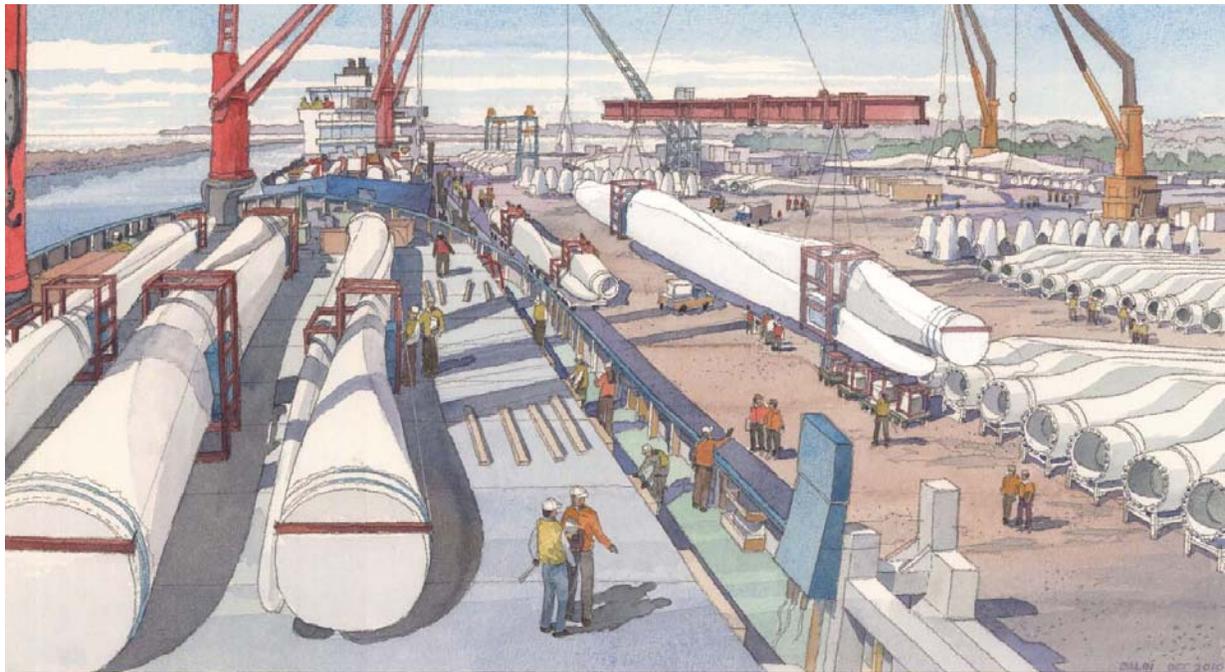


**RESPONSE TO USEPA COMMENTS ON THE JANUARY 18, 2012  
SUBMISSION BY THE COMMONWEALTH OF MASSACHUSETTS FOR THE  
NEW BEDFORD MARINE COMMERCE TERMINAL (NBMCT)  
(SUBMITTED JUNE 18, 2012)**



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# **Response to USEPA Comments on the Commonwealth of Massachusetts January 18, 2012 Submission for the New Bedford Marine Commerce Terminal (NBMCT)**

## **Introduction**

This document provides responses to the USEPA's May 21, 2012 and May 29, 2012 Comment Memoranda concerning the Commonwealth's restated application, dated January 18, 2012 ("January 18, 2012 submission") for inclusion of the New Bedford Marine Commerce Terminal (NBMCT) Project under the State Enhanced Remedy within the New Bedford Superfund site Program.

The Commonwealth, through the Massachusetts Department of Environmental Protection (the Department), requested that the Environmental Protection Agency ("EPA") include an expansion of the State Enhanced Remedy ("SER") of the New Bedford Harbor to allow the construction of three confined disposal facilities (CDFs) in a forthcoming Explanation of Significant Differences ("ESD") that EPA is planning to issue for the New Bedford Harbor Superfund Site<sup>1</sup>. In response to the Department's initial request, EPA verbally notified the Department that EPA considers the proposed South Terminal CDF (currently referred to by the Commonwealth as the "New Bedford Marine Commerce Terminal") to be covered by the initial Record of Decision<sup>2</sup> and that it could be included in the SER without need for inclusion in the ESD. However, EPA has noted that the proposed project must still meet all substantive requirements and evaluations that would normally be conducted for this proposal as part of the regulatory review and permitting process.<sup>3</sup> The EPA has provided guidance regarding the information required to conduct this review.

The report was initially submitted in August of 2010<sup>5</sup>, and has been revised multiple times via additional submissions to USEPA between August 2010 and January 2012 (with USEPA's most recent comments on the project submitted to the Commonwealth in January 18, 2012). This document provides responses to written questions issued by EPA between May 21 and May 29,

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<sup>1</sup> Letter dated January 20, 2010 to Mr. Curtis Spalding, Regional Administrator, EPA Region 1, from Mr. Gary Moran, Deputy Commissioner, MADEP.

