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TETRA TECH FW, INC

JACOBS

US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT

Total Environmental Restoration Contract
USACE Contract Number: DACW33-03-D-0006
Task Order No. 0001

EXECUTION PLAN
2004, 2005 NEW BEDFORD HARBOR REMEDIAL ACTION

New Bedford Harbor Superfund Site
New Bedford, MA

July 2004

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SDMS DocID 507210

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ACRONYMS AND ABBREVIATIONS

A/P	Accounts Payable
A/R	Accounts Receivable
AHA	activity hazard analysis
BOD	Basis of Design
BD/DA	Basis of Design/Design Analysis
CCQC	Contractor Chemical Quality Control
cfm	cubic feet per minute
CIH	Certified Industrial Hygienist
CMP	Contract Management Procedure
COA	code of accounts
COC	chain of custody
CQC	Contractor Quality Control
cy	cubic yards
DAF	Dissolved Air Flotation
DFW	definable features of work
DGPS	Differential Global Positioning System
DMU	dredge management unit
ECES	Environmental Cost Element Structure
EDD	electronic data deliverable
EPA	U.S. Environmental Protection Agency
FAR	Federal Acquisition Regulation
ft/sec	foot per second
FW	Foster Wheeler Environmental Corporation
FY	fiscal year

ACRONYMS AND ABBREVIATIONS

GAC	Granular Activated Carbon
GIS	Geodetic Information System
gpm	gallons per minute
HDPE	High Density Polyethylene
hp	horsepower
ID/IQ	Indefinite Delivery/Indefinite Quantity
IT	Information Technology
Jacobs	Jacobs Engineering Group
JV	Joint Venture
LAN	local area network
LTM	long term monitoring
MCL	Maximum Contaminant Level
MIS	Management Information System
MLLW	mean lo low water
NAE	U.S. Army Corps of Engineers – New England District
NBH	New Bedford Harbor
NOAA	National Oceanic & Atmospheric Administration
NPL	Superfund National Priorities List
NRWQC	National Recommended Water Quality Criteria.
O&M	Operation and maintenance
OBS	Organizational Breakdown Structure
OD	outside diameter
OSHA	Occupational Safety and Health Administration
OU	operable unit
OWS	Oil/water separator

PCB	Polychlorinated biphenyl
Plan	Execution Plan
PPE	personal protective equipment
ppm	parts per million
psi	pounds per square inch
PVC	Poly vinyl chloride
QA	Quality Assurance
QC	quality control
QCS	Quality Control System
RFS	resource forecasting system
RMS	Resident Management System
ROD	Record of Decision
SB	Small Business
SEE	site environmental evaluation
SG	specific gravity
Site	New Bedford Harbor Superfund Site
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
T&D	transportation and disposal
TDS	total dissolved solids
TERC	Total Environmental Restoration Contract
TSCA	Toxic Substance Control Act
TSS	total suspended solids
TtFW	Tetra Tech Foster Wheeler
WAN	wide area network

ACRONYMS AND ABBREVIATIONS

WBS	work breakdown structure
WBS	work breakdown structure
WOSB	Woman Owned Small Business
WST	Waste Stream Technology, Inc.
µg/L	micrograms per liter
µm	micro meter

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1.0 INTRODUCTION

This Execution Plan (Plan) has been prepared by Jacobs Engineering Group (Jacobs) under U.S. Army Corps of Engineers – New England District (NAE) Total Environmental Restoration Contract (TERC) No. DACW33-03-D-0006. The purpose of this Plan is to outline how the remediation of the New Bedford Harbor Superfund Site (Site) will be accomplished for Fiscal Year (FY) 2004 and 2005. The Plan describes the means and methods for performing the work, provides a material balance analysis, and presents a schedule, a work breakdown structure (WBS), staffing and other relevant items.

The work described in this Plan is based to a considerable extent on reports and documents prepared in recent years under a separate contract (DACW33-94-D-0002) between NAE and Foster Wheeler Environmental Corporation (FW). However, there are some significant deviations from the FW guidance documents, particularly with respect to treatment options. In preparation of this Plan, a scoping meeting was held on March 24, 2004 with NAE and the U.S. Environmental Protection Agency (EPA) to discuss various design details and project logistics (see Attachment A - Scoping Meeting Minutes). The dredging, desanding, dewatering and wastewater treatment strategies proposed in this Plan were discussed during the scoping meeting. These strategies are intended to provide greater flexibility for variable, annual funding expected over the multiple years required for remediation of the harbor.

1.1 PROJECT TEAM

Jacobs has assembled a project team for the remediation of the New Bedford Harbor Superfund Site during FY 2004 and FY 2005 that will enable NAE to meet the technical challenges associated with dredging, treatment, handling, and possible disposal of contaminated sediments, and associated environmental compliance monitoring and field activities. The team members listed below have decades of expertise in environmental remediation, marine dredging, regulatory compliance, and large, multi-firm construction management.

The planned subcontracting strategy is intended to meet the goals set forth in the Disadvantaged Business Subcontracting Plan included in Contract Management Procedure (CMP) 02 of the TERC Contract. An analysis of the percentage of the Disadvantaged Business Subcontracting amount vs. the TERC goals will be completed in preparation for Task Order/Modification proposals.

Table 1-1 below identifies the Project Team assembled for the New Bedford Harbor Remediation program during FY 2004 and FY 2005. The business category for each subcontractor (i.e.. Large business, Small Business (SB) and Woman Owned Small Business (WOSB)) is listed in the table. These firms and associated key personnel are discussed in more detail in Section 7 of this Plan.

Table 1-1 Project Team

Team Member Firm	Business Category	Team Responsibility
Jacobs Engineering Group	Large	Project Management, Environmental Sampling
Sevenson Environmental	SB	Dredging, Dewatering, and Wastewater Treatment
Cashins Associates	WOSB	Environmental Compliance Monitoring
Amro Environmental Labs	WOSB	Analytical Services
The Environmental Quality Company	SB	Transportation and Disposal Services (if authorized by NAE)

2.0 PROJECT DESCRIPTION

The New Bedford Harbor Superfund Site has been investigated extensively over the last two decades. These investigations have concluded that the primary contaminants of concern are PCBs and heavy metals. To date, limited quantities of contaminated sediments have been removed from the Harbor. However, numerous documents have been produced that help establish the design basis for full-scale remediation of the Harbor beginning in 2004.

