September 30, 2013

Second Modification to EPA's Final Determination for the South Terminal Project – Additional Dredging and Blasting for Rock Removal

SECOND MODIFICATION SUMMARY: After completing consultation with other federal and state agencies, as required by federal and state law, and after reviewing additional submissions by the Commonwealth, EPA has determined that the Commonwealth's request for a Second Modification to EPA's Final Determination for the South Terminal Project, issued on November 19, 2012 ("the Final Determination" or "FD"), is both protective of human health and the environment, meets the substantive requirements of applicable or relevant and appropriate federal environmental standards and, through the Commonwealth's determination, meets applicable or relevant and appropriate state environmental standards, as long as the conditions set forth in this Second Modification are met. Through this Second Modification to the Final Determination, EPA is modifying the South Terminal Project portion of the State Enhanced Remedy ("State Enhanced Remedy" or "SER"), which is incorporated into the 1998 Record of Decision for the Upper and Lower Harbor at the New Bedford Harbor Superfund Site ("1998 ROD") so that it includes additional dredging (which expands the deep draft berthing area an additional 200 feet north, widens the approach channel 50 feet to the west, and changes the configuration of the confined aquatic disposal cell 3 ("CAD cell 3")); blasting as the rock removal method; modifications to the performance standards for the winter flounder mitigation area and to the offsite disposal of PCB-contaminated material during certain upland remediation; and clarifies truck traffic patterns for construction and long-term use of the marine terminal facility as well as the shellfish mitigation plan. This Second Modification also incorporates the First Modification which clarified an ambiguity in the Final Determination with regard to the environmental monitor.

The Commonwealth of Massachusetts, through the Department of Environmental Protection ("MassDEP"), and the Massachusetts Clean Energy Center ("MassCEC") for the South Terminal Project, will continue to be the lead for conducting the SER work and is responsible for securing all funding for the SER work. EPA and other federal, state and local entities will continue to act as supporting regulatory agencies for the SER work.

Portuguese and Spanish translations of this document are available at the New Bedford Public Library.

The Administrative Record in support of this Second Modification to the Final Determination for the South Terminal Project will be available at the New Bedford Public Library, 613 Pleasant Street, 2nd floor Reference Department, New Bedford, MA (508) 961-3067 and the EPA New England Records Center, 5 Post Office Square, 1st floor, Boston, MA (617) 918-1440 as well as online at www.epa.gov/nbh. The Administrative Records for EPA's Final Determination for the South Terminal Project and for the New Bedford Harbor Superfund Site are incorporated by reference into this Administrative Record and may be viewed at the same locations.

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I. Introduction

The Second Modification At A Glance...

This is the Second Modification to the Final Determination for the South Terminal Project for the New Bedford Harbor State Enhanced Remedy that EPA issued on November 19, 2012. The Final Determination included the South Terminal Project as part of the State Enhanced Remedy that was approved and integrated into the 1998 ROD, issued on September 25, 1998. This document, and its supporting Appendices and Administrative Record, provides the rationale for EPA's determination that additional dredging, the use of blasting for rock removal and a change to the performance standards for the winter flounder mitigation area and certain upland remediation, slightly increases the scope and detail of the South Terminal Project as approved in EPA's Final Determination for the South Terminal Project, but does not fundamentally change the approved SER and it is consistent with the regulations at 40 C.F.R. § 300.515(f)(l(ii) (State enhancement of remedy) and with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §§ 9601 et. seq.[1]

With this document, EPA determines that the South Terminal Project described in the Final Determination, as modified by the work described in this Second Modification, which consists of expanding the deep draft berthing area 200 feet to the north, expanding the width of the approach channel 50 feet to the west, reconfiguring CAD cell 3 to change from 8.54 acres with a depth of -45 feet MLLW to 8.29 acres with a depth of -60 feet MLLW, the use of blasting for rock removal, and with modification to the performance standards for the winder flounder mitigation area and certain upland remediation areas, is both protective of human health and the environment and meets the substantive requirements of applicable or relevant and appropriate federal environmental standards. EPA also accepts the Commonwealth's determination that the Project, as modified, meets the applicable or relevant and appropriate state environmental standards. The Project, as modified, does not conflict with and is not inconsistent with the New Bedford Harbor Superfund remediation, and EPA reaffirms

[1] While EPA does not believe that an Explanation of Significant Differences ("ESD") under CERCLA is required here, this Second Modification to the Final Determination meets the requirements for an ESD as EPA has complied with CERCLA §117(c) and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300 ("NCP") §§300.435(c)(2)(i) and 300.825(a)(2). In addition, as with an ESD, this Second Modification to the Final Determination describes to the public the nature of the changes, summarizes the information that led to making the changes, and affirms that the revised action complies with the NCP and the statutory requirements of CERCLA.

that the 1998 ROD, including the State Enhanced Remedy, remains protective of human health and the environment. EPA makes this determination after carefully reviewing the extensive submissions provided by the Commonwealth and after completing its consultation requirements with other federal and state agencies. This Second Modification to the Final Determination is subject to the conditions set out below in Section II. of this document and those contained in the Final Determination. Accordingly, the South Terminal Project, as modified, will continue to benefit from the CERCLA Section 121(e) permit exclusion.

As explained below, by letters dated May 15, 2013 and July 11, 2013, EPA approved the changes in the performance standards related to implementation of the winter flounder habitat area and changes to the configuration of CAD cell 3, respectively. This Second Modification to the Final Determination incorporates those changes. The first Modification, issued by EPA on February 4, 2013, corrected an inconsistency between Section II. 2 of Appendix C (Water Quality Performance Standards) and Section 20.0 H.2 of Appendix E (Final Determination of Compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899) with regard to employment of an environmental monitor for the Project. The first Modification is incorporated into the Administrative Record for this Second Modification.

For more information about CERCLA and NCP provisions regarding the SER and its incorporation into the 1998 ROD, see discussion beginning at page 4 of EPA's Final Determination for the South Terminal Project.

A. Community Impacts

Because disposal of the dredged sediment will not change, only minimal impacts to the community are anticipated from the additional dredging work. Increased vessel traffic will likely occur as a result of having to dredge and dispose of up to 154,900 additional cubic yards of dredged sediment; truck traffic is not likely to increase since the size of the terminal is unchanged. However, as described in the Commonwealth's Construction Management Plan, the community will experience some additional impacts from the Commonwealth's clarification about additional temporary and permanent entrances and exits on Potomska, Blackmer, Gifford and Cove Streets that will be created to facilitate construction of multiple areas of the facility and for future use of the terminal.[2] All measures referenced in EPA's Final Determination to reduce impacts to the community from the South Terminal work remain in place. (See page 13 of the Final Determination; also see the Commonwealth's Construction Management Plan which provides a detailed discussion of, among other things, management of traffic, noise, and dust.) Eliminating silt curtains around the winter flounder mitigation

[2] Subsequent to issuance of the Final Determination, the Commonwealth clarified, in its Construction Management Plan dated March 2013, access and traffic patterns for construction and long-term use of the terminal. A copy of this document can be found at AR 547287.

area located south of the hurricane barrier will increase safe passage of vessels in the federal navigational channel by removing a potential hazard from drifting or loosened curtains. Similarly, allowing PCB-contaminated soil with concentrations less than ("<") 50 ppm rather than 25 ppm will reduce the volume of soil/sediment to be removed during upland remediation of the main terminal facility parcels and potentially all or a portion of the adjacent Radio Tower property provided that all conditions contained in the First Modification to November 19, 2012 TSCA § 761.61(c) Determination for New Bedford South Terminal Marine Facility ("Modified TSCA Determination") (Appendix D) are met and the work is conducted in accordance with the Massachusetts hazardous waste cleanup program (M.G.L. c. 21E).

Blasting impacts on the community appear to be minimal based on the information provided by the Commonwealth. Blasting is expected to last for approximately two months beginning in mid-September or October, with two or more blasts per day during weekdays with each event lasting just a few seconds. After proper notices are issued, blasting will begin in the morning and will not be conducted after 4 pm. Residents and businesses within 1500 feet of the blast area will experience mild vibrations, lasting a few seconds. Pre-blast surveys will be conducted by the Commonwealth for residences, businesses, and historic structures within this zone, and vibration monitors will also be in place in certain areas within this zone. The Commonwealth will coordinate with local regulatory and emergency services, including the Coast Guard, and will provide 24 hour advance notice as well as countdowns on the day of blasting. These notices and countdowns will be broadcast over the port's operation radio channel. Vessels will be excluded from a 1500 foot safe perimeter zone established around the blasting area 15 minutes before blasting occurs. Blast signals will be posted outside the area and blasting alerts will sound. The Commonwealth has provided a draft Operational Blasting Plan with specific details about the blasting events and measures to ensure the community is provided with adequate notification and protection.[3]

B. Resource Impacts

The Project modifications will impact waters of the U.S. and aquatic life; however, EPA has determined that the additional impacts that would result from the Project modifications do not change EPA's determination that the Project, subject to the conditions in the Final Determination and in this Second Modification, complies with the Clean Water Act ("CWA") § 404(b)(1) guidelines, or that the South Terminal site represents the LEDPA, since other alternatives are either not practicable or not less environmentally damaging; nor do they change EPA's conclusions regarding the Project's compliance with the other elements of the guidelines. See Section VII.B.1.

[3] The draft Operational Blasting Plan, dated August, 2013, was provided to EPA by the Commonwealth as Attachment F of its August 28, 2013 submission and can be found at AR #547283. Note that the blasting specifications in section 12.1 of the draft plan were updated by the Commonwealth and provided to EPA on September 25, 2013 (see AR # 547293). A revised plan for EPA review and approval will be submitted after this Second Modification is issued.

(CWA) for further discussion. Similarly, EPA has concluded that the Project modifications would not result in significant adverse effects on Essential Fish Habitat ("EFH") or resources protected by the Fish and Wildlife Coordination Act ("FWCA"). See Section VII.B.4. and 5. (EFH/FWCA) below for further discussion.

The Atlantic sturgeon, an endangered species potentially present in the area, is not likely to be adversely affected by the modified Project provided that the specified mitigative measures to minimize the potential for entrainment and turbidity, and to minimize acoustical (sound and pressure) impacts and maintain a zone of passage, are employed.[4] See Section VII.B.3 (ESA) below for further discussion.

EPA has also concluded that the Project, as modified, will not affect the Palmer Island Light Station, a recently identified historic structure. See Section VII.B.7 (National Historic Preservation Act "NHPA") below for further discussion.

Eliminating silt curtains at the winter flounder mitigation area will have no significant impact on aquatic resources or water quality provided the Commonwealth implements and maintains the conditions set out in the Revised Water Quality Performance Standards, Appendix C to this document. Similarly, allowing PCB-contaminated sediment and soils with concentrations <50 ppm to remain in upland soils/sediment at the main terminal facility parcels and potentially all or a portion of the Radio Tower parcel will have little impact on resources as long as the conditions set out in the Modified TSCA Determination are met and the cleanup is conducted in accordance with M.G.L. c. 21E.

C. Public Comment

No public comment is required by CERCLA and its implementing regulations (see 40 CFR §300.435(c)(2)), and EPA has decided that a discretionary additional public comment period was not needed with respect to the Second Modification for several reasons, including:

(1) the Draft Determination along with its supporting Administrative Record, which was issued for public comment, included additional dredging and blasting as well as an evaluation of certain potential impacts and associated mitigation measures[5];

(2) substantive public comments on blasting were received only from the Commonwealth and the National Marine Fisheries Services ("NMFS"), and on additional

[4] In EPA's ESA consultation with the U.S. Fish and Wildlife Service as part of the Final Determination, which included consideration of blasting and the expanded dredging, EPA concluded that these activities were not likely to adversely affect the roseate tern, also an endangered species potentially present in the area.

[5] The Final Determination did not evaluate impacts from blasting on the New Bedford/Fairhaven Hurricane Barrier, the Palmer Island Light Station, or the Atlantic sturgeon or other aquatic species; those impacts are evaluated in this Second Modification.

dredging from NMFS, and both entities were included in consultation prior to EPA's issuance of this Second Modification;

(3) although additional dredging was ultimately not included in the Final Determination, to avoid segmentation concerns, EPA's evaluation in the Final Determination considered the impacts of the Project both with and without the additional dredging and concluded that additional impacts associated with additional dredging, if properly mitigated, would not alter EPA's determination that the impacts from the overall Project would not cause or contribute to significant degradation of water of the U.S.;

(4) similarly, although blasting was ultimately not included in the Final Determination, EPA's evaluation in the Draft Determination considered the impacts of blasting on aquatic life (except Atlantic sturgeon), and included proposed special conditions in Appendix E;

(5) With one exception[6], no new issues were raised beyond those reflected in the Responsiveness Summary; and

(6) the Draft Determination contained adequate information about the fundamental components of these tasks and the newly submitted information does not change EPA's determinations made for the Project in its November 19, 2012 Final Determination.

D. Public Record

Since the issuance of the Final Determination, the Commonwealth has requested two modifications to the South Terminal Project. The first Modification, issued by EPA on February 4, 2013, corrected an inconsistency in the Final Determination between Section II.2 of Appendix C (Water Quality Performance Standards) and Section 20.0 H.2 of Appendix E (Final Determination of Compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899) with regard to employment of an environmental monitor for the Project. That Modification was posted on EPA's New Bedford Harbor website at www.epa.gov/nbh and is incorporated into the Administrative Record for this Second Modification.

Documents submitted in support of the Commonwealth's request for this Second Modification as well as all documents EPA relied on are included in the Administrative Record for this Second Modification and can be found at www.epa.gov/nbh and at the EPA Records Center and the New Bedford Public Library. The Administrative Record for EPA's Final Determination for the South Terminal Project and the Administrative Records for the New Bedford Harbor Superfund Site are incorporated by reference into the Administrative Record for the Second Modification to EPA's Final Determination for the South Terminal Project.

[6] In its May 20, 2013 letter, the Commonwealth requested approval to be able to use blasting as a method of first resort rather than last resort (after first employing non-blasting techniques), as had been its original proposal in June, 2012.

E. *Summary of Second Modification*

- Expands the width of the approach channel to the terminal from 175 feet to 225 feet, an expansion of 50 feet on the western edge of the channel;
- Expands the deep draft berthing area from 600 feet to 800 feet, an expansion of 200 feet to the north;
- Deepens CAD cell 3 from -45 MLLW to -60 MLLW and reduces the footprint from 8.54 acres to approximately 8.29 acres;
- Incorporates the use of blasting in three subtidal areas for rock removal;
- Eliminates silt curtains around the winter flounder mitigation area as long as certain condition concerning filling restrictions and monitoring are met; and
- Changes requirement for offsite disposal of material containing PCB-concentrations greater than (">") 25 ppm to greater than or equal to ("≥") 50 ppm in the upland area of the main terminal facility and potentially all or a portion of the Radio Tower parcel.
- Clarifies traffic routes during construction and long-term use of the terminal.
- Clarifies shellfish mitigation program.

The expanded dredging work will result in approximately 6 acres of additional dredging, generating approximately 154,900 additional cubic yards of dredged sediment. Of that amount, 17,900 cubic yards will be contaminated with PCB concentrations within a range of 1 to less than ("<") 50 ppm and will be disposed in CAD cells 2 and 3;[7] a portion of the remaining 137,000 cubic yards of clean material will be used to construct the terminal with the remainder disposed of offshore under existing permits. Blasting will remove approximately 23,200 cubic yards of subtidal rock which will be reduced to a smaller size and used to construct the main terminal facility.

The dredging volume table originally attached as Table 1 to the Final Determination has been revised and is attached as Table 1 to this document. Maps depicting the 200 foot deep draft dredge area and the 50 foot width expansion are attached as Figures 1 and 2 to this document. A map of the three subtidal blasting areas is attached as Figure 3.

II. EPA Approval and Conditions

A. Approval and Conditions for Second Modification

Subject to the conditions and understandings set out herein, after review and consideration of all the information submitted by the Commonwealth of Massachusetts, and after completing consultations with all federal and state agencies, EPA has determined that the South Terminal Project, as modified by this Second Modification, which consists of additional dredging (expanding the deep draft berthing area an

[7] This amount includes approximately 6,900 cubic yards of contaminated sediment that was previously approved in the Final Determination for CAD cell 3 (See Appendix D).

additional 200 feet north, widening the approach channel 50 feet to the west, and changing the configuration of CAD cell 3); includes blasting as the rock removal method; and modifies the performance standards for the winter flounder mitigation area and the PCB cleanup standard from ≤ 25 ppm to <50 ppm for certain upland remediation areas, remains both protective and meets the substantive requirements of the applicable and relevant and appropriate federal environmental law that would normally apply as part of a permitting process. In addition, EPA accepts the Commonwealth's determination that the Project, as modified by the Second Modification, meets the applicable and relevant and appropriate state environmental standards. The Project, as modified, does not conflict with and is not inconsistent with the remedy. EPA reaffirms that the 1998 ROD, including the State Enhanced Remedy, as modified, remains protective of human health and the environment.

As a result, EPA is approving inclusion of the Project, as modified by the Second Modification, into the State Enhanced Remedy at the New Bedford Harbor Superfund Site which is subject to the permit exclusion found in Section 121(e) of CERCLA provided that the Commonwealth meets the following conditions:

1. Maintain compliance with all applicable or relevant and appropriate requirements ("ARARs")[8] and performance standards in the Final Determination and in this Second Modification, including the Revised Water Quality Performance Standards (Appendix C), and the conditions in the TSCA Determinations in the FD (Attachments J1 and J2) as well as the Modified TSCA Determination attached to this document at Appendix D.

2. To protect the Hurricane Barrier during blasting activities, the Commonwealth must comply with all conditions contained in the letters from the U. S. Army Corps of Engineers ("USACE") to EPA dated March 1, 2013 (clarified by USACE's March 8, 2013 email) and September 5, 2013, all of which are attached to this document at Appendix A.

3. All conditions set out in Section VII.B.1. (Clean Water Act) below.

4. To protect the Atlantic sturgeon and other aquatic species, the conditions for dredging contained on page 2 of the April 18, 2013 consultation letter from EPA to NMFS[9] (Appendix B).

[8] For ease of understanding, throughout this Second Determination, federal ARARs are also sometimes referred to as "applicable or relevant and appropriate federal environmental standards" and state ARARs are also sometimes referred to as "applicable or relevant and appropriate state environmental standards."

[9] The conditions for blasting in the April 18, 2013 letter were superseded by those set out in Section VII.B.1(CWA) of this document.

5. The Revised Water Quality Performance Standards (See Appendix C, Section II.5.b).

6. To protect the Palmer Island Light Station, a historic structure, the Commonwealth will take real-time measurements of the actual vibrations at the Light Station that are generated during blasting to confirm modeling results. If actual vibrations exceed modeling results and/or impacts to this structure are detected, the Commonwealth must provide immediate notification to EPA. The parties will engage in consultation, as appropriate, in accordance with the Advisory Council on Historic Preservation regulations at 36 CFR Part 800.

7. Submission for EPA review and approval of any workplans required by the Final Determination that require revision as a result of this Second Modification and any workplans required by this Second Modification, including those required by the Modified TSCA Determination.

All deliverables required for EPA review and approval shall be submitted to Elaine Stanley with copy to Cynthia Catri as directed in Section 20 of Appendix E of the Final Determination.

III. Background and Description of Work

For a description of the State Enhanced Remedy (SER) process and the inclusion of navigational dredging and disposal as an enhancement in the 1998 ROD, see the 1998 ROD and the Final Determination.

Below is specific background information relative to the Commonwealth's request to modify the Final Determination to incorporate additional dredging work and to add blasting as a method for rock removal for construction of the terminal bulkhead. Information concerning the Commonwealth's request to modify the performance standards for the winter flounder mitigation area and for certain upland remediation areas is also provided in this section

A. Additional Dredging - Background

Expressing its desire to accommodate future vessels representative of both the offshore renewable energy industry (international and installation vessels) and anticipated future cargo vessels, in June, 2012, the Commonwealth requested EPA approval of an additional 200 feet of deep draft dredging to the north and/or 100 feet to the south of the deep draft dredge area as well as further expansion of the width of the approach channel to grow from 175 feet to 225 feet by dredging an additional 25 feet east and west of the 175 foot channel. In its submission, however, the Commonwealth stated it had not obtained sufficient funding for this work.

Supporting submissions in October and November 2012 reiterated the Commonwealth's request for additional dredging in order to allow the Commonwealth flexibility to accommodate larger ships for offshore renewable energy industry and cargo if, in the future, financing became available for some or all the work. The November submission provided a list of longer vessels that would likely use the terminal in the future, ranging from the design vessel length of 469 feet to 730 feet, with drafts ranging from 7.6 to 9.5 meters, all deeper than the design vessel used to calculate the request for the 175 foot wide channel authorized in the Final Determination.[10] Citing safety concerns, the Commonwealth referenced federal military criteria for determining recommended margins for berthing and maneuvering in the channel.[11] These criteria recommend a safety allowance of 50 feet at each end of the largest ship to be accommodated at the pier or wharf and a recommended calculation of 225 foot wide channel for the safe passage of even the deepest draft of these vessels were they to use the terminal in the future. A CAD cell expansion was also requested to accommodate the additional dredged material that would be generated from the additional work.

For reasons explained in the Final Determination (Final Determination, pp. 9-11; see also Appendix Q, pp. 22-26), EPA did not believe the request for the additional dredging work was adequately justified at that time, but indicated that the Commonwealth could renew its request at a later date with more information. The Final Determination authorized 600 feet of deep draft dredging at -30 to -32 MLLW and a channel width of 175 feet. An 8.52 acre CAD cell 3 at – 45 MLLW, which included capacity for potential dredging in the federal channel if it was necessary, was also authorized. Although EPA's Final Determination did not include the additional dredging work as part of its evaluation, it required the Commonwealth to perform additional mitigation work to avoid impacts in the future should the Commonwealth re-request the work and EPA agree to that request.

More recently, on March 7, 2013, the Commonwealth requested a slightly modified version of its prior requests. It sought to expand the deep draft dredging area an additional 200 feet to the north of the currently approved 600 foot area (at -30 to -32 MLLW) and to widen the channel an additional 50 feet to the west.[12] Subsequently, on March 20, 2013, and as clarified on May 14 and 15, 2013 and July 10, 2013, the

[10] On page 36 of the June 18, 2012 submission (FD AR#517907), the Commonwealth stated that the design vessel for the terminal, the BBC Mississippi is 143 meters (469.16 feet).

[11] See the Commonwealth's November 8, 2012 submission (FD AR #70005476) citing the Unified Facilities Criteria document Design of Piers and Wharves (UFC-4-152-01) promulgated by the U.S. Defense Department, 28 July 2005. EPA notes this document was updated on September 1, 2012; however, section UFC-4-152-01 was not affected. See also *Id.* referencing Table V-5-10 of the U.S. Army Corps of Engineers Coastal Engineering Manual (EM-1110-2-1100[sic] (Part V), dated August 1, 2008, federal recommended criteria for civil work projects and military design projects performed by the U.S. Army Corps of Engineers.

[12] On February 25-26, 2013, the Commonwealth's initial renewal request for EPA's approval included additional deep draft dredging 200 feet to the north *and* 100 feet to the south as well as expansion of the width of the channel by 50 feet by dredging 25 feet *on each side* of the authorized channel.

Commonwealth requested a reconfiguration of CAD cell 3, changing from 8.54 acres with a depth of -45 feet, as authorized in the FD, to 8.29 acres with a depth of -60 feet.[13]

This requested work differed from prior requests in that it did not include deep draft dredging 100 feet south of the approved 600 foot area and it shifted the 50 foot widening of the channel all to the west, or landward side of the authorized channel, rather than 25 feet on each side. Both of these changes substantially reduce environmental impacts as explained below in Section VII.B.1 (CWA).

The Commonwealth provided documentation and explanation, based on additional research since the issuance of the Final Determination, which revealed with more certainty that the design vessel is not representative of the vessels likely to use the terminal for this Project. Citing relevant information provided in its November submission, the design vessel on which the Commonwealth based its original channel and berthing estimates has a shallower draft than many vessels of similar length that support offshore renewable energy and transport cargo that it believes will use the port in the future. These other vessels have a deeper draft which requires a wider channel for vessel transit and navigational safety.[14] As explained in its March 2013 submission, a wider channel at deep depths allows vessels to safely pass with a buffer on either side to accommodate drift caused by currents, wind forces, or navigational error or navigational drift and to avoid running aground when such forces could drive them off of the center of the channel. Similarly, a longer deep draft berthing area would be necessary to safely accommodate such vessels.

Of importance in this request, for the first time, funding for this work was assured by the Commonwealth as well as a commitment to accomplish this work at the same time as the rest of the project.[15] These assurances address EPA's concerns expressed in the Final Determination about the speculative nature of the original proposal.

In its documentation, the Commonwealth also explained that the configuration change to CAD cell 3 would reduce the footprint impacts associated with construction of the CAD cell, would reduce the quantity of contaminated sediment that would need to be disposed within CAD cell 2, and would maximize the use of space within the DMMP area

[13] On March 20, 2013 Commonwealth noted that its December 5, 2012 design drawing increased the dredge depth of the cell from -45 MLLW to -60 MLLW based on its determination that the area (and environmental impact) of CAD cell 3 could be reduced if the depth of the CAD cell were increased. In addition to a reduction of the areal impact, added capacity resulted from self-compression of sediments within the CAD which was not included in prior calculations.

[14] Using the USACE recommended standard ratio of channel width to vessel beam of 2.75, the newer vessels fall below the recommended standard, ranging from 2.3 to 2.6. Adding 50 feet to the channel width raises these ratios above the recommended standard ratio of 2.75, providing the needed margin of safety for maneuvering within the Harbor.

[15] In addition to its commitment to fund this work, the Commonwealth also committed to complete mitigation for the eliminated expansion work described in footnote 12 even though that work will not be performed.

where CAD cells are built, thereby increasing the future flexibility of the navigational CAD cell program.[16]

To accommodate the Commonwealth's schedule for construction of CAD cell 3 which was already underway consistent with the Final Determination, and because EPA determined the CAD cell redesign would not create any additional impacts compared to those evaluated in the Final Determination, by letter dated July 11, 2013, EPA approved the changes in the configuration of CAD cell 3, subject to all the conditions set out in the Final Determination related to the dredging and filling of CAD cell 3.

After evaluating the Commonwealth's submissions and completing consultation with federal and state agencies,[17] EPA is approving inclusion of the additional dredging work as part of the South Terminal Project provided that all ARARs and conditions contained in the Final Determination and this Second Modification are met and maintained.

B. Description of Dredging Work

The Commonwealth's new request includes a shift in the location of the expanded channel dredging to minimize aquatic impacts, and a slightly smaller expansion at the berth area. Dredging operations will be the same as described in the Final Determination. (See discussion in the Final Determination beginning on page 29.)

The additional dredging at the deep draft berthing area would extend north by 200 feet the area authorized in the Final Determination, beginning at the southeastern edge of the existing Shuster bulkhead and ending at the northeast corner of the Shuster bulkhead, resulting in a total of 800 feet of deep draft area along the South Terminal facility. Depths will change from the existing -20 MLLW to a depth of -32 MLLW. Approximately 2,500 cubic yards of contaminated sediment and 8,000 cubic yards of clean sediment will be generated by this expansion. Contaminated sediment will be disposed in CAD cell 3; clean dredged material will be used as fill during construction of the terminal. See map at Figure 1.

The additional 50 foot width channel expansion will occur on the western, or landward, side of the 175 foot channel authorized in the Final Determination. This area west of the channel is already at a depth of -20 to -30 MLLW and will only need slightly more dredging to bring it to -32 MLLW, generating approximately 8,500 cubic yards of contaminated material and 7,000 cubic yards of clean material. Disposal of the contaminated and clean dredged material will be the same as disposal of the deep draft dredged material. See map at Figure 2.

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[16] See letter dated March 20, 2013 and clarifications dated May 14 and 15, 2013, and July 10, 2013.

[17] See EPA's letter to NMFS dated April 18, 2013 and NMFS's response dated May 6, 2013 , (ESA consultation); EPA's letter to NMFS dated July 25, 2013 (EFH and FWCA consultations) and EPA's September 6, 2013 letter and September 13, 2013 email to NMFS (ESA, EFH and FWCA consultation).

Reconfiguring CAD cell 3 involves dredging an additional 15 feet deeper than envisioned in the Final Determination changing the depth from -45 MLLW to -60 MLLW. Because the reconfiguration also involves changing the footprint from 8.54 acres to 8.29 acres, it will result in a decrease in the amount of contaminated material generated from the area of the top of CAD cell 3 that will be disposed in CAD cell 2 (from 8,000 to 6,900 cubic yards). Approximately 122,000 cubic yards of clean material will be disposed of offshore under existing permits with MassDEP and the U.S. Army Corps of Engineers for offshore disposal of clean sediment at the Rhode Island Sound and/or Cape Cod Bay Disposal sites.

C. Blasting - Background

The June 2012 submission also included a request for potential blasting as a rock removal method in three areas. The Commonwealth presented some information about blasting impacts and mitigation measures that would be taken in the event blasting was approved by EPA. Information about conventional rock removal techniques was also included in this submission. Subsequently, the Commonwealth submitted a report dated November 15, 2012 presenting the results from a JASCO Applied Sciences acoustic model which describes peak pressure and impulse impact thresholds for explosive charges up to 50 pounds. However, given its late submission, EPA did not have adequate time to review the results and also was not provided with the underlying information to complete its review.

EPA did not approve the use of blasting in the Final Determination (Final Determination, pp. 9-11; see also Appendix Q, pp. 22-26) because EPA did not believe the request for blasting was adequately justified at that time, but, similar to the additional dredging request, indicated that the Commonwealth could renew its request at a later date with more information. The Final Determination and EPA's October 2012 biological assessment for the Atlantic sturgeon also noted that reinitiation of consultation with state and federal agencies would be necessary to evaluate impacts of blasting on Atlantic sturgeon and other aquatic species as well as impacts on the hurricane barrier. Instead, EPA approved pile driving and conventional, non-blasting techniques for rock removal, using standard construction equipment and noted certain mitigating activities that must be followed during these activities. (See page 9 of Final Determination).

On May 20, 2013, the Commonwealth requested approval to conduct blasting in three areas for rock removal as a method of first resort rather than last resort (after employing conventional non-blasting techniques) as originally proposed in June 2012, and that blasting activities be allowed to occur from September 15 through November 15, 2013.[18] (See Figure 3 for map of blasting areas.) Subsequently, on August 28, 2013, the Commonwealth requested an expansion of the blasting program based on new

[18] The Commonwealth initially requested inclusion of blasting in a letter dated March 20, 2013 but revised and expanded its request in the May 20, 2013 letter.

information generated during pre-construction investigations. Additional sub-tidal borings reveal that there is approximately three times the initially estimated amount of rock (from 7,000 to 23,200 cubic yards) that must be removed prior to construction of the terminal bulkhead and channel dredging. Although the areas of blasting have not changed, these borings show the subtidal rock profile in area 1 consists of an irregular surface of hills and valleys with a bedrock layer thickness ranging from an average of six feet to 15 feet, rather than an east to west sloping profile with a bedrock layer ranging from 3 to 5 feet. As a result, the Commonwealth has concluded that it needs to increase the explosive charge weight from 50 lbs per delay to 150 lbs per delay to remove the rock.