<sup>2</sup> Record of Decision, EPA Region 1, September, 1998

<sup>3</sup> Letter dated February 11, 2010, from Mr. Curtis Spalding, Regional Administrator, EPA Region 1, to Mr. Gary Moran, Deputy Commissioner, MADEP.

<sup>5</sup> Report dated August 25, 2010, titled "State Enhanced Remedy in New Bedford, South Terminal", MADEP.

2012 and also summarizes discussions held between EPA and the Commonwealth between May 22, 2012 and June 7, 2012. This document also provides EPA with updated information concerning project design and development, and identifies proposed changes in the proposed project that will impact the overall analysis of resource impacts by EPA.

The information and responses provided in this document are organized into four sections: Section 1 – Summary of Proposed Project Modifications and Re-assessment of Overall Impacts and Proposed Mitigation; Section 2 – Responses to USEPA Memorandum dated May 21, 2012; Section 3 – Responses to USEPA email dated May 25, 2012; and Section 4 – Responses to USEPA Memorandum dated May 29, 2012.

The format of the document will follow a comment –and-response outline, where each of the USEPA Comments will be listed in the order in which they were presented in the USEPA’s Memoranda with the Commonwealths Response to each Comment presented immediately thereafter.

## **Section 1: Summary of Proposed Project Modification and Re-assessment of Overall Impacts and Proposed Mitigation**

Between May 21, 2012 and June 7, 2012, the Commonwealth met weekly with EPA to describe the scope of the project, answer EPA’s specific questions regarding the scope and impact of the project, and to explain any changes in the overall design since the Commonwealth’s January 18, 2012 submission. The following is a summary of the proposed changes to the overall project, and a re-stated summary of the overall impacts associated with the project:

### *Re-Evaluation of Intertidal Area Impact*

In responding to EPA’s questions, it has come to the Commonwealth’s attention that the correct Intertidal Area of Impact is **1.94** acres, rather than the 1.43 acres listed in the January 18, 2012 submission.

### *Federal Channel Dredging*

At the request of EPA, the Commonwealth has reviewed the area of impact associated with potential dredging of the Federal Channel described within its January 18, 2012 submission. At present, the Commonwealth is uncertain as to whether or not this area will need to be dredged by the Commonwealth at all (the dredging is not included within the draft plans for the work included within **Attachment A**). Nevertheless, the Commonwealth seeks approval under the SER to dredge the Federal Channel in case the area needs to be dredged in a worst-case scenario. Due to the varying elevation of the bottom surface in the Federal Channel, not all the

area will need to be dredged. EPA has requested that the Commonwealth re-calculate the area in the “worst-case” scenario that the entire area would need to be dredged to -30 MLLW. The revised area that would be impacted is **13.26** acres, which is a reduction from the 19.6 acres estimated in the Commonwealth’s January 18, 2012 submission to EPA.

*Expansion of the Deep Draft Berthing Area to the North or to the South*

The City of New Bedford has lobbied the Commonwealth to expand the deep-draft quay-side area of the dredge footprint from its existing 600 foot length. The Commonwealth does not currently anticipate obtaining sufficient funding to expand the deep-draft quay-side area of the dredge footprint beyond its existing 600 feet; however, it is the Commonwealth’s understanding that the City of New Bedford is pursuing independent funding to expand this area. Although it is unclear whether this work will take place or not, the Commonwealth is hereby adding the potential additional impacted area to the totals of the project.

There are two ways that the deep-draft quay-side dredge area can be expanded: to the north or to the south. It is currently unclear which area (if not both) would be expanded; therefore, the impacts from both are considered and added to the total impacts for the project.

Should the deep-draft quay-side dredge area be expanded to the south, it would deepen areas that are already being dredged to -14 MLLW to -32 MLLW. Should the deep-draft quay-side dredge area be expanded to the north, it would deepen areas that were previously going to be dredged as part of this project, but are currently at an elevation of -20 MLLW, and would be dredged to -32 MLLW.

The expansion of deep-draft quay-side to the north would impact approximately: **1.28 acres**.  
The expansion of deep-draft quay-side to the south would impact approximately: **0.62 acres**.

*Reduction in Size of Northern Mooring Mitigation Area*

The Commonwealth had proposed relatively shallow dredging within the Northern Mooring Mitigation Area as well as the Southern Mooring Mitigation Area to compensate for displaced moorings associated with the project. It has recently come to the Commonwealth’s attention that a portion of the Northern Mooring Mitigation Area is predominantly deep enough to accept deeper draft moorings and will not need to be dredged as part of this project. As a result, the overall area of impact associated with the Gifford Street Channel relocation, the Southern Mooring Mitigation Area and the Northern Mooring Mitigation Area has been reduced from 8.01 acres to **6.17** acres.