2.1 BACKGROUND

The New Bedford Harbor (NBH) Superfund Site is located in Bristol County, Massachusetts, approximately 55 miles south of Boston, and is bordered by the towns of Acushnet and Fairhaven on the east side of NBH, and by the City of New Bedford and the town of Dartmouth on the west. From north to south, the Site extends from the upper reaches of the Acushnet River estuary, through New Bedford's commercial port and into Buzzards Bay. The southern extent of the outer harbor and the Site is an imaginary line drawn from Rock Point (the southern tip of West Island in Fairhaven) southwesterly to Negro Ledge and then southwesterly to Mishaum Point in Dartmouth. A Site Plan Layout, showing the remedial system components from the upper reaches of the Acushnet River estuary south to the dewatering and wastewater treatment facility, is included as Figure 1.

Industrial and urban development surrounding the NBH Site have resulted in sediments becoming contaminated with polychlorinated biphenyls (PCBs) and heavy metals, with concentration gradients generally decreasing from north to south. Identification of PCB-contaminated sediments and seafood in and around New Bedford Harbor was first made in the mid-1970s as a result of U.S. Environmental Protection Agency (EPA) region-wide sampling programs. Based on these sampling programs, the determination was made that the principle sources of PCB contamination were from two electric capacitor manufacturing facilities located adjacent to the Acushnet River/New Bedford Harbor water way. The primary source of PCB contamination emanated from the Aerovox

facility, located near the northern boundary of the site. PCB wastes were discharged from Aerovox's operations directly into the upper harbor through open trenches and discharge pipes, or indirectly throughout the site via the City's sewage system. Secondary inputs of PCBs were also made from the Cornell Dubilier Electronics, Inc. facility just south of the New Bedford Hurricane Barrier. These electric capacitor manufacturing facilities operated from the 1940s into the 1970s. The NBH Site was added to the Superfund National Priorities List (NPL) in September 1983.

The NBH Site has been divided into three areas - the Upper Harbor, the Lower Harbor, and the Outer Harbor - consistent with geographical features of the area and gradients of contamination. The boundary between the Upper Harbor and the Lower Harbor is the Coggeshall Street Bridge where the width of New Bedford Harbor narrows to approximately 100 feet. The boundary between the Lower Harbor and the Outer Harbor is the 150-foot wide opening of the New Bedford Hurricane Barrier. The operable unit (OU) designation for the Upper and Lower Harbors, and a small portion of the Outer Harbor is OU #1, as defined by the cleanup goals in the Record of Decision (ROD) (EPA, 1998).

The Upper Harbor comprises approximately 187 acres, with a wide range of PCB concentrations in sediments. The range of PCB levels is from below detection to approximately 4,000 parts per million (ppm). Prior to the removal of the most contaminated Hot Spot sediments in 1994 and 1995 as part of the Site's first cleanup phase, sediment PCB levels were reported higher than 100,000 ppm at isolated locations in the Upper Harbor. The Lower Harbor comprises approximately 750 acres. In some of this area, sediment PCB levels range from below detection to over 100 ppm. Sediment PCB levels in the Outer Harbor are generally low, with only localized areas of PCBs in the 50-100 ppm range near the Cornell-Dubilier plant and the City's sewage treatment plant outfall pipes. A site plan showing the target dredge depths (Z-Star dredge depths) for PCB contaminant removal throughout the upper harbor is included as Figure 2. This figure also indicates the approximate location of the designated management units within the harbor. This figure was originally developed by Foster Wheeler and included in the

Final Confirmatory Sampling Approach Technical Memo Volumes, Areas and Properties of Sediment By Management Units Technical Memo (Foster Wheeler, June 2003).

The EPA and NAE entered into an Inter-Agency Agreement in February 1998 that gives NAE responsibility to provide technical assistance to EPA for the NBH Site. In October 1998, EPA authorized NAE to perform Remedial Design activities associated with the Upper Harbor and Lower Harbor cleanup.

In the period from December 1998 through June 2003, FW developed Remedial Designs for the NBH Site. The design documents produced by FW generally provide the basis for all subsequent Remedial Actions to be completed by Jacobs under this NAE TERC contract. The design documents available for review and reference as guidance for developing this Plan were the following:

- *Final Dredging Basis of Design/Design Analysis (BD/DA) Report*
- *Dredge & Excavation Specifications*
- *Final Excavation BD/DA Report*
- *Final BD/DA Report, Design Drawings, and Specifications for the Desanding and Dewatering Facilities*
- *Final BD/DA Report, Design Drawings, and Specifications for the Water Treatment System*
- *Final Confirmatory Sampling Approach Technical Memo Volumes, Areas and Properties of Sediment By Management Units Technical Memo*
- *Draft Data Interpretation Report*

2.2 EXISTING SITE UTILITIES

The site utilities (public water, sewer, power) existing on site were previously installed to support the remedial activities that have occurred prior to this date. To the extent possible, these utilities will be utilized for the remedial action work under this contract. A complete evaluation of the existing utilities will be conducted during the planning and design phases of the remedial action activities. Recommendations for adjustments to the

existing utilities (e.g., modifications, relocations or increases in capacity), if necessary, will be included in future task order proposals.

2.3 OBJECTIVES

Based on a combination of human health risk and ecological considerations, the NBH cleanup goals are intended to achieve the following long-term objectives:

- Reduce health risks due to consumption of PCB-contaminated local seafood
- Reduce health risks due to contact with PCB-contaminated shoreline sediments
- Improve ecological and water quality within the harbor

In conjunction with these objectives, location-specific cleanup criteria have been established as discussed in the *Final Dredging Basis of Design/Design Analysis Report*. In the Upper Harbor, sediments with PCB concentrations above 10 ppm will be removed. In the Lower Harbor and in salt marshes, sediments with PCB concentrations above 50 ppm will be removed. Intertidal sediments in specific areas adjacent to homes and in areas prone to beachcombing will be removed if PCB concentrations are above 1 ppm and 25 ppm respectively. The sequencing of sediment removal activities in previous reports was planned such that upgradient areas would be cleaned first; thereby reducing the likelihood of recontaminating previously dredged areas.

While recognizing the long-term objectives, for the next few years EPA and NAE have jointly decided that the primary objectives will be somewhat different from the principles outlined in the guidance documents. As a general rule, PCB mass removal will be a focus in 2004 and 2005. Specifically, the following major changes will be in effect for the near future:

- Sediment removal will not occur from a north to south (generally upgradient to downgradient) progression. Rather, dredge management units (DMUs) as outlined in the *Volumes, Areas and Properties of Sediment by Management Units Technical Memorandum* with the greatest amount of PCB mass will be remediated first. DMU-2 will be remediated in 2004.

- Remediation efforts will likely be focused on the DMUs in the subtidal zone. Therefore, minimal, if any, restoration efforts are expected in 2004 and 2005.

