptable risks were found for exposure to both subsurface soil and offsite swale sediments.
7 Media evaluated included subsurface soil and sediments, using resident child as proxy. Unacceptable risks were found for exposure to both subsurface soil and offsite swale sediments.

TABLE 2-5 SUMMARY OF CHEMICALS OF CONCERN FOR HUMAN HEALTH AND MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATIONS

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure
		Min	Max					
Sediment – Swale	Lead	267	161,000	ppm	15/15	15,400	ppm	Mean
Sediment – Wetland	Lead	45	2,490	ppm	18/18	395	ppm	Mean
Surface Soil - Direct Contact	Lead	5.6	1,790	ppm	49/49	297	ppm	Mean
Subsurface Soil - Direct Contact	Lead	1.8	13,500	ppm	35/35	402	ppm	Mean

NOTE:
Chemical of Concern (COC) data reflect conditions prior to the completed Non-Time Critical Removal Action.
Min = Minimum detected concentration.
Max = Maximum detected concentration.

TABLE 2-6 OCCURRENCE, DISTRIBUTION, AND SELECTION OF ECOLOGICAL COPC IN SWALE AND WETLAND SOIL

Chemical	Minimum Concentration	Qualifier	Maximum Concentration	Qualifier	Units	Detection Frequency	Screening Value	COPC	Additional Considerations
INORGANICS									
Aluminum	2,430		13,600		mg/kg	10/10	50	Yes	
Antimony	5.8	J	5.8	J	mg/kg	1/6	5	Yes	
Arsenic (1999)	2.95		13.1		mg/kg	9/10	10	Yes	
Swale (2002) [a]	2.5		16.4		mg/kg	10/10	10	Yes	
Wetland (2002) [a]	2.7		6.1		mg/kg	15/15	10	(a)	
Barium	11.1		178		mg/kg	10/10	500	No	
Beryllium	0.13		3.4		mg/kg	8/10	10	No	
Cadmium	0.16		4.5		mg/kg	10/10	4	Yes	
Calcium	465	J	5,990	J	mg/kg	10/10	N/A	No	Essential
Chromium	4.6	J	383	J	mg/kg	10/10	0.4	Yes	
Swale (2002) [a]	16.5		386		mg/kg	10/10	0.4	Yes	
Wetland (2002) [a]	4.5	J	93.4	J	mg/kg	15/15	0.4	Yes	
Cobalt	3.1		12.6		mg/kg	6/10	20	No	
Copper	4.3		9,960		mg/kg	10/10	50	Yes	
Swale (2002) [a]	613		12,000		mg/kg	10/10	50	Yes	
Wetland (2002) [a]	36.6	J	4,000	J	mg/kg	15/15	50	Yes	
Iron	3,370	J	195,000	J	mg/kg	10/10	N/A	No	Essential
Lead	26.8	J	161,000	J	mg/kg	10/10	50	Yes	
Swale (2002) [a]	426		20,100		mg/kg	10/10	50	Yes	
Wetland (2002) [a]	45.7	J	3,560	J	mg/kg	15/15	50	Yes	
Magnesium	429	J	1,920		mg/kg	10/10	N/A	No	Essential

NOTE:
mg/kg = Milligrams per kilogram.
N/A = Not Applicable.
NSV = No Screening Values are available.
J = Indicates an estimated value.
U = Analyte analyzed for but not detected.
Essential = Essential Nutrient.
(a) 2002 data from the Supplement Sampling to Support the FS, as documented in the EE/CA (EA 2002). Data from the RI (EA 2001) did not distinguish between the swale and wetland (most samples were from the swale).

Chemical	Minimum Concentration	Qualifier	Maximum Concentration	Qualifier	Units	Detection Frequency	Screening Value	COPC	Additional Considerations
Manganese	74.2	J	2,500	J	mg/kg	10/10	500	Yes	
Mercury	0.175	J	0.55	J	mg/kg	5/10	0.1	Yes	
Nickel	5.2	J	76.9		mg/kg	9/10	30	Yes	
Swale (2002) [(a)]	7.6		82.8		mg/kg	10/10	30	Yes	
Wetland (2002) [(a)]	5.5	J	24.0		mg/kg	15/15	30	(a)	
Potassium	107	J	407		mg/kg	10/10	N/A	No	Essential
Selenium	2.5	J	4.7		mg/kg	3/10	1	Yes	
Silver	0.54		0.65		mg/kg	2/10	2	No	
Sodium	431		431		mg/kg	1/10	N/A	No	Essential
Thallium	0.1175	U/-	0.1175	U/-	mg/kg	1/10	1	No	
Vanadium	7		40.6		mg/kg	10/10	2	Yes	
Zinc	14.7	J	1,700		mg/kg	10/10	50	Yes	
Swale (2002) [(a)]	128		1,580		mg/kg	10/10	50	Yes	
Wetland (2002) [(a)]	49.4		653		mg/kg	15/15	50	Yes	
PAHs									
1-Methylnaphthalene	0.047	J	0.29	J	mg/kg	4/6	40	No	
2-Methylnaphthalene	0.19	J	2.6		mg/kg	6/6	40	No	
Acenaphthene	0.097	J	3.3	J	mg/kg	6/6	5	No	
Acenaphthylene	0.06	J	0.67		mg/kg	6/6	5	No	
Anthracene	0.021	J	0.23	J	mg/kg	6/6	20	No	
Benz[a]anthracene	0.12	J	1.3		mg/kg	6/6	40	No	
Benzo[a]pyrene	0.12		2.1	J	mg/kg	6/6	40	No	
Benzo[b]fluoranthene	0.22		3.2		mg/kg	6/6	40	No	
Benzo[g,h,i]perylene	0.098	J	2		mg/kg	6/6	40	No	
Benzo[k]fluoranthene	0.093	J	1.6		mg/kg	6/6	40	No	
Chrysene	0.17		2.6		mg/kg	6/6	40	No	
Dibenz[a,h]anthracene	0.022	J	0.33	J	mg/kg	6/6	40	No	
Fluoranthene	0.29		4.3		mg/kg	6/6	40	No	
Fluorene	0.033	J	0.11	J	mg/kg	5/6	20	No	
Indeno[1,2,3-cd]pyrene	0.094		1.7		mg/kg	5/5	40	No	
Naphthalene	0.077	J	0.45	J	mg/kg	4/6	20	No	
Phenanthrene	0.097		1.6		mg/kg	6/6	20	No	
Pyrene	0.29	J	4.1	J	mg/kg	6/6	40	No	

Chemical	Minimum Concentration	Qualifier	Maximum Concentration	Qualifier	Units	Detection Frequency	Screening Value	COPC	Additional Considerations
PESTICIDES/PCB									
Aroclor 1260	1.1	J	1.1	J	mg /kg	1/6	40	No	
4,4'-DDD	0.0017	J	0.0093	J	mg/kg	4/5	4	No	
4,4'-DDE	0.0053	J	0.11	J	mg/kg	3/3	4	No	
4,4'-DDT	0.01	J	0.076	J	mg/kg	4/4	4	No	
Aldrin	0.001	J	0.0042	J	mg/kg	4/6	0.35	No	
Endosulfan Sulfate	0.0028	J	0.0097	J	mg/kg	4/6	200	No	
Endrin Ketone	0.0023	J	0.021	J	mg/kg	4/5	0.06	No	
Gamma-Chlordane	0.0027		0.0059	J	mg/kg	4/6	6.25	No	
Heptachlor	0.00076	J	0.00076	J	mg/kg	1/6	6.25	No	
Heptachlor Epoxide	0.0093	J	0.069	J	mg/kg	6/6	6.25	No	
Methoxychlor	0.0075	J	0.0083	J	mg/kg	2/6	N/A	Yes	NSV
SEMIVOLATILES									
4-Methylphenol	0.17		0.45	J	mg/kg	3/6	30	No	
Benzyl Butyl Phthalate	0.053		1.4	J	mg/kg	5/6	60	No	
Bis(2-Ethylhexyl)phthalate	0.16	J	1.7	J	mg/kg	5/6	60	No	
Carbazole	0.73	J	1	J	mg/kg	4/6	N/A	Yes	NSV
Dibenzofuran	1	J	1	J	mg/kg	1/6	49.6	No	
Phenol	0.076	J	0.076	J	mg/kg	1/6	30	No	
VOLATILES									
2-Butanone	0.048	J	0.12	J	mg/kg	2/6	N/A	Yes	NSV
Acetone	0.22	J	0.4	J	mg/kg	2/6	N/A	Yes	NSV
Chloroform	0.001		0.002	J	mg/kg	2/6	N/A	Yes	NSV
Ethylbenzene	0.002	J	0.002	J	mg/kg	1/6	N/A	Yes	NSV
Methylene Chloride	0.003		0.025	J	mg/kg	3/6	N/A	Yes	NSV
Toluene	0.02	J	0.02	J	mg/kg	1/6	130	No	
Xylenes, Total	0.002	J	0.008	J	mg/kg	2/6	N/A	Yes	NSV

TABLE 2-7 SUMMARY OF ECOLOGICAL RECEPTORS, EXPOSURE ROUTES, ENDPOINTS, AND FINDINGS [(a)]

Potential Receptor	Exposure Route Evaluated	Assessment Endpoints	Measurement Endpoints	Findings
Terrestrial Plants	Direct uptake from soil	Adverse effects on the survival, growth, and reproduction of terrestrial plant communities	Comparison of surface soil COPC concentrations to plant soil screening benchmarks	Concentrations of some metals in surface soil exceeded terrestrial plant benchmark values. Recommended NTCRA.
Terrestrial Invertebrates	Ingestion of soil	Adverse effects on the survival, growth, and reproduction of terrestrial invertebrate communities	Comparison of surface soil COPC concentrations to invertebrate soil screening benchmarks	Concentrations of some metals in surface soil exceeded the terrestrial invertebrate benchmark values. Recommended NTCRA.
Terrestrial Vertebrate Wildlife	Ingestion of surface soil Ingestion of food items that may contain accumulated chemicals from the soil.	Adverse effects on the maintenance of wildlife populations and communities within the habitats present at the site	Comparison of potential dietary exposures, calculated using concentrations of COPCs in the soil, to wildlife toxicity reference values	Potential for unacceptable risk to terrestrial small mammal and bird receptors from the concentrations of various metals in surface soil.
Wetland Plants	Direct contact with soil or direct contact with chemicals contained within the soil porewater	Adverse effects on the survival, growth, and reproduction of wetland plant communities	Comparison of sediment COPC concentrations to plant soil screening benchmarks	Concentrations of some metals in surface soil exceeded terrestrial plant benchmark values. Recommended NTCRA.
Wetland Vertebrate Wildlife	Ingestion of soil Ingestion of food items that may contain accumulated chemicals from soil	Adverse effects on the maintenance of wildlife populations and communities within the habitats present at the site	Comparison of potential dietary exposures, calculated using concentrations of COPCs in the sediment, to wildlife toxicity reference values	Potential for unacceptable risk to terrestrial small mammal and bird receptors from the concentrations of various metals in surface soil.

NOTES:
(a) Information in this table is based on site conditions prior to the non-time-critical removal action (NTCRA).
COPC = Chemical of Potential Concern.

TABLE 2-8 INVERTEBRATE AND PLANT BENCHMARK HAZARD QUOTIENTS (BASED ON 95 PERCENT UCLM)

COCs	Drainage Swale	Wetland
INVERTEBRATES		
Arsenic	0.19	0.08
Chromium	**785**	**72**
Copper	**154**	**16.6**
Lead	**172**	**1.36**
Nickel	0.29	0.06
Zinc	**9.25**	**1.62**
PLANTS		
Arsenic	0.31	0.13
Chromium	**13**	**1.2**
Copper	**94**	**10.1**
Lead	**1,720**	**13.6**
Nickel	**1.93**	0.39
Zinc	**5.8**	**1.02**

NOTE:
Bold indicates an exceedance of the HI=1 benchmark.
UCLM = Upper Confidence Limit on the Mean.