### Update to Impacts Associated with Area Beneath Pile Supported Section of Wharf

The Commonwealth indicated within its January 18, 2012 submission that the 0.67 acres that will no longer be completely filled in association with its re-design would only be impacted by dredging. However, this area will still be impacted by actions associated with this project. The area will be impacted in the following ways:

- The area will be dredged to a slope that will range in depths from between -5 MLLW to -14 MLLW on the southern side of the dredge footprint to between -25 MLLW to -32 MLLW on the northern side of the dredge footprint.
- The area will be protected from propeller wash via the installation of a concrete blanket, which will cover the surface with a rip-rap type material.
- The area will have piling within it, which will support a deck above. The pilings will be located on approximately a 16 foot by 16 foot grid. The piling diameters range from 24 inches to 36 inches in diameter. The deck will shade the area at most times of the day, resulting in significantly lower penetration of sunlight into the water column than in other areas of New Bedford Harbor.
- The area will be impacted by the transit of vessels to and from the proposed terminal.

### Potential Increase in the Width of the Navigational Channel

As stated within Appendix 15 of the January 18, 2012 submission, the feedback received from the Northeast Marine Pilots Association was to increase the size of the channel to the largest size possible, preferably 200 feet in width, in response to their information that the typical cargo vessel dock at the New Bedford Marine Commerce Terminal would be approximately 90 feet wide. The Commonwealth has responded by increasing the width of the channel from 150 feet to 175 feet and to add a tug channel, based on the constraints and priorities outlined within the Commonwealth's response to EPA's Question 6A below.

Although the Commonwealth anticipates that the 175 foot wide channel is sufficient for the design vessel (please see the Commonwealth's draft plans in **Attachment A** utilized for the New Bedford Marine Commerce Terminal), it is possible that the width of the channel may need to be further expanded if a future vessel's dimensions vary significantly from what is currently anticipated. As a result, the Commonwealth proposes (within this document) to add an

additional 50 feet of width (25-feet on each side of the channel) that is not currently contemplated for construction (for a total of a 225 foot wide channel), to the impacts associated with this project as a potential worst case scenario, assuming that the channel width may be expanded in the future to accommodate larger vessels than are currently envisioned.

The proposed expansion would take place both in the Federal Channel and within the proposed channel from the New Bedford Marine Commerce Terminal to the Federal Turning Basin. Therefore, the anticipated impact will be both within shallow near-shore waters (for expansion outside of the Federal Channel) as well as expansion of the dredging that may occur in the Federal Channel. These impacts would result in:

- Dredging of areas that are -6 MLLW, to a depth of -30 MLLW: **2.72 acres**; and
- Dredging of areas that are -26 MLLW to -29 MLLW to a depth of -30 MLLW: **1.74 acres**.

#### Potential Blasting

One of the beneficial aspects of the New Bedford Marine Commerce Terminal location is that, due to relatively shallow rock in New Bedford Harbor, an extremely stable surface can be provided for the jack-up barges when they are being loaded. This is in contrast to Boston Harbor, where the Boston Blue Clay provides a more unstable surface that could result in failures of heavily loaded or irregularly loaded jack-up barges (please see the Commonwealth's responses to Questions 3E and 3F of EPA's May 21, 2012 letter below).

One challenge associated with the relatively shallow rock is that the intersection between the overburden and the rock surface is very close to the bottom of the proposed dredge footprint. The intersection is primarily along the immediate eastern face of the proposed bulkhead. From this point, rock appears to generally slope to a lower elevation to the east of this point, and slopes to a higher elevation to the west of this point. Existing boring logs currently indicate that the rock within the existing dredge cuts is highly fractured, and therefore, should be able to be extracted through conventional means. However, the Commonwealth cannot be certain that blasting will not be required. Therefore, the Commonwealth is including blasting within the potential environmental impacts that should be included in EPA's assessment of this project. A draft proposed construction specification for completion of blasting is attached as **Attachment B**, for EPA's review.

The Commonwealth has reviewed a document prepared by the U.S. Army Corps of Engineers, titled "The Environmental Effects of Underwater Explosions With Methods to Mitigate

Impacts”, dated August 1997, in association with this proposed blasting. The document is attached as **Attachment C**. It is currently anticipated that the blast locations will be in excess of 25 feet below the water column, within New Bedford Harbor. The Contractor will drill down to the appropriate depth and place charges at that depth either prior to and/or subsequent to removal of the overburden material. The following is a list of conclusions and recommendations from the USACE document:

Blasting will likely result in noise effects, heat generation, pressure wave generation and increased turbidity. The blasting materials must be handled with great care. The blasts need to be carefully controlled such that they do not impact adjacent structures or vessels. Blasts could potentially pose a risk to humans if not kept away from the blast locations.

Blasting could have impacts on, including and up to mortality for: marine mammals, aquatic plants, aquatic invertebrates, amphibians and reptiles, and fish. Blasting may also impact larval stages of fish and fish eggs.

The following mitigation measures are recommended to reduce the adverse effects to aquatic resources:

#### Blast Design Parameters

1. Evaluate the need to use explosives. If practical alternatives are available and not excessively expensive, require their use.
2. Plan the blasting program to minimize the total weight of explosive charges per shot and the number of shots for the project.
3. Use angular stemming material of sufficient length in drill holes to reduce energy dispersal to the aquatic environment.
4. Subdivide the charge, using detonating caps with delays or delay connectors with detonating cord, to reduce total pressure. Avoid the use of submerged detonation cord.
5. Use decking when possible in lengthy drill holes to reduce total pressure.
6. For seismic exploration use non-explosive sources when possible or use linear charges for open water shots or buried charges.
7. Use shaped charges to focus the blast energy when submerged surface charges are necessary, reducing energy released to the aquatic environment during demolition.