In keeping with this revised approach, it is expected that approximately 30,000 cubic yards of PCB-contaminated sediments will be dredged from DMU-2 in 2004. These sediments will be transported via pipeline to the various treatment facilities and ultimately disposed of as described in Section 3.3.11. It is anticipated that as many as 15,000 cubic yards of PCB-contaminated sediments currently stored in Cell-1 at Sawyer Street will also be treated and disposed of during the 2004 field season. Following a winter shutdown of field operations, dredging will resume in the spring of 2005. Based on anticipated funding levels, approximately 50,000 cubic yards of sediments will be removed from subtidal areas during the 2005 field season. Depending on available funding, the quantity of sediments dredged could be modified. The DMU(s) to be remediated in 2005 will be determined following further discussions between EPA, NAE, and the Jacobs team.

In addition to the field tasks mentioned above, the Jacobs project team will also provide operation and maintenance (O&M) services for the continued operation of the project facilities at Sawyer Street and Area D. Jacobs will also assume the management responsibilities of the property system currently being managed by TtFW. The property management system will be maintained in accordance to government property policy, FAR regulations and NAE requirements.

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3.0 SCOPE OF WORK

The scope of work described in this Section includes the design and field implementation phases of the Execution Plan. The design for the dredging, desanding, dewatering and wastewater treatment systems presented herein will be the basis for implementation of the remedial actions taken for cleanup of NBH and adjacent tidal zones.

3.1 DESIGN BASIS

The basis of design (BOD) for the work described in this Plan is derived from several sources. The sources can be divided into two primary categories; the existing BOD documents and Jacobs' performance-based engineering design concept. The guidance documents previously prepared by FW with respect to dredging, desanding, dewatering, wastewater treatment, and sampling are integral aspects of the design basis. The primary guidance documents are listed above under Subsection 2.1.

The second source for the design basis is the performance-based engineering design concepts proposed by the Jacobs team. These concepts have been discussed with NAE and EPA in scoping meetings held for the development of this Plan. An effort was made in this Plan to reflect the most recent guidance from those discussions. CBI

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These examples, combined with other concepts proposed in this Plan, are intended to achieve the established performance objectives while maximizing efficiency and use of available funding.

3.2 DESIGN

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3.2.5.1 Basis For Design

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3.3 FIELD IMPLEMENTATION

The system component designs and waste stream process flow discussed in section 3.2 will be implemented as presented in this section.

3.3.1 2004 Field Season Plans

The major 2004 field season plans are as follows:

- Perform a treatability study that will help determine key parameters and anticipated treatment supplements prior to full-scale mobilization.
- Mobilize all dredging, treatment, and conveyance materials and equipment necessary to efficiently execute the required scope of work.
- Establish effective communications on site between the Jacobs team, NAE, and other NAE contractors that are involved in the fieldwork. Of particular importance will be communications with the contractors responsible for sampling and data management. Timely data transfer will be imperative to efficient execution of the work required.
- Commission the various treatment trains using contaminated sediments stored in Cell-1 at Sawyer Street. Once the treatment trains have been demonstrated effective and the dredging set-up and baseline monitoring are complete, harbor dredging will commence. Dredging and treating contaminated sediments in the harbor are a higher priority than treating the sediments stored in Cell-1, however freeing space within Cell-1 for additional dredged material storage is also a secondary objective.
- Dredge approximately 30,000 cubic yards of PCB-contaminated sediment from DMU-2. Treat all dredged material with desanding, dewatering, and wastewater treatment equipment, and properly dispose of all waste streams.
- Continuously assess the performance of the dredging and treatment systems and implement modifications as needed to improve efficiency.
- Once DMU-2 is dredged to the z* depths provided by NAE, either continue harbor dredging and/or treat and dispose the remaining PCB-contaminated sediments stored in Cell-1. The decision will be made by NAE at the appropriate time during field operations.
- Prepare the site for a winter shutdown period. The timing of this activity will depend on funding and weather.

3.3.2 Construction of Treatment Facilities

The desanding treatment system will be constructed on the paved location in Area C adjacent to the existing wastewater treatment building. This location has been selected for safety, constructability and cost considerations. The desanding system will be set up inside a temporary structure with all the required air emission controls and OSHA lighting.

The dewatering building at Area D is being constructed by others. Access to the building for initial mobilization activities is anticipated by late spring of 2004. The dewatering equipment and the wastewater treatment system will be installed inside this same building. If some of the dewatering and/or wastewater treatment equipment needs to be constructed and operated outside of the building, an enclosure will be constructed adjacent to the dewatering building with all the required air emission controls and OSHA lighting.

The following equipment will be used during the construction of the treatment facilities:

- 100-ton cranes
- 50-ton cranes
- Manlifts
- All terrain forklifts
- HDPE fusion welders

The layout of all treatment facilities will be designed and submitted for approval prior to mobilization. The V-bottom tanks, shakers, hydrocyclones, mix tanks, pumps, polymer systems, filter presses, bag, filters, sand filters, and carbon filter units will be set in place and plumbed with either the 100-ton crane or the 50-ton crane. All HDPE piping that will transfer slurry between the V-Bottom tanks, the mix tank, the filter presses, and the wastewater treatment equipment will be fusion welded.

3.3.3 Construction of Pipelines

All HDPE piping that will transfer slurry or filtrate water will be butt fusion welded. The pipeline installed between the desanding unit and the dewatering operations will be equipped with flanged joints installed at a field-approved interval along the pipeline for access.

Other flexible piping will be constructed within the treatment facilities to transfer slurry or filtrate between treatment components where the use of HDPE piping is not necessary. This piping will be connected using conventional camlock fittings.

3.3.4 System Shakedown

Upon completion of the dredge system construction, slurry pipeline system installation, desanding system construction, dewatering system construction and the wastewater treatment system construction, a system shakedown will be conducted prior to initiating full scale dredging operations.

The system shakedown includes two stages. The first stage involves pumping water from NBH through the slurry pipeline and the desanding, dewatering, and wastewater treatment systems to check for leaks throughout the system connections. All piping and fittings will be visually inspected and the equipment operators will monitor pressure gauges at the dredges and booster pumps. Piping and fittings will be leak tested prior to being placed in service. During operations, the equipment operators will routinely perform visual inspections and monitor pressure gauges and flow rates at the dredges and booster pumps for normal operation. Leaks that are detected will be repaired prior to beginning the second stage of the system shakedown.

The second stage will occur at the initiation of processing sediment from Cell-1 or full scale dredging operations and will last until the dredging, desanding, dewatering, and wastewater treatment systems have been optimized. The length of time required to complete this stage is anticipated to be one week. Sediments will be pumped from the

dredge through the slurry pipeline to the desanding, dewatering, and wastewater treatment system for processing. The system components will be adjusted as needed until the systems have been optimized. As soon as the August 2004 long term monitoring (LTM) sampling event (pre-scheduled by others) and the treatment system shakedown processes are complete, dredging of the harbor will commence.