TABLE 2-9 FOOD-WEB ECOLOGICAL RISKS BASED ON 95 PERCENT UCLM AND NOAEL TOXICITY VALUES

Ecological COC	Shrew HQ	Mouse HQ	Rabbit HQ	Red Fox HQ	Robin HQ	Carolina Wren HQ	Kestrel HQ
DRAINAGE SWALE							
Arsenic	**2.3**	0.46	0.34	0.03	0.34	0.04	<0.01
Chromium	0.01	<0.01	<0.01	<0.01	**103**	**36**	0.57
Copper	**6.14**	**1.16**	0.91	0.10	**11.7**	0.90	0.02
Lead	**135**	**23.1**	**14.98**	**1.72**	**1,445**	**165**	**2.73**
Nickel	0.23	0.03	<0.01	<0.01	0.35	0.13	<0.01
Zinc	0.25	0.05	0.03	<0.01	**5.69**	**1.19**	0.02
WETLAND							
Arsenic	0.71	0.16	0.12	0.01	0.10	0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	**8.56**	**3.24**	0.05
Copper	0.39	0.09	0.07	0.01	0.73	0.07	<0.01
Lead	**1.02**	0.16	0.07	0.01	**8.61**	**1.78**	0.03
Nickel	0.05	0.01	<0.01	<0.01	0.07	0.03	<0.01
Zinc	0.11	0.02	0.01	<0.01	**1.98**	0.59	0.01

NOTE:
Bold indicates an exceedance of the HI=1 benchmark.
COC = Chemical of Concern.
HQ = Hazard Quotient.
NOAEL = No Observed Adverse Effects Level.
UCLM = Upper Confidence Limit on the Mean.

TABLE 2-10 SUMMARY COMPARISON OF THE POST-CLEANUP CONDITIONS TO THE RISK-BASED CLEANUP GOALS

COC	Swale Cleanup Goal (mg/kg)	Swale Post Excavation Maximum Concentration (mg/kg)	Wetland Cleanup Goal (mg/kg)	Wetland Post Excavation Maximum Concentration (mg/kg)
Arsenic	56	<9.2	100	<86
Chromium	16	11.9	17	15.6
Copper	1,020	418	1,950	305
Lead	302	213 28 (average)	302	289 92 (average)
Nickel	230	7.3	245	13.5
Zinc	738	157	1,050	123

TABLE 2-11 COMPARISON OF FEASIBLE REMEDIAL ALTERNATIVES

Alternative	Description	Type of Action	Subject to Land Disposal Regulations?	May Require Offsite Transport/ Disposal?	Costs [a]		
					Capital Costs ($)	30-Year Present Worth O&M Costs ($)	Total 30-Yr Net Present Worth ($)
1	No Further Action	• 5-year reviews	No	No	$0	$51,000	$51,000
2	Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews	• Land use controls that prohibit non-industrial reuse of the site • Engineering Control (site access, stormwater, facility management) • Long-term monitoring • 5-year reviews	No	No	$45,000	$315,000	$360,000
3	Excavation with Offsite Disposal	• Excavation and offsite disposal of surface soil from the buoy storage area	Potentially	Yes	$871,000	$0	$871,000

NOTE: (a) Costs are based on 2005 dollars. Costs are rounded up to the nearest $1,000.

TABLE 2-12 SUMMARY OF THE COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

Alternative	Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Cost
1	Least protective	Risk concerns would not be mitigated.	Not effective or permanent.	No treatment specified.	Not effective.	Not implementable.	Low.
2	Protective.	Complies.	Effective. Upkeep of institutional controls and monitoring required to ensure permanency.	No treatment specified.	Most effective. RAOs achieved within 1 year with little or no disruption of the site, community, and facility operations. Low risks during remedial activities (sampling).	Easiest to implement.	Moderate.
3	Protective (somewhat more than Alternative 2).	Complies.	Effective and permanent for mitigating past releases.	No treatment specified; however, treatment of excavated material may be required to meet land disposal regulations prior to disposal at a landfill.	Effective. RAOs achieved within 1 year but with the greatest disruption of site, community, and facility operations. Highest risks (but manageable) during remedial activities (excavation).	Implementable, but difficult to coordinate excavation activities in the buoy storage area.	High.

(1) Alternative 1 – No Action.
(2) Alternative 2 – Land Use Controls (Institutional Controls and Engineering Controls), Long-Term Monitoring, and Five-Year Reviews.
(3) Alternative 3 – Excavation with Offsite Disposal.

TABLE 2-13 COST ESTIMATE
LAND USE CONTROLS
(INSTITUTIONAL CONTROLS AND ENGINEERING CONTROLS), LONG-TERM MONITORING, AND 5-YEAR REVIEWS

Item No.	Cost Categories and Items	Description	Unit Cost	Quantity	Line Item Total
A. CAPITAL COSTS					
1	**Administrative Costs**				
1.1	Land Use Controls	Site use covenants and restrictions	$15,000	1	$15,000
1.2	Long-Term Monitoring Plan	Monitoring, Quality Assurance, & Safety Plans	$30,000	1	$30,000
	Total Capital Cost				**$45,000**
B. OPERATION AND MAINTENANCE (O&M) COSTS					
2	**Swale/Wetland Monitoring (costs per event) (anticipated to be annual for 5 years, then once per 5 years)**				
2.1	Sampling team for two 8-hour days	mid-geologist ($74/hr)+ jr.-geologist ($52/hr)	$126	16	$2,016
2.2	Sampling equipment (per day)	meters, augers, containers, etc	$250	2	$500
2.3	Lab - swale/wetland sediment samples - TAL metal	5 locations plus 3 QA/QC	$175	8	$1,400
2.4	Lab - swale/wetland surface water samples - TAL metal	2 locations plus 2 QA/QC	$175	4	$700
2.5	Data Validation	per sample	$12	12	$144
2.6	Project Management			10%	$476
2.7	Site Services			10%	$476
2.8	Contingency			20%	$952
	O&M Subtotal				**$6,664**
3	**Stormwater System Cleanout (assume once per year)**				
3.1	Quarterly Inspection and Sampling	per Stormwater Mgmt Plan (Nobis 2004)	$500	4	$2,000
3.2	Lab - sediment samples - TAL metal:		$175	4	$700
3.3	Lab - sediment samples - TCLP metal:		$200	4	$800
3.4	Sediment removal from catch basin system (vac truck	per Stormwater Mgmt Plan (Nobis 2004)	$1,000	1	$1,000
3.5	Offsite Transportation & Disposal (non-haz)	9 tons per Stormwater Mgmt Plan (Nobis 2004)	$70	9	$630
3.6	Project Management			10%	$513
3.7	Site Services			10%	$513
3.8	Contingency			20%	$1,026
	O&M Subtotal				**$7,182**
4	**Infiltration Trench Cleanout (assume once per 5 years)**				
4.1	Clearing of vegetation	500 ft trench x 3 ft (cost per SF)	$0.1	1500	$150
4.2	Sediment removal from catch basin system	vacuum truck to remove top 1 inch	$1,000	1	$1,000
4.3	Lab - sediment samples - TAL metal:		$175	1	$175
4.4	Lab - sediment samples - TCLP metal:		$200	1	$200
4.5	Offsite Transportation & Disposal (non-haz)	cost per ton	$70	4	6280
4.6	Project Management			10%	$181
4.7	Site Services			10%	$181
4.8	Contingency			20%	$361
	O&M Subtotal				**$2,527**
5	**Groundwater Monitoring (costs per event) (anticipated to be only 1 event for the first 5-year review)**				
5.1	Sampling Team for 2 10-hour days	mid-geologist ($74/hr)+ jr.-geologist ($52/hr)	$126	20	$2,520
5.2	Sampling equipment (per day)	pumps, tubing, meters, containers, etc	$500	2	$1,000
5.3	Analytical costs - groundwater samples - metal:	5 locations plus 3 QA/QC	$175	8	$1,400
5.4	Data Validation	per sample	$12	8	$96
5.5	Project Management			10%	$502
5.6	Site Services			10%	$502
5.7	Contingency			20%	$1,003
	O&M Subtotal				**$7,022**
6	**Misc. Facility Upkeep**				
6.1	Dust Control (water truck)	July-August (per month rental	$200	2	$400
6.2	Perimeter Fence Repair	minor repair once per year	$250	1	$250
	O&M Subtotal				**$650**
7	**Reporting**				
7.1	Annual report years 1-5	Summary and interpretation of monitoring data, facility inspections, stormwater maintenance	$5,000	1	**$5,000**
7.2	Annual report after year 5	Summary and interpretation facility inspections, stormwater maintenance	$2,500	1	**$2,500**
8	**CERCLA Mandated 5-year review (costs per review)**				
8.1	5-year review	Information gathering, meetings, reporting	$15,000	1	$15,000
	5-Year Review Costs				**$15,000**
C. COST SUMMARY					
	Capital Costs		$45,000		
	30-Year Present Worth of O&M at 3.5% discount rate		$314,674		
	30 -Year Net Present Worth Cost		**$359,674**		

Notes:
Costs presented here do not include those covered unde
the EE/CA (see Section 1.4.4 of the FS and Appendix E of the EE/CA)

Disposal costs assume excavated soil is 1.65 tons/cubic yard

Year	Annual O&M	Periodic O&M	Subtotal
1	$19,496	$0	$19,496
2	$19,496	$0	$19,496
3	$19,496	$0	$19,496
4	$19,496	$0	$19,496
5	$19,496	$24,549	$44,045
6	$10,332	$0	$10,332
7	$10,332	$0	$10,332
8	$10,332	$0	$10,332
9	$10,332	$0	$10,332
10	$10,332	$24,191	$34,523
11	$10,332	$0	$10,332
12	$10,332	$0	$10,332
13	$10,332	$0	$10,332
14	$10,332	$0	$10,332
15	$10,332	$24,191	$34,523
16	$10,332	$0	$10,332
17	$10,332	$0	$10,332
18	$10,332	$0	$10,332
19	$10,332	$0	$10,332
20	$10,332	$24,191	$34,523
21	$10,332	$0	$10,332
22	$10,332	$0	$10,332
23	$10,332	$0	$10,332
24	$10,332	$0	$10,332
25	$10,332	$24,191	$34,523
26	$10,332	$0	$10,332
27	$10,332	$0	$10,332
28	$10,332	$0	$10,332
29	$10,332	$0	$10,332
30	$10,332	$24,191	$34,523
	Total =		$501,284

Real (constant dollar) rates from the Federal OMB Circular A-94 (2004 update)--> 30-Year Discount Rate = 3.5%
Present Worth = $314,674

PART 3—RESPONSIVENESS SUMMARY

3.1 STAKEHOLDER ISSUES AND USCG RESPONSES

The USCG held a public comment period on the Proposed Plan from 16 May 2005 to 15 June 2005. Verbal comments were received from one person during the public hearing held on 26 May 2005 for the Buoy Depot Site Proposed Plan. A copy of the transcript for the public hearing is provided as Appendix F of this ROD. MADEP provided written comments on 31 May 2005. Comment responses are provided in Section 3.3 of this Responsiveness Summary.

3.2 TECHNICAL AND LEGAL ISSUES

The issue raised during the public comment period pertained to oversight of the Remedial Action to be implemented by the USCG at the Buoy Depot Site.

MADEP's written comments pertained to the development of the LUCs portion of the Remedial Action and to the status of regulatory concurrence on other documents used to support the ROD.

The USCG and EPA believe that these issues have been addressed herein and that there is sufficient technical basis to proceed with the Selected Remedy.

3.3 COMMENT RESPONSES

Verbal Comment from James Cunningham, Restoration Advisory Board Member from Weymouth

> "I want to add my support to this solution, and I agree with Dave Chaffin (MADEP) that there should be some agency looking at the monitoring of the agreement after it's affected. And it looks to me as though the Coast Guard has been responsible in trying to clean up their pollution, especially lead pollution, here at the site."
>
> ***Response***—The USCG appreciates Mr. Cunningham's support for the Selected Remedy at the Buoy Depot Site. As described in Sections 2.12.2.2.6 and 2.12.2.3 of this legally enforceable ROD, the USCG will be submitting annual LUC compliance reports as well as monitoring (sampling) reports to EPA for approval and to MADEP for comment.