EPA received letters from USACE (dated March 1, 2013 and September 5, 2013) stating that, based on certain conditions, it has no objections to the Commonwealth's use of blasting as a method of rock removal during construction of the terminal based on its review of design and construction documents, an engineering assessment and other information provided by the Commonwealth.[19] Additional information was submitted to EPA including a seismic analysis of potential impacts to the Hurricane Barrier, more information on the actual construction of the project, including rock removal, from its recently hired construction contractor, additional technical memoranda related to the November 2012 JASCO Applied Sciences acoustic model, and an updated JASCO report dated September 13, 2013 that evaluates the acoustical impacts associated with a 150 lb charge weight compared to the 50 lb charge weight that JASCO had originally evaluated[20].

EPA reinitiated ESA consultation with NMFS on the potential impacts of blasting on the Atlantic sturgeon. EPA reviewed, among other things, the JASCO reports with regard to potential pressure and impulse impacts on Atlantic sturgeon and determined that, due in large part to the limited presence of the sturgeon in the area and the mitigative measures that EPA will require, the Project is unlikely to adversely affect the species.[21] EPA also reinitiated consultation on the potential of the blasting to impact other marine resources of concern to NMFS and concluded that the revised blasting program will not

[19] See March 1, 2013 and September 5, 2013 letters from Charles P. Samaris, USACE to Dave Lederer, EPA and Elaine Stanley, EPA, respectively. On a separate but related issue, on March 8, 2013, USACE clarified its position in the March 1 letter concerning maximum dredge depth, ultimately confirming that it had no objections with the dredge elevation of -32 MLLW since it would not affect the slope stability of the hurricane barrier system.

[20] Several revised versions of the JASCO report were provided to EPA: September 4, 2013 (version 4.0); September 10, 2013 (version 5.0); and September 13, 2013 (version 6.0).

[21] See letters from EPA to NMFS dated April 18, 2013 (for the initial proposal to blast 7,000 cy of rock with a maximum charge weight of 50 lbs per delay); September 6, 2013 (for the revised proposal of 23,200 cy of rock and a maximum charge weight of 150 lbs per delay); and email dated September 13, 2013 (final review of JASCO report). See also NMFS responses dated May 6, 2013 and September 16, 2013.

result in any significant impacts to Essential Fish Habitat or resources protected under the Fish and Wildlife Coordination Act.[22]

EPA also reinitiated consultation pursuant to the National Historic Preservation Act once it was determined that a historic lighthouse, the Palmer Island Light Station (the Light Station), would be included in the 1,500 foot radius of potential vibrations from blasting. In support of its request, the Commonwealth outlined measures it would employ to ensure the integrity of the Light Station and provided modeling that showed potential vibrations caused by blasting were well below allowable limits for historic structures adjacent to blasting areas. The City of New Bedford, which owns and maintains the Light Station, provided EPA with a letter concluding that it was satisfied that the Commonwealth is taking appropriate efforts to protect the Light Station. As a result, EPA has determined that the Project as described in the Final Determination and this Second Modification will not affect the Palmer Island Light Station.[23] See Section VII.B.7 (NHPA) below for further discussion.

After evaluating the Commonwealth's submissions and completing consultation with federal and state agencies, EPA has determined, as explained below in Section VII.B.1 (CWA), that blasting with the overburden in place would create less impact than blasting as a last resort after the overburden is removed, and is approving the inclusion of blasting in the three areas depicted on Figure 3 as a rock removal method as part of the South Terminal Project provided that all ARARs and conditions identified and contained in the Final Determination and this Second Modification are met and maintained.

D. Description of Blasting Work

The intersection of shallow rock and the overburden is located very close to the bottom of the dredge footprint primarily along the immediate eastern face of the bulkhead in the deep draft dredge area. Three areas may require blasting, one in the vicinity of the berthing area and the other two in the approach channel (See Figure 3). Before blasting occurs, all contaminated sediment will be removed, leaving a clean overburden layer above the bedrock. This overburden layer will remain in place during blasting to provide a positive dampening effect on the acoustical impacts of blasting. A drill rig will then drill through the rock to an appropriate depth and blast charges of varying amounts up to 150 pounds per delay, depending on the thickness of the rock, will be placed into the holes. A technique call "stemming" will be used which consists of placing crushed rock into the top of the hole to further dampen the shock wave reaching the water column that will assist in reducing fish mortality. A two hour Notice to Blast will be given at the

[22] See letters from EPA to NMFS dated July 25, 2013 (for the initial proposal to blast 7,000 cy of rock with a maximum charge weight of 50 lbs per delay); September 6, 2013 (for the revised proposal of 23,200 cy of rock and a maximum charge weight of 150 lbs per delay) and email dated September 13, 2013 (final review of JASCO report).

[23] See letter dated September 16, 2013 from James Owens, EPA to Brona Simon, Massachusetts Historical Commission and the Commission's concurrence dated September 20, 2013.

appropriate time but no later than noon on any day, leading to a 15 minute countdown which allows time for a series of public safety and aquatic life protection measures to be implemented. Once these procedures are in place, the blast will be detonated, then an "All Clear" signal will issue. EPA can, at any time, require the Commonwealth to stop blasting if necessary to prevent an unacceptable level of fish mortality.

Listed in Section VII.B.1 (CWA) of this document are certain conditions EPA requires that the Commonwealth follow during implementation of blasting to protect aquatic life. In addition to removing contaminated sediment and leaving overburden material in place (Condition 3), these include an allowance for blasting at the area closest to the bulkhead construction area between September 15 and January 15 with the remaining two areas after November 15 unless certain conditions are met (Conditions 2 and 7); the use of silt curtains, bubble curtains, and other mitigation measures (Conditions 4 and 5); pre- and post-blasting fish monitoring and reporting requirements (Conditions 6 and 7); prescriptive limits on weight of explosives and minimum delay between detonations (Condition 8); and the use of certain blasting equipment to reduce aquatic impacts (Conditions 9 – 12) and to protect the hurricane barrier (Condition 13). The Commonwealth will ensure that a dedicated marine observer, approved by Mass Division of Marine Fisheries ("MassDMF") and NMFS is present during blasting activities to ensure that fish exclusion measures are implemented and maintained throughout each blasting event.

Other measures to be implemented by the Commonwealth to protect the community include public informational meetings to describe the blasting events, specific mailings and pre-blast surveys to those businesses and residences within 1,500 feet of the blasting area, vibration monitors on certain structures as well as measures to ensure vessel traffic is alerted and protected during blasting events. See additional discussion in Section I.A (Community Impacts).

In addition, the Commonwealth will take real-time measurements of the actual vibrations at the Light Station that are generated during blasting to confirm modeling results. In the unlikely event that actual vibrations exceed modeling results and/or impacts are detected, the Commonwealth must provide immediate notification to EPA. The Agency will then immediately engage in consultation with appropriate parties to discuss and implement measures to avoid, minimize or mitigate potential impacts to the Light Station.

Finally, no later than 30 days before blasting begins, the Commonwealth must submit a final blasting plan to EPA for approval that contains measures to prevent community and aquatic impacts (Condition 1).[24]

[24] See footnote 3. The Commonwealth provided a draft Operational Blasting Plan which includes, among other things, public notice requirements and fish monitoring measures.

IV. Modification to Water Quality Performance Standards for Winter Flounder Mitigation Area

Within the Final Determination, EPA issued Water Quality Performance Standards (Final Determination Appendix C) that included a requirement that at any depth and at all times of the year, silt curtains be used during filling and capping activities associated with compensatory mitigation, including the winter flounder mitigation area. A copy of Figure 1 of Final Determination which depicts the winter flounder mitigation area is attached as Figure 4 to this document.

Section II.5.b of the Water Quality Performance Standards requires the following:

"**Compensatory Mitigation:** At any depth and at all times of year, all areas where there is filling and capping associated with compensatory mitigation (i.e. winter flounder mitigation and intertidal and subtidal mitigation capping) will be completely encircled by silt curtains and absorbent booms for the duration of the filling and capping activity."

EPA included the silt curtain requirement as a method to control turbidity levels to maintain water quality for the protection of aquatic life during mitigation activities.

On April 19, 2013, the Commonwealth requested a waiver of the requirement that silt curtains encircle the winter flounder mitigation area based on public safety concerns and offered an alternate plan to control turbidity during implementation of the mitigation work.

The Commonwealth's request is based on a number of public safety concerns arising from the use of silt curtains in the flounder mitigation area which is located below the New Bedford/Fairhaven hurricane barrier and approximately 100 feet west of the existing federal navigational channel. Specifically, the Commonwealth raised concerns about the effect of ocean currents and wind forces on silt curtains deployed below the hurricane barrier in deep water and the proximity of the federal channel presenting the potential for navigational hazards from loosened curtains drifting into the channel or shallow draft vessels transiting over the curtains.

During implementation of the early stages of this South Terminal Project, the Commonwealth, beginning January 15, 2013, installed and operated a Fish Deterrent System (also required by the Water Quality Performance Standards) that included the deployment and maintenance of silt curtains inside the hurricane barrier. Although successful, the Commonwealth faced some challenges, such as tearing and loosening, in maintaining these curtains inside the Hurricane Barrier in the January to June time period. Based on experience with monitoring of a maintenance dredging project in another harbor where silt curtains were used in ocean water near a federal channel, EPA acknowledges that the successful use of silt curtains in the marine environment is

very site specific based on exposure to predominant weather patterns, time of year and possible interactions with boating activities.[25]

After reviewing the Commonwealth's request, as well as the Fish Deterrent Weekly Reports provided by the Commonwealth from January 15 through June 15, 2013 and the alternate measures proposed in the letter dated April 19, 2013 from the Commonwealth to EPA for reducing and monitoring turbidity at the winter flounder mitigation area, and based on its own experience, EPA, by letter dated May 15, 2013, modified Section II.5.b of the Water Quality Performance Standards to waive the requirement for the use of silt curtains at the winter flounder mitigation area when there is filling and capping associated with compensatory mitigation as long as the conditions set out in that letter, and incorporated herein through the Revised Water Quality Performance Standards (Appendix C), are met. This modification does not alter the requirement that silt curtains be used during filling and capping associated with compensatory mitigation in intertidal and subtidal mitigation areas, and the Commonwealth must continue to meet all other requirements of the Water Quality Performance Standards.

V. Upland Remediation

In August and September 2013, the Commonwealth requested that the concentrations of PCB-contaminated material remaining onsite at the main terminal facility parcels, and potentially at all or a portion of the Radio Tower parcel, be revised upward to <50 ppm from the 25 ppm level authorized in the Final Determination and that confirmatory sampling be eliminated following the removal of all soil and sediment with PCB concentrations greater than or equal to ("≥ ") 50 ppm.[26] These requests arose as a result of sampling conducted during topsoil removal and characterization that revealed more extensive PCB-contamination both vertically and horizontally than originally anticipated.[27] In addition, areas of higher PCB-contamination were found in soils near the northern-most parcel of the main terminal facility (the vacant Shuster property). Contamination may also be present on adjacent properties; however, investigations have not yet been conducted on those parcels, including the Radio Tower parcel, which was identified in the Final Determination as an ancillary area for storage of equipment once the Commonwealth obtains ownership.

[25] See Memorandum to Site File, dated May 15, 2013, by Phil Colarusso, EPA Coastal and Ocean Protection Section (AR #547204).

[26] See letter dated August 30, 2013 from Bill White, MassCEC, to Elaine Stanley, EPA; and emails dated September 16 from Mike Bingham (Apex) to Kim Tisa, EPA, and September 25, 2013 from Chet Myers, Apex, to Kim Tisa, EPA. On September 23, 2013, maps of PCB concentrations were hand-delivered to EPA. Existing PCB concentrations and additional proposed soil borings are included as Attachment 4 to Appendix D.

[27] The original hot spots are indicated on Attachment 8 of Appendix J(1) of the Final Determination.

After reviewing the information submitted by the Commonwealth, EPA has determined that onsite disposal of upland soils and sediment with identified PCB concentrations < 50 ppm in the area depicted in Attachment 5 of the November 19, 2012 TSCA Determination (see Attachment 6 of Appendix D to this document) will not pose an unreasonable risk to human health or the environment provided the conditions in the Modified TSCA Determination (Appendix D) are met. See Section VII.B.6 (TSCA) below for further discussion.

Because EPA does not have sufficient information about potential PCB contamination on the Radio Tower property, the Modified TSCA Determination does not include that property. In the event that the Commonwealth acquires ownership of all or a portion of the Radio Tower property and provides information indicating that PCB concentrations are present at > 1 ppm, a proposed cleanup plan in accordance with 40 CFR Part 761 shall be submitted to EPA for review and approval.

As to the main facility parcels covered by the Modified TSCA Determination (see Attachment 6 of Appendix D), once it is determined to EPA's satisfaction, through additional sampling, that the previous PCB concentrations (see Attachment 4 to Appendix D) are representative of site conditions, the identified ≥ 50 ppm PCB-contaminated materials will be excavated and transported offsite for disposal at an appropriately licensed facility. The three-foot cap of Dense Graded Aggregate for the main facility parcels still remains protective pursuant to federal TSCA regulations. The area will also be fenced and future use restricted. In addition, given the high concentrations detected along the northern boundary of the main facility parcels, the Commonwealth shall submit a work plan for preventing migration of potential PCB-contaminated surface soils from the adjacent properties located along the northern property boundary of the site. Any maintenance requirements for the proposed work shall be incorporated into the long-term monitoring plan (LTMP) for the site. Finally, TSCA decontamination regulations will apply to all work conducted on these parcels.

All upland remediation activities will also be conducted in compliance with the M.G.L. c. 21E cleanup program as described in the Final Determination.

VI. Clarifications

A. Clarification of Shellfish Mitigation

EPA's Final Determination reflected a request by NMFS, through consultation, that the Commonwealth consider inclusion of other species identified in the shellfish survey, in particular oyster seed and establishment of an oyster reef in a suitable location. In the Final Mitigation Plan included in the Final Determination, the Commonwealth included the potential for this work.

After conducting further research on the issue, by letter to EPA dated June 27, 2013, the Commonwealth requested a withdrawal of its proposal of oyster seeding and an oyster reef from EPA's consideration in connection with the shellfish mitigation plan. The Commonwealth produced information that differing environmental conditions, such as salinity and substrate, south of the hurricane barrier where the shellfish mitigation seeding program would occur, in contrast to the conditions present where the shellfish survey was conducted in Palmer's Cove, make it unlikely that oyster seeding/reef would be successful.

EPA agrees with this conclusion. As a result, the shellfish mitigation seeding efforts will consist of 100% quahog seed.

B. Clarification on Community Impacts – Truck Traffic

Through the development of workplans following EPA's Final Determination, the Commonwealth clarified truck traffic patterns for construction and long-term use of the marine terminal facility. Section 10.1 of the Commonwealth's Construction Management Plan for the Project confirms that primary access to the terminal for both construction trucks and long-term commercial truck traffic remains through an entrance on Potomska Street.[28] However, the Plan clarifies that both temporary construction entrances and permanent long-term use entrances will appear on Potomska, Blackmer, Gifford and Cove Streets to facilitate construction of various parts of the terminal and for its long-term use. Access to Route 18 will remain primarily along Potomska Street, although South Front Street, Blackmer, Cove or Gifford Streets may also be used to access Route 18.

Consistent with Section H (Miscellaneous Special Conditions) of Appendix E of the Final Determination, because Gifford Street provides the only vehicular access to the New Bedford Harbor Hurricane Barrier, the Commonwealth must allow vehicular access along Gifford Street to the New Bedford Harbor Hurricane Barrier at all times.

All other measures described in the Final Determination to alleviate traffic impacts on the community, including coordination with area residents and businesses for access and parking, with emergency response vehicles for access, providing advance notice of construction activities, and displaying signs, signals, and hiring police details to direct traffic, remain unchanged. A full discussion of these and other measures can be found in the Commonwealth's Construction Management Plan.

VII. CERCLA Statutory Requirements

A. CERCLA § 121 Factors

[28] The Construction Management Plan is included in the administrative record for this Second Modification, AR #527287.

The Project, as modified, does not conflict with and is not inconsistent with the New Bedford Harbor Superfund remediation, and EPA reaffirms that the 1998 ROD, including the State Enhanced Remedy, remains protective of human health and the environment. The dredging work will sequester an additional 17,900 cubic yards[29] of contaminated sediment that would not otherwise be addressed by the Superfund dredging since it is below Superfund cleanup levels in the lower harbor. This work continues to enhance the 1998 ROD by further reducing the availability of PCB contamination to aquatic life, particularly those that bioaccumulate PCBs which has led to the Site's risk from consumption of fish. Similarly, although the cleanup levels are slightly higher, the upland remediation work continues to address contaminated soil and sediment through TSCA and the state cleanup program that would not otherwise be addressed in the foreseeable future if this Project did not occur. See page 41 of the Final Determination for more detailed discussion about the protectiveness of the Project. As long as the conditions contained in the Final Determination as modified by this Second Modification are implemented and maintained, the Project will not adversely affect human health or the environment.

Consistent with the Final Determination findings, the work described in this Second Modification does not change or alter EPA's determinations set out on page 42 of EPA's Final Determination that disposing of the additional dredged contaminated material in CADs will permanently isolate this sediment from human and environmental receptors by containing it in perpetuity using a safe and protective technology, and that CADs, although not using treatment of the PCB-contaminated sediment as a principal element, provide protection against site risks posed by these sediments by removing and permanently isolating the sediment.

The Commonwealth has not provided cost information for this Second Modification work; however, no Superfund money will be used to finance the work.

A detailed discussion of how the work described in this Second Modification complies with ARARs follows below.

B. *Significant Substantive Requirements*

As stated in the Final Determination, because EPA has integrated the State Enhanced Remedy into the 1998 ROD, this Project, and any modification to it, must comply with §121(d) of CERCLA and §300.450 of the NCP which requires the work to meet the substantive requirements of all ARARs. See page 43 of the Final Determination for a general overview of ARARs.

[29] See footnote 7.

EPA has re-evaluated the Project as modified by this Second Modification for compliance with ARARs. While no additional federal ARARs were identified, additional analysis and consultations were required pursuant to the ARARs identified in the Final Determination. After completing this analysis and concluding all required consultation, EPA has determined, as set out below, that the Project as modified by this Second Modification complies with all ARARs provided all conditions contained in the Final Determination, as modified by this Second Modification, are met and maintained. The Commonwealth has concluded that the determinations related to the state ARARs identified in Appendix D to the Final Determination do not need to be revised or supplemented to address the Project modifications, and that the potential impacts from this work are already addressed through the state standards described in Appendix D to the Final Determination.[30]

In addition, there are public safety regulations that are not under the jurisdiction of EPA, which govern the planned activities including Department of Transportation, Coast Guard, and Homeland Security regulations as well as Occupational Safety and Health Administration rules. This Project shall comply with those regulations and shall also comply with Massachusetts Explosive Regulations at 527 CMR 13. (Specific citations to the relevant regulations can be found in the draft Operational Blasting Plan (see footnote 3). The Commonwealth shall ensure its contractors secure all necessary federal, state and local permits required by these regulations.

1. Section 404 of the Clean Water Act (33 U.S.C. §1344)

As discussed in the Final Determination, aquatic impacts associated with the discharge of dredged or fill material into waters of the U.S., including secondary impacts associated with the filling such as dredging and rock removal, are evaluated for compliance with the Clean Water Act § 404(b)(1) guidelines. The additional impacts that would result from the proposed Project modifications do not change EPA's determination that the Project, subject to the conditions in the FD and in this Second Modification, complies with the applicable guidelines. The expanded dredging and blasting do not change EPA's determination that the South Terminal site represents the LEDPA, since other alternatives are either not practicable or not less environmentally damaging, nor do they change EPA's conclusions regarding the Project's compliance with the other elements of the guidelines, as discussed below.

1. Expanded Dredging and CAD Cell Configuration

Expanded Dredging. The expanded dredging will result in a greater areal impact to the soft bottom benthos, but this is considered temporary as the substrate will not change,

[30] See email dated June 27, 2013 from Bill White, CEC to Carl Dierker, EPA, transmitting email dated May 31, 2013 from Phil Weinberg, MassDEP. See also letters dated August 28, 2013 and September 10, 2013 from Bill White, Mass CEC, to Elaine Stanley, EPA.

just the depth. Recovery of the disturbed areas by benthic creatures will start immediately after the construction stops, and the benthic infaunal community will likely be fully recovered within a 3-5 year time period. The expanded dredging will not impact any additional winter flounder spawning habitat, as the areas in question are already deeper than the preferred depth range for that activity. Water quality impacts will be monitored to ensure that state water quality standards are not violated, but some level of degradation in the immediate vicinity of the dredge will occur. The expanded dredging will increase the duration of the dredging, but significant water quality impacts are not anticipated from the additional dredging.

The Commonwealth has addressed EPA's concerns about the speculative nature of the expanded dredging by providing additional information about potential vessel use and committing to fund the expansion. It has avoided and minimized impacts by 1) locating the 50 foot expansion of the channel entirely on the western side of the channel, thereby avoiding further dredging of winter flounder habitat that exists to the east of the existing channel and 2) limiting the deep draft berthing area expansion to only 200 feet to the north, and eliminating its original request to also expand an additional 100 feet to the south.

Even though EPA did not approve the expanded dredging in the FD, EPA did consider the impacts that may result from the expansion, in order to avoid any concerns about segmentation in the event that the expansion was approved in the future. See Appendices E and Q to the FD. EPA concluded in the FD that the additional impacts related to the expanded dredging would not alter EPA's determination that, with proper mitigation, the project would not cause or contribute to significant degradation of waters of the U.S. Nothing in the Commonwealth's submittals in conjunction with its recent modification request has changed EPA's conclusion. In fact, the Commonwealth has reduced the impacts from the expanded dredging compared to those that EPA considered in the FD. In addition, the expanded dredging will not meaningfully increase impacts on water quality and associated effects from elevated turbidity on fish and benthic species, because it will be subject to the same water quality performance standards as the previously approved dredging. Those standards are set forth in Appendix C of the FD.[31] Finally, the FD required the Commonwealth to provide sufficient mitigation to address impacts from both the approved and potential expanded dredging, to avoid adverse impacts that could result from creating some habitat initially and then doing additional work at the same areas at a future date. See Section 7 of Appendix E of the FD for further discussion of the mitigation. No additional mitigation is necessary to address the impacts of the expanded dredging beyond that already required by the FD.

[31] The Water Quality Performance Standards have been revised only to eliminate the need for silt curtains during creation of the winter flounder mitigation area. The revised standards are attached to this document as Appendix C.

CAD Cell Configuration. The change in design of CAD cell 3 will not create any additional impacts compared to what EPA approved in the FD, and in fact would reduce the footprint impacts associated with construction of the CAD cell and the quantity of contaminated sediment that would need to be disposed within CAD cell 2. Therefore, EPA believes the approval of this design change does not impact its determination that the Project is consistent with the requirements of section 404 of the Clean Water Act. No additional mitigation is necessary as a result of these changes.

2. Blasting

EPA evaluated the potential environmental impacts associated with blasting based on the November 15, 2012 (Version 3.0) acoustic modeling report, and its revisions dated September 4, 2013 (Version 4.0), September 10, 2013 (Version 5.0) and September 13, 2013 (Version 6.0), prepared by JASCO Applied Sciences (Matthews and Zykov, 2013). This report describes the modeling analysis used to estimate the distance to peak pressure and impulse impact thresholds for explosive charges up to 50 pounds (Version 3.0) and 150 pounds (Versions 4.0 and higher).

When assessing the potential impact of blasting to fisheries resources, we considered the following factors:

a. Species that may be present in the project area and their relative abundance:

Sampling completed in the Acushnet River by the Massachusetts Department of Marine Fisheries ("MassDMF") showed the normal diversity of fish species found in a typical southern New England estuary. The Acushnet is also known to support small anadromous/catadromous fish runs of American eel, blueback herring and rainbow smelt. Blasting is anticipated to occur between September 15 and January 15. Outward migrating anadromous fish may be present in the Acushnet River at that time. In addition, NMFS has stated that Atlantic sturgeon may use this area for foraging from March through November.

b. Geographic location of the activity:

Blasting is anticipated to occur near the terminal location, so the blast effects would be limited by the shoreline to the west. The terminal location is in relatively shallow water in the southwest corner of the Inner Harbor, immediately north of the hurricane barrier. This location allows for easier attenuation of the pressure wave from the blast epicenter as it will be much easier to deploy and maintain the mitigative equipment in this location, rather than at a site located in deeper water in the middle of the river.

c. Explosive charge weights and detonation delays:

The explosive charge sizes used in blasting for rock removal will vary, depending on the amount of rock to be removed at any specific location. After contaminated sediment is removed, boreholes for blasting are drilled through the overburden (clean sediment) and underlying rock to a "subdrill" depth six feet below the desired channel depth. The borehole is then filled with explosive and capped with a minimum two feet of stemming (angular crushed rock placed in the top of the borehole) to confine the force of the blast to the targeted bedrock, and reduce the transfer of blasting force to the water column. Thus, locations with greater amounts of rock will require longer boreholes and proportionally more explosive material. Given the revised estimates of the area and thickness of the rock layer anticipated to require blasting, the maximum allowable explosive charge weight has been revised upward from the original requirement of 50 pounds to a maximum of 150 pounds.

The JASCO modeling analysis used to estimate the distance to peak pressure and impulse impact thresholds for fish from explosive charges was revised to account for the larger required charge weights, as well as to better estimate the confinement of the blast force for detonations within bedrock.[32] The revised JASCO analyses utilized the U.S. Army Corps of Engineers' ConWep model to estimate the distance to peak pressure and impulse impact criteria[33] for various charge weights. The distance to the impulse impact criterion (or "impulse threshold") was greater than the distance to the peak pressure criterion in all cases, so the impulse threshold distance was chosen as the more conservative impact distance.

The UnderWater Calculator (Dzwilewski and Fenton, 2003), the spreadsheet model used in earlier versions of the JASCO study, was then re-run, but with the model's efficiency coefficient (a measure of the amount of force transferred from the confined blast to the water column) adjusted such that the distance to the impulse threshold generated by the UnderWater Calculator was equal to the distance to the impulse threshold generated by ConWep, plus a 5-10% "conservative margin." This resulted in the "adjusted distance" to meet the impulse criterion presented in the final revised JASCO report. The adjusted efficiency coefficient was then used in the Underwater Calculator to determine the adjusted distance to meet the peak pressure criterion.

The models used in these analyses estimate the pressure and impulse effects of discrete blasts. In practice, however, a blast event for the South Terminal project will consist of

[32] Note that the later revisions of the JASCO modeling analysis do not take into account the mitigative effect of the use of bubble curtains in reducing pressure and impulse impacts in the water column, as was considered in earlier versions of the analysis. Since the use of bubble curtains remains a condition of this modification, it will provide an additional measure of protection for aquatic resources.

[33] The NMFS recommended impact criteria for finfish used in the JASCO modeling analysis for peak pressure and impulse are 75.6 psi and 18.4 psi-sec, respectively. Currently, NMFS has no formal criteria for the assessment of hydroacoustic impacts of underwater explosion on finfish. The criteria used were recommended to the Commonwealth by NMFS based on previously conducted research (see email dated July 10, 2013 (with attachments) from Apex to EPA, AR #547298 and AR #547296).

firing a series of about 40 separate charges, with each detonation separated by a delay time of 25 milliseconds ("ms"). Peak pressure and impulse effects are typically measured over the initial positive portion of the pressure wave, e.g., the time elapsed from the onset of the primary pressure wave to its return to the ambient level. This time period is typically on the order of 3-6 ms. The required 25 ms delay between individual detonations is meant to assure that the initial positive phases of pressure waves are not overlapped by those from subsequent detonations, which would result in additive peak pressure and impulse levels. Thus, the results of the modeling analysis for discrete detonations is valid for the proposed series of detonations, assuming the 25 ms delay time between detonations is adequate to assure no overlap of the initial positive portion of pressure waves from each detonation in the series.

d. Timing of blasting

In its submissions, the Commonwealth asserted that if blasting were done immediately, rather than after use of non-blasting techniques, it would be less damaging to fish species. This is because blasting as the first resort could be conducted with much of the overburden in place (after removal of contaminated sediments), which would have the effect of dampening the acoustical impacts of the blasting, whereas blasting as a last resort would occur after the overburden was removed and other rock removal techniques had been tried and failed. In addition, because of the timing of project development, blasting as a first resort would occur this fall, whereas blasting as a last resort would not occur until next spring during the spawning migration of anadromous fish through the Harbor and up the Acushnet River.

EPA evaluated the Commonwealth's submissions and agrees that the technique of blasting with the overburden in place would create less impact than blasting as a last resort after the overburden is removed.[34] There are two main reasons for this conclusion. First, blasting as a last resort would necessitate the dredging of the terminal area and delay any potential blasting until the spring time. Blasting at this time has the potential to impact inward migrating anadromous fish and impact winter flounder spawning. Blasting in the fall has the potential to impact fewer aquatic resources. Second, the amount of energy transferred to the water column from the blast is reduced by the presence of the overburden material. The resulting pressure and impulse impacts to fish are correspondingly reduced. Accordingly, we conclude that if blasting becomes necessary for rock removal, it will be less damaging to implement blasting as a first resort, with the overburden in place.

[34] It is not possible to implement non-blasting rock removal while maintaining the overburden in place. Non-blasting rock removal involves ripping out rock and overburden by mechanical means, usually after some method of fracturing or weakening the rock (such as drilling, hammering or expanding grout) is employed. In the event that non-blasting techniques prove to be ineffective, and blasting as a last resort is then required, it would necessarily occur after the overburden is removed.