3.3.5 Water Column Siltation Controls

Mitigation of adverse impacts to areas outside the boundary of the remediation work area will be ensured through a series of preventative measures and environmental monitoring steps. As discussed, hydraulic dredging has been selected for removal of the sediment on the basis that this method of dredging minimizes re-suspension and loss of sediments, limiting the potential for cross contamination of PCB-containing sediments. In addition, preventative measures that will be taken during the sediment removal and temporary treatment operation include, but are not limited to the following:

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A water quality monitoring program will be implemented by the Government during dredging operations to limit environmental impacts to the water column. Monitoring will include both physical and chemical analysis to ensure that the dredging activities are carried out in a manner that limits the transport of suspended sediments, their associated contaminants and environmental impacts outside the construction zone. Real time monitoring coupled with effective communication will limit the potential for impact during the course of the project. As part of this monitoring program, samples may be taken near each dredging operation. Samples would be taken approximately 100 feet away from each active work area in the direction of the ebb tide; the first year work area will be DMU-2. TSS levels near the dredging activity would be compared to the background levels for water entering or leaving the harbor. Prior to starting dredging operations, an initial trigger level will be established to investigate the source of any elevated TSS levels near the dredge. The investigation would be carried out by taking additional samples as necessary close to the dredge head and along the bottom away from the dredge head. If analyses of the samples indicate levels were above normal operating values established with the dredge operating at optimal conditions, other sources of the high TSS would be investigated.

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These sources of suspension are indigenous to the process of dredging and will result in the movement of sediment away from the work areas and possibly out of the upper harbor. Other solutions using fixed hard structures (sheetpile) are possible, however, the disturbance from installation and the access problems may make the hard sediment control solutions unworkable.

Upper Harbor Water Level Control Option

Controlling the movement of water in the upper harbor may solve both the dredging time limitations and the suspended sediment movement problem due to tidal water level fluctuations. The harbor is ideally situated to affect such control without major impact to the areas around the harbor.

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3.3.7 Oversize Debris Handling

The sediment removal operation will be dependent on environmental conditions as well as operating restrictions of the dredge and sediment processing equipment. The hydraulic dredge equipment will be unable to remove debris from the harbor floor, therefore it will be necessary to manually or mechanically relocate/remove these objects prior to dredging. A barge with an excavator that has a long hydraulic arm attachment with a bucket will remove oversize debris and clumps of vegetation. It is anticipated that one or more of the following will be utilized as necessary to locate debris prior to dredging:

- Visual techniques
- Physical probing

- Divers
- Underwater video

Prior to hydraulic dredging in a particular area, attempts will be made to remove any debris or obstructions as necessary that may interfere with the dredging operations. Transportation of debris and removed aquatic vegetation to Area C will be by a barge. Based on the amount of sediment associated with this coarse debris, a decision will be made on a case-by-case basis as to whether to remove loose material attached to the debris at the Area C decontamination pad prior to placement of the debris in the storage area. Coarse debris will be disposed appropriately.

3.3.8 Desanding Process

The coarse material produced by the desanding operation will be stockpiled within the Area C desanding building for visual and analytical characterization. The frequency of analytical characterization will be established by the transportation and disposal contractor. Input from the ultimate receiving waste facility will be required for development of the plan.

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3.3.9 Dewatering Process

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Material resulting from the dewatering process will be stockpiled for off-site disposal. Analytical characterization of this material is discussed in section 4.3.

3.3.10 Wastewater Treatment System Discharge

As stated in section 3.2.5, the proposed wastewater treatment system is designed to treat anticipated contaminants in the filtrate from the filter presses processing the contaminated sediment. The proposed process flow train is included in Attachment B. Effluent from the wastewater treatment system will be directed into the lower harbor in the vicinity of Area D. The outfall design will be included in a future design submittal.

3.3.11 Storage, Transportation, and Disposal of Dewatered Sediment

Dredging and dewatering operations will produce the following major waste streams requiring offsite disposal:

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Debris will be removed ahead of dredging operations using a hydraulic excavator mounted on a barge. The recovered material will be transported to the Area C shoreline by means of a second barge fitted with a containment curb. Once transferred to shore, the debris will be separated for disposal. Although the upper harbor does not appear subject to heavy commercial or recreational marine traffic, the debris recovery process will be prepared to handle tires, chain, cable, metal fragments, lumber, root balls, etc. If significant portions of metallic and non-porous debris are produced, this material will be separated (if feasible) and, if necessary, cleaned for disposal as non-hazardous waste. Loading and transportation for disposal of the debris will be direct from the stockpile area located in Area C.

Coarse phase materials are separated from the dredge discharge by means of a vibrating screen as the first step of the desanding train. Materials separated by the vibrating screen are expected to include rocks, cables, crustaceans, shellfish, roots and brush that have been pulverized by the auger of the dredge, metal fragments and clumps of clay. The separated coarse phase materials will be visually inspected to gauge the mix of materials and to assess the viability of separating and cleaning (if necessary) for non-hazardous disposal. Stockpiles containing shellfish and other coarse phase materials will be placed within a temporary structure (trade name "RUBB building") housing the desanding operations. The shellfish and will be loaded for transportation and disposal before they can decompose and cause a nuisance odor. An air circulation system will be installed within the building to mitigate nuisance odors and fugitive emissions from the desanding operations. An exhaust purification system using granular activated carbon filters will be placed outside the RUBB building. Dump truck and front-end loader ingress and egress will be included in the temporary structure design.

Sand fraction from the hydrocyclones and 200 mesh screens will be visually inspected for organic content and sampled for potential disposal as non-hazardous waste All material generated at the desanding facility will be subject to analytical testing for verification. The materials will be loaded into trucks for transportation and disposal direct from the stockpile storage bays located within the desanding building.

As discussed in Section 3.2.4 the sediments will be dewatered by processing through recessed chamber plate and frame filter presses to produce filter cake. The filter presses will be configured together with the conditioning and ancillary equipment within the southwest section of the dewatering building located in Area D. This section of the dewatering building has an isolating curb for containment and separation from the loadout areas.

The recessed chamber plate and frame filter presses will be mounted on supporting steel structures. The steel supports provide adequate clearance from the floor to allow for the removal of dropped cake by means of conveyors. Conveyors under each recessed plate filter will transfer the dropped cake to a transverse belt conveyor that will deposit the

cake into a containment bay constructed of concrete blocks or similar to constrain the cake during disposition and subsequent handling. Cake will be recovered from the staging bin by front-end loader for transfer to the loadout area.