Written Comments from MADEP (dated 31 May 2005) on the Proposed Plan:

1. The Proposed Plan should explicitly identify the regulatory agency(ies) responsible for monitoring compliance with the LUCs. Please be advised that a proposal limited to self-monitoring by USCG would not provide an acceptable level of compliance monitoring

(*e.g.*, refer to the results from the recent U.S. General Accountability Office study of institutional controls at 268 CERCLA sites: report GAO-05-163).

Response—This comment has been addressed during the development of the ROD (see Section 2.12). EPA may legally enforce the provisions of the LUCIP both during times of USCG control of the Buoy Depot property, and in the event of property transfer, under the existing provisions of the FFA and this ROD. The USCG will provide annual LUC compliance reports to EPA for approval and to MADEP for comment.

2. The Proposed Plan should identify the means by which the responsible regulatory agency(ies) would monitor compliance with the LUCs while USCG owns the Buoy Depot property and after property transfer.

   For example, USCG could propose to: (1) maintain and certify records that would demonstrate continuous compliance with the LUCs; (2) perform, document, and certify annual LUC compliance inspections; and (3) provide for annual onsite LUC compliance monitoring inspections by the regulatory agency(ies) responsible for monitoring LUC compliance.

   Response—This comment has been addressed during the development of the ROD (see Section 2.12). The USCG will conduct LUC compliance inspections both during USCG control of the Buoy Depot property and after any property transfer. The USCG will provide annual LUC compliance reports to EPA for approval and to MADEP for comment. In accordance with CERCLA and the FFA, the USCG will provide EPA and MADEP with the opportunity to access the Buoy Depot property during LUC compliance inspections to verify compliance with LUCs, both during USCG control of the Buoy Depot property and after any property transfer.

3. The Proposed Plan should explicitly identify the regulatory agency(ies) that would be responsible for enforcing compliance with the LUCs. Please be advised that a proposal limited to self-enforcement by USCG would not provide an acceptable enforcement tool (*e.g.*, refer to GAO report GAO-05-163).

   Response—This comment has been addressed during the development of the ROD (see Section 2.12). EPA may legally enforce the provisions of the LUCIP, both during times of USCG control of the property and in the event of property transfer, under the existing provisions of the FFA and this ROD.

4. The Proposed Plan should identify the legally enforceable means by which the regulatory agency(ies) responsible for enforcing compliance with the LUCs could do so while USCG owns the Buoy Depot property and after property transfer.

For example, if the USCG intends to rely on the FFA for this purpose (as suggested by the reference to the "Land Use Control Plan to be developed with EPA and DEP in accordance with the FFA"), then the Proposed Plan should explain that the LUCs Plan would be legally enforceable under the existing provisions of the FFA, or explain that the FFA would be amended for this purpose. In addition, if the USCG intends to rely on the FFA to serve this purpose after the Buoy Depot property is transferred, the Proposed Plan should explain that the FFA would be legally enforceable against the property recipient under the existing provisions, the FFA would be amended for this purpose, or the Proposed Plan should identify another legal instrument that would be implemented for this purpose (*e.g.*, Grant of Environmental Restriction, refer to 310 CMR 40.1070).

Response—This comment has been addressed during the development of the ROD (see Section 2.12). EPA may legally enforce the provisions of the LUCIP both during times of USCG control of the property and after property transfer under the existing provisions of the FFA and this ROD.

5. DEP comments on the Proposed Plan are subject to a satisfactory response to comments on the swale and wetland removal action completion report (refer to 28 April 2005 comments on the draft Completion Report).

   Response—Responses to remaining MADEP comments on the swale and wetland Removal Action Completion Report have been addressed prior to signature of the ROD.

APPENDIX A: MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION LETTER OF CONCURRENCE

Refer to attached copy.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ROBERT W. GOLLEDGE, Jr.
Secretary

ARLEEN O'DONNELL
Commissioner

Mr. Robert Varney, Administrator
Region 1
U.S. Environmental Protection Agency
One Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Record of Decision
U.S. Coast Guard Buoy Depot Site
Former South Weymouth NAS
MassDEP RTN 3-2621
September 14, 2006

Dear Mr. Varney:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the *Record of Decision for the United Coast Guard South Weymouth Buoy Depot Site, South Weymouth, Massachusetts*, received June 19, 2006. The Record of Decision (ROD) summarizes the results from the remedial investigation (RI), feasibility study (FS), and removal actions conducted at the site, and provides the Coast Guard's rationale for selecting a remedy consisting of land use controls (institutional controls and engineering controls), long-term monitoring, and five-year reviews. Based on the results of the RI and removal actions, current conditions do not pose unacceptable risks to workers engaged in the on-going operations at the buoy depot. Proposed institutional controls will prevent more sensitive future uses of the site (e.g., residential activities) and will control migration of contaminated soil from the buoy depot property, which could pose a significant risk to human health and the environment. MassDEP concurs with the selected remedy for the Buoy Depot site.

If you have any questions or comments, please contact David Chaffin, Project Manager (617 348-4005), or Anne Malewicz, Federal Facilities Section Chief (617 292-5659).

Very truly yours,

for Edward P. Kunce, DCOP
Arleen O'Donnell, Acting Commissioner
Massachusetts Department of Environmental Protection

CC: D. Barney, USN-S. Weymouth
P. Marajh-Whittemore, USEPA
Executive Director, SSTTDC
RAB Members
J. Felix, MassDEP-Boston

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

MassDEP on the World Wide Web: http://www.mass.gov/dep
Printed on Recycled Paper

APPENDIX B: REFERENCES

EA Engineering, Science, and Technology, Inc. (EA). 2001. Final Remedial Investigation Report. February.

EA. 2002. Final Engineering Evaluation/Cost Analysis, U.S. Coast Guard Buoy Depot, Naval Air Station South Weymouth. December.

EA. 2003. Revised Final Non-Time Critical Action Memorandum for the Swale and Wetland Soil and the Building Floor Drain System, U.S. Coast Guard ISD Buoy Depot, South Weymouth, Massachusetts. November.

EA. 2004. Final USCG ISD South Weymouth Buoy Depot Feasibility Study, Naval Air Station, South Weymouth, Massachusetts. February.

EA. 2005. Proposed Plan, U.S. Coast Guard – Integrated Support Detachment, South Weymouth Buoy Depot Site, Weymouth, Massachusetts. May.

Nobis Engineering, Inc. (Nobis). 2004. Final Closure Report: Non-Time Critical Removal Action (Floor Drain Removal) at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts. August.

Nobis. 2005. Operations and Maintenance Manual for Stormwater Management System, U.S. Coast Guard Buoy Depot, South Weymouth, Massachusetts. June.

Nobis. 2006. Final Removal Action Completion Report, Stormwater System Installation and Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands, at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts. April.

U.S. Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund. Volume 1. Human Health Evaluation Manual (Part A). Interim Final. Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002. December.

USEPA. 1994. Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children. Office of Emergency and Remedial Response. USEPA/540/R-93/081.

USEPA. 1996. Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. USEPA. Washington, D.C.

USEPA. 2000. Integrated Risk Information System (IRIS). Environmental Criteria and Assessment Office. U.S. Environmental Protection Agency, Cincinnati, Ohio. http://www.epa.gov/ngispgm3/iris.

APPENDIX C: GLOSSARY OF TERMS AND ACRONYMS

Applicable or Relevant and Appropriate Requirements (ARARs)—"Applicable requirements" means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action location, or other circumstance found at a CERCLA site. Only those state requirements that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable. "Relevant and appropriate requirements" means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at a CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

Area of Concern (AOC)—A site or part of a site being investigated under CERCLA and for which risk assessments are conducted to identify the potential current and future effects on human health and the environment.

Background Level—Chemicals (or concentrations of chemicals) present in the environment due to naturally occurring geochemical processes and sources, or to human activities not related to specific point sources or site releases.

Benchmark—Concentration of a chemical considered to be protective of human health or the environment.

Chemical of Potential Concern (COPC)—A chemical detected in a site sample with a concentration that exceeds initial screening criteria and is then further evaluated in a risk assessment.

Chemical of Concern (COC)—Compounds and elements identified as a possible source of risk, based upon a comparison between compound concentrations and established screening levels (*e.g.*, Federal Primary Drinking Water Standards).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—A federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). For the Buoy Depot, the USCG is funding the investigation and cleanup under CERCLA.

Engineering Controls—Engineered instruments such as physical barriers or constructed/operational control systems that help minimize the potential for human or ecological exposure to site risks by limiting exposure pathways.

Engineering Evaluation/Cost Analysis (EE/CA)—A CERCLA document that develops and evaluates alternatives for a Non-Time-Critical Removal Action.

Excess Lifetime Cancer Risk Range—Upper bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen. The predicted cancer risk level is compared against an acceptable range of 1×10^{-4} to 1×10^{-6}.

Feasibility Study (FS)—This term refers to a study undertaken by the lead agency to develop and evaluate options for Remedial Action. The FS emphasizes data analyses and is generally performed concurrently and in an interactive fashion with the Remedial Investigation (RI) using data gathered during the RI. The RI data are used to define the objectives of the Response Action, to develop Remedial Action alternatives, and to undertake an initial screening and detailed analysis of the alternatives. The term also refers to a report that describes the results of the study.

Geoprobe—A brand name of hydraulically powered machines used for rapid subsurface sampling of soil, groundwater, etc. Sampling equipment is pushed into the ground without the use of a larger drill rig.

Groundwater—Groundwater, as defined by Section 101(12) of CERCLA, means water in a saturated zone or stratum beneath the surface of land or water.

Hazard Index—A measure of the potential for toxic (non-cancer related) effects from exposure to non-carcinogenic chemicals. A Hazard Index of 1 or less is considered an acceptable risk level by the U.S. Environmental Protection Agency.

Hydric Soil—Saturated/semi-saturated material located in areas of intermittent water flow (differs from a sediment which is continuously under water; although the HHRA in the Remedial Investigation for the USCG Buoy Depot Site referred to "hydric soil" as "sediment").

Institutional Controls—Institutional Controls are non-engineering measures designed to prevent or limit exposure to hazardous substances left in place at a site, or assure effectiveness of the chosen remedy. Institutional Controls are usually, but not always, legal controls, such as easements, restrictive covenants, and zoning ordinances.

Land Use Controls (LUCs)—The term *"Land Use Control"* or *"LUC"* in regard to real property on federal facilities should be broadly interpreted to mean any restriction or control, arising from the need to protect human health and the environment, that limits use of and/or exposure to any

portion of that property, including water resources. This term encompasses "Institutional Controls," such as those involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term also encompasses engineering controls such as physical barriers or constructed/operational control systems that help minimize the potential for human or ecological exposure to site risks by limiting exposure pathways. Considered altogether, the "LUCs" for a facility provide a blueprint for how its property should be used in order to maintain the level of protectiveness which one or more remedial/corrective actions were designed to achieve.

Land Use Control Implementation Plan (LUCIP)—Refers to a written plan, normally developed after a decision document has required one or more LUCs for some particular area (operable unit, contaminated unit, and/or solid waste management unit) which (1) identifies each LUC objective for that area (*e.g.*, to restrict public access to the area for recreational use) and (2) specifies those actions required to achieve each identified objective (*e.g.*, install/maintain a fence, post warning signs, record notice in deed records). LUC Implementation Plans specify what must be done to impose and maintain the required LUCs, and are therefore analogous to design and/or operation and maintenance plans developed for active remedies.

Monitoring—Indicates a variety of investigative activities, ranging from mere "drive-by" visual observations to detailed scientific sampling and testing. For purposes of this USCG Buoy Depot ROD, the term "monitoring" refers to sampling events whereas the term "inspection" refers to visual surveys.

Monitoring Well—A well drilled at a specific location on or off an investigation site allowing groundwater to be sampled at selected depths and groundwater flow directions to be determined.

National Priorities List—National Priorities List (NPL) means the list, compiled by EPA pursuant to CERCLA Section 105, of uncontrolled hazardous substance releases in the United States that are priorities for long-term remedial evaluation and response.