#### Biological Parameters

1. Evaluate the quality of the fishery resource, based on existing information. If there have been no previous surveys of the blast area, and there is reason for environmental concern, require or conduct a survey. Based on the quality of fishery resources, make a decision concerning the magnitude of potential impacts.
2. Require or conduct mathematical mortality modeling to determine potential fishery impacts. Based on predicted impacts, make rational decisions concerning compensation or use of other mitigation techniques.
3. If applicable, limit season of explosive use to avoid major migration periods, spawning seasons, spawning beds, or larval drift.
4. If there is a concern with migrating fish, use sampling techniques (e.g., hydroacoustics) to avoid impacting large congregations.
5. Use non-explosive noise techniques to move fish from the immediate blast zone; and install netting or silt curtains around the blast area to keep the fish away.
6. Require the presence of an agency observer, with authority to halt blasting or require use of mitigation techniques, if mortality is excessive based on predetermined mortality levels.
7. If mortality is excessive, based on pre-determined mortality levels or observation, require significant blasting revisions (that allow the work to proceed but lowers mortality), or compensation.
8. If fish mortality is excessive, based on observation or mathematical modeling, or if species of special concern are present (e.g., endangered species), require the use of properly designed bubble curtains or physical barriers.

The Commonwealth has added the blasting design requirements to the Blasting Specification section included within **Attachment B**, and has additionally required the use of silt curtains around each blasting area, as well as the use of non-explosive noise techniques to move fish and marine mammals from the immediate blast zone.

#### *Update on Real Estate Acquisition*

The Commonwealth utilized the information provided by Siemens (the turbine supplier to Cape Wind) to determine a minimum facility size that would be appropriate for the New Bedford Marine Commerce Terminal. This information was integrated into the Commonwealth's submission in order to inform EPA that the facility would be large enough to fulfill its Project Purpose. However, the reality is that the vast majority of foreign offshore staging ports are significantly larger than the proposed size of the New Bedford Marine Commerce Terminal (see the Commonwealth's response to Question 1C of EPA's May 21, 2012 letter). As a result, the Commonwealth asked an offshore renewable energy manufacturer, the Power Systems

Division, Wind Power Division, and Power Generation Divisions of Siemens, to assess the feasibility of utilizing the proposed facility at its proposed size of 28.25 acres. As a result of this analysis by Siemens, the Commonwealth made the assertion in its August 25, 2010 and January 18, 2012 submissions that the facility size must be 28.25 acres.

Discussions with private land owners have been ongoing since before the Commonwealth's August 25, 2010 submittal to EPA, and the Commonwealth is engaged in active and ongoing negotiations. Similarly, discussions are ongoing with private property owners for which easements are needed. However, the Commonwealth has recently determined that approximately 2.4 acres that was previously included in the Commonwealth's original 28.25 acre design is no longer available.

To address this 2.4 acre shortfall, the Commonwealth is now considering two alternate configurations "Configuration A" and "Configuration B" that will secure an additional 2.4 acres of land to replace the 2.4 acres that are no longer available. The drawings showing the two new configurations are attached within **Attachment D**. "Configuration A" includes additional land in three locations: a portion of Map 31, Parcel 234 (owned by N.B. Radio, Inc.), an easement over the Blackmer Street extension (owned by the City of New Bedford), and the inclusion of an undeveloped portion of Map 25A, Parcel 48 (owned by the New Bedford Redevelopment Authority). "Configuration B" includes additional land in two locations: a portion of Map 31, Parcel 234 (owned by N.B. Radio, Inc.), and two parcels located at the corner of Gifford Street and South Front Street (Map 25A, Parcel 10 and Map 25A, Parcel 2, both owned by South Coast Mills, LLC).

Some overhead restrictions on the use of Map 31, Parcel 234 (owned by N.B. Radio, Inc.) will likely need to be addressed, related to the presence of a radio tower, and associated buried ground system and/or tower guy anchors and guy wires; however, these restrictions are not anticipated to have a significant impact to the overall use of the proposed facility, as the height restrictions are primarily associated with pre-assembly areas onsite as well as transit to the construction location (see Siemen's description of the issue of height restrictions within its letter in **Attachment D** and the Commonwealth's response to Question 3G of EPA's May 21, 2012 letter). The portion of Map 31, Parcel 234 that will be acquired will be utilized as lay-down and not as pre-assembly or loading areas that would require large cranes.

The Commonwealth is engaged in active and ongoing negotiations for both potential configurations, each of which would replace the 2.4 acres of land that is no longer available. Please note that none of these additional properties are water-dependent properties that

would be regulated under Chapter 91; therefore, there would be no regulatory obligation to relocate current users as had been cited for other potential alternatives.