Environmental sampling of the dewatered sediment for disposal is discussed in Section 4.3. It is anticipated that the sediments will be sampled, characterized and profiled for disposal based upon major areas of the project such as the upper harbor, lower harbor, beachcombing areas, etc., or at a minimum by multiples of management units. In this way storage and accelerated analytical services will be minimized. The dropped cake can proceed to loadout based upon the waste stream profile. Periodic confirmation sampling, guided by the requirements of the disposal facility, will be conducted to ensure TSCA compliance.

Currently, the NAE plans to contract separately for the transportation and disposal (T&D) services for this project and those contracts will be in place when dredging and production of dewatered sediment is scheduled to start. However, as a contingency plan to contracting these services outside the TERC contract, Jacobs is prepared to offer services to profile the waste stream based upon in-situ data and sampling and to subcontract the T&D services directly to our teaming partner, CBI

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Manifests and straight bills of lading will be compiled by the T&D contractor in compliance with the waste stream profile. These manifests will be presented to the NAE representative for signature on behalf of the generator. A current manifest and transportation log, including confirming receipt and certificate of disposal at the facility will be maintained by the T&D contractor and routinely reported to NAE. Waste containers or trucks will exit the facility under the same traffic control protocols as for their entry.

Weigh scales for use by the T&D contractor will be installed and maintained by Jacobs. Scales will be located at the desanding operations and at the dewatering operations.

3.3.12 Treatment of Remaining Dredge Material in Cell-1

Because the contaminated material stored in Cell-1 is partially contained and is considered to constitute less of a threat to human health and the environment than the contaminated sediments in the harbor, the treatment and disposal of the stored sediments

is considered a lower priority. Therefore, dredged material will be the top priority in terms of utilizing the treatment trains. It is the intention of the Jacobs team to complete the 2004 dredging objectives with respect to DMU-2 and perhaps continue in an additional DMU if funding and weather allow. However, irrespective of funding, dredging will likely become inefficient due to winter weather conditions later in the field season. If freezing conditions force the suspension of dredging in the harbor, remaining treatment and disposal of the sediments stored in Cell-1 may still be viable during the colder months because this work is land-based and less affected by weather.

The Jacobs team will continue dredging in 2004, possibly in areas beyond DMU-2, as long as funding and weather allow.

3.4 WINTER SHUTDOWN AND EQUIPMENT STORAGE

It is anticipated that funding and weather considerations will result in a shut down period over the winter months. To reduce mobilization charges for 2005, the majority of the equipment and materials used for the dredging and treatment operations will likely be left on site following the 2004 field season. Prior to the shut down, the Jacobs team will take precautions to secure equipment and materials and protect them from weather effects. These precautions are likely to include moving equipment and material to available indoor locations, covering materials and equipment with tarpaulins, flushing out pipelines to prevent bursting, and others as needed.

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3.5 2005 FIELD SEASON PLANS

The plan for 2005 is to dredge, treat and dispose of approximately 50,000 cubic yards (exact quantity to be determined based on locations selected and funding) of PCB-contaminated sediments from the harbor. The dredging locations will be determined based on future discussions between EPA, NAE, and the Jacobs Team. Z* elevations will be provided by NAE to the Jacobs team for the dredging locations.

As described previously with respect to the 2004 field season, every effort will be made to remove as much PCB mass as possible from the harbor. Unless circumstances change or otherwise directed by NAE, contaminated sediments stored in Cell-1 will continue to be a lower priority with respect to treatment and disposal.

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4.0 ENVIRONMENTAL SAMPLING

During the remediation work, the Jacobs team will be tasked with air monitoring, performance monitoring of wastewater treatment operations, and sampling of sand and filter cake in support of transportation and disposal activities. Other NAE contractors are currently tasked with confirmation sampling and long-term monitoring of surface and groundwater. Collectively, these monitoring activities will be used to ensure work meets established guidelines or to help identify necessary operational adjustments.

4.1 AIR MONITORING

Air monitoring will be performed at multiple locations to ensure workers and the surrounding communities are adequately protected from airborne contamination and nuisance odors. The data collected will also be used in modeling efforts that will help determine the optimum sampling locations based on work areas, prevalent wind directions, and sensitive receptor locations. The samples will be collected both on land and on a barge near the dredging operation.

Generally, air samples will be collected at the following locations:

- Three locations in the dewatering facility
- Three locations in the desanding facility
- Two community samples
- One co-located sample
- One barge location

The procedures outlined in the *Field Sampling Plan* will be used as a guide regarding sample collection and methods. All sample related information will be recorded in the air-monitoring logbook. The relevant data will also be included on the laboratory chain of custody. The various sampling locations will require different types of samplers and sampling methods as described below:

Community Samples

High volume puff samplers will be used for all land-based community air sampling. The method used will follow the requirements outlined in EPA Method TO-4a. The high volume equipment currently available at the site cannot be used unless the equipment is fully inspected and overhauled as needed by an authorized representative of the manufacturer.

Barge Sampling

The barge sample station will be a lower flow station using a battery powered air sampler with analysis following EPA Method TO-10a. This method is preferred for the barge sampling due to the size and portability of the battery powered sampling equipment.

Desanding/Dewatering Unit Source Sampling

Battery powered air samplers and analysis by EPA TO-10a Method is proposed for the localized source sampling around the desanding and dewatering facilities. The battery powered air samplers proposed for the work will be BGI, Inc. PQ-100 mass flow controlled air samplers.

Stack Sampling

Stack sampling will be done at the desanding and dewatering facilities. The stack sampling equipment used will be electrically powered air samplers.

QA/QC procedures as outlined in the *Field Sampling Plan* will be followed. The plan will be used as a guide for both TO-4A and TO-10A analysis.

The Contractor Chemical Quality Control (CCQC) procedures as outlined in the *Field Sampling Plan* will be complied with. The CCQC specifies procedures for duplicates, QA samples, blanks, matrix spikes, and matrix spike duplicates.

The staff that will be assembled for the Ambient Air Monitoring Program will perform their work under the direction of the Jacobs Health and Safety team, including its Certified Industrial Hygienist (CIH). The CIH will have overall responsibility for the ambient air monitoring program and the development of procedures, statistical analysis of data, and review of laboratory reports and procedures. It is anticipated that initially there will be one or two air monitoring technicians monitoring the site. These technicians will be responsible for calibration and collection of all ambient air samples. Work will include equipment maintenance, siting, proper collection, and laboratory submittal.