The Commonwealth requested the opportunity to blast commencing on September 15, 2013. EPA considered whether the commencement of blasting should be delayed until November 15 to minimize potential impacts on the endangered Atlantic sturgeon, which may be present in the area until November, and on the fall migration of anadromous fish. Several species of juvenile fish are known to migrate from the Acushnet River back out to sea in the general time frame of September 1 through November 15, and they tend to travel along the shoreline as they migrate. Several factors weighed in EPA's evaluation. The Commonwealth made a strong case that postponing blasting at the location closest to the terminal site would have severe consequences for the Commonwealth's ability to complete the project on schedule. It also asserted that implementing a fish deterrent and protection system (a combination of bubble curtains, silt curtains, and fish startle protocols) would minimize any potential impacts on the Atlantic sturgeon and on migrating fish. EPA believes that the risk of impacts could be further reduced if these measures were supplemented by the installation of a silt curtain north of the blast site at an angle and length sufficient to deflect juvenile anadromous fish migrating from the Acushnet River to the ocean. At the same time, until blasting occurs with these measures in place, it is not possible to know with certainty how successful they will be in minimizing impacts to aquatic life. Taking all of these factors into consideration, EPA is approving the use of blasting as a method of first resort between September 15 and January 15 at the location closest to the terminal site provided that the mitigation measures specified below are implemented. In addition, EPA is approving the use of blasting at the other two locations between November 15 and January 15, and blasting might also be able to occur earlier than November 15 if EPA specifically approves in writing an earlier start date for one or both sites following completion of the blasting at the bulkhead site and EPA's evaluation of the monitoring results.

e. Mitigative measures to be implemented by the proponent:

The Commonwealth will employ multiple mitigative measures to reduce potential environmental impacts from the proposed blasting. It will leave the overburden in place, which will reduce the pressure wave generated by the explosion that is transferred to the water column (discussed further below). It will deploy bubble curtains, which have been used elsewhere to dissipate and reduce the adverse effect of pressure waves in the water column. It is anticipated that bubble curtains will reduce pressure and impulse levels below those estimated by the JASCO modeling, effectively reducing the size of the projected impact zone exhibiting levels that could adversely affect Atlantic sturgeon and other aquatic species. Additionally, the Commonwealth will deploy silt curtains around the blast site, and also north of the blast site at an angle and length sufficient to redirect migrating fish away from the project area. The Commonwealth will also use a fish startle system to move or prevent fish from entering the blast area. It will also have a licensed fisheries observer onboard who will be the person to initiate the blast sequence. Finally, the Commonwealth will conduct post-blast monitoring to look for potential fish mortalities.

Based on the JASCO acoustic modeling reports (through Version 6.0, dated September 13, 2013) and supporting information, information presented in technical memoranda from JASCO (dated 7/12/13) and Apex (dated 7/17/13); the U.S. Army Corps of Engineers' After Action Report on Fish Kills Resulting from the Blasting in Boston Harbor; our review of the scientific literature on blasting effects; the Massachusetts Division of Marine Fisheries' "Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts" (Technical Report TR-47); and on technical discussions between EPA and the Commonwealth's consultants, EPA believes that the impacts from blasting will not cause or contribute to significant degradation of the aquatic environment, as long as blasting is conducted in accordance with the conditions set forth below. Acoustical modeling conducted by JASCO shows that a blasting protocol meeting the conditions outlined below would result in peak pressure and impulse levels within NMFS recommended thresholds within a short distance (291 feet) in any direction from the blast location. This results in an impact zone, or area where the NMFS recommended criteria may be exceeded, that is roughly circular and 582 feet at its widest point. EPA believes that a blasting protocol with the specified restrictions on charge weight and delay time that meets these thresholds, coupled with the impact minimization measures incorporated into the conditions set forth below, will result in no significant adverse impacts to aquatic species. Importantly, the conditions set forth below include monitoring requirements designed to ensure that no adverse impacts occur when the blasting program is implemented.

Conditions on Blasting:

1. No later than 30 days before blasting commences, the Commonwealth must develop and submit to EPA a final blasting plan that includes measures that will be taken to prevent community impacts and provisions to satisfy the conditions set forth below. The plan must clearly articulate communications between the fisheries observer and the person who will conduct the blasting.[35]

2. Blasting shall only be conducted in the three locations depicted on page 4 of the Commonwealth's May 20, 2013 letter to EPA (See Figure 3 of this document). Blasting at the site closest to the bulkhead construction area may occur between September 15 and January 15. Blasting at the other two locations may occur between November 15 and January 15, and might also be able to occur earlier than November 15 if EPA specifically approves in writing an earlier start date for one or both sites following completion of the blasting at the bulkhead site and EPA's evaluation of the monitoring results (discussed further below).

[35] See footnote 3.

3. Prior to blasting, contaminated sediments must be removed and disposed of in CAD cell 3. The clean overburden must remain in place to absorb blast energy.

4. For any blasting that occurs before November 15, a silt curtain must be erected north of the blast at an angle and length sufficient to deflect juvenile anadromous fish migrating from the Acushnet River to the ocean. The details of the location, length, and angle of the silt curtain must be identified in the final blasting plan.

5. There must be an adequate fish deterrent and protection system (a combination of silt and bubble curtains and fish startle protocols) in place and properly functioning at least 24 hours prior to blasting, and such system shall remain in place for the duration of all blasting activities. Bubble curtains must be activated for the duration of all blasting events both to deter fish from the immediate area and to mitigate the pressure effects of blasting.

6. Pre-blast monitoring for the presence of fish in the projected impact zone must be conducted immediately prior to the initiation of blasting. If fish are detected within the impact zone, the fish startle system must be deployed in an attempt to move fish out of the area.

7. After a blasting event is completed, the Commonwealth must monitor the area within and near the impact zone looking for fish that may have been injured or killed. Monitoring must commence immediately following the completion of each blasting event and continue until no more bodies are recovered. Dead and injured fish must be enumerated and sorted by species and the information must be reported to EPA.

Within one week of receipt of the complete impact report related to the blasting at the bulkhead site, EPA will evaluate the impacts and determine whether blasting may proceed at the second location before November 15, 2013. If blasting at the second site is allowed to proceed before November 15, 2013, then within one week of receipt of the complete impact report related to the blasting at the second site, EPA will evaluate the impacts and determine whether blasting may proceed at the third location before November 15, 2013. Notwithstanding the foregoing, EPA reserves the right to require the Commonwealth to stop blasting either before or after November 15 if necessary to prevent an unacceptable level of fish mortality.

8. The blasting program must minimize the total weight of explosive charges per shot and the number of shots for the project, and in no case

shall more than 150 pounds of explosive per delayed charge, with a minimum time delay of 25 milliseconds (ms) between charges, be used.

9. The Commonwealth must use angular stemming material of sufficient length in drill holes to reduce energy dispersal to the aquatic environment.

10. The Commonwealth must subdivide the charge, using detonating caps with delays or delay connectors with detonating cord, to reduce total pressure, and must avoid use of submerged detonation cord.

11. The Commonwealth must use decking when possible in lengthy drill holes to reduce total pressure.

12. The Commonwealth must used shaped charges to focus the blast energy when the submerged surface charges are necessary, reducing energy released to the aquatic environment during demolition.

13. To protect the Hurricane Barrier, blasting must be conducted consistent with letters from the U.S. Army Corps of Engineers' to EPA dated March 1, 2013 to EPA (as clarified by USACE's March 8, 2013 email) and September 5, 2013 letter.

3. Winter Flounder Mitigation

As discussed above and in EPA's May 15, 2013 letter, EPA believes that the modification of water quality performance standards to eliminate the use of silt curtains in favor of specific measures to control turbidity will adequately protect water quality.

2. *Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403) Public Interest Review; Navigation and Navigable Waters (33 U.S.C. §408)*

For the reasons discussed above, the proposed changes in dredging, CAD cell design, use of blasting, and modification of winter flounder mitigation performance standards do not alter EPA's evaluations in the Final Determination of the Beneficial and Detrimental Impacts to the Environment and the Public Interest under § 10 of the Rivers and Harbors Act of 1899, with the exception of one factor. As discussed below, EPA re-evaluated the Public Safety factor because of the potential impacts of blasting on the New Bedford Hurricane Barrier and on local residents, businesses, and vessels.

The Commonwealth submitted substantial information to the U.S. Army Corps of Engineers to enable the Corps to determine, pursuant to 33 U.S.C. § 408, whether performing blasting near or adjacent to the Hurricane Barrier would pose an

unacceptable risk to the integrity of the Hurricane Barrier. On March 1, 2013 (as clarified by the Corps' March 8, 2013 email), and September 5, 2013, the Corps approved the proposed blasting subject to certain conditions set forth in the letters (see Appendix A). Accordingly, EPA has concluded that there is no risk to public safety associated with potential risk to the Hurricane Barrier as a result of the use of blasting.

In addition, EPA reviewed the Commonwealth's planned actions to protect the public from blasting activities, including but not limited to providing advance notifications to businesses and residences within 1500 feet of the blast site, establishing a 1500 foot perimeter around the blast site 15 minutes before the blast to keep the area clear of vessels, and providing advance notification to regulatory agencies (including the U.S. Coast Guard) and local emergency services (fire, police). Based on these and other measures the Commonwealth has proposed to take, EPA does not believe that the blasting will result in adverse effects on public safety.

Therefore, there is no change in EPA's conclusion in the FD that, after weighing the positive and negative impacts associated with this project, EPA has determined that the South Terminal Project is not contrary to the overall public interest.

3. Endangered Species Act (16 U.S.C. §1531 et seq.)

By letters dated April 18, 2013 and September 6, 2013, and an email dated September 13, EPA reinitiated consultation with the National Marine Fisheries Service ("NMFS") on the potential effects of the requested project modifications on the Atlantic sturgeon. In its letters and email, EPA described the potential impacts from expanded dredging and blasting and EPA's conclusion that while these activities may affect the Atlantic sturgeon, they were unlikely to adversely affect the species either on its own or when combined with the other impacts associated with this project, due in large part to the limited presence of the sturgeon in the area and the mitigative measures that will be employed. In its May 6, 2013 and September 16, 2013 letters in response to EPA, NMFS concurred with EPA's determination that the project, including the additional dredging and rock blasting, is not likely to adversely affect the Atlantic sturgeon provided that the specified mitigative measures to minimize the potential for entrainment and turbidity, and to minimize acoustic impacts and maintain a zone of passage, are employed. See Appendix B and Section VII.B.1 for mitigation measures.

4. Essential Fish Habitat Assessment under the Magnuson-Stevens Act (16 U.S.C. §§ 1851 et seq.) and Fish and Wildlife Coordination Act (16 U.S.C. §661-677e)

By letters dated July 25, 2013 and September 6, 2013 (followed by a September 13, 2013 email), EPA reinitiated consultation with NMFS under the Magnuson-Stevens Fishery Conservation and Management Act and the Fish and Wildlife Coordination Act ("FWCA") on the potential effects of the requested project modifications on Essential

Fish Habitat ("EFH") and on fish and wildlife resources protected by FWCA. EPA stated its conclusion that the additional dredging would not result in additional adverse effects on EFH or resources protected by FWCA, since it would not cause any additional loss of winter flounder spawning habitat and it would be subject to the same water quality performance standards as the previously approved dredging.[36] EPA also stated its conclusion that with time of year restrictions on blasting consistent with NMFS's August 21, 2012 recommendations, and with additional conditions requiring implementation of a fish deterrent system, the potential for fish to be within the impact area would be minimized to the greatest extent possible. Further, EPA identified conditions it intends to impose on the maximum charge weight per delay and the minimum delay time between charges to ensure no adverse pressure and impulse effects on fish. Finally, in the July 25, 2013 letter, EPA stated its agreement with MassDMF's request that oysters be withdrawn from consideration as part of the shellfish mitigation plan.

5. National Historic Preservation Act (16 U.S.C. § 470, 36 CFR Part 800)

The project modifications do not alter EPA's findings, set forth in Appendix G of EPA's Final Determination, that the Project will not affect historic properties. The expanded dredging areas included in the scope of the original assessment included the work described in this document *and* work that would have been conducted closer to the two historic paleosol areas consisting of additional dredging 100 feet to the south as well as 50 foot widening on both sides of the channel. Eliminating the 100 foot south expansion and shifting the 50 foot widening to the inside of the channel shrinks the work area even more than that considered in the original assessment. Blasting was also included in the scope of the original assessment and would have potentially been necessary nearer the paleosols had the southern 100 foot area been included in the project. The elimination of the southern expansion also shrinks the work area even more than that considered in the original assessment.

An additional historic property, the Palmer Island Light Station (the Light Station), has recently been identified within the Project area that was not included within the scope of the original assessment. More specifically, the Light Station is located within the 1500 foot zone where potential vibrations may occur from blasting. See Figure 5.

As a result, in a letter to EPA dated September 10, 2013, the Commonwealth outlined certain measures to ensure the Light Station is protected from blasting impacts. For example, the Commonwealth, through its contractor GZA, has modeled the estimated anticipated vibrations that are likely to impact the Light Station from blasting.[37] That maximum estimated vibration, or peak particle velocity ("PPV"), was 0.034 in/sec, as

[36] See footnote 30.

[37] See letter dated September 10, 2012 from Bill White, CEC, to Carl Dierker, EPA. See also letter dated September 13, 2013 from New Bedford Mayor Jon Mitchell to James Owens, EPA with attached memorandum dated September 11, 2013, from GZA GeoEnvironmental, Inc. to Chet Myers, Apex (describing modeling results).

calculated using a standard engineering equation and site-specific information. The Massachusetts Building Code (Explosive Regulations), at 527 CMR 13.09, regulates allowable maximum vibrations from blasting activities. The most conservative limit established in the Massachusetts Building Code (Explosive Regulations) for PPV to ensure the protection of structures with plaster is <0.5 in/sec. As such, the PPV estimated for the Light Station as a result of the proposed blasting is approximately 15 times lower than the allowable maximum vibration for potential damage to plaster structures.

Even with this margin of safety, the Commonwealth states it has conducted an extensive pre-blast photography and video of the Light Station to establish pre-blast conditions. In addition, the Commonwealth has committed to a pre-construction structural review of the Light Station, real-time measurements of the actual vibrations generated during blasting to confirm the results of the modeling and post-blast photograph and video of the Light Station to document post-blasting conditions.

As a condition of this approval, EPA is requiring the Commonwealth to provide immediate notification to EPA in the unlikely event that actual vibrations exceed modeling results and/or impacts are detected during implementation of the Project. If this occurs, the Agency will immediately engage in consultation with the Massachusetts Historical Commission, the Commonwealth, and the City of New Bedford to discuss and implement measures to avoid, minimize, or mitigate potential impacts to the Light Station.

The Light Station is owned and maintained by the City of New Bedford. On September 13, 2013, EPA received a letter from New Bedford Mayor Jonathan F. Mitchell acknowledging the historic value of the Light Station to the City and describing the City's view of the modeling performed by GZA. In his letter, the Mayor expressed his conclusion that the Commonwealth's "efforts are appropriate to give the public confidence that the blasting will not place the lighthouse in jeopardy."[38]

EPA has considered the blast modeling performed by the Commonwealth's consultant, the September 10, 2013 letter from the Massachusetts Clean Energy Center, the September 13, 2013 letter from New Bedford Mayor Mitchell, and the letter to EPA from Massachusetts Historical Commission dated September 6, 2013. In light of this modeling and the actions that will be taken to avoid effects to historic properties, in accordance with 36 CFR 800.4, EPA has determined that approval of the Second Modification will not affect historic properties. The SHPO concurred with this finding on September 20, 2013.[39]

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[38] *Id.*

[39] See letter dated September 16, 2013 from James Owens, EPA, to Brona Simon, Massachusetts Historical Commission ("MHC"). The MHC stamped its concurrence on this letter on September 20, 2013. See also email from Ramona Peters to Michael Stover, EPA dated September 18, 2013.

The Tribes were copied on EPA's letter to the SHPO regarding its determination that approval of the Second Modification will have no affect on the Palmer Island Light Station and the Tribes thanked EPA for the notification.

6. Toxic Substances Control Act (15 U.S.C.§ 2601 et seq.) PCB Remediation Waste (40 CFR §761.61(c))

Inclusion of blasting in the Project does not require a modification of the TSCA Determinations since all contaminated sediment will be removed prior to blasting activities. However, because additional dredging and disposal of PCB contaminated sediment and removal of additional upland soil is included in this Second Modification, EPA had to re-evaluate its determination made in the TSCA Determination included as Appendix J(1) in the Final Determination. After reviewing the Commonwealth's submissions (see footnote 26), EPA has determined that, provided the conditions in the First Modification to the November 19, 2012 TSCA § 761.61(c) Determination for New Bedford South Terminal Marine Facility ("the Modified TSCA Determination") (Appendix D) are met, the work described in this Second Modification will not pose an unreasonable risk to human health and the environment.

Removal and disposal into CAD cell 3 of 11,000 cubic yards of PCB contaminated sediment generated during the lengthening and widening of the channel will be conducted as described in the Final Determination. Other than the elimination of silt curtains around the winter flounder mitigation area, the Water Quality Performance Standards remain the same (see Appendix C). There is no proposed change to the capping of CAD cell 3, and the Commonwealth has indicated that inclusion of this additional sediment into CAD cell 3 would not require further expansion of the CAD as the additional capacity would be generated by self-compression of the sediment within the CAD cell, and that the CAD cell would be reconfigured to be smaller (from 8.54 to 8.29 acres) and deeper (from -45 MLLW to -60 MLLW). Maps showing the expansion areas to be dredged are attached as Attachments 1 and 2 to this Second Modification.

With respect to the Commonwealth's requests to increase the final maximum PCB concentration allowed onsite in the main terminal facility from ≤ 25 ppm to < 50 ppm and to eliminate confirmatory sampling following the removal of all identified upland soil and sediment ≥ 50 ppm PCBs, EPA has reviewed the sampling data provided by the Commonwealth on September 23, 2013 and the excavation depths and additional sampling proposed by the Commonwealth on September 25, 2013. The sampling data reflect widespread PCB contamination on the main facility properties (characterized as DGAs 1 though 8 and "the hot spot area 1" on the maps in Attachment 4 of the Modified TSCA Determination (Appendix D)). However, with the exception of hot spot area 1, PCB concentrations ≥ 50 ppm appear to be primarily limited to surface samples at two feet below the current ground surface, with the exception of two areas where PCB concentrations are > 10 ppm but < 25 ppm at greater than 3 feet below the current

ground surface. (Note: The Commonwealth has already removed two feet of top soil in DGAs 1 through 8 and five feet of topsoil in the hot spot area 1.) Contamination in hot spot area 1 appears to be deeper and generally contained within the walls of an underground concrete structure the may or may not have a bottom.

To confirm whether the previously collected PCB concentrations (see Attachment 4 of to Appendix D) at the main terminal facility are representative of site conditions and support that the ≥ 50 ppm concentrations are primarily limited to surface soils ("the conceptual site model"), EPA accepts the Commonwealth's proposed locations and depths for additional samples, as reflected in the September 25, 2013 email from the Commonwealth. Assuming the results of the additional sampling confirm the conceptual site model, EPA accepts the Commonwealth's proposed final excavation depths for the site set out in the September 25, 2013 email (see also Attachment 7 to the Appendix D). For the hot spot area 1, EPA is requiring that the soil and sediment be excavated to either the bottom of the concrete structure if there is a bottom, or to bedrock, or to the till layer but only to the till layer if the additional sampling in the hot spot area 1 indicates the till layer does not contain PCB contamination ≥ 50 ppm, or cleanup of this area may continue in accordance with the November 19, 2012 TSCA Determination. If EPA determines that the results of the additional sampling do not support the conceptual site model, the Commonwealth shall propose for EPA review and approval an alternative cleanup plan to address the PCB contamination at the main terminal facility. In addition, the Commonwealth shall submit a work plan for EPA review and approval for preventing migration of potential PCB-contaminated surface soils onto the site from the adjacent properties located along the northern property boundary of the site.

Based on the additional sampling requirements, the required excavation depths and the required workplans for an alternative cleanup if the data do not support the conceptual site model and for preventing migration of PCB-contaminated surface soils from adjacent properties, EPA has determined that increasing the final maximum PCB concentration allowed onsite in the main terminal facility (Attachment 6 to Appendix D) from ≤ 25 ppm to < 50 ppm and elimination of confirmatory sampling following the removal of all identified soil and sediment ≥ 50 ppm PCBs will not pose an unreasonable risk to human health and the environment provided the conditions in the Modified TSCA Determination (Appendix D) are met.

EPA does not have sufficient information to make a determination on the "Radio Tower Property (Potential TSCA Expansion Area)" as shown on Attachment 3 to Appendix D. Therefore, the Modified TSCA Determination does not include this area. In the event that the Commonwealth acquires ownership of all or a portion of this property and provides information indicating that PCB concentrations are present at > 1 ppm on this property, a proposed cleanup plan in accordance with 40 CFR Part 761 shall be submitted to EPA for review and approval.

7. Section 402 of the Clean Water Act (33 U.S.C. §1342)

The Project modifications will not result in additional impacts on stormwater. Therefore, EPA's previous conclusion under Section 402 of the Clean Water Act is unchanged.

8. Section 176(C) Of The Clean Air Act General Conformity Rule Review (42 U.S.C. § 7506(c), 40 CFR Part 93, Subpart B) *42 U.S.C. § 7412, 40 CFR Parts 61 and 63 (NESHAPs)*

The proposed project modifications will not result in additional effects on air quality. Therefore EPA's previous conclusion under the Clean Air Act General Conformity Rule, that a conformity determination is not required for EPA's authorization of this project, is unchanged.

EPA's conclusion under Parts 61 and 63 is also unchanged.

9. *Executive Orders and Policies*

1. *Consultation and Coordination with Indian Tribal Governments Executive Order (E.O. 13175) EPA Policy for the Administration of Environmental Programs on Indian Reservations (1984) EPA Policy on Consultation and Coordination with Indian Tribes (May 4, 2011)*

Additional dredging and blasting were within the scope of potential impacts included in EPA's consultation with the Tribes before the Final Determination issued.

The Tribes were copied on EPA's letter to the SHPO regarding its conclusion that blasting would not impact the Palmer Island Light Station and the Tribes thanked EPA for the notification.[40]

2. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, (E.O. 12898)*

The proposed project modifications do not result in additional traffic and air impacts, and the additional noise impacts are expected to be minimal. The community may experience some vibrations during blasting but these disruptions are expected to be minimal and of short duration. Vessels will be required to avoid the area when blasting events occur. Appropriate notice and protection measures for the community, for vessels and for structures will be in place prior to any blasting activities pursuant to the

[40] See email dated September 18, 2013 from Ramona Peters to Michael Stover, EPA.

Commonwealth's draft Operational Blasting Plan (see footnote 3). Traffic pattern clarifications during construction and long-term use of the terminal are slightly increased but there are traffic control measures in place to lessen impacts on the community. Therefore, EPA's conclusion, that the project is not expected to have disproportionately high and adverse human health or environmental effects on low-income or minority populations, as set forth in Appendix M of EPA's Final Determination, is unchanged.

3. *Floodplain Management Executive Order (E.O. 11988)*

The proposed project modifications will not result in additional effects on the floodplain. Therefore EPA's analysis under the Floodplain Management Executive Order set forth in Appendix L of EPA's Final Determination is unchanged.

4. *Wetland Executive Order (E.O. 11990)*

The proposed project modifications will not result in additional effects on wetlands. Therefore EPA's analysis under the Wetlands Executive Order set forth in Appendix J of EPA's Final Determination is unchanged.

5. *Invasive Species Executive Order (E.O. 13112)*

The proposed project modifications will not result in additional effects related to invasive species. Therefore EPA's analysis under the Invasive Species Executive Order set forth in Appendix N of EPA's Final Determination is unchanged.

Issued by: Nancy Barmakian for Date: 09/30/13

James T. Owens III
Director, Office of Site Remediation and Restoration

List of References

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EPA's Second Modification to the Final Determination for the South Terminal Project
New Bedford State Enhanced Remedy

Figure 1
Map of 200' Northern Dredging Expansion of Deep Draft Area

South Terminal Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
10	3.201	5.9	0.19
11	5.182	14	0.73
12	2.379	7.9	0.19
13	2.998	20.4	0.61
14	2.958	7.7	0.23
15	3.564	7.6	0.27
16	4.127	6.7	0.28
17	0.529	4	0.02
18	2.953	2.2	0.06
19	3.799	1.5	0.06
20	3.192	8	0.26
21	0.109	1.2	0.00
22	1.343	20	0.27
23	5.197	4	0.21
24	0.112	1.4	0.00
25	1.891	2.4	0.05
26	0.149	0.5	0.00
27	3.615	8.6	0.31
28	0.505	0.91	0.00
29	3.746	6.3	0.24
30	1.651	5.3	0.09
31	2.419	17.05	0.41
32	1.765	6.4	0.11
33	1.593	6	0.10
34	2.935	3.6	0.11
35	0.020	2.7	0.00
36	1.669	5.5	0.09
37	1.683	9	0.15
38	1.716	0.26	0.00
39	1.857	0.8	0.01
40	1.694	1.1	0.02
41	1.487	1.6	0.02
42	0.002	4.9	0.00
43	1.741	0.26	0.00
44	1.651	3.22	0.05
45	1.424	10.6	0.15
46	0.671	0.23	0.00
47	1.238	0.23	0.00
48	1.551	7	0.11
49	1.487	18.6	0.28
50	1.579	0.6	0.01
51	1.654	15.3	0.25
52	1.230	14.2	0.17
53	0.271	16	0.04
54	0.007	5	0.00
55	0.032	0.29	0.00
56	1.637	6.6	0.11
57	1.639	8.19	0.13
58	1.415	9.9	0.14
59	0.032	0.53	0.00
60	1.626	3.1	0.05
61	1.471	11.7	0.17
62	1.405	5.6	0.08
63	1.456	2.4	0.03
64	1.251	9	0.11
65	1.503	15	0.23
		SUM of V%*Conc.	7.22
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	7.22 mg/kg

Concentrations listed above for cells 10, 12-16, 18-22, 24-45, 47-52, & 55-65 are the results of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

Total PCB concentration for samples is estimated by summing 18 specific NOAA congeners and multiplying a harbor specific correction factor of 2.6. This harbor specific correction is based upon a statistical analysis conducted by the USEPA within New Bedford Harbor.

In the event of multiple samples per location, the highest concentration is shown in this table.

Samples with a "S" designation (i.e. S-af211), affecting cells 11, 17, 23, 46, 53, & 54, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

Federal Maneuvering Area Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
1	7.331	8	0
2	10.682	14	1
3	49.059	2	0
4	10.261	3	0
5	3.008	13	0
6	3.999	7	0
7	8.653	14	1
8	1.232	18	0
9	5.774	5.9	0
		SUM of V%*Conc.	5
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	5.82 mg/

Samples with a "S" designation (i.e. S-af211), affecting cells 1-8, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded fror the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Concentration listed for cell 9 is the result of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

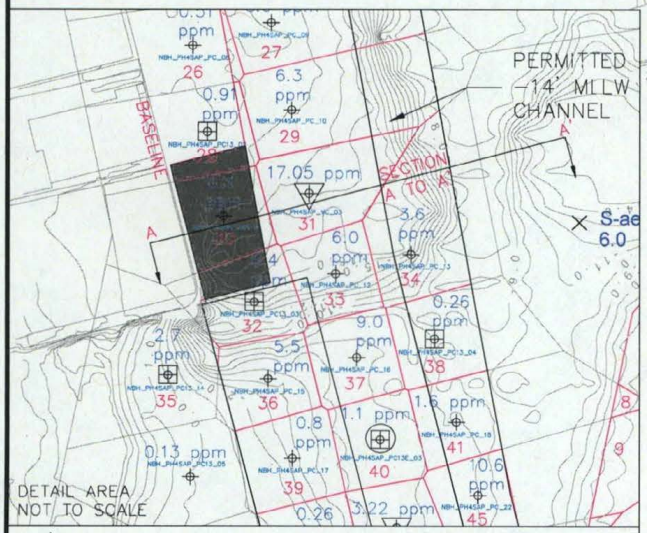
In the event of multiple samples per location, the highest concentration is shown in thi table.

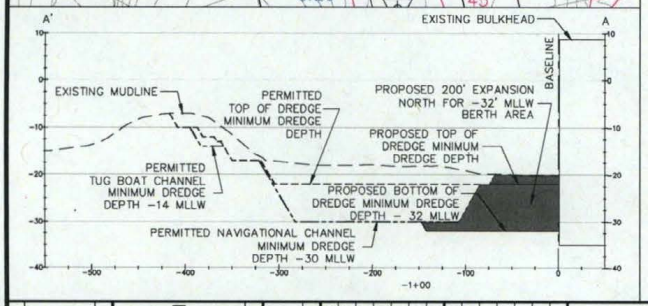
Voronoi Cells 9 and 10 originate from the same sample, however, because they straddl two separate dredge footprints they have been split into two voronoi cells.

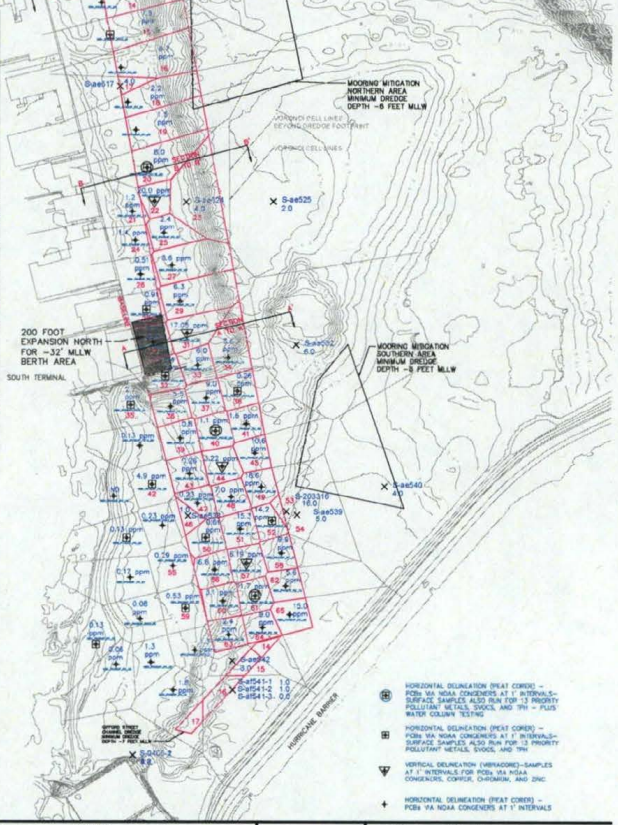
Notes:

Average Total PCB concentration calculated via the following procedure:

1). Each sample location is identified in relation to the dredge footprint.
2). The midpoint lines between each sample are drawn, defining areas represented by each sample. These areas are called "Voronoi Cells".
3). The area of each Voronoi Cell within the dredge footprint is presumed to represent the proportion of the dredge volume represented by each sample location.
4). The proportion of the total volume represented by each Voronoi Cell is calculated and called "Volume (V)%".
5). The proportion of the total volume for each Voronoi Cell is multiplied by the concentration of the sample associated with that cell (V%*Conc.).
6). The sum of all of the volumes times the concentrations (SUM of V%*Conc.) is the average concentration for the dredge footprint.