Polycyclic Aromatic Hydrocarbons—Chemical compounds such as benzo(a)pyrene, naphthalene, anthracene, and phenanthrene, which are usually byproducts of incomplete combustion.

Present Worth (or Present Value)—The present worth of a future investment or payment that is calculated using a particular discount or interest rate. Total present worth is the amount of money, which, if invested in the current year, would be sufficient to cover all the costs over time associated with a project.

Proposed Plan—A CERCLA document that summarizes the preferred cleanup remedy for a site and provides the public with information on how they can participate in the remedy selection process.

Record of Decision (ROD)—A legal, technical, and public document under CERCLA that explains the rationale and final cleanup decision for a site. It contains a summary of the public's involvement in the cleanup decision.

Remedial Investigation (RI)—A summary report of the information collected on the nature and extent of contamination and the problems that the contamination could potentially cause (including assessment of human health and ecological risks) at a CERCLA site.

Removal Action—A type of short-term cleanup that can be conducted at any time during the CERCLA process to address threats to human health or the environment. Typically, a "non-time-critical removal action" is conducted when it is determined that more than six months is available before site activities must be initiated but site conditions still consist of less complex or less extensive contamination problems than sites that would require long-term cleanup. An Engineering Evaluation/Cost Analysis and an Action Memorandum are prepared to authorize and outline the removal action. A "time-critical removal action" is performed when less than six months is available. Only the Action Memorandum is prepared for a time-critical removal action.

Responsiveness Summary—A CERCLA document containing the responses to the formal comments submitted by the public regarding the Proposed Plan. This summary is issued as an appendix to the Record of Decision.

ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BMP	Best Management Practice
BRAC	Base Realignment and Closure Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEU	Civil Engineering Unit
COC	Chemical of concern
COPC	Chemical of potential concern
CSM	Conceptual Site Model
CSO	Caretaker Site Office
dL	Deciliter
EA	EA Engineering, Science, and Technology, Inc.
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FFA	Federal Facility Agreement
FS	Feasibility Study
ft^2	Square feet
HHRA	Human Health Risk Assessment
HQ	Hazard Quotient
IEUBK	Integrated Exposure Uptake Biokinetic
ISCB	Integrated Support Command System
LNAPL	Light non-aqueous phase liquid
LTMP	Long-Term Monitoring Plan
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
MADEP	Massachusetts Department of Environmental Protection
MCL	Maximum Contaminant Level
mg/kg	Milligrams per kilogram
MIBK	Methyl isobutyl ketone
NAS	Naval Air Station
NCP	National Contingency Plan
NOAEL	No Observed Adverse Effects Level
NPL	National Priorities List
NTCRA	Non-Time-Critical Removal Action
O&M	Operation and Maintenance
PCB	Polychlorinated biphenyl
PPA	Potentially Productive Aquifer
PPE	Personal protective equipment
PRG	Preliminary Remediation Goal

RAB	Restoration Advisory Board
RAO	Remedial Action Objective
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SSTTDC	South Shore Tri-Town Development Corporation
SVOC	Semivolatile Organic Compound
TAL/TCL	Target Analyte List/Target Compound List
TBC	To Be Considered
TCLP	Toxicity Characteristic Leaching Procedure
TCRA	Time-Critical Removal Action
TRW	Technical Review Workgroup
TSDF	Treatment, storage, or disposal facility
UCLM	Upper Confidence Limit on the Mean
ug/L	Micrograms per liter
USCG	United States Coast Guard
VOC	Volatile organic compound
XRF	X-ray fluorescence
yd^3	Cubic yards

APPENDIX D: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS AND TO BE CONSIDERED GUIDANCE FOR THE SELECTED REMEDY: LAND USE CONTROLS (INSTITUTIONAL CONTROLS AND ENGINEERING CONTROLS), LONG-TERM MONITORING, AND FIVE-YEAR REVIEWS

CHEMICAL SPECIFIC					
Federal	All	Risk Assessment Guidance - Cancer Slope Factors and Reference Doses	Used in human health risk assessments as guidance values to evaluate the potential carcinogenic hazard caused by exposure to chemicals of concern (COCs).	None (used for risk calculations)	To Be Considered
Federal	All	EPA Region III Risk-Based Concentrations	Used as screening values to evaluate the potential hazards caused by exposure to COCs.	None (used for risk calculations)	To Be Considered
Federal	All	EPA Region IX Preliminary Remediation Goals	Generic risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements.	None (used for risk calculations)	To Be Considered
LOCATION SPECIFIC					
Federal	Species, Habitat	Endangered Species Act of 1973	Remedial actions may or may not impact federally-listed endangered/threatened species and their critical habitats.	No federally-listed endangered species have been identified in the vicinity of the Buoy Depot. However, endangered or threatened federally-listed migratory bird species may pass through this area. Therefore, appropriate measures must be taken during monitoring events or future actions to ensure that such species and their habitat are not adversely affected.	Relevant and Appropriate
Federal	Wetlands	Executive Order 11990; Wetlands Protection, 40 Code of Federal Regulations (CFR) Part 6, Appendix A	Requires action to avoid (whenever possible) the long- and short-term impacts associated with the destruction of wetlands whenever there is a practicable alternative which promotes preservation and restoration of the benefits and value of wetlands. If no such alternative exists, impacts from implementation must be mitigated.	No wetlands are located on the Buoy Depot; however, wetlands are located adjacent to the Buoy Depot. Potential impacts to wetlands from monitoring events or any future actions at the Site will be avoided, to the extent possible, in accordance with this order. If there is no practicable alternative to such remedial actions, unavoidable impacts to wetlands from these actions will be mitigated.	Relevant and Appropriate

LOCATION SPECIFIC (cont'd)					
Federal	Wetlands	Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661) Protection of Wildlife Habitats	Requires consultation with federal and state conservation agencies during planning and decision-making processes which may impact water bodies, including wetlands.	No wetlands are located on the Buoy Depot; however, wetlands are located adjacent to the Buoy Depot. Potential impacts to wetlands from monitoring events or any future actions at the Site will be avoided, to the extent possible, in accordance with this order. If there is no practicable alternative to such remedial actions, unavoidable impacts to wetlands from these actions will be mitigated.	Relevant and Appropriate
State	Wetlands	Massachusetts (MA) Wetlands Protection Regulations - 310 Code of MA Regulations (CMR) 10.51 - 10.60	Outlines requirements for all inland work that will remove, fill, dredge or alter and bank, bordering vegetated wetland, land under water bodies and waterways, land subject to flooding, or riverfront area.	No wetlands are located on the Buoy Depot; however, wetlands are located adjacent to the Buoy Depot. Potential impacts to wetlands from monitoring events or any future actions at the Site will be avoided, to the extent possible, in accordance with this order. If there is no practicable alternative to such remedial actions, unavoidable impacts to wetlands from these actions will be mitigated.	Relevant and Appropriate
State	Wetlands	MA Endangered Species Act (MESA) 321 CMR 10.00	Prohibits the "taking" of any rare plants or animals listed as Endangered, Threatened, or Special Concern by the MA Division of Fisheries and Wildlife. This also protects designated endangered/threatened species populations.	No state-listed endangered species have been identified in the vicinity of the Buoy Depot. However, appropriate measures must be taken during monitoring events and any future actions to ensure that state-listed threatened species (northern harrier) and state-listed species of special concern (spotted turtle and eastern box turtle) and their habitat are not adversely affected by any remedial actions. Although these species have not been identified onsite, they have been identified within the extent of the adjacent Navy base. Other listed migratory species may also pass through this area.	Relevant and Appropriate

ACTION SPECIFIC					
Federal	Soil	Resource Conservation and Recovery Act (RCRA) - Generator Requirements for Manifesting Waste for Offsite Disposal (40 CFR 262)	Standards for manifesting, marking, and recording hazardous waste shipments for offsite treatment/disposal.	If the monitoring events require offsite treatment/disposal of hazardous wastes (investigation-derived), then generator requirements will be followed.	Applicable
Federal	Soil	RCRA - Subpart I, Use and Management of Containers (40 CFR 264, Subpart I)	Outlines use and management standards applicable to owners and operators of all hazardous waste facilities that store containers of hazardous waste.	If monitoring events require storage of hazardous waste (investigation-derived) in containers, then the substantive requirements of these regulations will be followed.	Applicable
Federal	Soil	RCRA - Identification and Listing of Hazardous Wastes, Toxicity Characteristic (40 CFR 261.24)	These requirements identify the maximum concentrations of contaminants for which a waste would be considered a RCRA characteristic waste due to toxicity. The analytical test specified in Appendix II of 40 CFR 61 is referred to as the Toxic Characteristic Leaching Procedure (TCLP).	Investigation-derived waste will be analyzed by the TCLP to determine whether it is characteristic hazardous waste under RCRA. Wastes that are determined to exceed TCLP allowable concentrations (and are therefore hazardous) will be disposed of offsite in a RCRA Subtitle C or state equivalent treatment, storage, or disposal facility (TSDF). Wastes that are determined to be below TCLP allowable concentrations (and therefore non-hazardous) will be disposed of offsite in a RCRA Subtitle D or state equivalent TSDF.	Applicable
Federal	Soil	RCRA Standards Applicable to Generators of Hazardous Waste (40 CFR 262)	Massachusetts has been delegated the authority to administer these RCRA standards through its state hazardous waste management regulations. The relevant and appropriate provisions of 40 CFR 262 are incorporated by reference.	Investigation-derived waste may be characterized as hazardous waste. If so, the material will be handled in compliance with the substantive requirements of these standards.	Applicable
Federal	Soil	EPA Office of Solid Waste and Emergency Response (OSWER) Publication 9345.3-03 FS (January 1992)	Management of wastes generated during remedial activities must ensure protection of human health and the environment.	Investigation-derived wastes would be managed in accordance with these requirements.	To Be Considered

ACTION SPECIFIC (cont'd)					
State	Soil	Hazardous Waste Management Rules; Requirements for Generators; 310 CMR 30.300	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling waste and also apply to the accumulation of waste prior to offsite disposal.	Investigation-derived wastes that are determined to be hazardous would be managed in accordance with the substantive requirements of these regulations.	Applicable
State	Soil	Hazardous Waste Management Rules; Use and Management of Containers; 310 CMR 30.689	These regulations establish requirements for the use and management of containers at hazardous waste facilities.	If monitoring events require storage of hazardous waste (investigation-derived) in containers, then management procedure requirements will be followed.	Applicable

APPENDIX E: ADMINISTRATIVE RECORD INDEX AND GUIDANCE DOCUMENTS

ARI	Date	Document Type	Description	Notes
1000 Site Investigation	Apr-1988	Report	"Potential Hazardous Waste Site Preliminary Assessment Report, U.S. Coast Guard Buoy Depot, South Weymouth, Massachusetts", USCG.	
1000 Site Investigation	1-Dec-1991	Report	"Site Investigation at Naval Air Station South Weymouth, Massachusetts," Baker Environmental.	Available in Navy's files.
1000 Site Investigation	1-Feb-1996	Report	"Initial Assessment Survey, Buoy Depot, South Weymouth, Massachusetts", PSI Inc.	Available in Navy's files.
1000 Site Investigation	18-Nov-1996	Report	Final "Environmental Baseline Survey, Naval Air Station, South Weymouth, Massachusetts," Stone and Webster Environmental Technology and Services.	Available in Navy's files.
1000 Site Investigation	23-Mar-1998	Report	"Environmental Baseline Survey, USCG Buoy Depot, South Weymouth, MA", HRP Associates Inc.	
1000 Site Investigation	1-Jun-1998	Work Plan	Draft "Combined Work Plan Environmental Site Investigation, USCG Buoy Depot, South Weymouth", HRP Associates.	
1000 Site Investigation	1-Jul-1998	Work Plan	Final "Environmental Baseline Survey Phase II Sampling Work Plan, Naval Air Station, South Weymouth, Massachusetts," Stone and Webster Environmental Technology and Services.	Available in Navy's files.
1000 Site Investigation	1-Jul-1998	Work Plan	"Quality Assurance Project Plan Phase II Environmental Baseline Survey, South Weymouth NAS", Stone and Webster Environmental Technology and Services. Approximately 300 pages.	Available in Navy's files.
1000 Site Investigation	27-Aug-1998	Correspondence	Letter from Ms. Patty Marajh-Whittemore, to Mr. Steve Hurff, Navy Northern Division, re: Review of Draft Combined Work Plan, Environmental Site Investigation, USCG Buoy Depot. 5 pages	
1000 Site Investigation	Sep-1998	Report	"Phase II Environmental Site Assessment for Transfer of Property, USCG Buoy Depot, South Weymouth, MA", HRP Associates, Inc.	
1000 Site Investigation	20-Jan-1999	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Review of Phase II Environmental Site Assessment for Transfer of Property, USCG Buoy Depot, South Weymouth. 8 pages. (Note: The USCG response is included as Appendix I of the final Remedial Investigation Work Plan.)	
1000 Site Investigation	7-May-1999	Correspondence	Letter from D.R. May, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Formal documentation that there is only one septic tank and leach field located at USCG South Weymouth. 1 page.	