The Commonwealth has secured a letter from Siemens to the effect that the 28 acres under consideration, with either site configuration, is sufficient to manage terminal operations for the anticipated wind development project. A copy of the Siemens comment letter concerning the revised facility layout is attached to this letter as **Attachment D**.

### **Updated Summary of Overall Project Impacts**

Based on the information provided within the January 18, 2012 submission, as well as the proposed revisions outlined above, the following updated summary of environmental impacts is provided. The project as planned will result in the following Direct Impacts to existing resource areas as outlined below:

#### ***Permanent Impacts***

- **Areas of Proposed Filling:**
  - 1.94 acres of intertidal area – *Recalculated Intertidal Area*,
  - 4.06 acres of shallow, near-shore sub-tidal area; and
  - 0.18 acres of salt marsh will be filled during the construction of the facility.
  - 0.67 acres of area that will be dredged, partially filled with a concrete blanket along the bottom as well as piles needed to support the pile-supported section of the quay, and shaded by the concrete platform.
- **Areas of Dredging (Existing Depth Between -1 and -6 MLLW):**
  - 7.02 acres of near-shore, subtidal area will be dredged from between -1 and -6 MLLW to between -30 and -32 MLLW (*Quayside Areas – Increased Due to the Potential Extension of the Deep-Draft Dredging Area to the South and Due to Potential Widening of Deep-Draft Channel By 50 Feet*).
  - 8.46 acres of near-shore, subtidal area will be dredged from -1 MLLW to -6 MLLW to -14 MLLW (*Quayside Areas and Tug Channel*).
- **Shellfish Impacts**
  - Based upon the revised area of impact as described above, the number of shellfish anticipated to be impacted has been revised. The total shellfish anticipated to be impacted by the project is now estimated at: **9,817,121**. Please see **Attachment E** for the re-calculation of the number of shellfish to be impacted.; also within **Attachment E** is a plan that outlines the Commonwealth's proposal to mitigate the impacts to shellfish.

### ***Temporary Impacts***

- **Areas of Dredging (Existing Depth Between -1 and -6 MLLW):**
  - 8.76 acres of near-shore, subtidal area will be dredged to -45 MLLW, filled and capped (CAD Cell).
  - 6.17 acres of near-shore, subtidal area will be dredged from -4 to -6 MLLW to between -6 and -7 MLLW (Gifford Street Channel Re-Alignment and Mooring Mitigation Areas – *Reduced due to the reduction in size of the Northern Mooring Mitigation Area*).
- **Areas of Dredging (Existing Depth between -20 and -30 MLLW):**
  - 8.29 acres of subtidal area will be dredged from -20 to -29 MLLW to -30 MLLW (South Terminal Channel – *Increased Due to the Potential Extension of the Deep-Draft Dredging Area to the North*).
  - 15 acres of subtidal area will be dredged to -30 MLLW (Maintenance Dredging of Federal Navigation Project – *Recalculated Based on the Maximum Anticipated Dredging in the Federal Channel to Achieve -30 MLLW plus a potential 50 foot width expansion of the deep-draft channel*).
- **Blasting Impacts** – To be minimized to the extent possible as outlined above.

### **Alterations to Proposed Mitigation**

To compensate for environmental impacts associated with the above-listed changes, the Commonwealth intends to increase the proposed mitigation for the project as follows:

- The proposed Winter Flounder spawning habitat creation will be increased by 5 acres, from 17.73 acres to **22.73 acres**.
- The OU-3 Hot-Spot Capping Mitigation Area will be increased in size such that the following increases in habitat creation or enhancement area realized:
  - The intertidal portion of the OU-3 Hot-Spot Capping Mitigation Area will be increased in size by approximately 1 acre from 3.47 acres to **4.47 acres** of inter-tidal area that will be either created or enhanced.
  - The sub-tidal portion of the OU-3 Hot-Spot Capping Mitigation Area will be increased approximately 4 acres from 10.91 acres to **14.91 acres**.
- Creation/Enhancement of up to approximately **1.9 acres** of successional marsh area will still be included within the mitigation package, as outlined within the Commonwealth’s January 18, 2012 submittal.
- Completion of the Tern Monitoring Program as outlined within the Commonwealth’s January 18, 2012 submittal.

- Shellfish mitigation as outlined within the Commonwealth’s response to Question 7E to EPA’s May 21, 2012 letter.

## **Section 2: Responses to USEPA Memorandum dated May 21, 2012**

### **1. Timeline**

**Question 1A:** For Cape Wind, all turbines are required to be in place by Jan. 2014 (pp. 22-23); is this at all possible? (AW)

**Response:** Please note that the Project Purpose of the New Bedford Marine Commerce Terminal is *to develop a multi-purpose marine terminal, a primary purpose of which will be to provide critical infrastructure to serve offshore renewable energy facilities and accommodate international shipping at the new facility.* The project is not being constructed in association with any one offshore renewable energy project; however, the Commonwealth anticipates that the Cape Wind Off-shore Wind development will be the first offshore wind project to be staged at the New Bedford Marine Commerce Terminal.