HORIZONTAL DELINEATION (PEAT CORES) – PCBs VIA NOAA CONGENERS AT 1' INTERVALS, S-SURFACE SAMPLES ALSO RUN FOR 13 PRIORITY POLLUTANT METALS, SVOCS, AND TPH – PLUS WATER COLUMN TESTING

HORIZONTAL DELINEATION (PEAT CORES) – PCBs VIA NOAA CONGENERS AT 1' INTERVALS, S-SURFACE SAMPLES ALSO RUN FOR 13 PRIORITY POLLUTANT METALS, SVOCS, AND TPH

VERTICAL DELINEATION (VIBRACORE) – SAMPLES AT 1' INTERVALS FOR PCBs VIA NOAA CONGENERS, COPPER, CHROMIUM, AND ZINC

HORIZONTAL DELINEATION (PEAT CORES) – PCBs VIA NOAA CONGENERS AT 1' INTERVALS

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA BATHYMETRY WITH EXPANDED BERTH

DRAWING NO. V-5.4

SHEET TITLE

GRAPHIC SCALE
SCALE: 1"=200'
0 100 200 400

DRAWING SCALE 1"=200'
DATE 09/5/2012
CHECKED BY
DRAWN BY JER
DESIGNED BY JER
CADD FILE
PROJECT NO. 6990

NO.	DATE	DESCRIPTION	BY

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

DRAFT

APEX
ROCKVILLE, MD · NEW BEDFORD, MA · CT · BOSTON, MA · HOLYOKE, MA
134 HIGH STREET, SUITE 502
BOSTON, MA 02110
599 CONNECTICUT AVENUE
SOUTH WINDSOR, CT

EPA's Second Modification to the Final Determination for
the South Terminal Project
New Bedford State Enhanced Remedy

Figure 2
Map of 50' Widening of Channel

Federal Maneuvering Area Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
1	7.331	8	0.59
2	10.682	14	1.50
3	49.059	2	0.98
4	10.261	3	0.31
5	3.008	13	0.39
6	3.999	7	0.28
7	8.653	14	1.21
8	1.232	18	0.22
9	5.774	5.9	0.34
		SUM of V%*Conc.	5.82
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	5.82 mg/kg

Samples with a "S" designation (i.e. S-af211), affecting cells 1-8, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Concentration listed for cell 9 is the result of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

In the event of multiple samples per location, the highest concentration is shown in this table.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

Notes:

Average Total PCB concentration calculated via the following procedure:
1). Each sample location is identified in relation to the dredge footprint.
2). The midpoint lines between each sample are drawn, defining areas represented by each sample. These areas are called "Voronoi Cells".
3). The area of each Voronoi Cell within the dredge footprint is presumed to represent the proportion of the dredge volume represented by each sample location.
4). The proportion of the total volume represented by each Voronoi Cell is calculated and called "Volume (V)%".
5). The proportion of the total volume for each Voronoi Cell is multipled by the concentration of the sample associated with that cell [V%*Conc.].
6). The sum of all of the volumes times the concentrations [SUM of V%*Conc.] is the average concentration for the dredge footprint.

South Terminal Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
10	3.201	5.9	0.19
11	5.182	14	0.73
12	2.379	7.9	0.19
13	2.998	20.4	0.61
14	2.958	7.7	0.23
15	3.584	7.6	0.27
16	4.127	6.7	0.28
17	0.529	4	0.02
18	2.953	2.2	0.06
19	3.799	1.5	0.06
20	3.192	8	0.26
21	0.109	1.2	0.00
22	1.343	20	0.27
23	5.197	4	0.21
24	0.112	1.4	0.00
25	1.891	2.4	0.05
26	0.149	0.5	0.00
27	3.615	8.6	0.31
28	0.506	0.91	0.00
29	3.746	6.3	0.24
30	1.651	5.3	0.09
31	2.419	17.05	0.41
32	1.765	6.4	0.11
33	1.593	6	0.10
34	2.935	3.6	0.11
35	0.020	2.7	0.00
36	1.669	5.5	0.09
37	1.683	9	0.15
38	1.716	0.26	0.00
39	1.857	0.8	0.01
40	1.684	1.1	0.02
41	1.487	1.6	0.02
42	0.002	4.9	0.00
43	1.741	0.26	0.00
44	1.651	3.22	0.05
45	1.424	10.6	0.15
46	0.671	0.23	0.00
47	1.238	0.23	0.00
48	1.551	7	0.11
49	1.487	18.6	0.28
50	1.579	0.6	0.01
51	1.654	15.3	0.25
52	1.230	14.2	0.17
53	0.271	16	0.04
54	0.007	5	0.00
55	0.032	0.29	0.00
56	1.637	6.6	0.11
57	1.639	8.19	0.13
58	1.415	9.9	0.14
59	0.032	0.53	0.00
60	1.626	3.1	0.05
61	1.471	11.7	0.17
62	1.405	5.6	0.08
63	1.456	2.4	0.03
64	1.251	9	0.11
65	1.503	15	0.23
		SUM of V%*Conc.	7.22
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	7.22 mg/kg

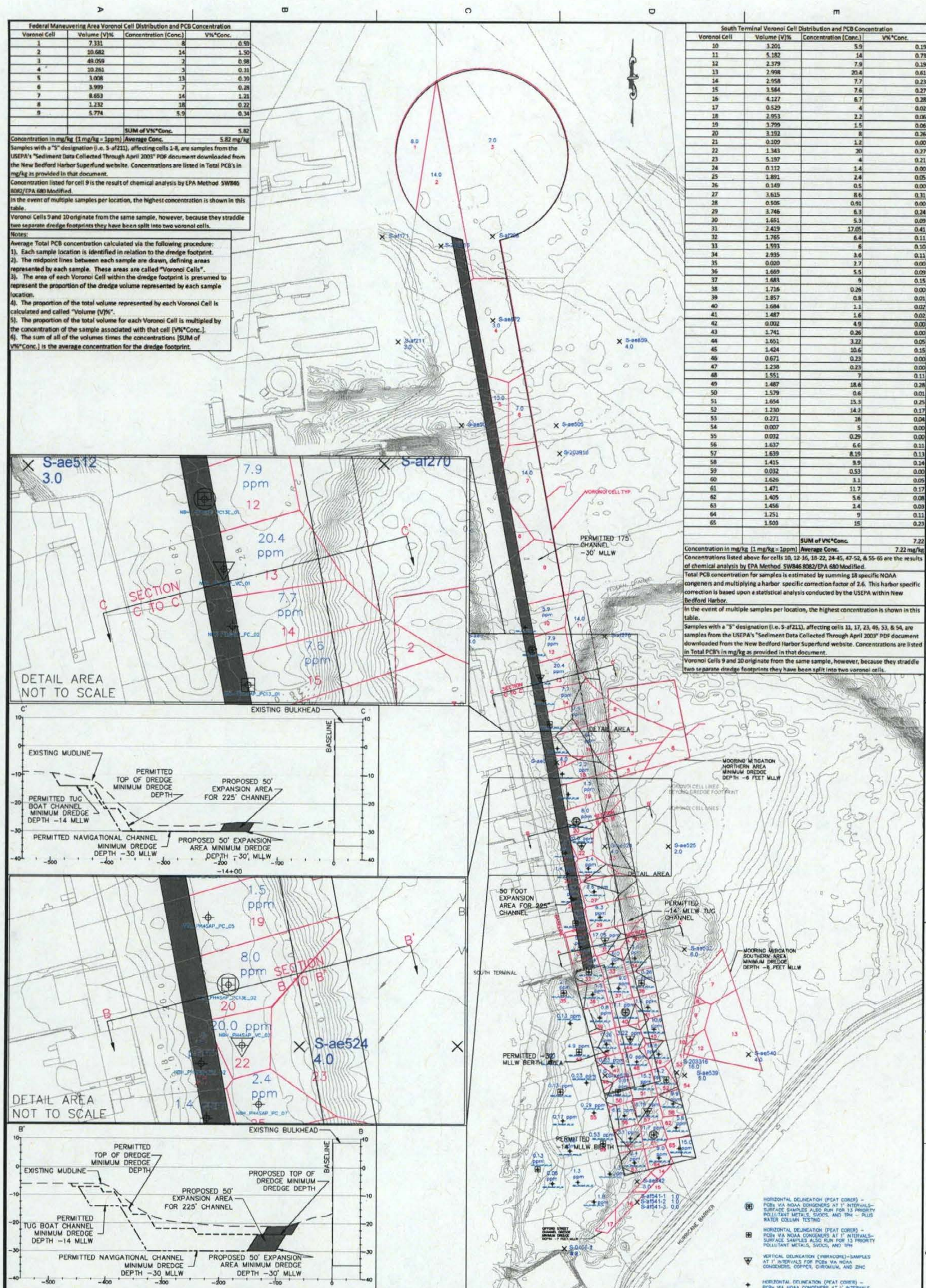
Concentrations listed above for cells 10, 12-16, 18-22, 24-45, 47-52, & 55-65 are the results of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

Total PCB concentration for samples is estimated by summing 18 specific NOAA congeners and multiplying a harbor specific correction factor of 2.6. This harbor specific correction is based upon a statistical analysis conducted by the USEPA within New Bedford Harbor.

In the event of multiple samples per location, the highest concentration is shown in this table.

Samples with a "S" designation (i.e. S-af211), affecting cells 11, 17, 23, 46, 53, & 54, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.



NO.	DATE	DESCRIPTION	BY

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	JER
DRAWN BY	JER
CHECKED BY	
DATE	06/5/2012
DRAWING SCALE	1"=200'

GRAPHIC SCALE
SCALE: 1"=200'
0 100 200 400

SHEET TITLE

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA BATHYMETRY WITH 225 FT CHANNEL

DRAWING NO.

V-5.4

1 OF 1

PROJECT

NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER

MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

DRAFT

APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

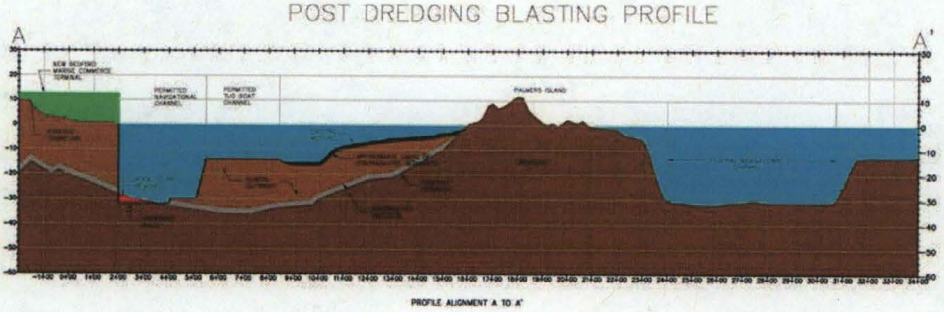
58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

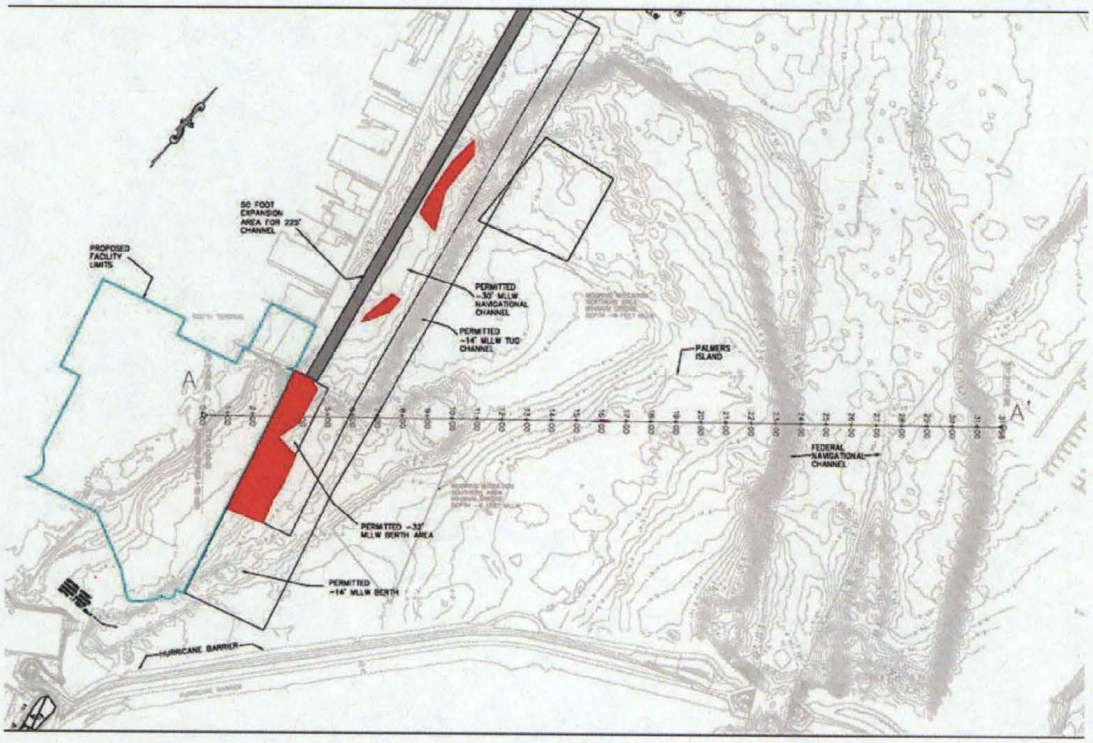
EPA's Second Modification to the Final Determination for
the South Terminal Project
New Bedford State Enhanced Remedy

Figure 3
Map of Three Blast Areas

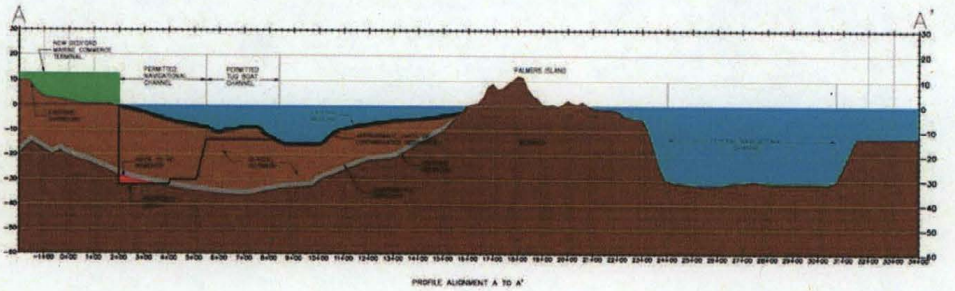
Insert 2: Mechanics of "In Water" (Post-Dredging) Blasting Scenario and Blasting Prior to Overburden Removal (Pre-Dredging) Scenario

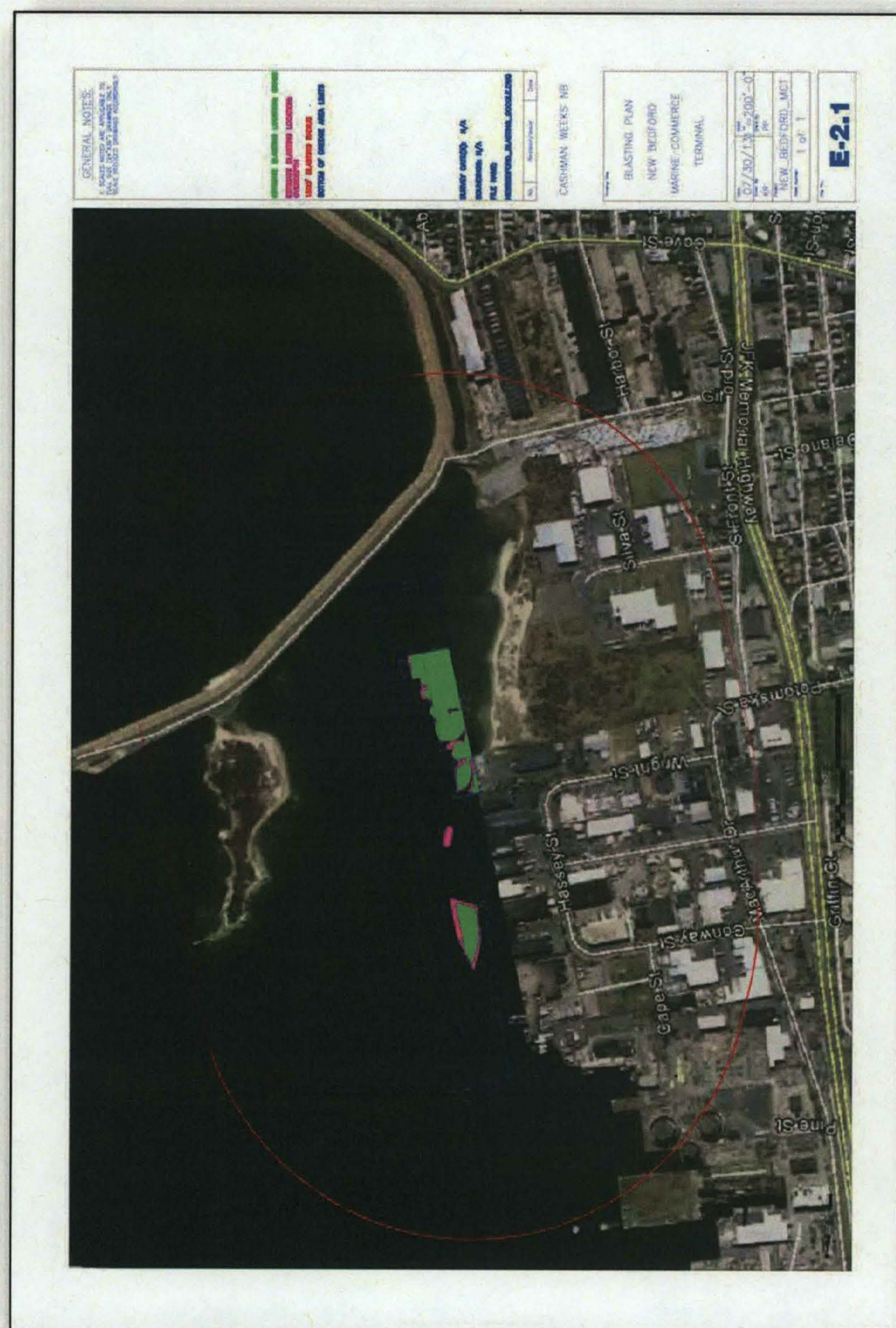
POST DREDGING BLASTING PROFILE





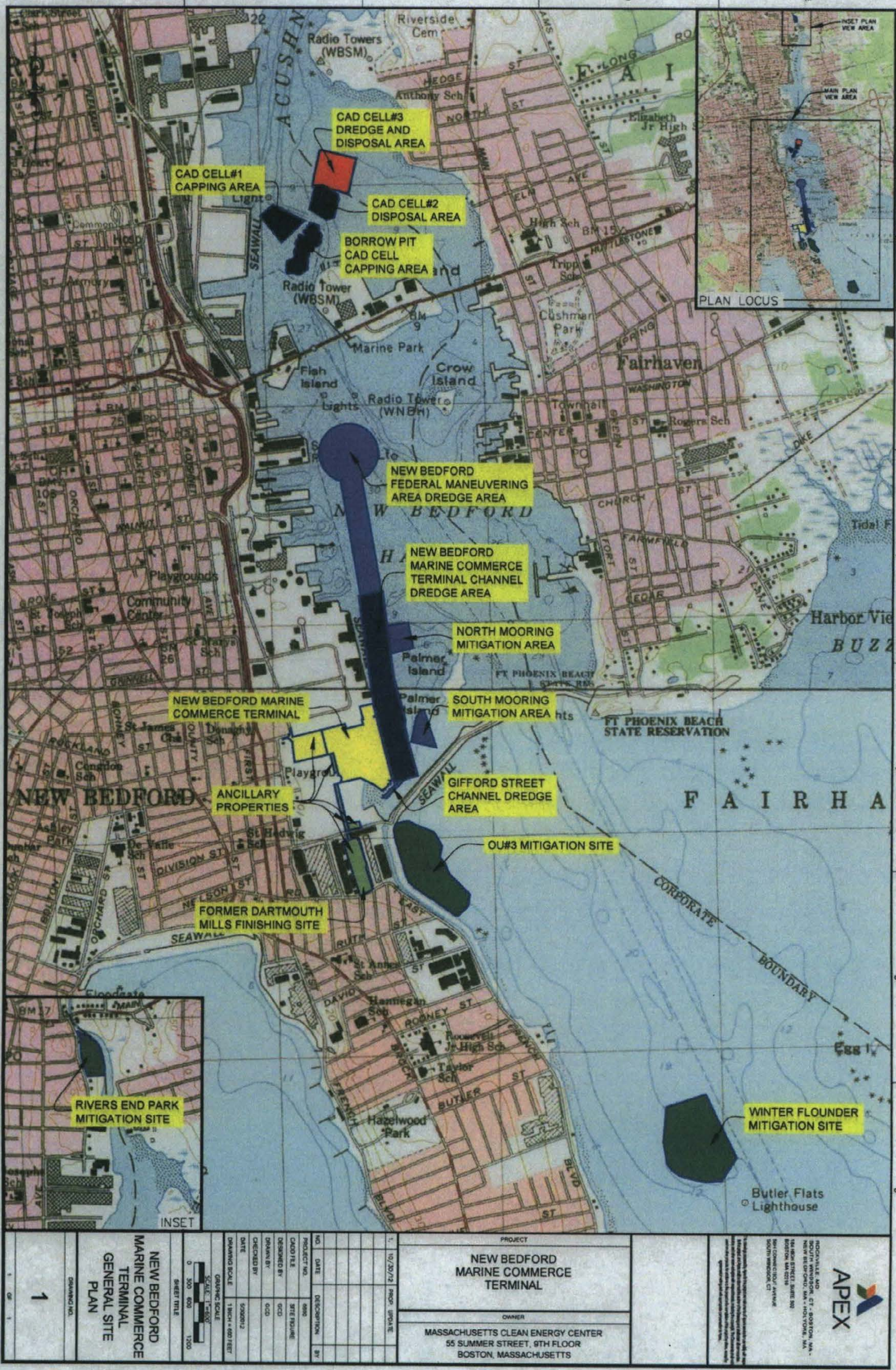
PRE DREDGING BLASTING PROFILE




GENERAL NOTES:
CASHMAN WEEKS NB
BLASTING PLAN
NEW BEDFORD
MARINE COMMERCE
TERMINAL
07/30/13
NEW_BEDFORD_MCT
1 of 1
E-2.1
Hassey St
Silva St
Harbor St
Cape St
Conway St
Wright St
MacArthur Dr
S Front St
JFK Memorial Highway
Cove St
Pine St
Griffin Ct

EPA's Second Modification to the Final Determination for
the South Terminal Project
New Bedford State Enhanced Remedy

Figure 4
Map of Winter Flounder Mitigation Area



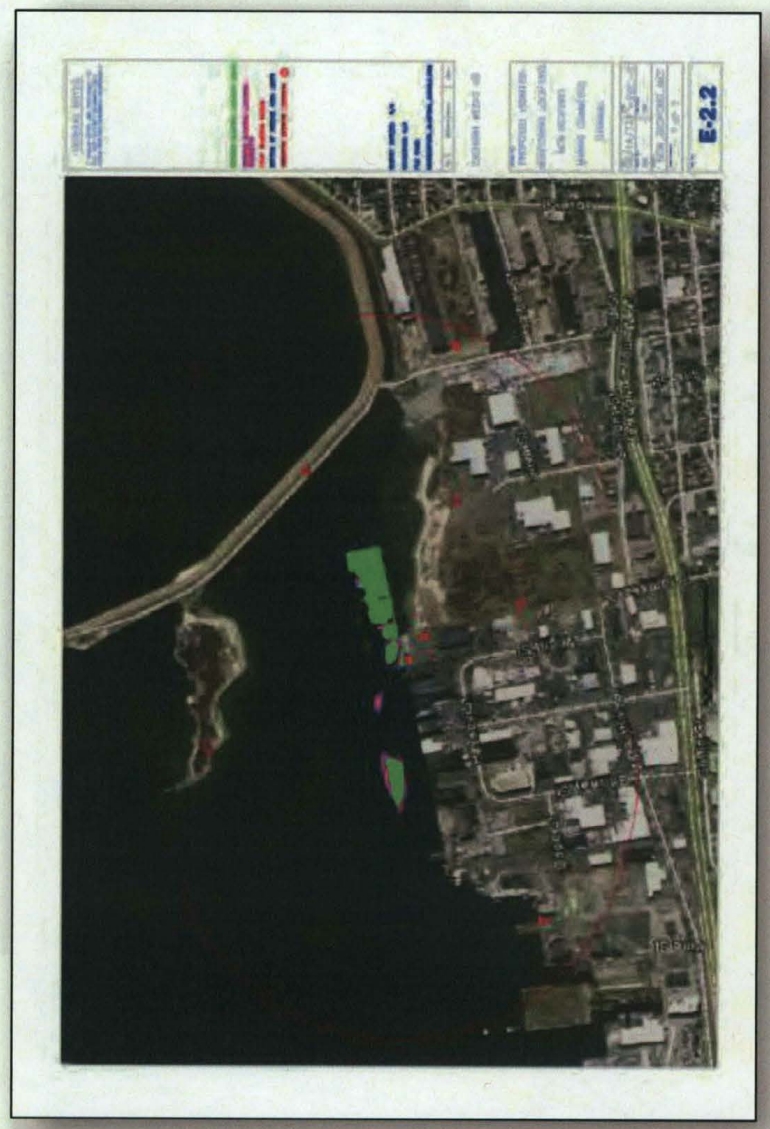
CAD CELL#3 DREDGE AND DISPOSAL AREA
CAD CELL#1 CAPPING AREA
CAD CELL#2 DISPOSAL AREA
BORROW PIT CAD CELL CAPPING AREA
NEW BEDFORD FEDERAL MANEUVERING AREA DREDGE AREA
NEW BEDFORD MARINE COMMERCE TERMINAL CHANNEL DREDGE AREA
NORTH MOORING MITIGATION AREA
NEW BEDFORD MARINE COMMERCE TERMINAL
SOUTH MOORING MITIGATION AREA
ANCILLARY PROPERTIES
GIFFORD STREET CHANNEL DREDGE AREA
OU#3 MITIGATION SITE
FORMER DARTMOUTH MILLS FINISHING SITE
RIVERS END PARK MITIGATION SITE
WINTER FLOUNDER MITIGATION SITE
INSET
PLAN LOCUS
NEW BEDFORD
FAIRHAVEN
FT PHOENIX BEACH STATE RESERVATION
CORPORATE BOUNDARY
Butler Flats Lighthouse
PROJECT
NEW BEDFORD MARINE COMMERCE TERMINAL
OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS
NEW BEDFORD MARINE COMMERCE TERMINAL GENERAL SITE PLAN
1
APEX

EPA's Second Modification to the Final Determination for the South Terminal Project
New Bedford State Enhanced Remedy

Figure 5
Map of 1500 foot zone for potential vibrations from blasting

9.4.1 Monitoring Locations for Vibration & Air Overpressure

The locations of seismographs installed to measure blast-induced ground vibration and air blast in relation to the blasting footprint, are shown below.



EPA's Second Modification to the Final Determination for the South Terminal Project New Bedford State Enhanced Remedy

Table 1
Revised Volume of Material to be Dredged

Destination of Dredged Material	Material to be Dredged													Totals
	Mooring Northern Mitigation	Mooring Southern Mitigation	Gifford Street Channel Relocation	Top of Dredge	Federal Channel Dredge	Deep Draft Extension to North	Increase Channel Width	Intermediate Dredge	Bottom of Dredge	Top of CAD #3	Top of CAD #3 Expansion	Bottom of CAD #3	Bottom of CAD #3 Expansion	
OU-3 Hot-Spot Capping Mitigation Area:	-	-	-	-	-	-	-	-	92,500	-	-	-	-	92,500
Disposal Offshore at CCDS/RISDS:	-	-	-	-	-	-	-	-	-	-	-	90,000	122,000	212,000
Winter Flounder Mitigation Area:	-	-	-	-	-	-	-	12,000	2,000	-	-	146,500	-	160,500
New Bedford Marine Commerce Terminal:	-	-	-	-	-	8,000	7,000	-	134,000	-	-	-	-	149,000
Former Dartmouth Finishing Site:	-	-	-	-	-	-	-	-	45,800	-	-	-	-	45,800
Capping of CAD Cell #1:	-	-	-	-	-	-	-	27,500	-	-	-	-	-	27,500
Disposal at CAD Cell #2:	-	-	-	-	-	-	-	-	-	27,000	6,900	-	-	33,900
Disposal at CAD Cell #3:	8,600	10,500	2,000	118,500	59,000	2,500	8,500	-	-	-	-	-	-	209,600
Capping of Borrow Pit CAD Cell:	-	-	-	-	-	-	-	25,500	-	-	-	-	-	25,500
Totals:	8,600	10,500	2,000	118,500	59,000	10,500	15,500	65,000	274,300	27,000	6,900	236,500	122,000	956,300

EPA's Second Modification to the Final Determination for the South Terminal Project New Bedford State Enhanced Remedy

Table 2
Major Federal Substantive Requirements

Major Federal Substantive Requirements

Table 2

ARARs for EPA's Second Modification to the South Terminal Project[1]

Federal Requirement[2]	Status	Synopsis	Action to be Taken
Clean Water Act, Sec. 404 (33 U.S.C §1344), 40 C.F.R. Part 230, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 C.F.R. Part 230, 231 and 33 C.F.R. Parts 320-323)	Applicable	Prohibits discharges of dredge or fill material into waters of the U.S. except in compliance with the requirements of the § 404(b)(1) guidelines.	EPA has re-evaluated the impacts of additional dredging and blasting pursuant to the 404(b)(1) guidelines. After careful review of the Commonwealth's submittals and based on the information provided in those submittals, EPA has determined that 404(b)(1) guidelines will be met as long as the conditions and mitigation measures set out in the Final Determination and this Second Modification are met.
Rivers and Harbors Act of 1899, (33 U.S.C. §403 *et seq.*; 33 C.F.R. Parts 320-323) Section 10	Applicable	Prohibits the obstruction or alternation of any navigable water of the U.S. except as authorized after a finding that the activity is not contrary to the public interest.	EPA has re-evaluated the Public Safety requirement of section 10 for impacts from the additional blasting. After careful review of the Commonwealth's submittals and based on the information provided in those submittals, EPA has

[1] Only those ARARs modified by this Second Modification are included; all other ARARs identified in ARARs - Table 2 in the Final Determination are still in effect.

[2] This Table includes all major federal substantive requirements (ARARs/TBCs) related to this Second Modification to the Final Determination. Additional federal requirements have also been identified and are included in the Administrative Record for this Project. State substantive requirements are referenced separately in the Administrative Record and can also be found in Appendix D to the Final Determination. Finally, some federal requirements are implemented by the State. These are referenced in the Administrative Record.