ARI	Date	Document Type	Description	Notes
1000 Site Investigation	1-Jul-1999	Report	"Phase II Environmental Baseline Survey Field Reports for Review Item Areas 39D, 57, Naval Air Station, South Weymouth, Massachusetts", Stone and Webster Environmental Technology and Services.	Available in Navy's files.
2000 Remedial Investigation	Apr-1999	Work Plan	"Phase II Remedial Investigation Workplan for South Weymouth Naval Air Station Weymouth, MA", Tetra Tech NUS, Inc.	Available in Navy's files.
2000 Remedial Investigation	Apr-1999	Work Plan	"Phase II Remedial Investigation Work Plan, South Weymouth Naval Air Station, Appendix A of Volume 1, Refined Tier 1 Ecological Risk Assessment," ENSR.	Available in Navy's files.
2000 Remedial Investigation	20-Apr-1999	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Proposed Groundwater Investigation USCG Buoy Depot. 3 pages.	
2000 Remedial Investigation	20-Apr-1999	Correspondence	Memo from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Review of Memorandum titled "Ground-Water Flow Direction and Proposed Monitoring Well Package." 2 pages.	
2000 Remedial Investigation	Aug-1999	Work Plan	Draft "USCG ISD South Weymouth Buoy Depot, Remedial Investigation Quality Assurance Project Plan," EA Engineering, Science, and Technology.	
2000 Remedial Investigation	20-Aug-1999	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Review of the XRF Section of the RI Work Plan. 5 pages.	
2000 Remedial Investigation	27-Aug-1999	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Review of the Draft RI Work Plan, XRF Soil Screening, USCG Buoy Depot, South Weymouth NAS. 3 pages.	
2000 Remedial Investigation	13-Sep-1999	Response to Comment	"USCG Response to EPA and MADEP Comments on the XRF Portions of the Draft RI Work Plan for the USCG Buoy Depot," EA Engineering, Science, and Technology. 6 pages.	
2000 Remedial Investigation	14-Sep-1999	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Draft RI Work Plan USCG Buoy Depot, South Weymouth NAS.	
2000 Remedial Investigation	20-Sep-1999	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the USCG ISD, South Weymouth Buoy Depot RI Work Plan". 15 pages.	
2000 Remedial Investigation	28-Sep-1999	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Review of the USCG response to comments on the XRF section of the RI Work Plan. 2 pages.	
2000 Remedial Investigation	27-Oct-1999	Response to Comment	"USCG Response to EPA's Comment Letter Dated 28 September 1999 Regarding the Review of USCG Response to Comments on the XRF Section of the RI Work Plan", EA Engineering, Science, and Technology. 4 pages.	

ARI	Date	Document Type	Description	Notes
2000 Remedial Investigation	Nov-1999	Response to Comment	Response to USEPA Comments Regarding the Review of USCG Response to Comments on the XRF Section of the Draft RI Work Plan for the USCG Buoy Depot", EA Engineering, Science, and Technology. 4 pages.	
2000 Remedial Investigation	Nov-1999	Response to Comment	Response to USEPA Comments Regarding the Draft RI Work Plan for the USCG Buoy Depot, NAS South Weymouth, South Weymouth, MA", EA Engineering, Science, and Technology. 32 pages.	
2000 Remedial Investigation	Nov-1999	Response to Comment	Response to MADEP Comments Regarding the Draft RI Work Plan for the USCG Buoy Depot, NAS South Weymouth, South Weymouth, MA", EA Engineering, Science, and Technology. 13 pages.	
2000 Remedial Investigation	16-Dec-1999	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Draft Final RI Work Plan. 2 pages.	
2000 Remedial Investigation	21-Dec-1999	Correspondence	Letter form Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the USCG response to comments on USCG South Weymouth Buoy Depot RI Work Plan, Draft Final. 6 pages.	
2000 Remedial Investigation	7-Jan-2000	Correspondence	Letter from Mr. Michael Milanoski, South Shore Tri-Town Development Corporation, to Ms. Rachel Marino, USCG, re: Comments on the Draft RI Work Plan, USCG Buoy Depot, South Weymouth. 4 pages.	
2000 Remedial Investigation	Jan-2000	Response to Comment	"USCG Response to SSTTDC Comments on the Draft Final Work Plan for the USCG Buoy Depot," EA Engineering, Science, and Technology. 2 pages.	
2000 Remedial Investigation	Jan-2000	Response to Comment	USCG Response to MADEP Comments on the Draft Final Work Plan for the USCG Buoy Depot," EA Engineering, Science, and Technology. 3 pages.	
2000 Remedial Investigation	Jan-2000	Response to Comment	"USCG Response to USEPA Comments on the Draft Final Work Plan for the USCG Buoy Depot," EA Engineering, Science, and Technology. 9 pages.	
2000 Remedial Investigation	Jan-2000	Work Plan	Final "Remedial Investigation Work Plan, USCG ISD Buoy Depot, South Weymouth, MA" EA Engineering, Science, and Technology.	
2000 Remedial Investigation	Jan-2000	Report	"United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, Soil and Ground-Water Screening Data Package", EA Engineering, Science, and Technology. Approximately 250 pages.	
2000 Remedial Investigation	26-Jan-2000	Meeting notes	Synopsis of USCG Buoy Depot Meeting on 21 January 2000, re: to discuss the screening data obtained as part of the RI. 2 pages	
2000 Remedial Investigation	Feb-2000	Report	Final "Summary Report of Background Statistics for NAS South Weymouth, Massachusetts," Stone and Webster Environmental Technology and Services.	Available in Navy's files.

ARI	Date	Document Type	Description	Notes
2000 Remedial Investigation	6-Oct-2000	Correspondence	Letter from Ms, Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Draft RI, USCG South Weymouth. 6 pages.	
2000 Remedial Investigation	11-Oct-2000	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Draft USCG ISD, South Weymouth Buoy Depot, RI Report. 15 pages.	
2000 Remedial Investigation	16-Oct-2000	Correspondence	Letter from Mr. Kenneth Goff, South Shore Tri-Town Development Corporation, to Ms. Rachel Marino, USCG, re: Comments on the Draft Remedial Investigation. 6 pages.	
2000 Remedial Investigation	31-Oct-2000	Response to Comment	United States Coast Guard Responses to Agency Comments on the South Weymouth Buoy Depot, Draft Remedial Investigation Report", EA Engineering, Science, and Technology. 48 pages.	
2000 Remedial Investigation	16-Nov-2000	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Response to Comments on the Draft RI Report of October 2000. 2 pages.	
2000 Remedial Investigation	22-Nov-2000	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response to the Navy's Response to Comments on the Draft RI Report of October 2000. 7 pages.	
2000 Remedial Investigation	Dec 2000	Report	Draft Final "United States Coast Guard Integrated Support Detachment South Weymouth Buoy Depot, Remedial Investigation Report," EA Engineering, Science, and Technology. (Note: See the February 2001 document for the final version.)	
2000 Remedial Investigation	26-Jan-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Final U.S. Coast Guard Integrated Support Detachment South Weymouth Buoy Depot, RI Report. 4 pages.	
2000 Remedial Investigation	26-Jan-2001	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Final RI Report Comments. 2 pages.	
2000 Remedial Investigation	26-Jan-2001	Correspondence	Letter from Mr. Kenneth Goff, South Shore Tri-Town Development Corporation, to Ms. Rachel Marino, USCG, re: Comments - Draft Final Remedial Investigation Report. 3 pages.	
2000 Remedial Investigation	Feb-2001	Response to Comment	"USCG Responses to Agency Comments on the South Weymouth Buoy Depot Draft Final Remedial Investigation Report", EA Engineering, Science, and Technology. 9 pages.	
2000 Remedial Investigation	Feb-2001	Response to Comment	"Response to USEPA Comments Regarding the Draft Final RI for the USCG Buoy Depot, NAS South Weymouth, South Weymouth, MA", EA Engineering, Science, and Technology.	

ARI	Date	Document Type	Description	Notes
2000 Remedial Investigation	15-Feb-2001	Report and Response to Comment	"Responses to Comments and Final Remedial Investigation Report" (issued as change pages for the draft final report), EA Engineering, Science and Technology. 32 pages.	
2000 Remedial Investigation	19-Mar-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Final USCG ISD, South Weymouth Buoy Depot, Remedial Investigation Report". 2 pages.	
3000 Feasibility Study	23-Apr-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: EPA extension of time to review and Comments on the Draft USCG ISD South Weymouth Buoy Depot Feasibility Study. 1 page.	
3000 Feasibility Study	25-Apr-2001	Correspondence	Letter from Mr. Kenneth Goff, South Shore Tri-Town Development Corporation, to Ms. Rachel Marino, USCG, re: Comments – Draft Feasibility Study. 5 pages.	
3000 Feasibility Study	8-May-2001	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Draft FS Report Comments. 5 pages.	
3000 Feasibility Study	17-May-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Draft United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, Feasibility Study Report. 45 pages.	
3000 Feasibility Study	2-Nov-2001	Work Plan	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Draft Work Plan for Supplemental Field Work to Support the Feasibility Study, USCG ISD Buoy Depot, South Weymouth, Massachusetts. 7 pages.	
3000 Feasibility Study	15-Nov-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Work Plan for Supplemental Field Work to Support the Feasibility Study. 6 pages.	
3000 Feasibility Study	12-Dec-2001	Work Plan	Letter to Ms. Patty Marajh-Whittemore, USEPA, from Ms. Rachel Marino, USCG, re: Final Work Plan for Supplemental Field Work to Support the Feasibility Study. 9 pages.	
3000 Feasibility Study	21-Dec-2001	Response to Comment and Meeting Notes	Response to Comments on Draft Work Plan for Supplemental Field Work to Support the Feasibility Study and Meeting Notes from 29 November 2001, EA Engineering, Science, and Technology. 25 pages.	
3000 Feasibility Study	21-Dec-2001	Correspondence	Letter from Ms. Jane Connet, EA Engineering, Science, and Technology, to Ms. Rachel Marino, USCG, re: Work elements associated with Supplemental Field Work to Support the FS and accompanying EA Final Work Plan for Supplemental Field Work to Support the FS. 9 pages.	