4.2 WASTEWATER TREATMENT EFFLUENT

Samples will be collected from the wastewater treatment system to assess the effectiveness of the wastewater treatment system in meeting project specific discharge criteria. Additionally, the effluent water will also be tested for TSS. Monthly discharge reports will be compiled and presented to the regulators. A summary of sampling locations, parameters and analytical methods is included under section 12.0 of the project *Field Sampling Plan.*

4.3 DEWATERED SEDIMENT FOR DISPOSAL

Environmental sampling for disposal of dewatered sediment (i.e. filter cake) is highly dependent upon the disposal facilities selected for receipt of this PCB Remediation Waste stream. As these facilities are still undetermined, the environmental sampling program for dewatered sediment is presented in general terms.

Environmental sampling and analysis of dewatered sediment for disposal will be designed to optimally meet the following objectives:

- Ensure regulatory compliance
- Satisfy waste characterization requirements of the disposal facility
- Minimize dewatered sediment handling and storage on site;

At this time, it is anticipated that at least during FY 2004 and FY 2005 the filter cake generated will be primarily from highly contaminated sediments. As such, it is likely that initially most, if not all, of the filter cake would be transported to a Toxic Substance Control Act (TSCA) facility for disposal. Under this assumption, sampling and analysis would be performed primarily to provide necessary characterization information to the disposal facility.

Upon selection of disposal facilities for the dewatered sediment, the environmental sampling plan for dewatered sediments will be developed. The objective of the plan will be to define sampling frequency and methodology, identify the analyses and associated test methods that will be used to characterize the material and discuss factors such as turn-around time, integration with off-site disposal, and documentation procedures.

4.4 POST-DREDGE CONFIRMATION SAMPLING

Per NAE direction, Jacobs will not be collecting post-dredge confirmation samples during FY 2004. Jacobs understands that another NAE contractor will be collecting these samples. Jacobs also understands that the collection of post-dredge confirmation samples may be awarded to Jacobs in later task order modifications. A detailed post-confirmation sampling plan will be developed coincident with authorization to proceed with this work.

For the purposes of preparing this Plan, the following assumptions have been made with respect to confirmation sampling:

- The NAE contractor (other than Jacobs) performing the post-dredge confirmation sampling will follow the guidelines presented in the *Final Confirmatory Sampling Approach, New Bedford Harbor Superfund Site, July 2002,* and the *Sampling and Analysis Plan, New Bedford Harbor Superfund Site, Revision 21, June 2002,* documents prepared by FW.
- Confirmatory sampling events will not interfere with dredging operations.
- Data from confirmatory sampling events will be loaded into the data management system currently being managed by Battelle in a timely manner (See Section 9.0).

- Jacobs will have access to Battelle's data management system and will be able to download applicable post-dredge data, including, but not limited to, chemical data, GIS information, geotechnical information, etc. (See Section 9.0).

4.5 LONG TERM MONITORING

In order to assess the effectiveness of the NBH remediation efforts, a long term environmental monitoring (LTM) plan has been developed by the EPA's research laboratory, Atlantic Ecology Division in Narragansett, Rhode Island (AED). This plan incorporates an intensive sampling and analysis effort for the purpose of quantifying the long-term environmental effects of reduced PCB levels in the sediments and water column of the New Bedford Harbor estuary as a result of remediation efforts. For the 2004 field season, another NAE contractor (Battelle) will be collecting these samples for the NAE, however Jacobs understands that the sampling and analysis of LTM samples may be awarded to Jacobs in later work modifications. A LTM sampling plan, incorporating details and results of previous sampling plans, will be developed coincident with authorization to proceed with this work.

Based on information received from NAE and the EPA, a LTM event in the Upper Harbor is expected to be complete by 25 August 2004. To satisfy the environmental objectives of this sampling, dredging within DMU-2 will not be initiated until the sampling event is complete.

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5.0 QUALITY

As identified in the TERC modification P00002, DACW33-03-D-0006 (dated 3/08/04), the Jacobs team will support NAE in the implementation of the Resident Management System (RMS) on this contract. The Resident Management System (RMS) is a comprehensive construction management computer program that allows NAE field and office personnel the detail and flexibility to manage all portions of a construction project. Under this system, contractors are required to populate a database module of the RMS program, which is in turn submitted to the government. Specifically, the construction contractor module of RMS, referred to as the Quality Control System (QCS), will be used to record, maintain and submit various information throughout the contract period. The QCS will allow Jacobs to electronically exchange information and to more efficiently manage the contract, thereby providing the means to share the following information with NAE:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

NAE training will need to be provided along with the software, users manual, and technical support contacts.

5.1 CONSTRUCTION QUALITY PLAN

Jacobs will implement the NAE Construction Quality Management procedures to manage, control and document all activities to ensure compliance with the contract. A Construction Quality Plan will be developed for the New Bedford Harbor Project and will be updated in the future as needed. The Construction Quality Plan will discuss all aspects of the Contractor Quality Control (CQC) system that will be used throughout all

phases of the work, including approval of submittals, procurement, coordination of subcontractor activities, and the inspections and tests required to assure that the project objectives are met efficiently and in accordance with the design. Definable features of work (DFW) will be identified in the Construction Quality Plan to identify tasks within the project that are distinctly different. The Three Phase Control concept, (i.e., preparatory, initial, follow-up) developed by NAE will be a core element of the quality control process on this program, with each DFW evaluated using the Three Phase Control system.

5.2 CLIENT EXPECTATIONS

It is Jacobs' intention to complete work associated with this contract at the highest level of client satisfaction. Accordingly Jacobs has sought NAE's expectations on numerous issues during various meetings and conversations. Based on these communications, some of the most critical issues and direction with respect to client expectations for the New Bedford Harbor project are the following:

- Implement effective safety program and adhere to safe working practices in all aspects of the work.
- Meet dredging productivity objectives for FY 2004 and FY 2005 as discussed in this Plan.
- Meet treatment objectives at desanding, dewatering, and wastewater treatment facilities.
- Ensure water and air quality objectives are being met through performance monitoring; make system adjustments as needed to satisfy stakeholders.
- Effectively manage the project with respect to cost controls and the change order process.
- Maintain effective communications among the Jacobs team and with NAE with respect to field and office personnel.
- Identify cost saving opportunities to NAE.
- Maintain positive relationships with teaming partners, subcontractors, and local residents and businesses.
- Direct third party questions concerning the project to NAE.

5.3 DOCUMENT CONTROL

Document Control for the project will be performed in accordance with Jacobs procedures. These procedure define the organization, responsibilities, systems and methods used to control the receipt, tracking, and issuing of all documents and data related to project development and execution.