Major Federal Substantive Requirements

			determined that the Project meets these requirements as long as the conditions and mitigation measures set out in the Final Determination and this Second Modification are met.
Toxic Substances Control Act (TSCA), 15 U.S.C §2601 *et seq.* PCB Remediation Waste (40 C.F.R. §761.61(c))	Applicable	This section of TSCA provides risk-based cleanup and disposal options for PCB remediation waste based on the risks posed by the concentrations at which the PCBs are found.	EPA has determined that disposal of material unsuitable for ocean disposal generated from navigational dredging and mitigation measures into CAD cells 2 and 3 will not pose an unreasonable risk to human health or the environment as long as certain conditions are followed. A TSCA determination that was included in EPA's Final Determination as Appendix J(1), has been modified to include conditions for the change in upland remediation to allow PCB contaminated sediment and soils with concentrations <50 ppm to remain onsite at the main terminal facility parcels and to eliminate confirmatory sampling after excavation provided conditions in the Modified TSCA Determination are met. (Although the upland remediation will be performed

Major Federal Substantive Requirements

			independently under the state cleanup program, EPA has included this work in its Modified J(1)TSCA Determination for upland disposal of PCB remediation waste within the upland portion of the terminal and the CDF.)
Navigation and Navigable Waters, 33 USC 408	Applicable	Unlawful for any person to impair the usefulness of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States, unless permission is granted based upon a determination that such occupation or use will not be injurious to the public interest.	Additional dredging and blasting will not adversely affect the hurricane barrier as long as the conditions in this Second Modification are met.
Endangered Species Act 16 U.S.C. 1531 *et seq.*	Applicable	Species currently listed on the Endangered Species list could potentially be affected by the Project.	EPA has re-initiated consultation to evaluate the impacts of additional dredging and blasting. EPA has concluded, for the reasons discussed in the Second Modification that while the Project, including the additional impacts, may affect the Atlantic sturgeon, as long as the Commonwealth fully implements all the conditions set out in the Final Determination, the Second Modification and mitigation measures, it is unlikely to adversely affect the species. The National

Major Federal Substantive Requirements

			Marine Fisheries Service concurred with EPA's conclusion.
Essential Fish Habitat Assessment under the Magnuson-Stevens Act, 16 U.S.C. §§ 1851 *et seq.*	Applicable	This Act establishes procedures designed to identify, conserve, and enhance essential fish habitat for those species regulated under a federal fisheries management plan. Consultation with National Marine Fisheries Service must be conducted.	EPA has re-initiated consultation to evaluate the impacts of additional dredging and blasting. EPA has determined that the additional impacts would not have a significant effect on EFH, provided that the Commonwealth complies with the conditions in the Final Determination and Second Modification and fully implements all of the proposed minimization and mitigation measures.
Fish and Wildlife Coordination Act, 16 U.S.C. §661-677e	Applicable	The Act requires consultation with the U.S. Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service (NMFS), as appropriate, and the fish and wildlife service of the state to be undertaken for the purpose of preventing loss of and damage to wildlife resources.	EPA re-initiated consultation with NMFS under this Act to evaluate the impacts of additional dredging and blasting on fish and wildlife resources protected by FWCA. EPA concluded the additional impacts would not have a significant adverse effect on the fish and wildlife resources provided that the mitigation measures included in the Final Determination and the conditions included in the Second Modification are satisfied.
National Historic Preservation Act, 16 U.S.C. §470;	Applicable	Section 106 of the Act requires that Federal agencies consider,	EPA re-initiated consultation for impacts of blasting on the Palmer

Major Federal Substantive Requirements

36 CFR Part 800		in consultation with other interested parties, the effects of their undertakings on historic properties prior to the undertaking and determine whether the undertaking adversely affects or has the potential to adversely affect these properties. The following properties were identified: two paleosols, a shipwreck, and the Palmer Island Light Station.	Island Light Station. After completing consultation, EPA determined that the undertaking will have no adverse affect on the upland, subtidal and intertidal areas, or the Palmer Island Light Station as long as the Commonwealth agrees to abide by the conditions imposed in the Final Determination and this Second Modification.
Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7,629 (Feb. 16, 1994)	To Be Considered	The Executive Order, among other things, requires, to the greatest extent practicable, each Federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations and to ensure such programs, policies and activities are conducted in a manner that ensures that such programs, policies, and activities do not have the effect of subjecting persons (including populations)	Certain areas located within or along the truck access route (Route 18) have been identified as environmental justice areas. Traffic, noise and air impacts are expected to be minimal; however, a Construction Management Plan (CMP) will be required in order to minimize construction-related impacts. A 1500 foot perimeter around the blasting areas has been delineated. Vibrations from blasting impacts are expected to be minimal and adequate public safety measures including notice requirements, vibration monitors and pre- and post-blast surveys are contained in the Operational Blasting Plan.

Major Federal Substantive Requirements

		to discrimination because of their race, color, or national origin.	

EPA's Second Modification to the Final Determination for the South Terminal Project
New Bedford State Enhanced Remedy

Appendix A

U.S. Army Corps of Engineers Letters dated March 1, 2013 (clarified on March 8, 2013) and September 5, 2013 containing conditions for blasting to protect Hurricane Barrier

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

March 1, 2013

Engineering/Planning Division
Geotechnical/Water Resources Branch

Mr. Dave Lederer
Remedial Project Manager
Office of Site Remediation and Restoration
EPA Region 1, Suite 100, OSRR 7-04
5 Post Office Square
Boston, Massachusetts 02176

Dear Mr. Lederer:

This letter is in regards to the proposed New Bedford Marine Commerce Terminal adjacent to the U.S. Army Corps of Engineers (USACE) federally constructed New Bedford Hurricane Shore Protection (HSP) System in the city of New Bedford, Massachusetts.

The proposed project will construct a multiuse marine facility within the limits of New Bedford harbor and directly adjacent to the federally constructed New Bedford HSP System. Construction of the facility may require the use of blasting techniques to remove bedrock required to achieve a maximum proposed draft depth Elevation of -20 ft (MLLW). The proposed blasting is in close proximity to the New Bedford HSP, and thus USACE requested design analysis to address concerns to liquefaction and general blasting impacts to the HSP System and therefore was the sole focus of USACE's review.

The USACE New England District reviewed the information supplied in the following documents:

a. Letter report titled "*Request for District Engineer Review of Engineering Assessment Which Outlines the Procedures that Will Result in No Modification or Alternation to a Corps of Engineers Project: Blasting Associated With Construction of New Bedford Marine Commerce Terminal, New Bedford, MA*" prepared by Apex Companies LLC and GEI Consultants dated, January 11, 2013.

b. For Construction Project Specifications titled "*New Bedford Marine Commerce Terminal, Contract No. MACEC-FY13-001NB* " prepared by Apex Companies LLC, dated December 5, 2012, received via Fedex on February 6, 2013.

c. For Construction Design Drawings titled "*New Bedford Marine Commerce Terminal, Contract No. MACEC-FY13-001NB* " prepared by Apex Companies LLC, dated December 2012, received via Fedex on February 6, 2013.

d. Email correspondence providing Apex Companies, LLC responses to USACE review comments on documents a, b, and c above, from Mr. Chet Meyers, Apex Companies LLC, to Mr. Michael Bachand, USACE, dated February 22, 2013.

USACE has no objections to the proposed blasting evaluation and blasting program based on the commitments and responses provided in the email correspondence (item d above) and provides the following comments:

- No blasting shall occur a minimum of 3 days before a hurricane or significant coastal storm that potentially would require gate closures is forecasted to potentially impact the northeast coastline.

- Any damages to the HSP System or appurtenant components by the activities described above must be immediately repaired to the satisfaction of USACE.

- The issuance of this acceptance does not relieve Apex Companies LLC, the Commonwealth of Massachusetts, or the United States Environmental Protection Agency from its obligation to obtain any other federal, state, or local approvals or permits as may be required for this project, including but not limited to Section 10 and Section 404 permits.

- Any changes or amendments to the above referenced contract documents or drawings shall be submitted to and approved by USACE *prior* to implementation. Additionally, USACE reserves the right to require any and all project submittals for review and acceptance.

- Within 45 days of completion of the blasting program, Apex Companies LLC, shall furnish the District Engineer with two complete hard copy sets and one electronic copy (PDF format) of all blasting reports and evaluations and any other pertinent information requested by the USACE, signed and sealed by a professional engineer/land surveyor. All vertical data shall be in North American Vertical Datum of 1988 (NAVD 88). All post dredged elevations and areas should also be provided on "As-Built" drawings in relation to the HSP.

Be assured that USACE holds life and public safety paramount with regards to protecting the communities behind the New Bedford HPS System. Should you have any further questions or concerns, please feel free to contact me, at (978) 318-8220 or Michael Bachand at (978) 318-8075.

Sincerely,

Charles P. Samaris
Colonel, Corps of Engineers
District Engineer

Copy Furnished:

Ronald H Labelle
City of New Bedford, DPI
Commissioner
1105 Shawmut Avenue
New Bedford, Massachusetts 02746

Jeffrey Osuch
Town Executive
Town Hall, 48 Center Street
Fairhaven, Massachusetts 02719

Steve Fluegel
Project Manager, New Bedford –
Fairhaven Hurricane Barrier
40 Academy Drive
P.O. Box 1555
Buzzards Bay, Massachusetts 02532-1555

Cynthia Catri
Senior Enforcement Counsel
EPA Region 1, Suite 100, OES04-2
5 Post Office Square
Boston, Massachusetts 02176

Chet H. Meyers, PE, LSP
Apex Companies, LLC
125 Broad Street, 5th Floor
Boston, Massachusetts 02110

Bill White
Director, Offshore Wind Sector Development
Massachusetts Clean Energy Center
55 Summer Street, 9th Floor
Boston, Massachusetts 02110

Larry Davis – USACE NAE - OPS

Catri, Cindy

From: Lederer, Dave
Sent: Friday, March 08, 2013 9:05 AM
To: Brill, Larry
Cc: Stanley, Elaine; Cianciarulo, Robert; Catri, Cindy; paul.craffey@state.ma.us
Subject: FW: USACE Acceptance Letter - Clarification (UNCLASSIFIED)

FYI

Corps clarification on acceptance of blasting at NBMCT.

-----Original Message-----
From: Bachand, Michael L NAE [mailto:Michael.L.Bachand@usace.army.mil]
Sent: Friday, March 08, 2013 8:54 AM
To: Lederer, Dave
Cc: 'Bill White'; 'Chet Myers'; Michalak, Scott C NAE
Subject: RE: USACE Acceptance Letter - Clarification (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Lederer,
I am writing to clarify USACE's position as stated in March 1, 2013 letter with respect to the maximum dredge depth. USACE's review was focused on two aspects: (1) slope stability of the dredged area directly adjacent to the New Bedford HPS and (2) blasting effects on the New Bedford HPS.

The slope stability evaluations that we reviewed evaluated a maximum dredge elevation of -20 (MLLW) in the area directly adjacent to the New Bedford HPS system. The evaluation stated the area with a maximum dredge elevation of -32 (MLLW) is outside the area of influence from a slope stability perspective and therefore not a concern. The dredge elevation of -20 (MLLW) referenced in the March 1, 2013 letter is relevant to USACE because of its proximity to the barrier and potential slope stability impacts.

The blasting evaluation that was performed is a function of the distance from the New Bedford HPS and not directly connected to the maximum dredge elevation of -32 (MLLW). USACE understands that blasting activities would occur in the area's needed to achieve a dredge elevation of -32 (MLLW). The elevation -32 (MLLW) dredge area is accounted for in the blasting evaluation because the distances measured from the barrier and used in the evaluation encompass the footprint of the elevation -32 (MLLW) dredge area. Therefore, USACE does not have any objections with the dredge elevation of -32 (MLLW) as currently shown on the drawings (referenced in item "c" of our March 1, 2013 letter).

Should you have any questions please don't hesitate to contact me directly.

Regards,

Michael L. Bachand, P.E.
Levee Safety Program Manager

United States Army Corps of Engineers
New England District
696 Virginia Road
Concord, Massachusetts 01742
Office: 978.318.8075

Cell: 978.551.1656

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

September 5, 2013

Engineering/Planning Division
Geotechnical/Water Resources Branch

Ms. Elaine Stanley
EPA Cleanup Project Manager
Office of Site Remediation and Restoration
EPA Region 1
Post Office Square
Boston, Massachusetts 02109-3912

Dear Ms. Stanley:

This letter is in regards to the proposed New Bedford Marine Commerce Terminal adjacent to the U.S. Army Corps of Engineers (USACE) federally constructed New Bedford Hurricane Shore Protection (HSP) System in the city of New Bedford, Massachusetts.

The proposed project will construct a multiuse marine facility within the limits of New Bedford harbor and directly adjacent to the federally constructed New Bedford HSP System. Construction of the facility may require the use of blasting techniques to remove bedrock required to achieve a maximum proposed draft depth of Elevation of -20 ft (MLLW) in and area (Area 1) directly adjacent to the New Bedford HPS System and Elevation -32 ft (MLLW) in areas (Area 2 & 3) closer to the marine terminal. The proposed blasting is in close proximity to the New Bedford HSP and thus USACE requested design analysis to address concerns to liquefaction and general blasting impacts to HSP System and therefore was the sole focus of USACE's review.

USACE issued an acceptance letter dated March 1, 2013, for the proposed work. After the initial acceptance letter was issued, additional test borings were performed and a Contractor was selected. The test borings indicated additional rock excavation would be required and the Contractor's work plan required modifications to the original blasting evaluation. Apex Companies, LLC performed additional evaluations that showed larger allowable charge weights could be used while still meeting or exceeding the minimum required safety factors.

The USACE New England District, in accordance with guidance and Title 33 United States Code Section 408 (33 USC 408) requirements, reviewed the information supplied in the following documents:

a. Vibration Monitoring Plan titled "*Vibration Monitoring Plan for the Hurricane Shore Protection (HSP) System New Bedford Marine Commerce Terminal*"

prepared by Apex Companies LLC and GEI Consultants dated, June 19, 2013, Revised August 29, 2013.

b. For Construction Project Specifications titled "*New Bedford Marine Commerce Terminal, Contract No. MACEC-FY13-001NB* " prepared by Apex Companies LLC, dated December 5, 2012, received via Fedex on February 6, 2013.

c. For Construction Design Drawings titled "*New Bedford Marine Commerce Terminal, Contract No. MACEC-FY13-001NB* " prepared by Apex Companies LLC, dated December 2012, received via Fedex on February 6, 2013.

USACE has no objections to the proposed revised blasting evaluation and blasting program and provides the following comments:

- No blasting shall occur a minimum of 3 days before a hurricane or significant coastal storm that potentially would require gate closures is forecasted to potentially impact the northeast coastline.

- Any damages to the HSP System or appurtenant components by the activities described above must be immediately repaired to the satisfaction of USACE.

- The issuance of this acceptance letter does not relieve Apex Companies LLC, the Commonwealth of Massachusetts, or the United States Environmental Protection Agency from its obligation to obtain any other federal, state, or local approvals or permits as may be required for this project, including but not limited to Section 10 and Section 404 permits.

- Any changes or amendments to the above referenced contract documents or drawings shall be submitted to USACE for acceptance *prior* to implementation. Additionally, USACE reserves the right to require any and all project submittals for review and acceptance.

- Within 45 days of completion of the blasting program, Apex Companies LLC, shall furnish the District Engineer with two complete hard copy sets and one electronic copy (PDF format) of all blasting reports and evaluations and any other pertinent information requested by the USACE, signed and sealed by a professional engineer/land surveyor. All vertical data shall be in North American Vertical Datum of 1988 (NAVD 88). All post dredged elevations and areas should also be provided on "As-Built" drawings in relation to the HSP.

Be assured that USACE holds life and public safety paramount with regards to protecting the communities behind the New Bedford HPS System. Should you have any further questions or concerns, please feel free to contact me, at (978) 318-8220 or Michael Bachand at (978) 318-8075.

Sincerely,

Charles P. Samaris
Colonel, Corps of Engineers
District Engineer

Copy Furnished:

Ronald H Labelle
City of New Bedford, DPI
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1105 Shawmut Avenue
New Bedford, Massachusetts 02746

Jeffrey Osuch
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Boston, Massachusetts 02110

Bill White
Director, Offshore Wind Sector Development
Massachusetts Clean Energy Center
55 Summer Street, 9th Floor
Boston, Massachusetts 02110

Larry Davis – USACE NAE - OPS

EPA's Second Modification to the Final Determination for the South Terminal Project
New Bedford State Enhanced Remedy

Appendix B

EPA Letter to the Commonwealth dated April 18, 2013 containing conditions for expanded dredging to protect aquatic species

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
FIVE POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

April 18, 2013

Christine Vaccaro
Section 7 Coordinator
National Marine Fisheries Service
Northeast Regional Office
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930-2276

Re: New Bedford Harbor-South Terminal Project

Dear Ms. Vaccaro:

The Commonwealth of Massachusetts has requested a modification to EPA's Final Determination Document on the proposed marine South Terminal Project in New Bedford Harbor. The Commonwealth seeks EPA's approval to allow expanded dredging of approximately 6 acres beyond what EPA approved in the Final Determination , and to allow blasting for rock removal. EPA intends to approve these proposed project modifications with conditions, as discussed further below. The intent of this letter is to re-initiate consultation under Section 7 of the Endangered Species Act of 1973, as amended, and provide our biological assessment and conclusions regarding potential effects of the project modifications on the Atlantic Sturgeon. EPA's November 19, 2012 Final Determination specifically contemplated the need to re-initiate consultation in the event that the Commonwealth decided to pursue these modifications.

Proposed Project Modifications

The Commonwealth has provided additional documentation on the size of vessels that may use the port and thus has requested to expand the dredge footprint of the project.[1] The approach channel to the terminal will be expanded in width by 50 feet. This expansion will occur on the western edge of the proposed channel (Figure 1). The Commonwealth will expand the deep draft berthing area 200 feet to the north (Figure 2). In addition, the Commonwealth proposes to use blasting as a method for removal of rock in the terminal area. The potential impacts associated with blasting, as well as other rock

[1] The Commonwealth has also committed to funding the additional dredging and accomplishing it at the same time as the rest of the project, in contrast with its original proposal, thereby addressing concerns about the speculative nature of the original proposal.

removal techniques, can be evaluated based on the November 15, 2012 acoustic modeling report prepared by JASCO Applied Sciences, which describes peak pressure level and impact level thresholds of explosive charges up to 50 pounds. EPA received this report from the Commonwealth on November 16, 2012, and we provided it to your office on January 17, 2013.

Atlantic Sturgeon

There have been no recorded sightings of Atlantic Sturgeon in New Bedford Harbor. Atlantic sturgeon have been known to utilize the nearby Taunton River for spawning. It is our understanding from discussions with NMFS that sturgeon eggs, larvae and juveniles are not expected to occur within New Bedford Harbor, but sub-adult and adult sturgeon could use the area for foraging. If sturgeon did use New Bedford Harbor, it would most likely be from March to November.

In-Water Activities that Could Impact Atlantic Sturgeon

Dredging

The proposed modifications will result in approximately an additional 6 acres of dredging of the seafloor.[2] Dredging is proposed to begin in April and continue for about 7 months. Thus, dredging will occur during the time of year when Atlantic sturgeon could be present.

To mitigate potential impacts to Atlantic sturgeon and other fishery resources, EPA will require the following measures:

1. The use of an environmental bucket for dredging of fine grained materials;
2. The implementation of turbidity monitoring with action levels, which may trigger the use of silt curtains or other engineering controls;
3. The use of a series of barriers that will form the basis of a fish exclusion system around the project area. The Commonwealth will erect silt barriers that will be anchored to the bottom and build a bubble curtain to encircle the project area. In addition, weir nets will be deployed outside of these barriers to provide a second obstacle to benthic fish movement. These fish exclusion devices will be deployed prior to construction begins in January and will remain in place until June 15th to protect winter flounder spawning; and
4. A fish monitoring program will be instituted for the project area during the period of time when the fish exclusion devices are in place. On a weekly basis, the Commonwealth will monitor for the presence of fish in the project area. If fish are present, multiple fish startle systems will be deployed in an attempt to get the fish to move out of the project area.

[2] This additional acreage includes a small amount of dredging (0.22 acres) that may be necessary for expansion of CAD cell #3.

Blasting

Based on our review of JASCO's acoustic modeling report and other information in the record, our conclusions are summarized below:

1. Potential acoustic impacts from explosive charges ≤ 50 pounds would be primarily limited to behavioral (avoidance) effects.
2. Blasting results in a larger area of a potential impact zone than other rock removal techniques.
3. Potential acoustic impacts can be expected to be limited to an area surrounding the project site that represents less than approximately 1/3 of the cross-sectional area of the river. This leaves ample room for fish passage.
4. From the initiation of construction in January through June 15, a large percentage of the zone of potential acoustic impact will already be blocked off with fish exclusion devices (silt curtains, bubble curtains and fish weirs) designed to keep benthic fish out of the project zone. A fish startle system will also be available for deployment if necessary to keep fish out of the project zone. During that period of time, sturgeon will be physically shielded from a large part of the area that could cause them harm.
5. Bubble curtains can be employed as an effective means of minimizing the potential area of impact.

EPA will include the following conditions in its approval that will minimize potential impacts from blasting. First and foremost, EPA will require that blasting be limited to a charge of no greater than 50 pounds. This condition will be necessary to protect the hurricane barrier and also will serve to limit potential impacts on the Atlantic sturgeon.

Second, EPA will require the Commonwealth to have an adequate fish deterrent system (some combination of silt and bubble curtains and fish weirs) in place and properly functioning 24 hours prior to blasting. The fish deterrent system shall stay in place for the duration of all blasting activities. EPA will require monitoring for the presence of fish in the projected impact zone, immediately prior to the initiation of blasting. If fish are detected within the impact zone, the fish startle system will be deployed in an attempt to move fish out of the area. After a blasting event is completed, the Commonwealth will monitor the area within and near the impact zone looking for fish that may have been injured or killed. Dead or injured fish will be enumerated and sorted by species and the information will be reported to EPA.

Conclusion

EPA has reviewed the request for additional dredging and has concluded that while it may affect the Atlantic sturgeon, it is unlikely to adversely affect the species either on its own or when combined with the other dredging impacts associated with this project, due in large part to the limited presence of the sturgeon in the area and the mitigative measures that will be employed.

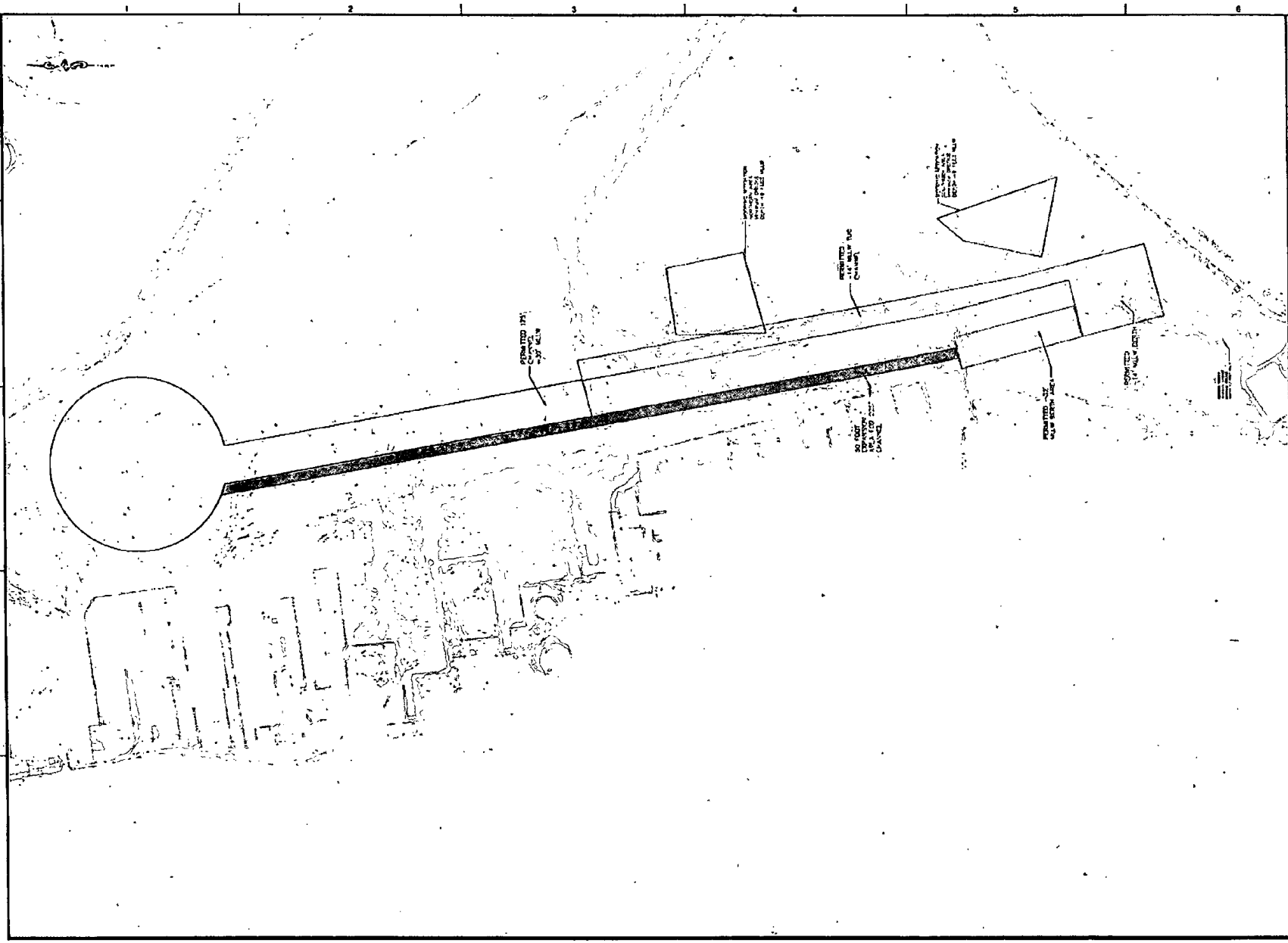
With respect to blasting, EPA has reviewed the acoustic modeling report and discussed it with NMFS. Based on the available information, EPA concludes that, although the proposed blasting has the potential to affect the Atlantic sturgeon, the project is unlikely to adversely affect the species due in large part to the limited presence of the sturgeon in the area and the mitigative measures that will be employed.[3] If you have any questions on this letter, please contact me at (617) 918-1506.

Sincerely,

Phil Colarusso, Marine Biologist
Coastal and Ocean Protection Section

cc: Gary Davis, Mass EOEA
Paul Diodati, Mass DMF
Kathryn Ford, Mass DMF

[3] EPA is also considering whether to include additional conditions on blasting pursuant to other applicable statutes, but we believe that the conditions identified above are sufficient to support our conclusion under the ESA that blasting is not likely to adversely affect the Atlantic sturgeon.



APEX

DRAFT

PROJECT: NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER: MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

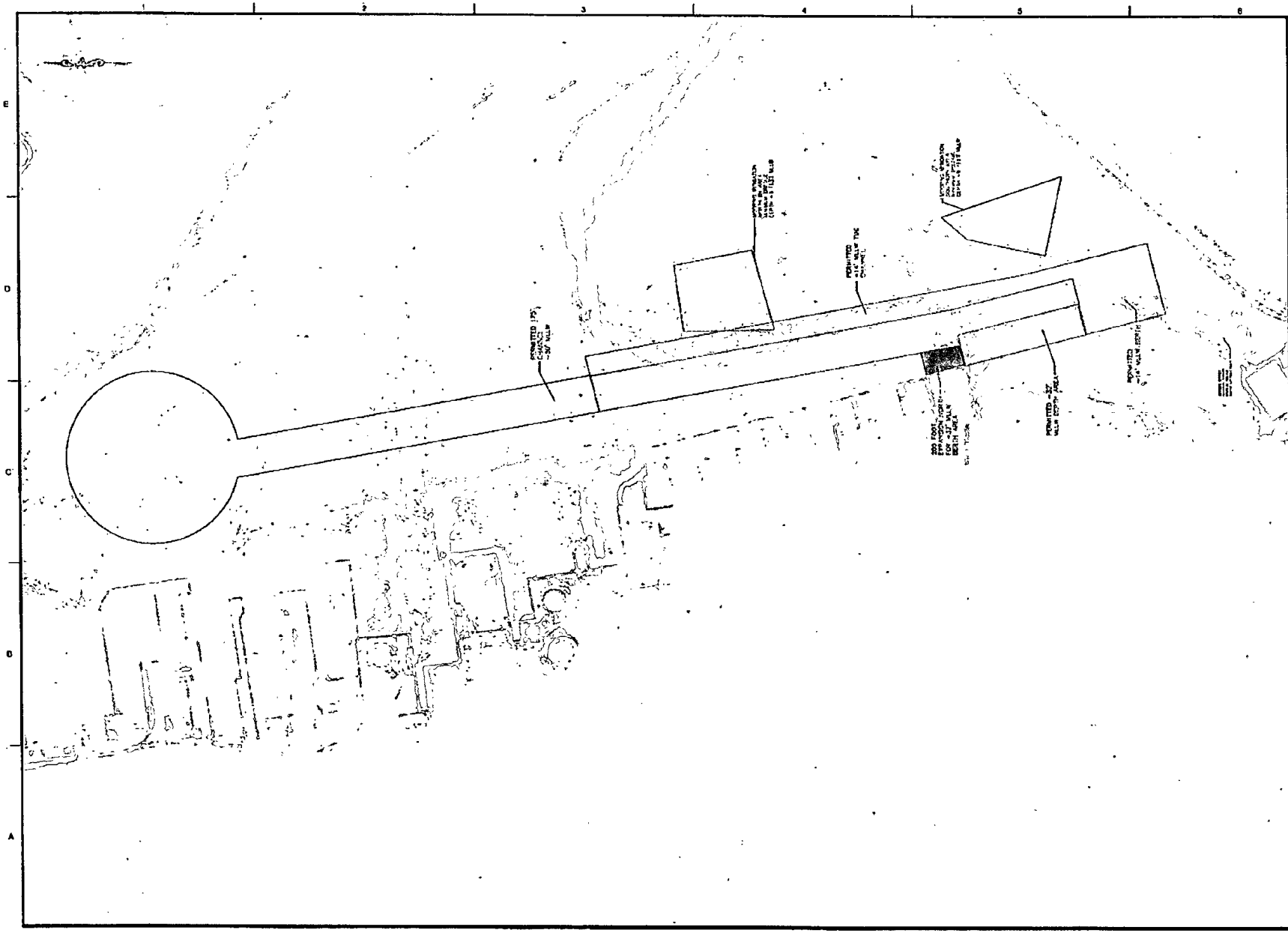
PROJECT NO	9630
CADD FILE	
DESIGNED BY	JTR
DRAWN BY	JCR
CHECKED BY	
DATE	09/30/22
DRAWING SCALE	1"=200'

GRAPHIC SCALE
SCALE: 1" = 200'
0 100 200 400

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA BATHYMETRY WITH 225 FT CHANNEL

DRAWING NO.
V-5.4

1 OF 1



APEX

ROCKVILLE, MD - SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

DRAFT

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	6490
CADD FILE	
DESIGNED BY	JER
DRAWN BY	JER
CHECKED BY	
DATE	06/5/2012
DRAWING SCALE	1"=200'

GRAPHIC SCALE
SCALE: 1"=200'
0 100 200 400

SHEET TITLE
SOUTH TERMINAL AND FEDERAL MANUEVERING AREA BATHYMETRY WITH EXPANDED BERTH

DRAWING NO.
V-5.4

1 OF 1

EPA's Second Modification to the Final Determination for
the South Terminal Project
New Bedford State Enhanced Remedy

Appendix C

Revised Water Quality Performance Standards

Revised Water Quality Performance Standards*[1]

I. Introduction

1. These Water Quality Performance Standards ("Performance Standards") shall apply to the South Terminal Project as defined by EPA's Final Determination for the South Terminal Project issued on November 19, 2012, as modified by EPA's Second Modification for the South Terminal Project issued in September 2013.*

2. The Commonwealth of Massachusetts is the lead agency for the State Enhanced Remedy work, and has a designated State Enhanced Remedy Project Manager ("SER PM").