ARI	Date	Document Type	Description	Notes
3000 Feasibility Study	23-Jan-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: EPA concurrence with modifications and addition to Draft Work Plan for Supplemental Field Work to Support the Feasibility Study and acceptance of Final Work Plan for Supplemental Field Work to Support the FS. 1 page.	
3000 Feasibility Study	28-Feb-2002	Response to Comment	"Response to Comments for the Draft Feasibility Study and Response to EPA Comments on the Human Health Risk Assessment (HHRA) from the Final Remedial Investigation Report," EA Engineering, Science, and Technology. 52 pages.	
3000 Feasibility Study	28-Mar-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] USCG Responses to EPA Comments on the South Weymouth Buoy Depot Draft Feasibility Study Report. 7 pages.	
3000 Feasibility Study	10-Jun-2003	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Revised Feasibility Study Report. 3 pages.	
3000 Feasibility Study	2-Jul-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Draft Final Feasibility Study, U.S. Coast Guard - Integrated Support Detachment, South Weymouth Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 13 pages.	
3000 Feasibility Study	23-Jul-2003	Meeting Notes	Meeting Notes from 8 July 2003. 3 pages.	
3000 Feasibility Study	30-Jul-2003	Correspondence	Email from Ms. Betsy Mason, USEPA, to Ms. Patty Marajh-Whittemore, USEPA, re: USCG FS question. 2 pages.	
3000 Feasibility Study	22-Aug-2003	Correspondence	Email from Mr. Rick Sugatt, USEPA, to Patty Whittemore, USEPA, re: "hot spot" action item from the 8 July 2003 meeting. 1 page.	
3000 Feasibility Study	29-Oct-2003	Response to Comment	"Responses to MADEP Comments (Dated 10 June 2003) on the Draft Final Feasibility Study (Dated May 2003), U.S. Coast Guard – Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering Science, and Technology. 9 pages.	
3000 Feasibility Study	29-Oct-2003	Response to Comment	"Responses to EPA Comments (Dated 2 July 2003) and Supplemental Comments (Dated 22 August 2003) on the Draft Final Feasibility Study (Dated May 2003), U.S. Coast Guard – Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering Science, and Technology. 23 pages.	
3000 Feasibility Study	25-Nov-2003	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Responses to Comments on the Draft Final Feasibility Study.	

ARI	Date	Document Type	Description	Notes
3000 Feasibility Study	4-Dec-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: USCG's October 29, 2003 Response to EPA Comments (dated July 2, 2003) and Supplemental Comments (dated August 22, 2003) on the Draft Final Feasibility Study, U.S. Coast Guard Integrated Support Detachment, Buoy Depot - Naval Air Station, South Weymouth, Massachusetts.	
3000 Feasibility Study	Feb-2004	Report	Final "USCG ISD South Weymouth Buoy Depot Feasibility Study, Naval Air Station, South Weymouth, Massachusetts," EA Engineering, Science, and Technology.	
3000 Feasibility Study	Feb-2004	Response to Comment	"USCG Responses to MADEP Comments (Dated 25 November 2003) on the Previous Response Document (Dated 29 October 2003) for the Draft Final Feasibility Study (Dated May 2003), U.S. Coast Guard – Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering, Science, and Technology (included as part of Final Feasibility Study). 2 pages.	
3000 Feasibility Study	Feb-2004	Response to Comment	"USCG Responses to EPA Comments (Dated 4 December 2003) on the Previous Response Document (Dated 29 October 2003) for the Draft Final Feasibility Study (Dated May 2003), U.S. Coast Guard – Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering, Science, and Technology, (included as part of Final Feasibility Study). 7 pages.	
3000 Feasibility Study	11-Mar-2004	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Revised Feasibility Study Report. 5 pages.	
3000 Feasibility Study	Apr-2004	Letter Report	"USCG Facility, Lead Issue In Surface Soil", USEPA. 4 pages.	
3000 Feasibility Study	22-Apr-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Final Feasibility Study. 5 pages.	
3000 Feasibility Study	1-Jun-2004	Response to Comment	"USCG Responses to MADEP Comments (Dated 11 March 2004) on the Final Feasibility Study (Dated February 2004), USCG Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering, Science, and Technology. 14 pages.	
3000 Feasibility Study	1-Jun-2004	Response to Comment	"USCG Responses to EPA Comments (Dated 22 April 2004) on the Final Feasibility Study (Dated February 2004), USCG Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts", EA Engineering, Science, and Technology. 12 pages.	
3000 Feasibility Study	15-Jul-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: EPA Evaluation of Navy's Responses to EPA Comments on the Final Feasibility Study. 8 pages.	

ARI	Date	Document Type	Description	Notes
3000 Feasibility Study	3-Feb-2005	Response to Comment	Response to EPA Comments on the Final FS, USCG ISD Buoy Depot, South Weymouth, MA" EA Engineering, Science, and Technology.	
4000 Removal Action	24-Sep-2001	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Draft Dust Collection System Removal and Associated Lead-Contaminated Soil Removal Action Memorandum. 2 pages.	
4000 Removal Action	24-Oct-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Dust Collection System Removal and Associated Lead-Contaminated Soil Removal, Removal Action Memorandum. 7 pages.	
4000 Removal Action	26-Apr-2002	Correspondence	Memorandum from Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: "Approval Memorandum to Perform Engineering Evaluation/Cost Analysis, United States Coast Guard, Integrated Support Detachment South Weymouth Buoy Depot." 7 pages.	
4000 Removal Action	8-May-2002	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: USCG EE/CA Memo.	
4000 Removal Action	13-May-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the USCG Approval Memorandum to Perform Engineering Evaluation/Cost Analysis. 3 pages.	
4000 Removal Action	27-Jun-2002	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: EE/CA Comments. 4 pages.	
4000 Removal Action	18-Jul-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Draft USCG Engineering Evaluation/Cost Analysis. 15 pages.	
4000 Removal Action	6-Aug-2002	Response to Comment	"Response to Massachusetts Department of Environmental Protection and the U.S. Department of Environmental Protection [sic] Comments on the Draft Engineering Evaluation/Cost Analysis for the United States Coast Guard Buoy Depot at Naval Air Station South Weymouth", EA Engineering, Science, and Technology. 34 pages.	
4000 Removal Action	4-Sep-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] USCG Response to EPA Comments on Draft USCG Engineering Evaluation/Cost Analysis. 5 pages.	
4000 Removal Action	11-Sep-2002	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] USCG RTC on EE/CA. 1 page.	
4000 Removal Action	25-Oct-2002	Response to Comment	"Response to the Massachusetts Department of Environmental Protection and the United States Environmental Protection Agency Additional Comments on the Draft EE/CA for the USCG Buoy Depot, at the Naval Air Station South Weymouth, Massachusetts," EA Engineering, Science, and Technology.	

ARI	Date	Document Type	Description	Notes
4000 Removal Action	20-Nov-2002	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] USCG Response to EPA Additional Comments on Draft EE/CA for USCG Buoy Depot. 13 pages.	
4000 Removal Action	Dec-2002	Report	Final "Engineering Evaluation/Cost Analysis U.S. Coast Guard Buoy Depot, Naval Air Station South Weymouth," EA Engineering, Science and Technology.	
4000 Removal Action	30-Dec-2003	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Floor Drain Removal Work Plan. 3 pages.	
4000 Removal Action	14-Jan-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Work Plan for the (floor drains) Soil Excavation and Offsite Treatment/Disposal, USCG Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 10 pages.	
4000 Removal Action	16-Jan-2003	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: EE/CA and Action Memorandum Comments. 3 pages.	
4000 Removal Action	31-Jan-2003	Correspondence	Response to USEPA Comments dated 14 Jan 03 on the Work Plan, Soil Excavation and Offsite Treatment/Disposal at the USCG ISD South Weymouth Buoy Depot", Nobis Engineering, Inc. (Note: This pertains to the floor drain removal action.)	
4000 Removal Action	31-Jan-2003	Work Plan	Final "Work Plan, Soil Excavation and Offsite Treatment/Disposal at the USCG ISD South Weymouth Buoy Depot," Nobis Engineering, Inc. (Note: This pertains to the floor drain removal action.)	
4000 Removal Action	27-Feb-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Non-Time Critical Action Memorandum, U.S. Coast Guard Buoy Depot, Naval Air Station South Weymouth, South Weymouth, Massachusetts. 6 pages.	
4000 Removal Action	27-Feb-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Comments on the Final Engineering Evaluation/Cost Analysis, U.S. Coast Guard Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 7 pages. .	
4000 Removal Action	19-Mar-2003	Response to Comment	"Response to U.S. Environmental Protection Agency Comments Dated 27 February 2003 on the Non-Time Critical Action Memorandum for U.S. Coast Guard ISD Buoy Depot, South Weymouth, Massachusetts" by EA Engineering, Science, and Technology. 10 pages.	
4000 Removal Action	25-Aug-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Floor Drain Closeout Report. 5 pages.	
4000 Removal Action	28-Aug-2003	Correspondence	Letter from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Comments on Draft Floor Drain Closeout Report.	

ARI	Date	Document Type	Description	Notes
4000 Removal Action	Nov-2003	Response to Comment	"Responses to EPA and MADEP Comments on the Draft Dust Collection System Removal Action Memorandum, USCG ISD Buoy Depot, South Weymouth, Massachusetts," EA Engineering, Science, and Technology.	
4000 Removal Action	19-Nov-2003	Report	Revised Final "Non-Time Critical Action Memorandum for the Swale and Wetland Soil and the Building Floor Drain System, U.S. Coast Guard ISD Buoy Depot, South Weymouth, Massachusetts", EA Engineering, Science and Technology. Approximately 60 pages.	
4000 Removal Action	19-Nov-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: Comments on Conceptual Stormwater System Design.	
4000 Removal Action	24-Nov-2003	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the] Hydric Soil Excavation and Offsite Treatment/Disposal Swale and Wetlands at the USCG South Weymouth Buoy Depot.	
4000 Removal Action	24-Nov-2003	Correspondence	Email from Mr. David Chaffin, MADEP to Ms. Rachel Marino, USCG, re: Comments on the Conceptual Stormwater Design	
4000 Removal Action	24-Nov-2003	Correspondence	Letter/Email from Mr. David Chaffin, MADEP to Ms. Rachel Marino, USCG, re: Comments on Hydric Soil Work Plan.	
4000 Removal Action	24-Nov-2003	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, re: Comments on the Action Memorandum for the Swale, Wetland, and Floor Drain Removal.	
4000 Removal Action	26-Nov-2003	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Comments on Dust Collection System Removal Action. 1 page.	
4000 Removal Action	23-Dec-2003	Response to Comment	Responses to EPA Comments on the Conceptual Stormwater System Design, Nobis Engineering.	
4000 Removal Action	12-Jan-2004	Response to Comment	Responses to EPA Comments on the Hydric Soil Work Plan, Nobis Engineering.	
4000 Removal Action	16-Jan-2004	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Approval of Responses to Comments on the Hydric Soil Work Plan.	
4000 Removal Action	27-Jan-2004	Correspondence	Email from Mr. David Chaffin, MADEP to Ms. Rachel Marino, USCG, re: Comments on the Stormwater Management Conceptual Design.	
4000 Removal Action	20-Feb-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the] Response on the Draft Closure Report, Non-Time-Critical Removal Action (Floor Drain Removal). 9 pages.	
4000 Removal Action	8-Mar-2004	Response to Comment	Responses to USEPA Comments [from 2/20/04] on the Draft Closure Report, Non-Time Critical Removal Action, Nobis Engineering, Inc.	

ARI	Date	Document Type	Description	Notes
4000 Removal Action	12-Mar-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the] Revised Final Non-Time Critical Action Memorandum for the Swale and Wetland Soil and the Building Floor Drain System USCG Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 7 pages.	
4000 Removal Action	12-Mar-2004	Response to Comment	Response to Comments to the Stormwater Management Plan 90% Design, Nobis Engineering.	
4000 Removal Action	19-Mar-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the Draft Final] Time-Critical Removal Action Memorandum for Dust Collection System and Associated Lead-Contaminated Soil Removal. 3 pages.	
4000 Removal Action	25-Mar-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: Response Evaluation to USCG Comments on the Draft Work Plan, Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands.	
4000 Removal Action	7-Apr-2004	Response to Comment	Responses to EPA Evaluation on the Draft Work Plan, Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands.	
4000 Removal Action	12-Apr-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: [Comments on the] 90% Stormwater Management Plan, USCG South Weymouth Buoy Depot. 12 pages.	
4000 Removal Action	4-May-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA to Ms. Rachel Marino, USCG, re: Response to USCG Responses [4/7/04] on EPA Evaluation on the "Draft Work Plan, Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands , USCG Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 4 pages.	
4000 Removal Action	4-May-2004	Response to Comment	"USCG Responses to EPA Comments Dated 19 March 2004 on the Draft Final Time-Critical Removal Action Memorandum for Dust Collection system and Associated Lead-Contaminated Soil Removal of November 2003", EA Engineering Science, and Technology. 3 pages.	
4000 Removal Action	4-May-2004	Response to Comment	Responses to EPA Comments dated 12 March 2004 on the Revised Final Non-Time Critical Action Memorandum for the Swale and Wetland Soil and the Building Floor Drain System of November 2003 at the USCG Buoy Depot. 4 pages.	
4000 Removal Action	5-May-2004	Correspondence	Letter from Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response Evaluation to USCG Comments on the Conceptual Stormwater Management Plan for the USCG Buoy Depot. 8 pages.	
4000 Removal Action	21-May-2004	Response to Comment	Responses to EPA Comments on the Draft Work Plan, Hydric Soil Excavation, Swale and Wetlands.	