The schedule for the Cape Wind Off-shore Wind development has changed multiple times since the Commonwealth’s original August 25, 2010 submission and has changed again since the Commonwealth’s January 18, 2012 submission. The information available to the Commonwealth regarding Cape Wind’s schedule is the following:

- As of the spring of 2012, Cape Wind wishes to stage equipment associated with the foundation of turbines at the New Bedford Marine Commerce Terminal as soon as January 2014; and
- As of the spring of 2012, Cape Wind wishes to stage turbine parts at the New Bedford Marine Commerce Terminal as soon as November 2014.

The Commonwealth makes no assertions as to the accuracy of this information, as Cape Wind, and Cape Wind’s schedule, is not a part of the Commonwealth’s submission. However, for a discussion about the staging and design layout of the terminal, please see Siemens’ Letter annexed hereto at **Attachment D.**

**Question 1B:** Is the time to construct the terminal 9 mos. (p. 117) or 15 mos. (p. 115)?

(This bears on overall time frame plus on the length of time there would be construction impacts on neighborhoods/EJ community). Also note p. 67: CDF must be in place no later than fall, 2012 and use of the site as early as November 2012. That means dredging would have to occur this summer or early fall. (AW, CC)

**Response:** The construction timeline for the New Bedford Marine Commerce Terminal has changed as the design for the project has progressed. The most recent schedule, formulated in February of 2012, calls for a 22 month construction process. A revised schedule is attached to this document (**Attachment F**).

**Question 1C:** Explain the time to construct Cape Wind (2 yrs vs. 1 yr); time frame appears to affect the size of the facility (28 acres needed to accomplish construction in one year). (AW)

**Response:** As stated earlier, Cape Wind, and Cape Wind's schedule, is not a part of the Commonwealth's submission; however, the Commonwealth utilized the information provided by Siemens (the turbine supplier to Cape Wind) to determine a minimum facility size that would be appropriate for the New Bedford Marine Commerce Terminal. This information was integrated into the Commonwealth's submission in order to inform EPA that the facility would be large enough to fulfill its Project Purpose; however, the reality is that the vast majority of foreign offshore staging ports are significantly larger than the proposed size of the New Bedford Marine Commerce Terminal (see below).

It is the Commonwealth's understanding that the process for installing an offshore wind facility is multi-fold, and includes both the installation of the foundations (which are staged and installed first), the installation of the turbines (tower sections, nacelles, hubs and blades), and the installation of the transmission cable[s].

Including all three components, the overall construction period for the Cape Wind project is anticipated to be an approximately 2 year process, whereas the installation of the turbines is anticipated to be a 1 year process. The basis for the conceptual facility layout promulgated by Siemens assumed that the turbines for the Cape Wind facility could be staged 40 turbines at a time, such that an approximate 1 year timeline could be reached.

As stated earlier, the New Bedford Marine Commerce Terminal is anticipated to be utilized for multiple offshore renewable energy facility projects, and each project will vary in its size and scope. However, please note that the schedule for any offshore renewable energy facility is highly weather dependent. Severe weather in the construction location could easily delay the delivery or installation of some or all of the components of any offshore renewable energy project. As a result, work that is anticipated to take one year, could easily be forced to require additional time for installation. Because of the high degree of uncertainty related to offshore construction conditions, as well as the distant point of manufacture of the majority of offshore wind components, a significant quantity of materials storage is necessary at the New Bedford Marine Commerce Terminal.

As no domestic offshore wind staging port currently exists on the east coast of the United States, additional information regarding the size of foreign offshore wind staging ports in the United Kingdom and Germany (some of which are active; others of which are proposed for use) are attached as **Attachment G**, and are summarized below:

Location	Area (Square Meters)	Area (Acres)
Medway, Port of Sheerness, UK	1,214,000	300
Cuxport, Neufelder Schanze 4, Germany	245,000	60.54
Medway, Isle of Grain, UK	3,000,000	741.32
Great Yarmouth, Outer Harbour, UK	1,214,000	300
Killingholme, North Licolnshire, Able Humber Port Facility, UK	8,820,000	2179.47
Humber, ABP Humber, UK	819,000	202.38
Hartlepool, Hartlepool Port, UK	230,000	56.83
Hartlepool, Able Deaton Port Port, UK	510,000	126.02
Teesside, Able Middlesbrough Port, UK	207,000	51.15
Tyneside, Offshore Technology Park, UK	250,000	61.78
Blyth, Port of Blyth, UK	250,000	61.78
Methil, Fife Energy Park, UK	277,000	68.45
Tayside, Port of Dundee, UK	240,000	59.31
Tayside, Port of Montrose, UK	300,000	74.13
Peterhead Bay Harbour, North Base, UK	340,000	84.02
Cromarty Firth, Nigg Yard, UK	700,000	172.97
Cromarty Firth, Highland Deephaven, UK	1,000,000	247.11
Firth of Clyde, Hunterston Terminal, UK	700,000	172.97
Belfast, Harland and Wolff, UK	700,000	172.97
Barrow-in-Furness, Port of Barrow, UK	566,000	139.86
Dee Estuary, Port of Mostyn, UK	300,000	74.13
Milford Haven, Pembroke Port, UK	192,000	47.44
West Glamorgan, Port of Swansea and Port Talbot, UK	160,000	39.54
Portland, Port of Portland, UK	130,000	32.12
Southampton, ABP Southampton, UK	800,000	197.68
Newhaven, Port of Newhaven, UK	300,000	74.13

Based on this information, as well as Siemens' letter, it is the Commonwealth's understanding that the New Bedford Marine Commerce Terminal is just large enough to fulfill its Project Purpose.