All documents and data relating to the implementation of this project will be controlled by document procedures. To ensure that all documents that directly affect the execution of the project are effectively controlled, a master list will be used to capture both internally- and externally-generated data. The master list will include at a minimum: originator; date received; and document date, title (description), identification number, and revision status.

A distribution system will be established that will ensure documents are available at all office locations for the effective functioning of the project. All superceded documentation will either be removed from the system or its obsolescence appropriately marked. File copies of all superseded documents that have been formally issued will be appropriately marked and retained for archiving with the project files. Revised documents will be marked with an appropriate revision number or date, and changes will be identified in the document or on an attachment accompanying the document.

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6.0 HEALTH AND SAFETY

The Jacobs team is committed to maintaining a safe workplace for the NBH project. Jacobs' Health and Safety personnel are tasked to modify the existing Health and Safety Plan. In addition, Jacobs will staff the project with qualified Health and Safety professionals as needed to properly oversee the work. This group will review the training records of staff assigned to the project and identify necessary, additional training.

6.1 SITE MOBILIZATION AND SETUP

Prior to mobilization of crews and equipment, the appropriate documentation of safety-related training for relevant personnel will be obtained. Personnel will have received the required Occupational Safety & Health Administration (OSHA) training certificates and physician summaries. Additionally, equipment operators will have the current Massachusetts Department of Public Safety license(s) for the type and capacity of equipment to be operated.

Other safety items that will be accomplished prior to initiating field work include documenting equipment inspections, obtaining a DIGSAFE permit with a copy on-site before any intrusive activities occur and coordination with local emergency response agencies.

6.2 HEALTH AND SAFETY PLAN REVIEW, MODIFICATION AND FINALIZATION

The current set of H&S plans written by others will be evaluated for applicability to the upcoming task order(s). Applicable sections of the H&S plan will be modified to meet current NAE and Jacobs health and safety requirements.

In order to facilitate client and regulator review of the draft modified H&S plan revisions, any changes made will be completed using the Microsoft Word *Track Changes* tool. Once the changes are approved, the H&S plans will be finalized electronically and distributed accordingly. This effort is anticipated to be focused on being task specific

activity hazard analysis development. All team members will be responsible for implementing the H&S plans and ensuring employee compliance.

6.3 FIELD OPERATIONS

Daily tailgate meetings will be held with all site personnel prior to the start of field activities. During these meetings information will be disseminated that will facilitate the safe planning and execution of the general site activities. Activity hazard analyses (AHAs) for specific tasks will be developed and reviewed during the daily tailgate meeting with the lead person and crew.

Health and safety professional(s) will monitor field activities on a daily basis while in operation. Team members are empowered to control site activities including work stoppage in the event of an imminent hazard.

6.4 AIR MONITORING

Monitoring of occupational exposures will be conducted on a routine basis as prescribed in any relevant AHA. Depending on the contaminants of concern, direct-reading instrumentation such as a four-gas monitor (LEL, oxygen, hydrogen sulfide and carbon monoxide) will be used.

7.0 PROJECT ORGANIZATION

The Jacobs team is comprised of subcontractors and experienced in-house staff with extensive combined environmental remediation management and dredging experience. Collectively, this team has the resources available to them to successfully complete one of the largest single environmental dredging programs ever attempted within the United States. For each individual team member, a key component to the success of the team will be a clear understanding of the role that he/she plays on the project. This section summarizes the structure and the responsibilities of each of the key personnel assigned to the project.

7.1 ROLES AND RESPONSIBILITIES OF KEY PERSONNEL

The roles and responsibilities of key personnel for the New Bedford Harbor project are as follows:

Ira Nadelman will serve as Jacobs' Program Manager for the TERC. He is responsible for the overall management of the contract including cost, schedule, and technical quality. Mr. Nadelman is located at Jacobs' Boston Office

Mike Anderson will serve as Jacobs' Project Manager for the New Bedford Harbor Project. In this capacity he will be the single point of contact for the project, and will be responsible for management of the task order in accordance with the approved statement of work, approved work plans, and all federal, state and local laws and regulations. Mr. Anderson is located at Jacobs' Boston office and will frequently be at the field office on site.

Bob Lewis will be Jacobs' Remediation Manager for the project. He will manage labor, material, plant and equipment to complete the remediation work on time, within budget and as specified in the task order. Mr. Lewis will be located at the field office on site.

Mike Crystal will be Sevenson's Project Manager for the project. He will be responsible for executing the design and construction of the dredge and treatment equipment, the dredging operations and treatment of the dredged material in accordance with project guidance and approved plans. Mr. Crystal will be located at the field office and will be traveling to Sevenson's Niagara Falls office as necessary.

Glen Schmidt will be Jacobs' Engineering Manager for the project. He will ensure that all engineering design/support requirements specified in the task order are attained. Mr. Schmidt is located at Jacobs' Oak Ridge TN office.

Ken Gaynor will be Jacobs' Quality Control System Manager for the project. He will be responsible for the overall management of CQC and will have the authority to act in all CQC matters for the Jacobs Team. Mr. Gaynor will be based in the Bourne office and will be located at the field office on site during the active dredging season.

Lonnie Fallin will be Jacobs' Project Chemist. In this capacity he will ensure that all chemistry-related goals of the task order are attained. He will conduct or oversee all onsite analytical testing including field analysis tests. He will review all off-site analytical testing and coordinate government quality assurance testing that verifies the chemical data. He will review and verify all chemical data for hazardous waste manifests and prepare all data validation reports or review for accuracy all data validation reports prepared by subcontractors. Mr. Fallin is located at Jacobs' Bourne office.

Tony Tawa will be the Regulatory Specialist for Jacobs and as such will be the single point of contact for all regulatory matters. He will have overall responsibility for accuracy of hazardous waste identification, completion of waste profiles and manifests, preparation of exception and discrepancy reports, preparation of the Regulatory Compliance Plan and any other transportation and disposal concerns. He will have responsibility for contaminated material handling, proper storage, transportation and disposal. He will coordinate review and approval procedures for all manifests. Mr. Tawa is located at Jacobs' Boston office.

Terry Briggs will be Jacobs' Certified Industrial Hygienist for the project and will develop implement, and oversee all safety and health-related aspects of the project. He will be present on-site when appropriate and will be available for emergencies and on-site consultation. Mr. Briggs is located at Jacobs' Golden, CO office.

Carl Wilson will be Jacobs' Site Safety and Health Officer (SSHO). He will ensure that all elements of the approved Site Safety and Health Plan (SSHP) are implemented and enforced on site. He will assist and represent the CIH in on-site training and the day-to-day on-site implementation and enforcement of the approved SSHP. He will be on site on a full time basis for the entire duration of field activities and will have the authority to stop work if unacceptable health or safety conditions exist. Mr. Wilson will be based in Bourne and will be located at the field office on site during the active dredging season.