ARI	Date	Document Type	Description	Notes
4000 Removal Action	4-Jun-2004	Report	Final "Time-Critical Removal Action Memorandum for Dust Collection System and Associated Lead-Contaminated Soil Removal, South Weymouth Buoy Depot, South Weymouth, Massachusetts," EA Engineering, Science, and Technology.	
4000 Removal Action	21-Jun-2004	Work Plan	"Stormwater Management Plan at the United States Coast Guard Integrated Support Detachment South Weymouth Buoy Depot, South Weymouth, Massachusetts", Nobis Engineering, Inc.	
4000 Removal Action	23-Jun-2004	Work Plan	Final "Work Plan, Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetland, at the United States Coast Guard Integrated Support Detachment South Weymouth Buoy Depot, South Weymouth, Massachusetts", Nobis Engineering, Inc. Approximately 100 pages.	
4000 Removal Action	15-Jul-2004	Correspondence	Letter from Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response to USCG Responses on EPA Evaluation on the Draft Work Plan, Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands. 3 pages.	
4000 Removal Action	23-Jul-2004	Correspondence	Letter from Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] 100% Stormwater Management Plan. 6 pages.	
4000 Removal Action	11-Aug-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response on the USCG March 8, 2004 comments on the Draft Closure Report, Non-Time Critical Removal Action (Floor Drain Removal), USCG Buoy Depot, Naval Air Station South Weymouth, Massachusetts. 7 pages.	
4000 Removal Action	20-Aug-2004	Report	Final "Closure Report: Non-Time Critical Removal Action (Floor Drain Removal) at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts", Nobis Engineering, Inc.	
4000 Removal Action	23-Sep-2004	Correspondence	Letter from Patty Marajh-Whittemore, USEPA, to Rachel Marino, USCG, re: Final Work Plan, Hydric Soil Excavation and Offsite Removal.	
4000 Removal Action	8-Sep-2004	Correspondence	Letter from Christopher Ryan, Nobis Engineering, to Rachel Marino, USCG, re: Responses to EPA Comments to the USCG's Responses Regarding the Draft Closure Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal.	
4000 Removal Action	Mar-2005	Report	"Draft Removal Action Completion Report, Stormwater System Installation and Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands, at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts", Nobis Engineering, Inc. 75 pages.	
4000 Removal Action	28-Apr-2005	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, re: comments on the draft Swale –Wetland Completion Report. 3 pgs.	

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4000 Removal Action	16-May 2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Removal Action Completion Report	
4000 Removal Action	16 Jun-2005	Response to Comments	[Response to] "USEPA Comments regarding the Draft Closure Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal", Nobis Engineering, Inc. 11 pages.	
4000 Removal Action	16-Jun-2005	Response to Comments	[Response to] "DEP Comments regarding the Draft Closure Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal", Nobis Engineering, Inc. 4 pages.	
4000 Removal Action	29-June-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Responses on the Draft Closure Report Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal.	
4000 Removal Action	8 Sept-2005	Response to Comments	[Response to] "USEPA Comments to the USCG's Responses Regarding the Draft Closure Report" Nobis Engineering. 6 pages	
4000 Removal Action	3-Oct 2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Responses on the Draft Closure Report Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal.	
4000 Removal Action	29-Nov-2005	Response to Comments	[Response to] "USEPA Comments to the USCG's Responses Regarding the Draft Closure Report" Nobis Engineering.	
4000 Removal Action	4-Jan-2006	Correspondence	EPA Comments via Email of January 4, 2006 on the Draft Closure Report Stormwater System Installation and Swale and Wetland Hydric Soil Excavation and Off-Site Treatment/Disposal, U. S. Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, March 2005.	
4000 Removal Action	1-Feb-2006	Response to Comments	Letter from Ms. Rachel Marino., USCG, to Ms. Patty Marajh-Whittemore, USEPA re: Response to EPA Comments via Email of January 4, 2006 on the Draft Closure Report Stormwater System Installation and Swale and Wetland Hydric Soil Excavation and Off-Site Treatment/Disposal, U. S. Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, March 2005.	
4000 Removal Action	7-Feb-2006	Response to Comments	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response (2) on the Draft Closure Report Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal, U.S. Coast Guard Buoy Depot.	
4000 Removal Action	17-Feb-2006	Response to Comments	Letter from Ms. Rachel Marino., USCG, to Ms. Patty Marajh-Whittemore, USEPA re: Response to EPA Comments Response (2) Draft Closure Report Stormwater System Installation and Swale and Wetland Hydric Soil Excavation and Off-Site Treatment/Disposal, U.S. Coast Guard Buoy Depot.	

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4000 Removal Action	1-Mar-2006	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Response to USCG Letter (February 17, 2006) on the Draft Closure Report Report for the Stormwater System Installation and Wetland/Swale Hydric Soil Excavation/Disposal, U.S. Coast Guard Buoy Depot.	
4000 Removal Action	21 April 2006	Report	Final Removal Action Completion Report, Stormwater System Installation and Hydric Soil Excavation and Offsite Treatment/Disposal, Swale and Wetlands, at the United States Coast Guard Integrated Support Detachment, South Weymouth Buoy Depot, South Weymouth, Massachusetts", Nobis Engineering, Inc. 75 pages.	
5000 Proposed Plan and ROD	3-Aug-2004	Correspondence	Letter from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, re: [Comments on the] Draft Proposed Plan.	
5000 Proposed Plan and ROD	5-Aug-2004	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Anticipated Comments on USCG Proposed Plan. 3 pages.	
5000 Proposed Plan and ROD	12-Aug-2004	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Proposed Plan. 7 pages.	
5000 Proposed Plan and ROD	7-Feb-2005	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: USCG Buoy Depot RTCs, proposed meeting dates. 1 page.	
5000 Proposed Plan and ROD	3-Feb-2005	Response to Comment	"Responses to EPA and MADEP Comments on the Draft Proposed Plan and Response to EPA Comments on the Final FS, USCG ISD Buoy Depot, South Weymouth, MA" EA Engineering, Science, and Technology.	
5000 Proposed Plan and ROD	24-Feb-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the USCG's responses, dated February 3, 2005 on to EPA comments, dated August 12, 2004 on the Draft Proposed Plan]. 4 pages.	
5000 Proposed Plan and ROD	25-Mar-2005	Response to Comment	"USCG Responses to EPA Comments dated 24 February 2004 on the Draft Proposed Plan dated 9 July 2004," EA Engineering, Science, and Technology. 6 pages.	
5000 Proposed Plan and ROD	8-Apr-2005	Correspondence	Letter from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, re: [Comments on the] Draft Final Proposed Plan.	
5000 Proposed Plan and ROD	12-Apr-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Final Proposed Plan. 7 pages.	
5000 Proposed Plan and ROD	19-Apr-2005	Response to Comment	"USCG Responses to EPA Comments dated 12 April 2005 on the Draft Final Proposed Plan dated 25 March 2005", EA Engineering, Science, and Technology. 7 pages.	
5000 Proposed Plan and ROD	19-Apr-2005	Response to Comment	"USCG Responses to MADEP Comments dated 8 April 2005 on the Draft Final Proposed Plan dated 25 March 2005", EA Engineering, Science, and Technology. 5 pages.	

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5000 Proposed Plan and ROD	21-Apr-2005	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] RTCs on the DF Proposed Plan for the USCG Buoy Depot. 3 pages.	
5000 Proposed Plan and ROD	27-Apr-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on USCG's 4/19/05 Responses to EPA's 4/12/05 Comments on the] Draft Final Proposed Plan. 3 pages.	
5000 Proposed Plan and ROD	3-May-2005	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] Redlined Proposed Plan. 2 pages.	
5000 Proposed Plan and ROD	4-May-2005	Response to Comment	Email from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: USEPA Comments - CG Edits. 2 pages.	
5000 Proposed Plan and ROD	4-May-2005	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] EPA Comments – CG Edits. 2 pages.	
5000 Proposed Plan and ROD	4-May-2005	Correspondence	Email from Ms. Leann Jensen, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] EPA Comments – CG Edits.	
5000 Proposed Plan and ROD	16-May-2005	Fact Sheet	"Proposed Plan, USCG ISD South Weymouth Buoy Depot Site, Weymouth, Massachusetts", EA Engineering, Science, and Technology. 16 pages.	
5000 Proposed Plan and ROD	31-May-2005	Correspondence	Email from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Final Proposed Plan. 1 page.	
5000 Proposed Plan and ROD	12-July-2005	Correspondence	Letter from Mr. David Chaffin, MADEP, to Ms. Rachel Marino, USCG, re: Comments on the Draft Record of Decision. 6 pages.	
5000 Proposed Plan and ROD	21-July-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Record of Decision. 7 pages.	
5000 Proposed Plan and ROD	30-Sept-2005	Correspondence	USCG Responses to MADEP Comments (dated 12 July 2005) on the Draft Record of Decision for the South Weymouth Buoy Depot Site, South Weymouth, Massachusetts (dated July 2005)	
5000 Proposed Plan and ROD	30-Sept-2005	Correspondence	USCG Responses to EPA Comments (dated 21 July 2005) on the Draft Record of Decision (dated 6 July 2005) for the USCG Buoy Depot, South Weymouth, MA	
5000 Proposed Plan and ROD	26-Oct-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Final Record of Decision. 7 pages.	
5000 Proposed Plan and ROD	4-Nov-2005	Correspondence	Letter from Ms. Anne Malewicz, MADEP, to Ms. Rachel Marino, USCG, re: [Comments on the] Draft Final Record of Decision.	
5000 Proposed Plan and ROD	5-Dec-2005	Response to Comments	USCG Responses to MADEP Comments on the Draft Final Record of Decision (dated 3 Oct 2005) for the South Weymouth Buoy Depot Site, South Weymouth, Massachusetts	

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5000 Proposed Plan and ROD	6-Dec-2005	Responses to Comments	USCG Responses to EPA Comments on the Draft Final Record of Decision (dated 3 Oct 2005) for the USCG Buoy Depot, South Weymouth, Massachusetts	
5000 Proposed Plan and ROD	[SIGN DATE]	Report	Final "Record of Decision for the United States Coast Guard Integrated Support Detachment Buoy Depot, South Weymouth, Massachusetts," signed by the USCG Civil Engineering Unit Providence and the USEPA Region I. Approx. 100 pages.	
6000 Public Participation and Community Relations	25-Oct-1999	Public Notice	"Public Notice Announcing the Signing of the FFA for the USCG Buoy Depot South Weymouth, MA," appeared in the Boston Globe.	
6000 Public Participation and Community Relations	1999-2005	Meeting Notes	Restoration Advisory Board, minutes from February 1999 to May 2005 (includes brief status updates).	
6000 Public Participation and Community Relations	8-Apr-1999	Meeting Notes	Restoration Advisory Board minutes from 8 April 1999 meeting (included a presentation as an update of the overall environmental investigation status).	
6000 Public Participation and Community Relations	12-Oct-2000	Meeting Notes	Restoration Advisory Board, minutes from 12 October 2000 meeting (included a presentation on the Remedial Investigation).	
6000 Public Participation and Community Relations	12-Apr-2001	Meeting Notes	Restoration Advisory Board, minutes from 12 April 2001 meeting (included a presentation on the Feasibility Study).	
6000 Public Participation and Community Relations	14-Feb-2002	Meeting Notes	Restoration Advisory Board minutes from 14 February 2002 meeting (included a presentation as an updated of the overall site status).	
6000 Public Participation and Community Relations	3-Jun-2002	Public Notice	"U.S. Coast Guard (USCG) Issues Draft Engineering Evaluation for Planned Removal Action at Buoy Depot at Former Naval Air Station (NAS) South Weymouth, Massachusetts," legal notice appeared in the Boston Globe and the Patriot Ledger.	