## **2. Project Overview**

**Question 2A:** We would like to have a discussion of the components of the project that are the subject of EPA's review. The inclusion in the January 18, 2012 submittal of CAD cell #3 and portions of the federal channel dredging have created some confusion. Acknowledging that either or both of these activities may or may not happen without the terminal construction, the question raised is, "Have the impacts for these two pieces been analyzed under any prior federal permitting action?" Typically, for a CAD cell, there is not only a permitting action for site selection but also for the actual use of the CAD cell. For instance, in the Ocean Dumping program, (which is different than Superfund) disposal sites are selected via the EIS process. DMMPs are prepared that discuss the monitoring and management of the disposal site. With those documents in place, individual dredging projects still need environmental review and a permit to use the previously designated discharge site. For this project, we seem to have two of the three pieces in place since there was an environmental review on the placement of the CAD cell and there is a DMMP. While there is no need for a permit (since this is proceeding under the State Enhanced Remedy portion of the 1998 ROD for the Upper and Lower Harbor), an environmental review needs to be equivalent for what we would do for a permit. (PC, AW, PS, rest of team)

**Response:** An updated project plan is attached to this document (**Attachment H**). Based on discussions with EPA, it is the Commonwealth's understanding that impacts from the following components of the project should be considered by EPA:

- Bulkhead, filled areas, and upland ancillary properties;
- Dredged channels and boat basins and disposal into CAD Cell #3;
- Gifford Street Channel relocation and disposal into CAD Cell #3;
- Northern and southern mooring mitigation areas and disposal into CAD Cell #3;
- Stormwater drainage swale mitigation area and disposal into CAD Cell #2;
- OU-3 hot spot capping mitigation area;
- Winter flounder mitigation area;
- Dredging of the Top of CAD Cell #3 and disposal into CAD Cell #2;
- Dredging of the Bottom of CAD Cell #3;
- Uncapped CAD Cell #3 until capping is achieved;
- Capping of CAD Cell #1;
- Capping of the Borrow Pit CAD Cell; and
- Dredging of the Federal Channel (if completed) and disposal into CAD Cell #3.

**Question 2B:** It appears that there will be a need for a TSCA risk-based determination for the CAD cell and potentially for the upland area of the CDF should this project move forward.

Consistent with the above question, we would also like to discuss how these determinations will be issued. (KT, CC).

**Response:** Discussions with EPA on this issue have taken place. Additionally, the Commonwealth has provided additional supporting documentation to aid EPA in its review of the TSCA issues, and will submit additional supporting information as necessary to support the TSCA Program review.

**Question 2C:** It should also be understood that if EPA determines this project meets all its substantive requirements and it is approved after public comment, a c. 91 permit to use the facility will be required. (CC)

**Response:** A Chapter 91 approval document will be obtained for this facility.

### **3. Alternative-Specific**

#### *Port of Davisville*

**Question 3A:** There's reference to 14.5 acres at the Magnolia Street area of the Port of Davisville being "under agreement" (p. 30). That was the case 2 years ago; any updates? (AW)

**Response:** As EPA has stated, the "Magnolia Street Area" was listed as "under agreement" in previous documentation obtained from the Port of Davisville. The information for the Port of Davisville has since been updated. Available information from the Port now includes a map showing "Available Parcels", included as **Attachment I**. This map does not list the "Magnolia Street Area" as an available parcel, which is consistent with the information provided by the Commonwealth within its previous submittals.

**Question 3B:** With regard to the discussion of Broadway Street area (pp. 29-30) – On p. 29, it is stated that the area does not have adequate load bearing capacity and so it could only be used for staging in conjunction with Pier 2 (which isn't available). Then on p. 30 there's a discussion about ways to improve this area which would involve extending the existing bulkhead (resulting in more filling and dredging than would occur at South Terminal). It's not clear whether extension of the bulkhead would be the way to solve the issue of the unavailability of Pier 2, or whether even if this work were done, Pier 2 would still be needed. (AW)

**Response:** Two scenarios were evaluated by the Commonwealth with regard to the potential use of the "Broadway Street Area" as an alternative to the project: use of the facility without engineering improvements and use of the facility with engineering improvements.

Without engineering improvements, the area could not be accessed by the vessels necessary to deliver offshore renewable energy components or the vessels necessary to transport renewable offshore energy components to their construction sites. Additionally, without engineering improvements, the area could not support the loads associated with staging, loading, and unloading of offshore renewable energy components. Therefore, the area could only be used for staging and storage of components and alternate methods would be needed to receive and offload those components (which would require the use of Pier 2, which is unavailable).