3. Pursuant to the Memorandum of Agreement entered into between EPA and the Commonwealth in 2005 relative to the New Bedford Harbor State Enhanced Remedy, the SER PM shall continue to coordinate with the Regulatory Agencies for this South Terminal Project. In addition, to ensure consistency with EPA's Final Determination for the South Terminal Project, EPA shall have review and approval authority as described in these Water Quality Performance Standards.

4. No modifications may be made to these Water Quality Performance Standards without prior written agreement of EPA.

5. In the event of a conflict between these Performance Standards and the Final Mitigation Plan included in EPA's Final Determination, the Final Mitigation Plan shall prevail.

II MADEP 401 Water Quality Program Standards:

1. Anti-degradation provisions of the Massachusetts Surface Water Quality Standards protect all waters, including wetlands. The Commonwealth shall ensure that all necessary steps are taken to assure that the proposed activities will be conducted in a manner, which will avoid violations of said standards.

2. Environmental Monitor. The Commonwealth shall ensure that the contractor shall employ an "Environmental Monitor" (EM) and that the contract requires the EM to report directly to the SER PM and EPA. An assistant to the EM shall be hired if needed. The EM shall have a minimum of five (5) years experience in wetlands protection, erosion and sedimentation control, water quality monitoring, site maintenance, site drainage, dredging operation management and general site construction. The EM shall verify the placement and performance of erosion/sediment/turbidity control measures and shall have the authority to halt construction for erosion control purposes or for other threats to

[1] See end of document for description of revised provisions.

public health, safety or the environment. The name and phone number(s) of the EM and his or her assistant, if needed, and back-up shall be provided to the SER PM and the Regulatory Agencies so that s/he may be contacted on a 24-hour basis, seven days a week to address any emergency situation. The EM shall be authorized to contact the SER PM and EPA directly for any matter involving wetland protection. The EM shall submit bi-weekly reports to the SER PM and EPA, following the commencement of construction and continuing until completion of the work in resource areas. The bi-weekly reports shall summarized, by station location, the status of construction, the condition of the site, the weather conditions and shall report any erosion, sedimentation, discharge or pollution problems and how they were corrected, along with recommendations on how to prevent similar problems in the future. The EM shall immediately report any erosion, sedimentation or pollution problems to the Resident Engineer(s) who shall take immediate steps to correct those problems.

3. All in-water work shall meet EPA's Final Determination conditions to protect aquatic life, including winter flounder spawning & the alewife fish run that passes through the harbor to the Acushnet Sawmill Pond spawning area.

4. A Storm Water Pollution Prevention Plan (SWPPP) for the entire project as required by EPA's Final Determination, proposing both non-structural and structural BMPs to limit erosion & sediment laden discharge during land clearing filling and construction, shall be prepared and submitted to the SER PM for prior review and written approval prior to commencement of construction. The SWPPP shall emphasize measures to contain and prevent sediment laden water from being discharged from dewatering activities from areas within the bulkhead sheet pile that is to serve as a containment device. Further, the SWPPP shall meet the criteria established for such plans contained in EPA's NPDES Construction Stormwater General Permit. All proposed dewatering shall be identified in the site specific SWPPPs and shall not exceed the following limits when discharged:

   a. pH: pH shall be 6.5 to 8.5 for discharge to salt water bodies. The SWPPPs shall identify specific measures to be taken to adjust the pH to acceptable limits [for example, carbon dioxide (CO2) bubbling when concrete pouring is also occurring].

5. The Commonwealth shall ensure that the contractor shall implement the use of silt curtains and absorbent booms, and/or the Fish Deterrent Program as outlined below:

   a. **CDF Filling**: At all times of year, when filling below Mean High Water occurs in association with construction of the CDF, the area being filled shall either be completely encircled with steel sheet piling, or completely encircled with a combination of steel sheet piling and silt curtains, or completely encircled with silt curtains.

      1. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet

from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

b. **Compensatory Mitigation:***

1. Intertidal and Subtidal Mitigation Capping at the OU-3 Mitigation Area:

   A. At any depth and at all times of year, all areas where there is filling and capping associated with compensatory mitigation will be completely encircled by silt curtains and absorbent booms for the duration of the filling and capping activity.

   B. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. Winter Flounder Mitigation Area:

   A. Only non-contaminated materials that are predominantly coarse, sandy material may be placed within this area. This includes dredged material from the bottom of CAD cell 3, and from the bottom and intermediate layers of the channel, all of which are generated by the South Terminal Project dredging.

   B. Capping activities shall only occur within the local depression (depths ranged from -15 MLLW at its edges to -22 MLLW at its center) at the winter flounder mitigation area.

   C. Only scows that have a maximum bottom draft (once full) of between 16 and 21 feet shall be used to create this mitigation area.

   D. Placement of material shall be limited to a period of three hours before and after low tide for the duration of the mitigation activities.

   E. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the scow and at a monitoring location established 200-feet down-current from the scow. Turbidity standards outlined in Section II.9 must be satisfied. Turbidity monitoring for this mitigation area shall be conducted daily to ensure that Water Quality Performance standards are not exceeded.

c. **Dredging, Filling Capping, and Rock Removal at Depths Shallower Than -5 Meters MLLW**: In all areas where dredging, filling (except for filling below Mean High Water associated with construction of the CDF, addressed in Section II.5.a, and compensatory mitigation activities, addressed in Section II.5.b.), capping, and other activities such as rock removal will occur, the following is required:

1. *From January 15 through June 15 of any year*, the Fish Deterrent Program (see Section II.8 and Attachment 1) must be implemented. This Program requires that absorbent booms, silt curtains, bubble curtains and fish weirs be erected around the work area to prevent fish, particularly winter flounder, from entering the work area. [Note: other Fish Deterrent Program requirements as specified in Section II.8 must also be employed.]

A. Monitoring: Inside the silt curtain (except for areas below Mean High Water to be filled in association with construction of the CDF), turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge, unless dredging is conducted within 200 feet of the silt curtain, in which case turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. *From June 16 through January 14 of any year*, work may proceed without silt curtains unless necessary to ensure compliance with turbidity standards:

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section 9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

d. **Filling and Capping At Depths Equal To or Greater Than -5 Meters MLLW**: In all areas that are not already enclosed (except for filling associated with construction of the CDF, addressed in SectionII.5.a, and compensatory

mitigation activities, addressed in Section II.5.b), where filling (including CAD cell capping) will occur, the following is required:*

1. *From January 15 through June 15 of any year*, CAD cells (including the borrow pit) that are being filled or capped shall be completely encircled by silt curtains and absorbent booms for the duration of the filling activity.

A. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the outside edge of silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. *From June 16 through January 14 of any year*, CAD cell filling and capping may proceed without silt curtains unless necessary to ensure compliance with turbidity standards.

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section II.9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the outside edge of silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

e. **Dredging At Depths Equal to or Greater than -5 Meters MLLW**: In all areas where dredging and associated activities such as rock removal will occur in depths equal to or greater than -5 meters MLLW:

1. *From January 15 through June 15 of any year*, silt-curtains and absorbent booms shall be deployed to enclose all areas being dredged.

A. Monitoring: Inside the silt curtain, turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge, unless dredging is conducted within 200 feet of the silt curtain, in which case turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet

from the silt curtain. Turbidity standards outlined in Section II.9 (below) must be satisfied.

2. *From June 16 through January 14 of any year*, work may proceed without silt curtains unless necessary to ensure compliance with turbidity standards.

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section II.9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

6. The Commonwealth shall ensure that the contractor shall, prior to the start of any in-water work, submit a plan for deployment of silt curtains, absorbent booms, fish weirs and bubble curtains in accordance with Section II.5 to SER PM and to EPA for review and approval.

7. The Commonwealth shall ensure that the contractor shall, prior to the start of any in-water work, submit to the SER PM and to EPA for review and approval, a Contingency Plan, outlining the steps that the contractor will take, should dredging, filling, capping or rock removal activities cause an exceedance of the Water Quality Monitoring criteria outlined within these Performance Standards (see Section II.9). At a minimum, the Contingency Plan shall include measures that may be undertaken by the contractor to reduce turbidity such as reduction of the rate of operations, use of silt curtains and absorbent booms, alternate dredging and capping methodologies, and the total halt of operations. The Contingency Plan shall also include a provision that if the deployment of silt-curtains and absorbent booms cannot be implemented in accordance with Section II.5 during the period of time from January 15 to June 15 of any year, work in the area may not begin until June 16 of that year and the SER PM and EPA shall be notified.

8. *Fish Deterrent Program* – A Fish Deterrent Program in accordance with the Fish Deterrent Plan in Attachment 1 shall be implemented for any work conducted within waters shallower than -5 Mean Lower Low Water between January 15th and June 15th of any year. If the Fish Deterrent Program is not implemented in an area shallower than -5 Mean Lower Low Water prior to January 15th of any year, work in the area may not begin until June 16th of that year. Proposed modifications to the Fish Deterrent Plan must be submitted to the SER PM and to EPA for review.

9. Water Quality Monitoring Schedule and Methods

a. *When in-water work is contained within a silt-curtained area* in accordance with Section II.5, the following water-quality monitoring program shall be carried out daily for the first three days of activities commencing and once a week thereafter and during those times when dewatering activities are ongoing from the CDF filling operation:

1. Turbidity shall be measured, using an optical backscatter sensor, at both the reference and monitoring locations, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three values obtained shall be averaged, such that a single, representative turbidity value is calculated for the monitoring site and a single, representative value is calculated for the reference site.

2. Turbidity shall be measured at both the monitoring and reference site prior to the start of dredging, and once every two hours during dredging.

3. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the monitoring site exceeds the average reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase Over Reference
<10	20 NTUs
11-20	15 NTUs
>21	30% of reference

4. If, in two consecutive monitoring events, the average turbidity at the monitoring site exceeds the average turbidity at the reference site by more than the permissible turbidity increase, then water samples, composited over the entire water column, from both the monitoring and reference sites shall be collected and submitted for analysis of Total Suspended Solids, total and dissolved PCBs, and total metals for arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-round time shall be requested. Additionally, the Commonwealth shall ensure that its contractor takes operational action(s) designed to limit such exceedances (as outlined within the approved Contractor's Contingency Plan, see Section II.7), such as increasing the dredge cycle time, inspection and any necessary repair of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section II.9.a until compliance is reestablished.

5. If compliance cannot be reestablished within 48 hours, in-water work shall cease and the SER PM and EPA, in consultation with the Environmental Monitor and the Commonwealth's contractors and/or consultants, shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data. EPA, in consultation with the SER PM and the Environmental Monitor, shall have final authority to determine the requirements for additional mitigation, if any.

6. In the event the exceedence occurs during an activity and in an area in which silt curtains are required from January 15 through June 15 in accordance with Section II.5, if all additional mitigation measures exercised in accordance with Section II.7, and compliance cannot be reestablished within 48 hours of the implementation of the additional mitigation measures, the work shall stop and may not resume again until June 16, unless the Commonwealth can demonstrate to the satisfaction of EPA that it has instituted measures sufficient to reestablish compliance and EPA concurs that work may proceed with such measures.

b. *When in-water work is not conducted within a silt curtain area* in accordance with Section II.5 the following water-quality monitoring program shall be carried out daily for the first three days of activities commencing and twice a week thereafter and during those times when dewatering activities are ongoing from the CDF filling operation:

1. Turbidity shall be measured, using an optical backscatter sensor, at both the reference location and the monitoring location, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three depth values obtained shall be averaged, such that a single, representative turbidity value is calculated for the reference location and a single, representative turbidity value is calculated for the monitoring location.

2. Turbidity shall be measured at both the reference location and the monitoring site (see Section II.5) prior to the start of dredging, and once every two hours of dredging.

3. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the monitoring site exceeds the reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase Over Reference

<10	20 NTUs
11-20	15 NTUs
21-30	10 NTUs
>31	30% of reference

4. If, in two consecutive monitoring events, the average turbidity at the monitoring site exceeds the average turbidity at the reference site plus the permissible turbidity increase, then water samples, composited over the entire water column, from both the reference site and the monitoring site shall be collected and submitted for analysis of Total Suspended Solids, total and dissolved PCBs, and total metals for arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-round time shall be requested. Additionally, the Commonwealth shall ensure that its contractor takes operational action(s) designed to limit such exceedences (as outlined within the approved Contractor's Contingency Plan, see Section II.7), such as increasing the dredge cycle time, deployment of silt curtains, inspection and any necessary repair of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section II.9.b.iii, until compliance is reestablished.

5. If compliance cannot be reestablished within 48 hours, in-water work shall cease and the SER PM and EPA, in consultation with the Commonwealth's contractors and/or consultants, shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data. EPA, in consultation with the SER PM, shall have final approval to determine the requirements for additional mitigation, if any.

10. Dredging of contaminated, silty sediment shall be done using a closed, environmental, clamshell bucket. Where pilings or other debris are found to interfere with environmental bucket closure or equipment operation, a conventional clamshell bucket may be used to extract the pilings/debris. Sediment removal during piling/debris removal shall be minimized to the greatest extent practicable. Should dredging with the environmental bucket become infeasible or unsuccessful, such dredging must halt and the SER PM and EPA must be notified. EPA, in consultation with the SER PM, must approve any contaminated sediment dredging not using the environmental bucket before such dredging may recommence. The contractor must continue to meet the project Water Quality Standard Performance Standards when an alternate dredging method is used.

11. Water discharged from the barge shall be appreciably free of suspended sediment and meet the water quality criteria established in Section II.9. Any free liquid flowing from the barge in the harbor shall be passed through a sand media filter or equivalent filtration system (which must be approved by the SER PM) prior to discharge.

12. The SER PM and EM shall be responsible for anticipating the need for and installation of additional erosion/sediment/turbidity controls and shall have the authority, subject to EPA review and approval, to require additional control measures to protect the resource areas beyond what is shown on the plans, if field conditions or professional judgment dictate that additional protection is necessary.

13. Within 30 days of the completion of all dredging, all bathymetric surveys of the dredge footprint shall be sent to the SER PM and EPA.

III MADEP Chapter 91 Waterways Standards

1. Acceptance of these Waterways Conditions shall constitute an agreement by the Commonwealth to ensure its contractors conform to all terms and conditions herein.

2. Within 90 days after completion of the authorized South Terminal Project work, the Commonwealth shall require its contractors to furnish to the SER PM a suitable plan showing the depths at mean low water over all filled (except areas filled above Mean High Tide) and dredged areas. Dredging shall be conducted so as to cause no unnecessary obstruction of the free passage of vessels, and care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Commonwealth shall at its expense, remove the shoal areas. The Commonwealth shall pay all costs of supervision, and if at any time the SER PM deems necessary a survey or surveys of the filled and dredged areas, the Commonwealth shall pay all costs associated with such work.

3. The Commonwealth shall ensure that its contractor shall, at least three business days prior to the commencement of any dredging and filling in tide water, give written notice to the SER PM and EPA of the time, location, and amount of the proposed work.

IV Special Waterways Conditions

1. Dredged material shall be transported to suitable disposal facilities; unregulated dumping of dredge materials is not permitted.

2. The Commonwealth shall develop and implement a Navigation Plan to address and mitigate temporary impacts to navigation during dredging and filling activities.

3. The Commonwealth shall provide and maintain in good working order appropriate United States Coast Guard (USCG) approved navigation aids to assist mariners in avoiding work areas as required by the USCG.

4. The Commonwealth shall maintain vehicular access to water-dependent users throughout construction activities. As part of the final design plan, the Commonwealth shall ensure it describes the means by which the public shall provide reasonable measure to provide on-foot public passage consistent with the need to avoid undue interference with the water-dependent uses of the project.

5. The Commonwealth shall remove and properly dispose of all temporary structures no later than three (3) months after completion of the dewatering and amendment of the sediments. Temporary structures are defined as berms and dikes; lime silo; dewatering tanks, erosion and sediment control systems, pipes, fish weirs, bubble curtains, and siltation curtains.

*Revisions made September 2013:

Page 1: Title revised; Section I.1. revised to include EPA's Second Modification.

Page 3: Section II.5.b. revised to eliminate use of silt curtains in Winter Flounder Mitigation Area and to include additional mitigation measures for Winter Flounder Mitigation Area.

Page 4: Section II.5.d. first paragraph clarified.

EPA's Second Modification to the Final Determination for
the South Terminal Project
New Bedford State Enhanced Remedy

Appendix D
Modified TSCA Determination

First Modification to November 19, 2012 TSCA § 761.61(c) Determination for New Bedford South Terminal Marine Facility

In its November 19, 2012 Toxic Substances Control Act 40 CFR § 761.61(c) Determination (November 19, 2012 TSCA Determination), EPA found that disposal of PCB-contaminated sediments containing less than (<) 50 parts per million (ppm) into CAD cell #3 and removal of greater than (>) 25 ppm with capping of less than or equal to (≤) 25 ppm PCB-contaminated soils on certain upland areas would not pose an unreasonable risk to human health or the environment provided certain conditions were met. This November 19, 2012 TSCA Determination was based on information set forth in the Administrative Record for the New Bedford South Terminal Project.

The Commonwealth of Massachusetts, through the Massachusetts Clean Energy Center, (the Commonwealth) has submitted a request for a modification to the November 19, 2012 TSCA Determination to include removal of an additional 11,000 cubic yards of PCB-contaminated sediments from the channel with disposal of these sediments into CAD cell #3. Documents dated March 7, 2013 and March 20, 2013, as clarified on May 14, May 15, and July 10, 2013 were provided in support of this requested modification. Specifically, 2,500 cubic yards of PCB-contaminated sediments would be generated during expansion of the deep draft area 200 feet to the north; and, 8,500 cubic yards of PCB-contaminated sediments would be generated during expansion of the channel 50 feet to the west. In its request, the Commonwealth has indicated that inclusion of these additional sediments into CAD cell #3 would not require further expansion of CAD cell #3 as the additional capacity would be generated by self-compression of the sediments within CAD cell #3, and that CAD cell #3 would be reconfigured to be smaller (from 8.54 to 8.29 acres) and deeper (from -45 MLLW to -60 MLLW).[1] Maps showing the proposed expansion areas to be dredged are attached as Attachments 1 and 2 to this First Modification to November 19, 2012 TSCA § 761.61(c) Determination for New Bedford South Terminal Marine Facility ("the Modified TSCA Determination").

In addition, the Commonwealth has submitted a request for a modification to the November 19, 2012 TSCA Determination to increase the final maximum PCB concentration allowed onsite in upland areas depicted on Attachment 3 to this Modification from ≤ 25 ppm to < 50 ppm and inclusion of the area depicted as the "Radio Tower Property (Potential TSCA Expansion Area)" on Attachment 3. The Commonwealth also requested that confirmatory sampling be eliminated following the removal of all upland soil and sediment with ≥ 50 ppm PCBs. Documents dated August 30, 2013, September 16, September 23, and September 25,

[1] Table 1 in the Final Determination reflects 27,000 cubic yards of PCB-contaminated sediment generated from the "Top of CAD cell #3" to be disposed in CAD cell #2; however, this volume was based on a 6.3 acre CAD cell #3 which was less than the authorized 8.54 acre CAD cell #3 in the Final Determination (calculations at that time did not include the sizing of CAD cell #3 required to accommodate the authorized federal channel dredging). The smaller reconfiguration of CAD cell #3 to 8.29 acres results in a decrease of 1,100 cubic yards of PCB-contaminated sediment (from 8,000 cubic yards as depicted in Table 1 of the Final Determination, to 6,900 cubic yards) that will be disposed of in CAD cell #2 as depicted in the "Top of CAD #3 Expansion" Revised Table 1 in the Second Modification to the Final Determination.

2013, (see Attachment 4) were provided in support of this requested modification.

On April 19, 2013 the Commonwealth requested a waiver of the requirement that silt curtains encircle the winter flounder mitigation creation area based on public safety concerns and offered an alternate plan to control turbidity during implementation of the mitigation work. (See further discussion of this request in Section IV of the Second Modification to the Final Determination.) After reviewing the Commonwealth's request, as well as all documentation supporting that request, EPA by letter dated May 15, 2013, modified Section II.5.b of the Water Quality Performance Standards to waive the requirement for the use of silt curtains at the winter flounder mitigation creation area when there is filling and capping associated with compensatory mitigation as long as the conditions set out in that letter are met. A copy of the Revised Water Quality Performance Standards is attached as Attachment 5 to this Modification.

Consistent with TSCA 40 CFR § 761.61(c) I have reviewed these documents regarding the proposed work and have determined that disposal of these additional < 50 ppm PCB-contaminated sediments into CAD cell #3 and onsite disposal of upland soils with identified PCB concentrations < 50 ppm in the TSCA Determination Area depicted on Attachment 5 of the November 19, 2012 TSCA Determination (see Attachment 6) will not pose an unreasonable risk to human health or the environment provided the following conditions are met:

1. Unless otherwise modified below by this Modified TSCA Determination, continuing compliance with all conditions contained in the November 19, 2012 TSCA Determination (Appendix J(1) of the Final Determination).

2. Identified PCB-contaminated soils with greater than or equal to (≥) 50 ppm shall be excavated and disposed off-site at a TSCA-approved disposal facility or a RCRA hazardous waste landfill in accordance with § 761.61(a)(5)(i)(B)(*2*)(*iii*). Confirmatory sampling shall not be required provided the results of the additional sampling to be conducted as directed by EPA (see Attachment 7) confirms the existing PCB concentrations shown on Attachment 4 are representative of site conditions for the DGA-1 through DGA-8 areas.

3. PCB cleanup of the Area 1 "hot spot" as shown on Attachment 8, shall be conducted in accordance with the November 19, 2012 TSCA Determination unless (1) the additional sampling or soil/sediment removal to be conducted as directed by EPA (see Attachment 7) confirms the till layer below the PCB-contaminated soil/sediment is < 50 ppm; or (2) the soil/sediments are excavated to bedrock or, if found, the bottom of the concrete structure.

4. A work plan shall be submitted that details the excavation plan to remove the identified ≥ 50 ppm soil/sediment located within TSCA Determination Area as identified on Attachment 5 of the November 19, 2012 TSCA Determination and Attachment 6 to this Modified TSCA Determination. The work plan shall include the results of all sampling conducted within the DGA-1 through DGA-8 areas and the Area 1 "hot spot". In the event that EPA determines that the data does not support that the previously collected PCB

concentrations are representative of site conditions, the Commonwealth shall propose for EPA review and approval, an alternative cleanup plan to address the PCB contamination at the site.

5. The Commonwealth shall submit a work plan for preventing migration of potential PCB-contaminated surface soils onto the site from the adjacent properties located along the northern property boundary of the site. Any maintenance requirements for this control shall be incorporated into the long-term monitoring plan (LTMP) for the site.

EPA does not have sufficient information to make a determination on the "Radio Tower Property (Potential TSCA Expansion Area)" as shown on Attachment 3. Therefore, this Modified TSCA Determination does not include this area. In the event that the Commonwealth acquires ownership of all or a portion of this property and provides information indicating that PCB concentrations are present at > 1 ppm on this property, a proposed cleanup plan in accordance with 40 CFR Part 761 shall be submitted to EPA for review and approval.

This Modification to the November 19, 2012 TSCA Determination is based on the information contained in the March 7, 2013, March 20, 2013, as clarified in the May 14, May 15, and July 10, 2013 submissions, and the August 30, September 16, September 23, and September 25, 2013 submissions. Any proposed change(s) to work described in these submissions shall be provided to EPA. Upon review, EPA may find it necessary to revise this Modification to the November 19, 2012 TSCA Determination or issue a new or further modified TSCA determination based on the proposed change(s).

Nancy Barmakian for

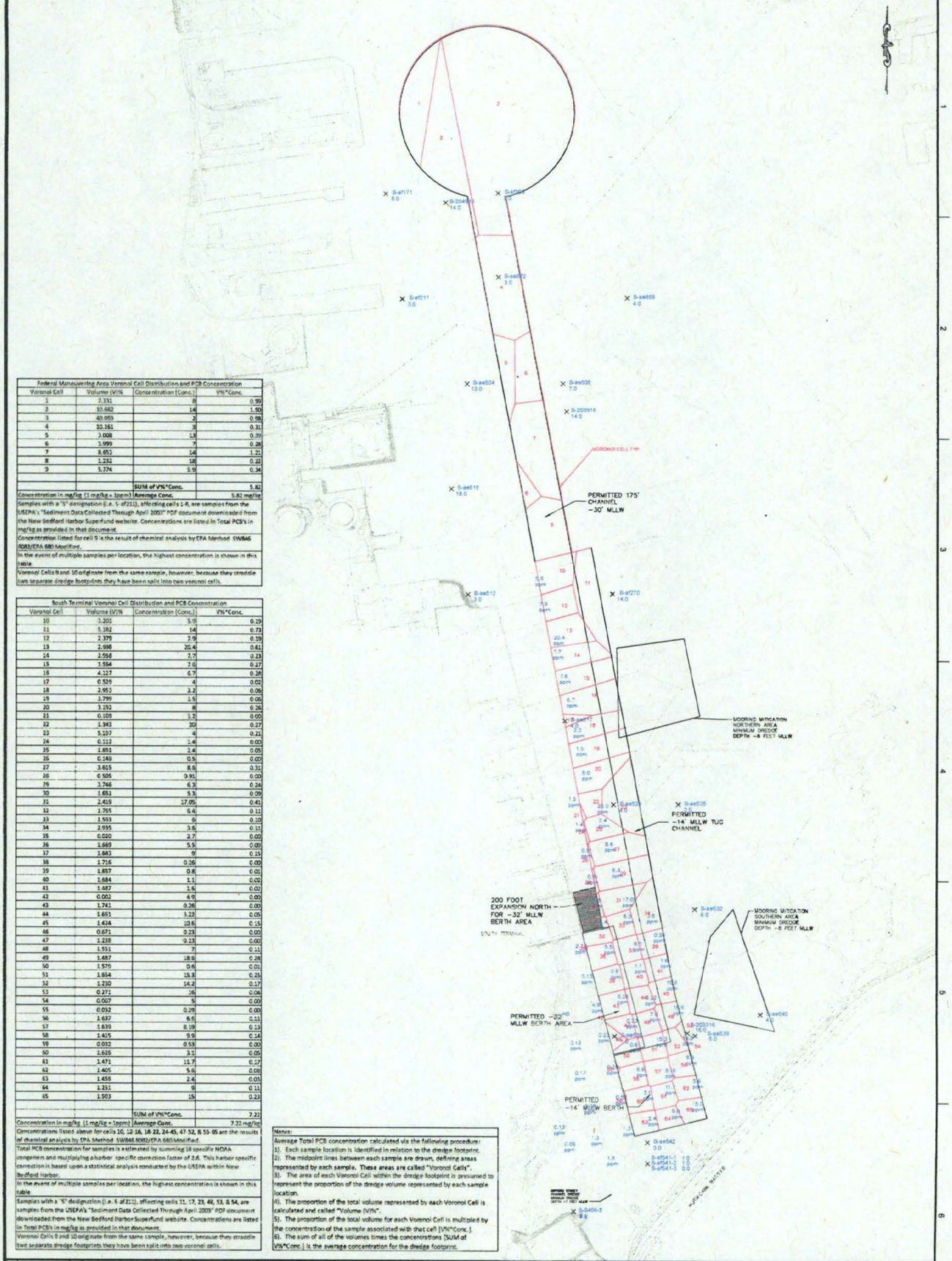
09/30/13

James T. Owens, III
Director, Office of Site Remediation & Restoration

Date

Attachment 1: Map of Deep-Draft Berth Area Expansion
Attachment 2: Map of Channel Width Expansion Area
Attachment 3: Map of Proposed TSCA Determination Upland Area
Attachment 4: Seven (7) Maps of PCB Sample Locations and Concentrations
Attachment 5: Revised Water Quality Performance Standards
Attachment 6: TSCA Determination Area Attachment 5 to November 19, 2012 TSCA Determination
Attachment 7: Additional Sampling for DGA-1 through DGA-8 areas and Area 1 "hot spot"
Attachment 8: Area 1 "hot spot"

Attachment 1.



Federal Maneuvering Area Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
1	7.331	8	0.59
2	10.682	14	1.50
3	40.059	2	0.98
4	10.161	3	0.31
5	3.008	13	0.39
6	3.999	7	0.28
7	8.653	14	1.21
8	1.232	18	0.22
9	5.274	5.9	0.34
		SUM of V%*Conc.	5.82
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	5.82 mg/kg

Samples with a "S" designation (i.e. S-af211), affecting cells 1-8, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Concentration listed for cell 9 is the result of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

In the event of multiple samples per location, the highest concentration is shown in this table.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

South Terminal Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
10	3.201	5.9	0.19
11	5.182	14	0.73
12	2.378	7.9	0.19
13	2.998	20.4	0.61
14	2.958	7.7	0.23
15	3.584	7.6	0.27
16	4.127	6.7	0.28
17	0.529	4	0.02
18	2.953	2.2	0.06
19	3.799	1.5	0.06
20	3.192	8	0.26
21	0.109	1.2	0.00
22	1.343	20	0.27
23	5.197	4	0.21
24	0.112	1.4	0.00
25	1.891	2.4	0.05
26	0.149	0.5	0.00
27	3.615	8.6	0.31
28	0.505	0.91	0.00
29	3.748	6.3	0.24
30	1.651	5.3	0.09
31	2.419	17.05	0.41
32	1.765	6.4	0.11
33	1.593	6	0.10
34	2.935	3.6	0.11
35	0.030	2.7	0.00
36	1.669	5.5	0.09
37	1.683	9	0.15
38	1.716	0.26	0.00
39	1.857	0.8	0.01
40	1.684	1.1	0.02
41	1.487	1.6	0.02
42	0.002	4.9	0.00
43	1.741	0.26	0.00
44	1.651	3.22	0.05
45	1.424	10.6	0.15
46	0.671	0.23	0.00
47	1.238	9.23	0.00
48	1.551	7	0.11
49	1.487	18.6	0.28
50	1.579	0.6	0.01
53	1.654	15.3	0.25
52	1.230	14.2	0.17
53	0.271	16	0.04
54	0.007	5	0.00
55	0.032	0.29	0.00
56	1.637	6.6	0.11
57	1.639	8.19	0.13
58	1.415	9.9	0.14
59	0.032	0.53	0.00
60	1.626	3.1	0.05
61	1.471	11.7	0.17
62	1.405	5.6	0.08
63	1.456	2.4	0.03
64	1.251	9	0.11
65	1.903	15	0.23
		SUM of V%*Conc.	7.22
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	7.22 mg/kg

Concentrations listed above for cells 10, 12-16, 18-22, 24-45, 47-52, & 55-65 are the results of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

Total PCB concentration for samples is estimated by summing 18 specific NOAA congeners and multiplying a harbor specific correction factor of 2.6. This harbor specific correction is based upon a statistical analysis conducted by the USEPA within New Bedford Harbor.