Bill Pencola will be Jacobs' Cost Scheduler for the project and will ensure proper schedule and cost reimbursement. He will be responsible for the task order Management Information System (MIS) reporting requirements. Mr. Pencola is located at Jacobs' Bourne office.

Fred Stuart will be Jacobs' Senior Contracts Manager. He will ensure that all acquisition and contract management related to this contract (including subcontracts, purchases, rental agreements, subcontract modifications, etc.) are performed appropriately. Mr. Stuart will be located at Jacobs' Bourne office.

7.2 ORGANIZATION CHART

The organization chart prepared for this project is included as Attachment E. All key personnel from the Jacobs team are listed with the lines of responsibility mapped out in a classic tree matrix format.

7.3 RESOURCE MANAGEMENT

The key personnel for the Jacobs team on the NBH project were listed in Section 7.1. In addition to those personnel, Jacobs has resource pools in several offices that will support the project as needed. The primary offices for this support will include Bourne and Boston, MA and Oak Ridge, TN. Additionally, Jacobs has a nationwide resource pool available as circumstances dictate. Jacobs' teaming partners also have the resources to provide support on an as-needed basis. The Jacobs Project Manager will work with NAE to ensure cost effective solutions are identified with respect to labor resource management.

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7.5 COMMUNICATION

The team assembled for the New Bedford Harbor project includes multiple organizations, some with more than one participating office location. Effective and timely internal communication within the project team will be critical to the successful execution of the project.

Multiple communication methods will be utilized to achieve the most favorable team communication. The global project contact list developed for the project includes three communication options for all team members: phone, fax and e-mail. The contact list is included as Attachment F. The list will be maintained by Jacobs' project administrative assistant and will be updated as necessary. Updates will be provided to the team via e-mail to the address on record.

Responsibility for communication with outside agencies is shared between NAE and Jacobs. Communication about project-related information with the public and the media by the team members is discouraged. All project-related questions from the public, elected officials, and the media that are fielded by team members should be immediately directed to the NAE Resident Office personnel. Meetings with the client will be held on an as-needed basis. Project team meetings will be held weekly to address the status of project scope, budget, safety and quality.

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8.0 OFFICE SYSTEMS

The Jacobs team will establish field offices at the project site and will have several support offices, including the home office in Bourne, MA. Temporary field offices may be needed as other contractors complete their work at the NBH project site during 2004. Jacobs will use a phased approach with respect to IT systems due to the temporary field offices in use during 2004. Once completed, the Jacobs trailers will make use of a local area network and link its equipment to a wide area network.

8.1 SITE OFFICE (TEMPORARY AND PERMANENT)

The Jacobs team will be mobilizing to the NBH site prior to TtFW's completion of work at the Site.

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Costs to establish site office operations (i.e., building rental and utilities) will be included in subsequent task order modifications.

Following the completion of field work by TtFW, expected in the late fall of 2004, the Jacobs team will make use of TtFW's former office trailers and the office space that becomes available within the new dewatering and wastewater treatment building at Area D. If these existing facilities provide sufficient space, rental or lease contracts for trailers or office space rented prior to the departure of TtFW would be concluded at that time. Jacobs, Sevenson and Cashins will each have their own independent office space.

8.2 HOME AND SECONDARY OFFICES

The Jacobs team home office will be in Bourne, MA, approximately 35 miles from the project site. This office will contain the project files and will be one of the primary support offices for the project. Secondary project files will also be maintained in the Boston and Oak Ridge, TN offices and the field site office.

8.3 INFORMATION SYSTEMS

Jacobs plans to approach Information Technology (IT) deployment and support of the project in phases. The phases will coincide with the transition between TtFW and Jacobs' involvement at the site.

Temporary site office arrangements will require IT services to establish basic phone, fax, copying, printing, computers and Internet services. As the Jacobs team moves into their permanent offices, the IT systems will need to be reconfigured. The exact requirements of the temporary and permanent office arrangements will be predicated on the facilities, services and equipment provided for Jacobs' use, and the timeframe in which they will be provided. For purposes of discussion, the site office requirements are presented as temporary and permanent, with the transition from temporary to permanent requiring a more substantial equipment and labor cost commitment.

Prior to mobilization, Jacobs will conduct an inspection of the current facilities, services, and equipment available. The facilities available will be compared against the minimum

labor and equipment requirements to maintain a temporary field office. The equipment and services necessary to establish a temporary office will be evaluated for inclusion into a subsequent task order modification.

When Jacobs establishes permanent offices on site, it is anticipated that a wired local area network (LAN) will be required. In addition workstations, peripherals, servers, data backup equipment, software, printers, networking equipment, photocopiers, telecommunications equipment and a data connection to the Jacobs wide area network (WAN) will be necessary. The exact placement of equipment and services, as well as long-term maintenance requirements, will be defined as the site office plan is finalized. Equipment and labor cost to establish the permanent office systems will be included in a subsequent task order modification.

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9.0 DATA MANAGEMENT

Jacobs will manage all chemistry, water quality, and Geographic Information Systems (GIS) data associated with samples collected at the wastewater treatment system, for the transportation and disposal effort, and for the desanding and dewatering tasks. Additionally, Jacobs plans to manage all chemistry and GIS data associated with future sampling events that may be awarded to Jacobs, such as post-dredging confirmation sampling and LTM sampling using the same general approach.

The data management tasks listed below are considered to be within scope for the dredging, desanding, dewatering and wastewater treatment activities included within this Plan. Data management concerns other than those listed below, particularly those involving GIS and graphics production, are not included in this Plan and will be addressed in an addendum to this Plan when contractually appropriate.

A summary of the data management services related to the wastewater treatment system effluent and waste transportation and disposal are as follows:

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For the purposes of preparing this Plan, the following assumptions have been made with respect to data management:

Jacobs will maintain the ability to create figures using GIS showing harbor sections, management unit contaminant concentration data, and other figure types. It is assumed, however, since post-dredge confirmation sampling and LTM sampling are being performed by other NAE contractors, actual graphics production and presentation needs for this task order will be limited to the dredging operations and waste stream treatment concerns.

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FIGURES

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ATTACHMENT A

Scoping Meeting Minutes
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ATTACHMENT B

Process Flow Diagram

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ATTACHMENT C

Wastewater Treatment System Preliminary Design Data And Materials Balance

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ATTACHMENT D

Mass Balance Calculations

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ATTACHMENT E

Project Organization Chart

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ATTACHMENT F

New Bedford Harbor Project Team Contact List

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ATTACHMENT G

Project WBS Codes

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ATTACHMENT H

Project Schedule

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