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6000 Public Participation and Community Relations	13-Jun-2002	Meeting Notes	Restoration Advisory Board minutes from 13 June 2002 meeting (included a presentation on the Engineering Evaluation/Cost Analysis).	
6000 Public Participation and Community Relations	10-Apr-2003	Meeting Notes	Restoration Advisory Board, minutes from 10 April 2003 meeting (included a presentation on the floor drain removal action).	
6000 Public Participation and Community Relations	3-9 June 2004	Public Notice	"U.S. Coast Guard (USCG) Announces the Action Memorandum for the Time-Critical Removal Action for the Dust Collection System and Associated Lead-Contaminated Soil at the South Weymouth Buoy Depot," legal notice appeared in the Patriot Ledger on 3 June 2004 and in the Weymouth News.	
6000 Public Participation and Community Relations	10-Jun-2004	Meeting Notes	Restoration Advisory Board, minutes from 10 June 2004 meeting (included a presentation on the hydric soil removal action and the stormwater system design).	
6000 Public Participation and Community Relations	13-Jan-2005	Meeting Notes	Restoration Advisory Board, minutes from 13 January 2005 meeting (included a presentation on the hydric soil removal action and the stormwater system design).	
6000 Public Participation and Community Relations	26-May-2005	Meeting	Public Informational Meeting and Public Hearing on the Proposed Plan (public hearing transcript included as part of the Record of Decision).	
6000 Public Participation and Community Relations	[PENDING]	Public Notice	"U.S. Coast Guard (USCG) Presents the Record of Decision for the South Weymouth Buoy Depot," legal notice appeared in the Patriot Ledger, Weymouth News, and Abington/Rockland Mariner.	
7000 Technical Sources and Guidance Documents		Regulation	Resource Conservation and Recovery Act (RCRA), 40 CFR 261, EPA Regulations for Identifying Hazardous Waste.	On file with issuing agency.

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7000 Technical Sources and Guidance Documents		Regulation	Federal Safe Drinking Water Act (SDWA) (USC 300g), 40 CFR 141.11-141.16 and 141.60-141.63.	On file with issuing agency.
7000 Technical Sources and Guidance Documents		Guidance	U.S. Environmental Protection Agency. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12.	On file with issuing agency.
7000 Technical Sources and Guidance Documents		Regulation	Federal Clean Water Act (CWA) (33 USC 1251-1376); Clean Water Act, Water Quality Criteria, Section 404 (40 CFR 230).	On file with issuing agency.
7000 Technical Sources and Guidance Documents	1986	Law	42 U.S.C. Section 7401 et. Seq., CERCLA, as amended by the Superfund Amendments and Reauthorization Act.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	1988	Guidance	CERCLA Compliance with Other Laws Manual, OSWER Directive: 9234.1-01. Washington, D.C., USEPA.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Oct-1988	Guidance	U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) Interim Final (EPA/540/G-89/004), OSWER Directive 9355.3-01.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	1990	Regulation	"National Oil and Hazardous Substances Pollution Contingency Plan," Code of Federal Regulations (Title 40, Part 300).	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Dec-1991	Guidance	U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals), Interim. EPA/540/R-92/003.	On file with issuing agency.

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7000 Technical Sources and Guidance Documents	Aug-1993	Guidance	Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA, EPA540-R-93-057, USEPA.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Jan-1994	Guidance	U.S. Environmental Protection Agency. *Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children.* EPA/540/R-93/081.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Aug-1994	Guidance	U.S. Environmental Protection Agency. *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities.* OSWER Directive #9355.4-12, EPA/540/F-94/043.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Sep-1994	Guidance	Department of Defense and United States Environmental Protection Agency. Restoration Advisory Board Implementation Guidelines.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Dec-1996	Guidance	U.S. Environmental Protection Agency. *Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil.*	On file with issuing agency.
7000 Technical Sources and Guidance Documents	1997	Guidance	U.S. Environmental Protection Agency. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final,* EPA/540/R-97/006, OSWER 9285.7-25, PB97-963211.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Apr-98	Guidance	U.S. Environmental Protection Agency. *Guidelines for Ecological Risk Assessment.* EPA/630/R-95/002F. Office of Research and Development, Washington DC.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Jun-1998	Guidance	U.S. Environmental Protection Agency. Community Relations in Superfund, A Handbook (Interim Version) (EPA/540/G-88/002).	On file with issuing agency.

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7000 Technical Sources and Guidance Documents	Jun-1998	Guidance	U.S. Environmental Protection Agency. *EPA Region IX Preliminary Remediation Goals Table (Update).* EPA Region IX, San Francisco.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	1998	Guidance	U.S. Environmental Protection Agency. *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments) (Interim).* Publication 9285.7-01D. EPA Office of Emergency and Remedial Response, Washington, DC.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Apr-1999	Guidance	U.S. Environmental Protection Agency. *EPA Region III Risk-Based Concentration Table (Update).* EPA Region III, Philadelphia.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Oct-1999	Guidance	Issuance of Final Guidance: Ecological Risk Assessment and Risk Management Principals for Superfund Sites. USEPA, OSWER Directive 9285.7-28 P.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Apr-2000	Guidance	U.S. Environmental Protection Agency. *Risk-Based Concentration Table.* U.S. Environmental Protection Agency, Region III.	On file with issuing agency.
7000 Technical Sources and Guidance Documents	Jul-2000	Guidance	A Guide to Documenting Cost Estimates During the Feasibility Study, EPA 540-R-00-002, USEPA.	On file with issuing agency.
9000 Federal Facility Agreement	Sep-1999	Federal Facility Agreement	United States Environmental Protection Agency New England Region and the United States Coast Guard, on the matter of the United State Coast Guard South Weymouth Buoy Depot, Weymouth, Massachusetts, Federal Facility Agreement under CERCLA Sections 104, 120, and 122	
9000 Federal Facility Agreement	29-Dec-1999	Correspondence	Responsiveness Summary for the USCG Buoy Depot Federal Facility Agreement, EA Engineering, Science, and Technology. 5 pages.	
9000 Federal Facility Agreement	6-Dec-2000	Correspondence	Letter from Rachel Marino, USCG, to Patty Marajh-Whittemore, USEPA, re: FFA extension request for USCG extension on submission of Draft Final RI Report.	

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9000 Federal Facility Agreement	16-Mar-2001	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Whittemore, USEPA, re: Extension Request for USCG Buoy Depot Draft FS. 2 pages.	
9000 Federal Facility Agreement	15-Jun-2001	Correspondence	Letter from Jane Connet, EA, to Rachel Marino, USCG, re: Draft Amendment to FFA Timetable. 8 pages.	
9000 Federal Facility Agreement	25-Sep-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Missed Federal Facility Agreement Deadlines USCG Buoy Depot, South Weymouth Naval Air Station National Priorities List Site. 2 pages	
9000 Federal Facility Agreement	5-Oct-2001	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Missed Federal Facility Agreement Deadlines, USCG Integrated Support Detachment Buoy Depot, South Weymouth, MA. 3 pages.	
9000 Federal Facility Agreement	16-Oct-2001	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Federal Facility Agreement Schedule, USCG Buoy Depot, South Weymouth Naval Air Station National Priorities List Site. 5 pages.	
9000 Federal Facility Agreement	15-May-2002	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Federal Facility Agreement Extension Request for U. S. Coast Guard (USCG) South Weymouth Buoy Depot.	
9000 Federal Facility Agreement	19-Dec-2002	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: FFA Schedule Clarification. 2 pages.	
9000 Federal Facility Agreement	7-Oct-2003	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Request for Federal Facility Agreement (FFA) Extension on the Final Feasibility Study for U. S. Coast Guard Integrated Support Detachment (ISD) South Weymouth. 2 pages.	
9000 Federal Facility Agreement	20-Oct-2003	Correspondence	Letter from Patty Marajh- Whittemore, USEPA, to Rachel Marino, USCG, re: 7 October USCG Request for Time Extension for Final FS. 1 page.	
9000 Federal Facility Agreement	15-Jun-2004	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA re: Federal Facility Agreement (FFA) Revised Schedule. 2 pages.	
9000 Federal Facility Agreement	5-Aug-2004	Correspondence	Email from Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: Extension request for review of the draft Proposed Plan. 1 page.	

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9000 Federal Facility Agreement	8-Dec-2004	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA re: Request for Federal Facility Agreement (FFA) Extension on the Draft Final Proposed Plan for U. S. Coast Guard Integrated Support Detachment (ISD) South Weymouth. 3 pages.	
9000 Federal Facility Agreement	15-Apr-2005	Correspondence	Letter from Ms. Rachel Marino, USCG, to Ms. Patty Marajh-Whittemore, USEPA, re: Request for extension to the Federal Facility Agreement (FFA) Schedule. 2 pages.	
9000 Federal Facility Agreement	26-Apr-2005	Correspondence	Letter from Ms. Patty Marajh-Whittemore, USEPA, to Ms. Rachel Marino, USCG, re: USCG Request for and Indefinite Extension of the Federal Facility Agreement Schedule. 2 pages.	

APPENDIX F: TRANSCRIPT OF THE PUBLIC HEARING ON THE PROPOSED PLAN FOR THE BUOY DEPOT

PROPOSED PLAN

U.S. COAST GUARD ISD BUOY DEPOT

SOUTH WEYMOUTH, MASSACHUSETTS

Naval Air Station

Conference Center

South Weymouth, MA

May 26, 2005

8:00 p.m.

(The formal public hearing convened at 8:00 p.m., chaired by Ms. Rachel Marino.)

MS. MARINO: Good evening. My name is Rachel Marino, and I'm with the Coast Guard Civil Engineering Unit from Providence, Rhode Island. I am project manager for the US Coast Guard Buoy Depot Site.

This evening we have presented a proposed plan to the public, and now this is the public hearing for the proposed plan, on May 26, 2005, at 8:00 p.m., and we'll accept any comments at this time.

MR. CUNNINGHAM: What sort of comments are you looking for? Is this the whole of the hearing?

MS. MARINO: This is the whole of the hearing.

MR. CHAFFIN: This is the opportunity to comment for the record.

MR. CUNNINGHAM: Do I need to say my name and all that kind of thing?

MS. MARINO: Yes.

MR. CUNNINGHAM: I'm James Cunningham,

a Weymouth resident, and I'm a member of the Restoration Advisory Board here in the Naval Air Station. I want to add my support to this solution, and I agree with Dave Chaffin that there should be some agency looking at the monitoring of the agreement after it's effected. And it looks to me as though the Coast Guard has been responsible in trying to clean up their pollution, especially lead pollution, here at the site.

MS. MARINO: Thank you, Jim.

Any other comments? That's the end of the public hearing, not the comment period. The comment period extends to June 15th, and written comments should be postmarked no later than June 15th and sent either to myself Rachel Marino at the Coast Guard, 300 Metro Center Blvd., Warwick, RI 02886. Other contacts would be the EPA project manager Patty Marajh-Whittemore, Mr. David Chaffin DEP project manager.

(The hearing concluded at 8:10 p.m.)

1 C E R T I F I C A T E

2 State of Massachusetts)
) ss.
3 County of Norfolk)

4 I, *Carol DiFazio*, a Notary Public in and for the County of Norfolk, State of MASSACHUSETTS,
5 do hereby certify:

6 That the said proceeding was taken before me as a Notary Public at the said time and place and
7 was taken down in machine shorthand writing by me;

8 That I am a Registered Professional Reporter of the State of Massachusetts, that the
9 said proceeding was thereafter under my direction transcribed into computer-assisted transcription,
10 and that the foregoing transcript constitutes a full, true, and correct record of the proceedings
11 which then and there took place;

12 IN WITNESS WHEREOF, I have hereunto subscribed my hand and affixed my official seal this
13 27th day of May, 2005.

14 _____
CAROL DiFAZIO, Notary Public
15 Registered Professional Reporter

16 My Commission expires December 20, 2007
CSR#: 108293
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