In the event of multiple samples per location, the highest concentration is shown in this table.

Samples with a "S" designation (i.e. S-af211), affecting cells 11, 17, 23, 46, 53, & 54, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

Notes:

Average Total PCB concentration calculated via the following procedure:

1). Each sample location is identified in relation to the dredge footprint.

2). The midpoint lines between each sample are drawn, defining areas represented by each sample. These areas are called "Voronoi Cells".

3). The area of each Voronoi Cell within the dredge footprint is presumed to represent the proportion of the dredge volume represented by each sample location.

4). The proportion of the total volume represented by each Voronoi Cell is calculated and called "Volume (V)%".

5). The proportion of the total volume for each Voronoi Cell is multiplied by the concentration of the sample associated with that cell (V%*Conc.).

6). The sum of all of the volumes times the concentrations (SUM of V%*Conc.) is the average concentration for the dredge footprint.

V-5.4

DRAWING NO. 1 OF 1

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA VORONOI CELL WITH EXPANDED BERTH

SHEET TITLE

SCALE: 1"=200'
0 100 200 400
GRAPHIC SCALE

DRAWING SCALE 1"=200'
DATE 09/5/2012
CHECKED BY
DRAWN BY JER
DESIGNED BY JER
CADD FILE
PROJECT NO. 5990

NO.	DATE	DESCRIPTION	BY

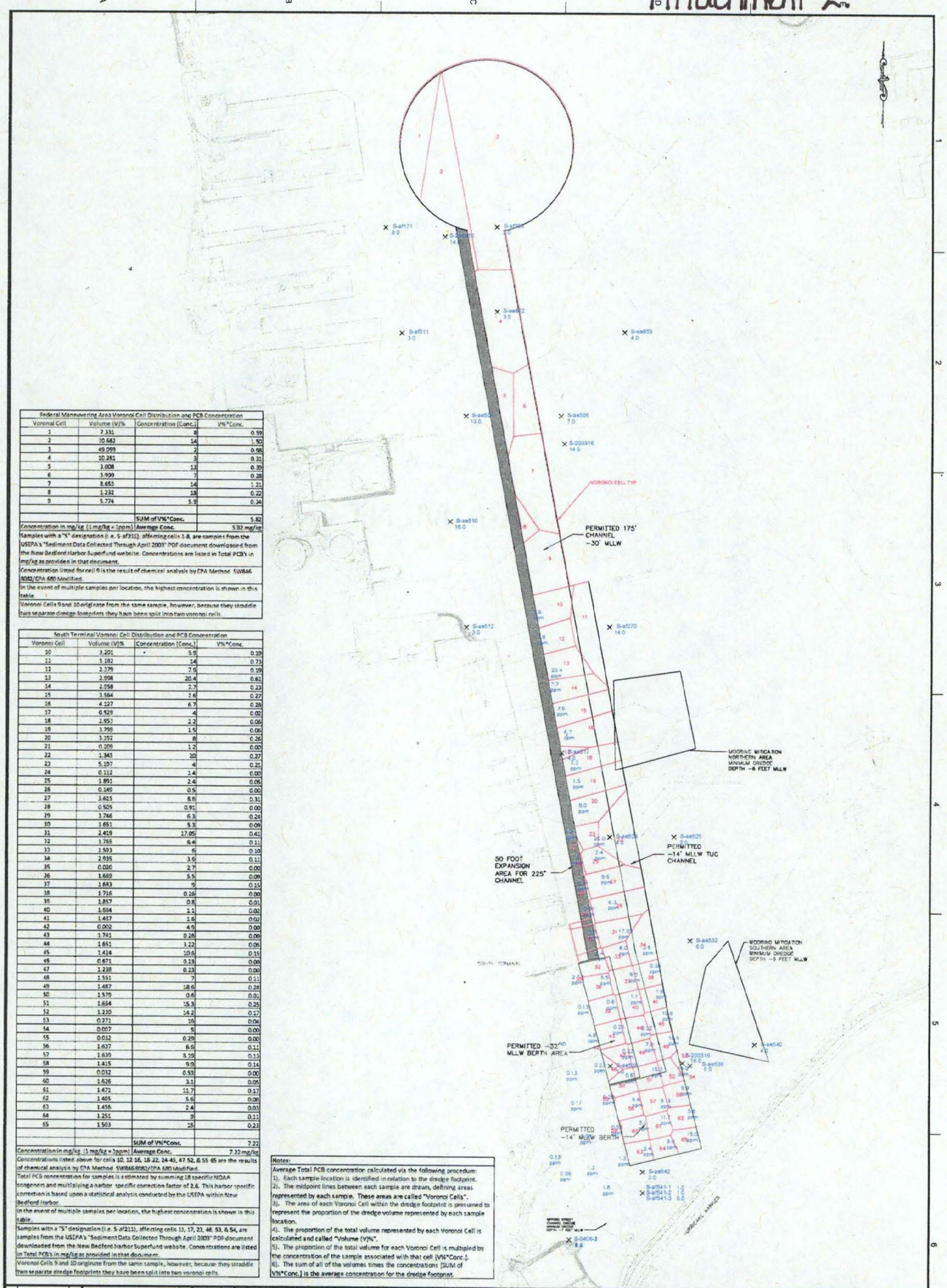
PROJECT
NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

DRAFT

APEX
ROCKVILLE, MD
GLASTONBURY, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA
184 HIGH STREET, SUITE 502
BOSTON, MA 02110
38H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

Attachment 2.



Federal Maneuvering Area Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
1	7.331	8	0.59
2	10.682	14	1.50
3	49.999	2	0.98
4	10.261	3	0.31
5	3.008	13	0.39
6	3.999	7	0.28
7	8.653	14	1.21
8	1.232	18	0.22
9	5.774	5.9	0.34
		SUM of V%*Conc.	5.82
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	5.82 mg/kg

Samples with a "S" designation (i.e. S-af211), affecting cells 1-8, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Concentration listed for cell 9 is the result of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

In the event of multiple samples per location, the highest concentration is shown in this table.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

South Terminal Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
10	3.201	5.9	0.19
11	5.182	14	0.73
12	2.379	7.9	0.19
13	2.998	20.4	0.61
14	2.958	7.7	0.23
15	3.564	7.6	0.27
16	4.127	6.7	0.28
17	0.529	4	0.02
18	2.953	2.2	0.06
19	3.799	1.5	0.06
20	3.292	8	0.26
21	0.109	1.2	0.00
22	1.343	20	0.27
23	5.197	4	0.21
24	0.112	1.4	0.00
25	1.891	2.4	0.05
26	0.149	0.5	0.00
27	3.615	8.6	0.31
28	0.505	0.91	0.00
29	3.766	6.3	0.24
30	1.651	5.3	0.09
31	2.419	17.05	0.41
32	1.765	6.4	0.11
33	1.593	6	0.10
34	2.935	3.6	0.11
35	0.000	2.7	0.00
36	1.669	5.5	0.09
37	1.683	9	0.15
38	1.716	0.26	0.00
39	1.857	0.8	0.01
40	1.684	1.1	0.02
41	1.487	1.6	0.02
42	0.002	4.9	0.00
43	1.741	0.26	0.00
44	1.651	3.22	0.05
45	1.414	10.6	0.15
46	0.671	0.23	0.00
47	1.238	0.23	0.00
48	1.551	7	0.11
49	1.487	18.6	0.28
50	1.579	0.6	0.01
51	1.654	15.3	0.25
52	1.230	14.2	0.17
53	0.271	16	0.04
54	0.007	5	0.00
55	0.032	0.28	0.00
56	1.637	6.6	0.11
57	1.639	8.19	0.13
58	1.415	9.9	0.14
59	0.032	0.53	0.00
60	1.626	3.1	0.05
61	1.472	11.7	0.17
62	1.405	5.6	0.08
63	1.456	2.4	0.03
64	1.251	9	0.11
65	1.503	15	0.23
		SUM of V%*Conc.	7.22
Concentration in mg/kg (1 mg/kg = 1ppm)		Average Conc.	7.22 mg/kg

Concentrations listed above for cells 10, 12-16, 18-22, 24-43, 47-52, & 55-65 are the results of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

Total PCB concentration for samples is estimated by summing 18 specific NOAA congeners and multiplying a harbor specific correction factor of 2.6. This harbor specific correction is based upon a statistical analysis conducted by the USEPA within New Bedford Harbor.

In the event of multiple samples per location, the highest concentration is shown in this table.

Samples with a "S" designation (i.e. S-af211), affecting cells 11, 17, 23, 46, 53, & 54, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

Notes:

Average Total PCB concentration calculated via the following procedure:

1). Each sample location is identified in relation to the dredge footprint.

2). The midpoint lines between each sample are drawn, defining areas represented by each sample. These areas are called "Voronoi Cells".

3). The area of each Voronoi Cell within the dredge footprint is presumed to represent the proportion of the dredge volume represented by each sample location.

4). The proportion of the total volume represented by each Voronoi Cell is calculated and called "Volume (V)%".

5). The proportion of the total volume for each Voronoi Cell is multiplied by the concentration of the sample associated with that cell (V%*Conc.).

6). The sum of all of the volumes times the concentrations (SUM of V%*Conc.) is the average concentration for the dredge footprint.

NO.	DATE	DESCRIPTION	BY

PROJECT NO. 6990
CADD FILE
DESIGNED BY JER
DRAWN BY JER
CHECKED BY
DATE 09/5012
DRAWING SCALE 1"=200'
PLOTTING SCALE SCALE: 1"=200'
0 100 200 400

SHEET TITLE
SOUTH TERMINAL AND FEDERAL MANUEVERING AREA VORONOI CELL WITH 225 FT CHANNEL

DRAWING NO. V-5.4

1 OF 1

PROJECT
NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

DRAFT

APEX
ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA -
NEW BEDFORD, MA - HOLYOKE, MA
184 HIGH STREET, SUITE 502
BOSTON, MA 02110
SOUTH WINDSOR CT AVENUE
SOUTH WINDSOR, CT

Attachment 3.

APEX

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION

PREPARED FOR:

COMMONWEALTH OF MASSACHUSETTS

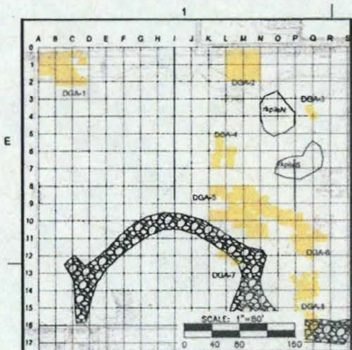
DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL AREA FOR TSCA DETERMINATION

Scale: 1"=100'

0 50 100 200 300 FEET

Date 8/28/13	Drawing No.
Proj. Mgr.	
Design	
Check CM	
Drawn MT	
Job. No. 6690	
Last Rev. 8/28/13	



NOTE:

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LEGEND

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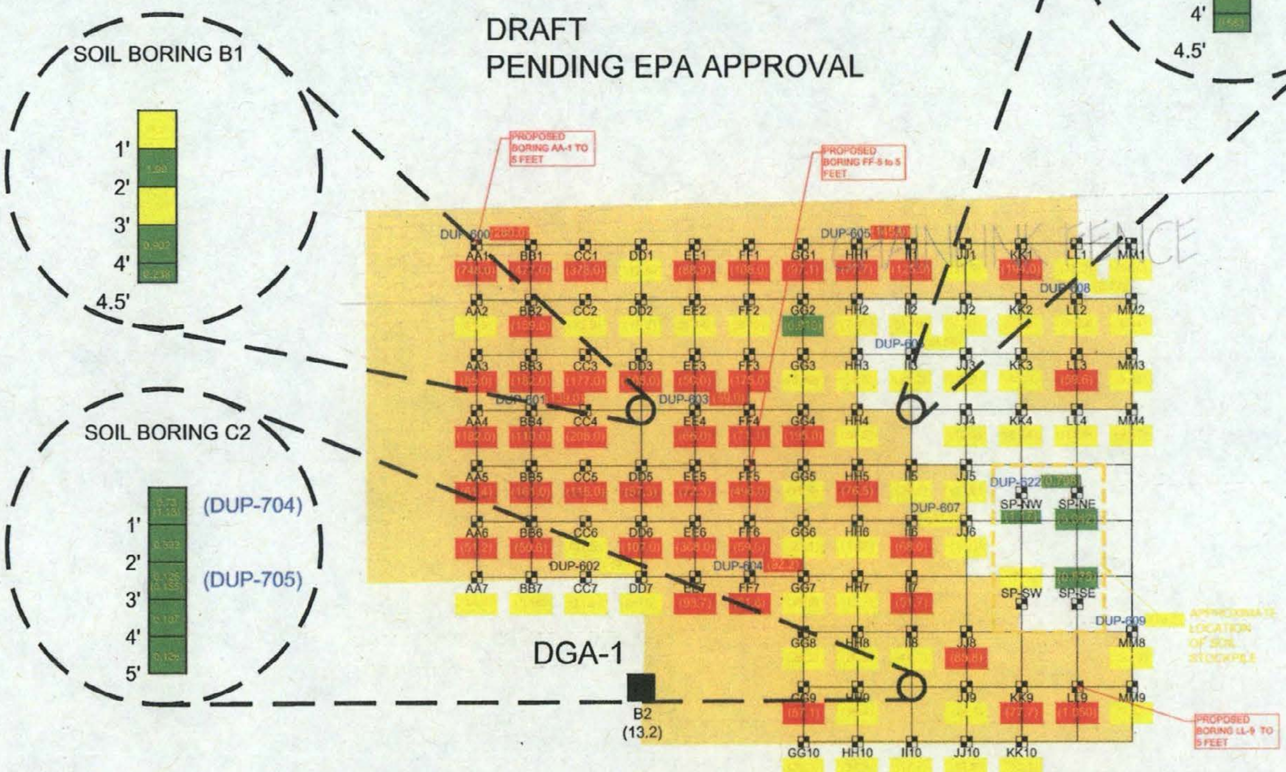
- AA3 BLUE TEXT DENOTES SAMPLE WAS COLLECTED AS A BLIND DUPLICATE
- APPROXIMATE LIMITS OF HOTSPOT EXCAVATION
- 25'x25' GRID SAMPLES AT THE PERIMTER OF HOTSPOT AREAS (SHOWN WHEN USED TO DEFINE HOTSPOT AREA)

DRAFT
PENDING EPA APPROVAL



APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT: NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER: MASSACHUSETTS CLEAN ENERGY CENTER, 55 SUMMER STREET, 9TH FLOOR, BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.			
1.			

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

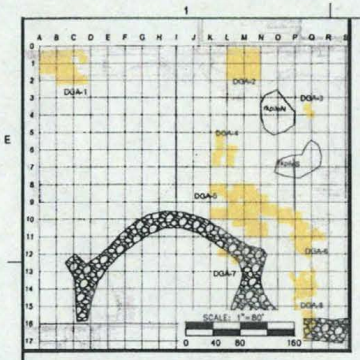
SHEET TITLE
PROPOSED EXCAVATION AREAS

DRAWING NO.
DRAFT

X OF X

Attachment 4 (1of7)

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1.2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 3:39 PM



NOTE:

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LEGEND

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- 25'x25' GRID SAMPLES AT THE PERIMTER OF HOTSPOT AREAS (SHOWN WHEN USED TO DEFINE HOTSPOT AREA)

DRAFT
PENDING EPA
APPROVAL

P3
(1.52)

Q3
(2.37)

SOIL BORING Q4

1'
2'
3'
4'

(DUP-709)

PROPOSED BORING CC-1 TO 5 FEET

DUP-617

DUP-616

DUP-614

DUP-615

DGA-3

SOIL BORING M1

1'
2'
3'
4'
6'
8'

PROPOSED BORING CC-2 TO 8 FEET

DUP-611

DUP-612

PROPOSED BORING FF-3 TO 8 FEET

L1
(9.94)

N1
(3.52)

DUP-610

PROPOSED BB-5 TO 8 FEET

PROPOSED BORING BETWEEN FF-5 AND FF-6 TO 8 FEET

DUP-613

L2
(10.6)

DGA-2

M2
(6.74)

N2
(2.15)

APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

56H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.			
1.			

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

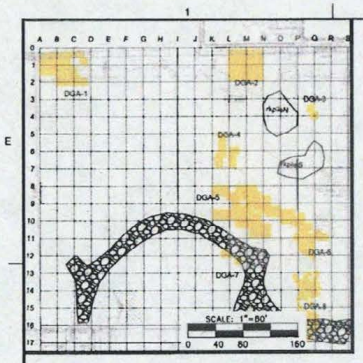
SHEET TITLE
PROPOSED EXCAVATION AREAS

DRAWING NO.
DRAFT

X OF X

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1 2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 3:41 PM

Attachment 4 (2 of 7)



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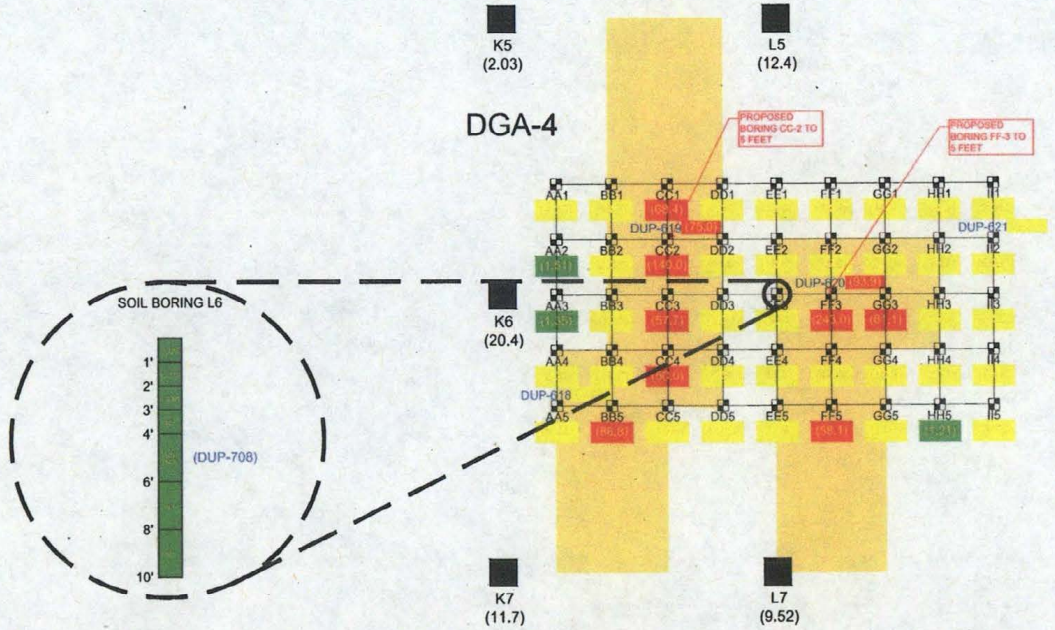
- 25'x25' GRID SAMPLES AT THE PERIMTER OF HOTSPOT AREAS (SHOWN WHEN USED TO DEFINE HOTSPOT AREA)

DRAFT
PENDING EPA APPROVAL



APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

134 HIGH STREET, SUITE 502
BOSTON, MA 02210

564 CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT: NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER: MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.			
1.			

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

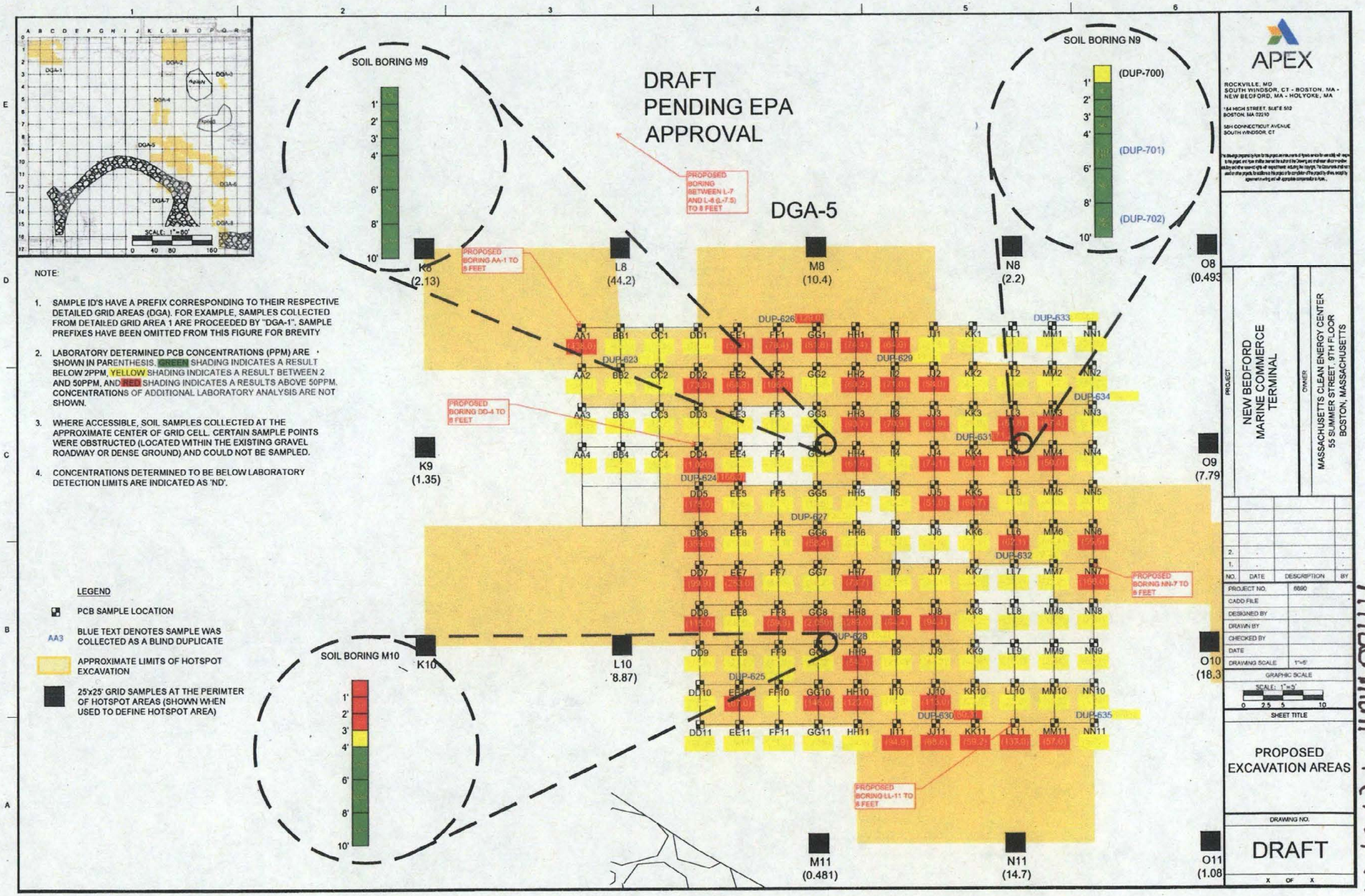
SHEET TITLE
PROPOSED EXCAVATION AREAS

DRAWING NO.
DRAFT

X OF X

Attachment H (3 of 7)

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1.2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 3:42 PM



Attachment 4 (4 of 7)

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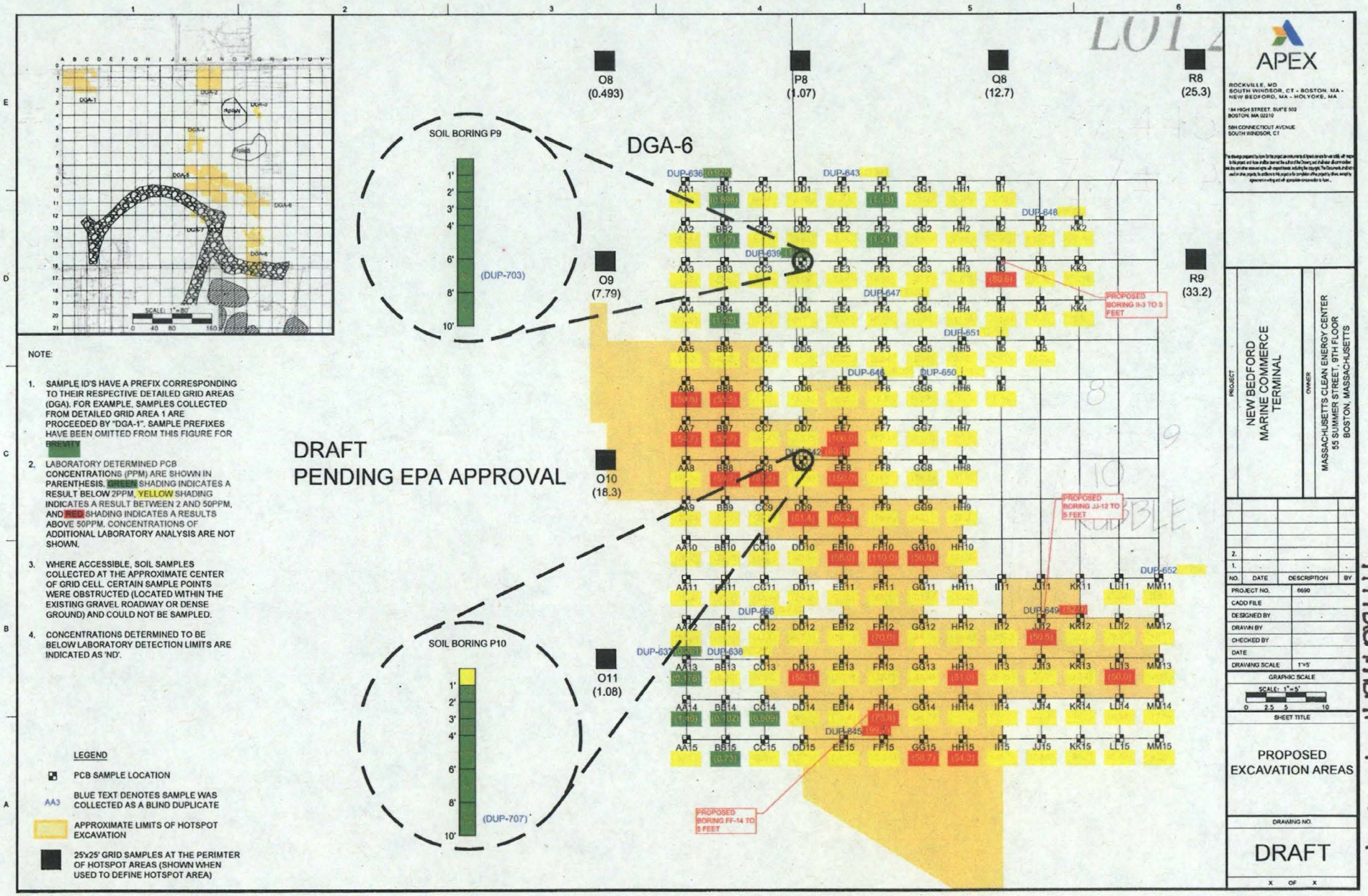

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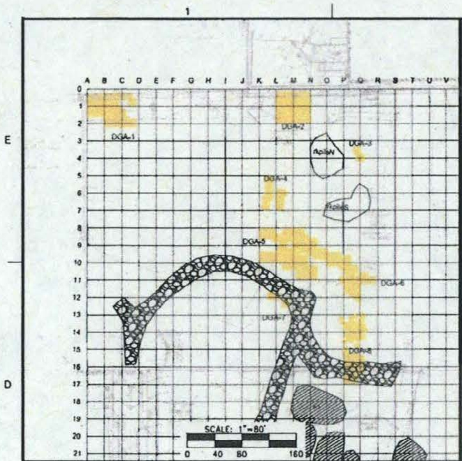

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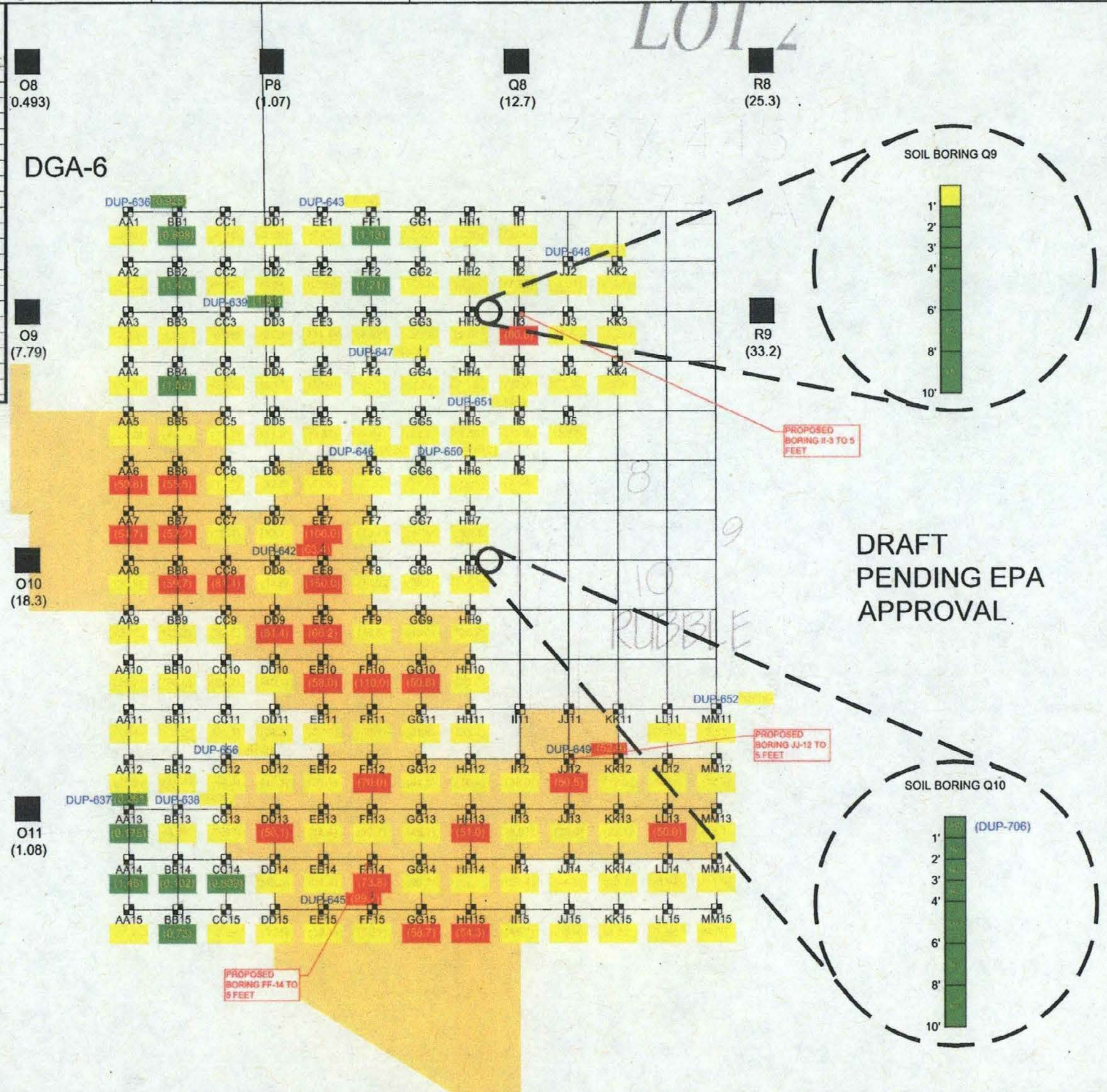


DRAFT
PENDING EPA
APPROVAL

LEGEND

- PCB SAMPLE LOCATION
- AA3 — BLUE TEXT DENOTES SAMPLE WAS COLLECTED AS A BLIND DUPLICATE
- APPROXIMATE LIMITS OF HOTSPOT EXCAVATION
- 25'x25' GRID SAMPLES AT THE PERIMTER OF HOTSPOT AREAS (SHOWN WHEN USED TO DEFINE HOTSPOT AREA)

APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

584 CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT: NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER: MASSACHUSETTS CLEAN ENERGY CENTER, 55 SUMMER STREET, 9TH FLOOR, BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.			
1.			

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

SHEET TITLE

PROPOSED EXCAVATION AREAS

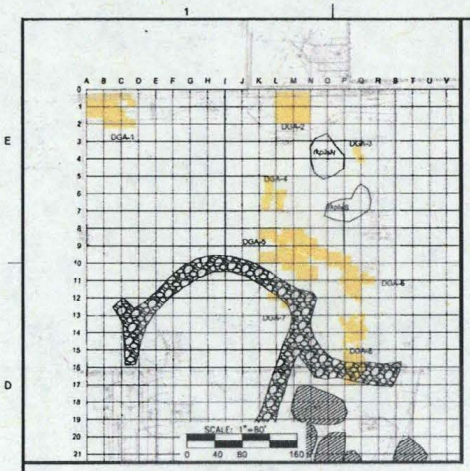
DRAWING NO.

DRAFT

X OF X

Attachment 4 (Lot 7)

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1.2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 3:46 PM



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DRAFT
PENDING EPA APPROVAL

DGA-8

SOIL BORING Q16
1' 2' 3' 4' 6' 8' 10'

PROPOSED BORING AA-2 TO 8 FEET
PROPOSED BORING CC-5 TO 8 FEET

P16 (1.33)
R16 (26.2)
P17 (5.23)
Q17 (13.4)
R17 (14.8)

AA4 BB4 CC4 DD4 EE4
AA5 BB5 CC5 DD5 EE5
AA6 BB6 CC6 DD6 EE6

DGA-7

SOIL BORING M12
1' 2' 3' 4' 6' 8' 10'

M12 (0.726)

PROPOSED BORING AA-2 TO 8 FEET
PROPOSED BORING DD-4 TO 8 FEET

AA1 AA2 BB2 DUP-653 AA3 BB3 CC3 AA4 BB4 CC4 AA5 BB5 CC5 DD5 DUP-654 AA6 BB6 CC6 DD6 EE6 DUP-655 AA7 BB7 CC7 DD7 EE7

APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

5 CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT
NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.	.	.	.
1.	.	.	.

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

SHEET TITLE
PROPOSED EXCAVATION AREAS

DRAWING NO.
DRAFT

X OF X

Attachment 4 (1 of 1)

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1.2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 4:15 PM

Revised Water Quality Performance Standards*[1]

I. Introduction

1. These Water Quality Performance Standards ("Performance Standards") shall apply to the South Terminal Project as defined by EPA's Final Determination for the South Terminal Project issued on November 19, 2012, as modified by EPA's Second Modification for the South Terminal Project issued in September 2013.*

2. The Commonwealth of Massachusetts is the lead agency for the State Enhanced Remedy work, and has a designated State Enhanced Remedy Project Manager ("SER PM").

3. Pursuant to the Memorandum of Agreement entered into between EPA and the Commonwealth in 2005 relative to the New Bedford Harbor State Enhanced Remedy, the SER PM shall continue to coordinate with the Regulatory Agencies for this South Terminal Project. In addition, to ensure consistency with EPA's Final Determination for the South Terminal Project, EPA shall have review and approval authority as described in these Water Quality Performance Standards.

4. No modifications may be made to these Water Quality Performance Standards without prior written agreement of EPA.

5. In the event of a conflict between these Performance Standards and the Final Mitigation Plan included in EPA's Final Determination, the Final Mitigation Plan shall prevail.

II MADEP 401 Water Quality Program Standards:

1. Anti-degradation provisions of the Massachusetts Surface Water Quality Standards protect all waters, including wetlands. The Commonwealth shall ensure that all necessary steps are taken to assure that the proposed activities will be conducted in a manner, which will avoid violations of said standards.

2. Environmental Monitor. The Commonwealth shall ensure that the contractor shall employ an "Environmental Monitor" (EM) and that the contract requires the EM to report directly to the SER PM and EPA. An assistant to the EM shall be hired if needed. The EM shall have a minimum of five (5) years experience in wetlands protection, erosion and sedimentation control, water quality monitoring, site maintenance, site drainage, dredging operation management and general site construction. The EM shall verify the placement and performance of erosion/sediment/turbidity control measures and shall have the authority to halt construction for erosion control purposes or for other threats to

[1] See end of document for description of revised provisions.

public health, safety or the environment. The name and phone number(s) of the EM and his or her assistant, if needed, and back-up shall be provided to the SER PM and the Regulatory Agencies so that s/he may be contacted on a 24-hour basis, seven days a week to address any emergency situation. The EM shall be authorized to contact the SER PM and EPA directly for any matter involving wetland protection. The EM shall submit bi-weekly reports to the SER PM and EPA, following the commencement of construction and continuing until completion of the work in resource areas. The bi-weekly reports shall summarized, by station location, the status of construction, the condition of the site, the weather conditions and shall report any erosion, sedimentation, discharge or pollution problems and how they were corrected, along with recommendations on how to prevent similar problems in the future. The EM shall immediately report any erosion, sedimentation or pollution problems to the Resident Engineer(s) who shall take immediate steps to correct those problems.

3. All in-water work shall meet EPA's Final Determination conditions to protect aquatic life, including winter flounder spawning & the alewife fish run that passes through the harbor to the Acushnet Sawmill Pond spawning area.

4. A Storm Water Pollution Prevention Plan (SWPPP) for the entire project as required by EPA's Final Determination, proposing both non-structural and structural BMPs to limit erosion & sediment laden discharge during land clearing filling and construction, shall be prepared and submitted to the SER PM for prior review and written approval prior to commencement of construction. The SWPPP shall emphasize measures to contain and prevent sediment laden water from being discharged from dewatering activities from areas within the bulkhead sheet pile that is to serve as a containment device. Further, the SWPPP shall meet the criteria established for such plans contained in EPA's NPDES Construction Stormwater General Permit. All proposed dewatering shall be identified in the site specific SWPPPs and shall not exceed the following limits when discharged:

   a. pH: pH shall be 6.5 to 8.5 for discharge to salt water bodies. The SWPPPs shall identify specific measures to be taken to adjust the pH to acceptable limits [for example, carbon dioxide (CO2) bubbling when concrete pouring is also occurring].

5. The Commonwealth shall ensure that the contractor shall implement the use of silt curtains and absorbent booms, and/or the Fish Deterrent Program as outlined below:

   a. **CDF Filling**: At all times of year, when filling below Mean High Water occurs in association with construction of the CDF, the area being filled shall either be completely encircled with steel sheet piling, or completely encircled with a combination of steel sheet piling and silt curtains, or completely encircled with silt curtains.

      1. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet

from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

b. **Compensatory Mitigation**:*

1. Intertidal and Subtidal Mitigation Capping at the OU-3 Mitigation Area:

   A. At any depth and at all times of year, all areas where there is filling and capping associated with compensatory mitigation will be completely encircled by silt curtains and absorbent booms for the duration of the filling and capping activity.

   B. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. Winter Flounder Mitigation Area:

   A. Only non-contaminated materials that are predominantly coarse, sandy material may be placed within this area. This includes dredged material from the bottom of CAD cell 3, and from the bottom and intermediate layers of the channel, all of which are generated by the South Terminal Project dredging.

   B. Capping activities shall only occur within the local depression (depths ranged from -15 MLLW at its edges to -22 MLLW at its center) at the winter flounder mitigation area.

   C. Only scows that have a maximum bottom draft (once full) of between 16 and 21 feet shall be used to create this mitigation area.

   D. Placement of material shall be limited to a period of three hours before and after low tide for the duration of the mitigation activities.

   E. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the scow and at a monitoring location established 200-feet down-current from the scow. Turbidity standards outlined in Section II.9 must be satisfied. Turbidity monitoring for this mitigation area shall be conducted daily to ensure that Water Quality Performance standards are not exceeded.

c. **Dredging, Filling Capping, and Rock Removal at Depths Shallower Than -5 Meters MLLW**: In all areas where dredging, filling (except for filling below Mean High Water associated with construction of the CDF, addressed in Section II.5.a, and compensatory mitigation activities, addressed in Section II.5.b.), capping, and other activities such as rock removal will occur, the following is required:

1. *From January 15 through June 15 of any year*, the Fish Deterrent Program (see Section II.8 and Attachment 1) must be implemented. This Program requires that absorbent booms, silt curtains, bubble curtains and fish weirs be erected around the work area to prevent fish, particularly winter flounder, from entering the work area. [Note: other Fish Deterrent Program requirements as specified in Section II.8 must also be employed.]

A. Monitoring: Inside the silt curtain (except for areas below Mean High Water to be filled in association with construction of the CDF), turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge, unless dredging is conducted within 200 feet of the silt curtain, in which case turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. *From June 16 through January 14 of any year*, work may proceed without silt curtains unless necessary to ensure compliance with turbidity standards.

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section 9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

d. **Filling and Capping At Depths Equal To or Greater Than -5 Meters MLLW**: In all areas that are not already enclosed (except for filling associated with construction of the CDF, addressed in SectionII.5.a, and compensatory

mitigation activities, addressed in Section II.5.b), where filling (including CAD cell capping) will occur, the following is required:*

1. *From January 15 through June 15 of any year*, CAD cells (including the borrow pit) that are being filled or capped shall be completely encircled by silt curtains and absorbent booms for the duration of the filling activity.

A. Monitoring: Turbidity monitoring must be conducted outside of and within 15 feet from the outside edge of silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

2. *From June 16 through January 14 of any year*, CAD cell filling and capping may proceed without silt curtains unless necessary to ensure compliance with turbidity standards.

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section II.9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the outside edge of silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

e. **Dredging At Depths Equal to or Greater than -5 Meters MLLW**: In all areas where dredging and associated activities such as rock removal will occur in depths equal to or greater than -5 meters MLLW:

1. *From January 15 through June 15 of any year*, silt-curtains and absorbent booms shall be deployed to enclose all areas being dredged.

A. Monitoring: Inside the silt curtain, turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge, unless dredging is conducted within 200 feet of the silt curtain, in which case turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet

from the silt curtain. Turbidity standards outlined in Section II.9 (below) must be satisfied.

2. *From June 16 through January 14 of any year*, work may proceed without silt curtains unless necessary to ensure compliance with turbidity standards.

A. Monitoring: Turbidity monitoring is required at a reference location established approximately 200-feet up-current from the dredge and at a monitoring location established 200-feet down-current from the dredge. Turbidity standards outlined in Section II.9 must be satisfied.

B. If silt curtains are deployed to ensure compliance with turbidity standards, turbidity monitoring must be conducted outside of and within 15 feet from the silt curtain and at a reference site located 200 feet from the silt curtain. Turbidity standards outlined in Section II.9 must be satisfied.

6. The Commonwealth shall ensure that the contractor shall, prior to the start of any in-water work, submit a plan for deployment of silt curtains, absorbent booms, fish weirs and bubble curtains in accordance with Section II.5 to SER PM and to EPA for review and approval.

7. The Commonwealth shall ensure that the contractor shall, prior to the start of any in-water work, submit to the SER PM and to EPA for review and approval, a Contingency Plan, outlining the steps that the contractor will take, should dredging, filling, capping or rock removal activities cause an exceedance of the Water Quality Monitoring criteria outlined within these Performance Standards (see Section II.9). At a minimum, the Contingency Plan shall include measures that may be undertaken by the contractor to reduce turbidity such as reduction of the rate of operations, use of silt curtains and absorbent booms, alternate dredging and capping methodologies, and the total halt of operations. The Contingency Plan shall also include a provision that if the deployment of silt-curtains and absorbent booms cannot be implemented in accordance with Section II.5 during the period of time from January 15 to June 15 of any year, work in the area may not begin until June 16 of that year and the SER PM and EPA shall be notified.

8. *Fish Deterrent Program* – A Fish Deterrent Program in accordance with the Fish Deterrent Plan in Attachment 1 shall be implemented for any work conducted within waters shallower than -5 Mean Lower Low Water between January 15th and June 15th of any year. If the Fish Deterrent Program is not implemented in an area shallower than -5 Mean Lower Low Water prior to January 15th of any year, work in the area may not begin until June 16th of that year. Proposed modifications to the Fish Deterrent Plan must be submitted to the SER PM and to EPA for review.

9. Water Quality Monitoring Schedule and Methods

a. *When in-water work is contained within a silt-curtained area* in accordance with Section II.5, the following water-quality monitoring program shall be carried out daily for the first three days of activities commencing and once a week thereafter and during those times when dewatering activities are ongoing from the CDF filling operation:

1. Turbidity shall be measured, using an optical backscatter sensor, at both the reference and monitoring locations, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three values obtained shall be averaged, such that a single, representative turbidity value is calculated for the monitoring site and a single, representative value is calculated for the reference site.

2. Turbidity shall be measured at both the monitoring and reference site prior to the start of dredging, and once every two hours during dredging.

3. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the monitoring site exceeds the average reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase Over Reference
<10	20 NTUs
11-20	15 NTUs
>21	30% of reference

4. If, in two consecutive monitoring events, the average turbidity at the monitoring site exceeds the average turbidity at the reference site by more than the permissible turbidity increase, then water samples, composited over the entire water column, from both the monitoring and reference sites shall be collected and submitted for analysis of Total Suspended Solids, total and dissolved PCBs, and total metals for arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-round time shall be requested. Additionally, the Commonwealth shall ensure that its contractor takes operational action(s) designed to limit such exceedances (as outlined within the approved Contractor's Contingency Plan, see Section II.7), such as increasing the dredge cycle time, inspection and any necessary repair of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section II.9.a until compliance is reestablished.

5. If compliance cannot be reestablished within 48 hours, in-water work shall cease and the SER PM and EPA, in consultation with the Environmental Monitor and the Commonwealth's contractors and/or consultants, shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data. EPA, in consultation with the SER PM and the Environmental Monitor, shall have final authority to determine the requirements for additional mitigation, if any.

6. In the event the exceedence occurs during an activity and in an area in which silt curtains are required from January 15 through June 15 in accordance with Section II.5, if all additional mitigation measures exercised in accordance with Section II.7, and compliance cannot be reestablished within 48 hours of the implementation of the additional mitigation measures, the work shall stop and may not resume again until June 16, unless the Commonwealth can demonstrate to the satisfaction of EPA that it has instituted measures sufficient to reestablish compliance and EPA concurs that work may proceed with such measures.

b. *When in-water work is not conducted within a silt curtain area* in accordance with Section II.5 the following water-quality monitoring program shall be carried out daily for the first three days of activities commencing and twice a week thereafter and during those times when dewatering activities are ongoing from the CDF filling operation:

1. Turbidity shall be measured, using an optical backscatter sensor, at both the reference location and the monitoring location, at established depths: near the water's surface, at the mid-point of the water column and near the bottom. The three depth values obtained shall be averaged, such that a single, representative turbidity value is calculated for the reference location and a single, representative turbidity value is calculated for the monitoring location.

2. Turbidity shall be measured at both the reference location and the monitoring site (see Section II.5) prior to the start of dredging, and once every two hours of dredging.

3. An exceedance of the project turbidity standard shall be attributed to project activities when the average turbidity at the monitoring site exceeds the reference site turbidity plus the permissible turbidity increase, as outlined in the following table:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase Over Reference

<10	20 NTUs
11-20	15 NTUs
21-30	10 NTUs
>31	30% of reference

4. If, in two consecutive monitoring events, the average turbidity at the monitoring site exceeds the average turbidity at the reference site plus the permissible turbidity increase, then water samples, composited over the entire water column, from both the reference site and the monitoring site shall be collected and submitted for analysis of Total Suspended Solids, total and dissolved PCBs, and total metals for arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc. When samples are submitted to the laboratory, a 36-hour turn-round time shall be requested. Additionally, the Commonwealth shall ensure that its contractor takes operational action(s) designed to limit such exceedences (as outlined within the approved Contractor's Contingency Plan, see Section II.7), such as increasing the dredge cycle time, deployment of silt curtains, inspection and any necessary repair of the silt curtains, deployment of an additional row of silt curtains or other mitigation measures. Turbidity monitoring shall continue on the schedule outlined in Section II.9.b.iii, until compliance is reestablished.

5. If compliance cannot be reestablished within 48 hours, in-water work shall cease and the SER PM and EPA, in consultation with the Commonwealth's contractors and/or consultants, shall review the operational actions undertaken, the results of the analyses of the water samples and evaluate the biological significance of the available data. EPA, in consultation with the SER PM, shall have final approval to determine the requirements for additional mitigation, if any.

10. Dredging of contaminated, silty sediment shall be done using a closed, environmental, clamshell bucket. Where pilings or other debris are found to interfere with environmental bucket closure or equipment operation, a conventional clamshell bucket may be used to extract the pilings/debris. Sediment removal during piling/debris removal shall be minimized to the greatest extent practicable. Should dredging with the environmental bucket become infeasible or unsuccessful, such dredging must halt and the SER PM and EPA must be notified. EPA, in consultation with the SER PM, must approve any contaminated sediment dredging not using the environmental bucket before such dredging may recommence. The contractor must continue to meet the project Water Quality Standard Performance Standards when an alternate dredging method is used.

11. Water discharged from the barge shall be appreciably free of suspended sediment and meet the water quality criteria established in Section II.9. Any free liquid flowing from the barge in the harbor shall be passed through a sand media filter or equivalent filtration system (which must be approved by the SER PM) prior to discharge.

12. The SER PM and EM shall be responsible for anticipating the need for and installation of additional erosion/sediment/turbidity controls and shall have the authority, subject to EPA review and approval, to require additional control measures to protect the resource areas beyond what is shown on the plans, if field conditions or professional judgment dictate that additional protection is necessary.

13. Within 30 days of the completion of all dredging, all bathymetric surveys of the dredge footprint shall be sent to the SER PM and EPA.

III MADEP Chapter 91 Waterways Standards

1. Acceptance of these Waterways Conditions shall constitute an agreement by the Commonwealth to ensure its contractors conform to all terms and conditions herein.

2. Within 90 days after completion of the authorized South Terminal Project work, the Commonwealth shall require its contractors to furnish to the SER PM a suitable plan showing the depths at mean low water over all filled (except areas filled above Mean High Tide) and dredged areas. Dredging shall be conducted so as to cause no unnecessary obstruction of the free passage of vessels, and care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Commonwealth shall at its expense, remove the shoal areas. The Commonwealth shall pay all costs of supervision, and if at any time the SER PM deems necessary a survey or surveys of the filled and dredged areas, the Commonwealth shall pay all costs associated with such work.

3. The Commonwealth shall ensure that its contractor shall, at least three business days prior to the commencement of any dredging and filling in tide water, give written notice to the SER PM and EPA of the time, location, and amount of the proposed work.

IV Special Waterways Conditions

1. Dredged material shall be transported to suitable disposal facilities; unregulated dumping of dredge materials is not permitted.

2. The Commonwealth shall develop and implement a Navigation Plan to address and mitigate temporary impacts to navigation during dredging and filling activities.

3. The Commonwealth shall provide and maintain in good working order appropriate United States Coast Guard (USCG) approved navigation aids to assist mariners in avoiding work areas as required by the USCG.

4. The Commonwealth shall maintain vehicular access to water-dependent users throughout construction activities. As part of the final design plan, the Commonwealth shall ensure it describes the means by which the public shall provide reasonable measure to provide on-foot public passage consistent with the need to avoid undue interference with the water-dependent uses of the project.

5. The Commonwealth shall remove and properly dispose of all temporary structures no later than three (3) months after completion of the dewatering and amendment of the sediments. Temporary structures are defined as berms and dikes; lime silo; dewatering tanks, erosion and sediment control systems, pipes, fish weirs, bubble curtains, and siltation curtains.

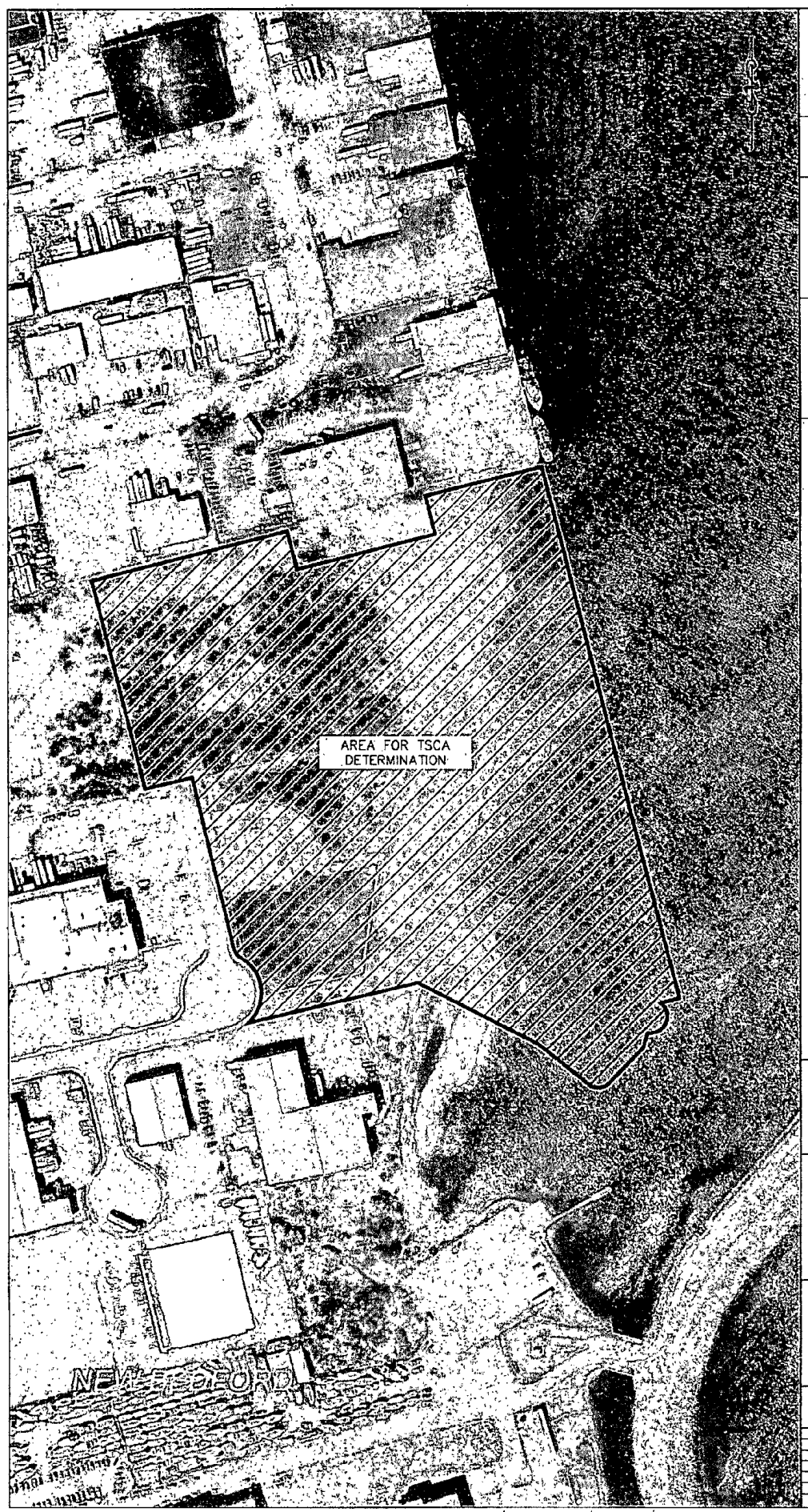
*Revisions made September 2013:

Page 1: Title revised; Section I.1. revised to include EPA's Second Modification.

Page 3: Section II.5.b. revised to eliminate use of silt curtains in Winter Flounder Mitigation Area and to include additional mitigation measures for Winter Flounder Mitigation Area.

Page 4: Section II.5.d. first paragraph clarified.

Attachment 6.



APEX

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO	DATE	DESCRIPTION

PREPARED FOR:

COMMONWEALTH
OF
MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE
COMMERCE TERMINAL
AREA FOR TSCA
DETERMINATION

Scale: 1"=80'

0 40 80 160 240 FEET

Date 8/16/12	Drawing No.
Proj. Mgr.	
Design	
Check GCD	
Drawn JDR	
Job No. 6815	
Last Rev. 7/7/10	

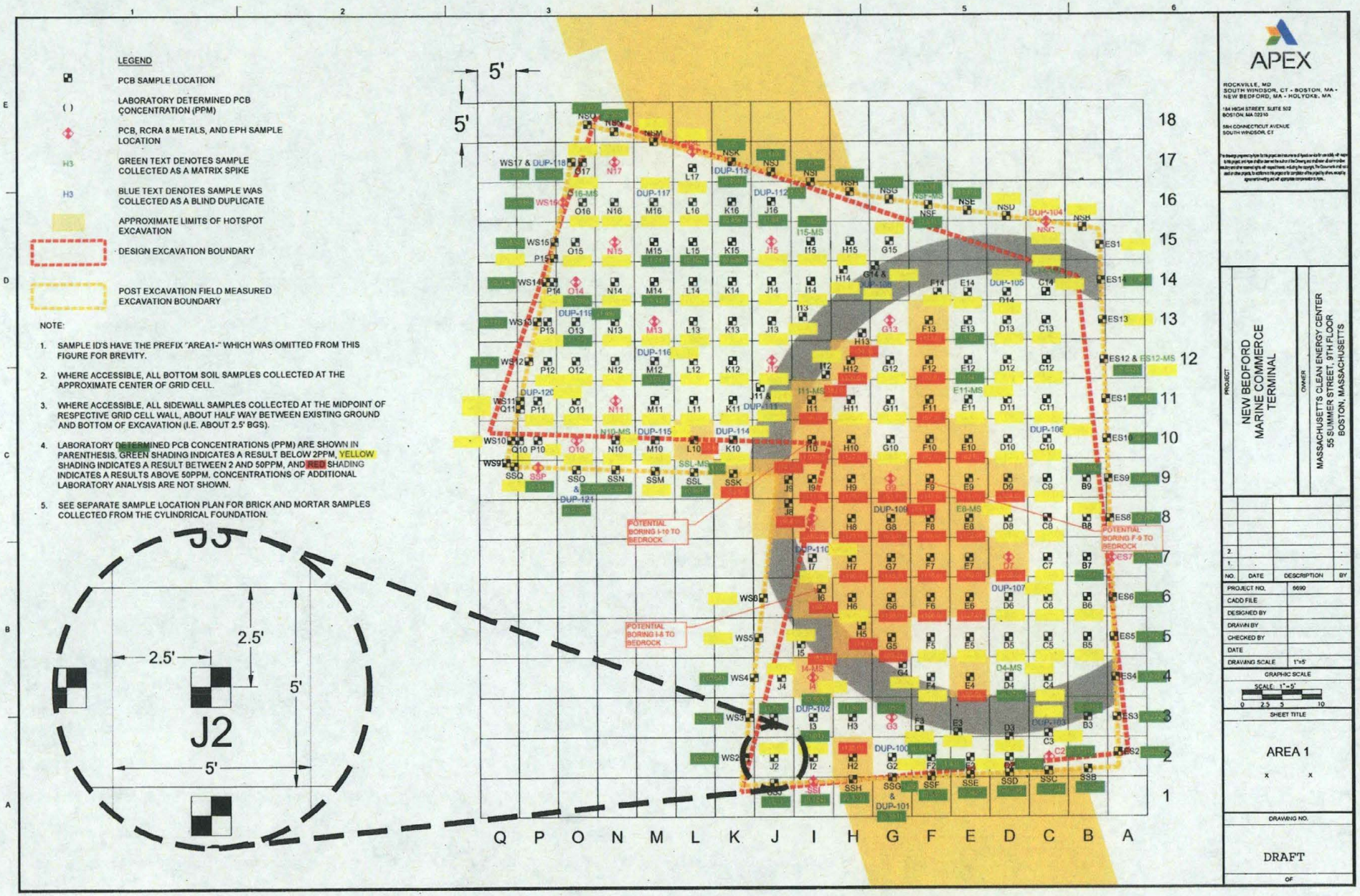
Attachment 7.

ADDITIONAL SAMPLING DGA-1 THROUGH DGA-8 AND AREA 1 "HOT SPOT"

Detailed Grid Area (DGA) or Hot Spot Area	Proposed Depth of Excavation (ft) [1]	Additional Soil Borings to be Installed [1, 2]	Proposed Boring Depth (ft)
DGA-1	1.5	AA1, LL9, FF5	5
DGA-2	4.5	FF3, FF5/FF6, BB5, CC2	8
DGA-3	1.5	CC1	5
DGA-4	1.5	CC2, FF3	5
DGA-5	5	DD4, AA1, LL11, NN7, and L7/L8 (L7.5 on 25' grid)	8
DGA-6	1.5	FF14, JJ12, II3	5
DGA-7	1.5	AA2, DD4	8
DGA-8	1.5	CC5, AA2 (H-1 on 25' grid)	6
Area 1 "hot spot"	Bottom of Concrete Structure (if present) or Bedrock or Till (depending on the results of borings, if completed)	Potential Borings: I-10, I-6, and F-9	To Bedrock, Till or Bottom of Concrete Structure

[1] Per September 25, 2013 submittal

[2] For Area 1 "hot spot" soil borings may be installed and samples collected to confirm PCB concentrations in till. Alternatively, soils/sediments may be removed to bedrock or, if found, the bottom of the concrete structure, or cleanup of this area may continue in accordance with the November 19, 2012 TSCA Determination.



APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

5 RH CONNECTICUT AVENUE
SOUTH WINDSOR, CT

PROJECT
NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
2.			
1.			

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
DRAWING SCALE	1"=5'

GRAPHIC SCALE
SCALE: 1"=5'
0 2.5 5 10

SHEET TITLE
AREA 1

DRAWING NO.
DRAFT
OF

Attachment 8.

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\CONSTRUCTION\P-1.2_PCB_CONFIRM_SAMPLE_PLAN_July2013.dwg 9/21/2013 3:05 PM