Assuming that engineering improvements to this area could be permitted and completed, that the necessary water depth could be created to allow access of international delivery vessels and installation vessels, and that the load-bearing capacity of the area could be improved in order to allow the staging, loading, and unloading of the offshore renewable energy components, the following would be necessary: Installation of a bulkhead similar to that proposed at the New Bedford Marine Commerce Terminal site, dredging of a boat basin, dredging of a turning basin to allow vessels to turn to enter and exit the facility, and dredging of a channel to access the area. Assuming that all of these engineering improvements were completed, the Commonwealth believes that the use of Pier 2 would no longer be necessary, and that staging, loading, and unloading of the offshore renewable energy components could be conducted directly from the “Broadway Street Area.”

The Commonwealth has concluded that the impacts to the existing environmental resources from the engineering improvements envisioned in the scenario described above would be significantly greater than the Broadway Street area analyzed for the other alternatives, including the New Bedford Marine Commerce Terminal alternative.

**Question 3C:** In the discussion of potential impacts at Broadway Street area (pp. 30-31), there is an implication that the greater amount of filling (and possibly greater dredging) compared to South Terminal would mean greater impacts. Is there any information available regarding the quality of the resources that could be affected? (AW)

**Response:** The “Broadway Street Area” expansion, as well as the other potential alternatives, have been evaluated on a conceptual basis only. No specific environmental investigations associated with this alternative have been completed by the Commonwealth. The Commonwealth has investigated existing data, and has not found evidence of past proposed construction in this area, which may have generated more detailed analysis of the quality of the resources, and the potential impact to those resources from construction, within the “Broadway Street Area.” The Commonwealth’s current understanding of the resources within the “Broadway Street Area” is that they consist of the following:

- Upland area (west and, to varying degrees, to the east of Broadway Street);
- Existing salt marsh (predominantly on the the northern portion of the site, east of Broadway Street);
- Coastal beach area (to the east of upland locations);
- Intertidal areas (which run along the shoreline);
- Shallow sub-tidal areas (areas less than -15 MLLW which are predominant from the shoreline to the existing channels and basins servicing the Port of Davisville (see navigational chart printout attached as **Attachment J**).

Although specific environmental assessments have not been conducted for the “Broadway Street Area”, it is the Commonwealth’s position that, due to the PCB contamination within New Bedford Harbor, that the quality of the resources that would be effected by construction at the “Broadway Street Area” are of equal, if not higher quality, than those present within the area proposed for the New Bedford Marine Commerce Terminal.

#### *South Terminal*

**Question 3D:** There is a reference to being “in discussions” with private landowner of two lots that would make up part of the South Terminal site (p. 56). This statement was made 2 years ago; are the discussions still not finalized? A similar question exists regarding easements for four properties referenced on p. 57. Are there problems in getting these necessary property rights? (AW)

**Response:** Discussions with private land owners have been ongoing since before the Commonwealth’s August 25, 2010 submittal, and the Commonwealth is engaged in active and ongoing negotiations. Similarly, discussions are ongoing with private property owners for which easements are needed.

It is the Commonwealth’s understanding that work on the New Bedford Marine Commerce Terminal completed prior to EPA’s Final Decision on this project is considered by EPA to be “at risk.” Despite this risk, the Commonwealth has proceeded with design activities and is engaged in active and ongoing negotiations with private land owners, as stated above. Nevertheless, due to the inherent risk associated with EPA’s review process, the Commonwealth awaits the result of EPA’s review of the project prior to finalizing its proposed property transactions. Please see the section titled “*Update on Real Estate Acquisition.*”

#### *Dry Dock #4*

**Question 3E:** Please provide more detailed information on why Boston Blue Clays provide inadequate stability for the jack-up barge spuds (pp. 34-35). (PS)

**Response:** Additional information regarding the prevalence and thickness of Boston Blue Clay at potential sites within Boston Harbor area attached within **Attachment K**, and discussed further within Question 3F.

The impact of the Boston Blue Clay is related to the capability of the substrate to support the jack-up barge as it is being loaded, which involves resistance of extremely high, concentrated loads at the end of the legs of the jack-up barge. Jack-up barges (depending on the particular vessel) may be able to carry the components of between one and two wind turbines per trip. As noted within the January 18, 2012 submission, offshore renewable energy components associated with a 3.6 MW turbine (anticipated to be the lightest turbine handled at the New Bedford Marine Commerce Terminal, as the trend in the offshore wind industry is toward larger turbines) are anticipated to weigh the following:

- Wind Blade: 18 metric tons (three per turbine installed).
- Nacelle: 125 metric tons (one per turbine installed).
- Hub: 100 metric tons (one per turbine installed).
- Tower Section: 100 metric tons (three per turbine installed).

In order for the vessel to be loaded in a stable condition, the vessel is typically jacked up at the quay-side while it is being loaded, which means that the full load of the vessel would be on the end of each of the legs as the vessel is being loaded. Therefore, the weight that the legs of the jack-up barge must support ranges from approximately 579 metric tons to 1,158 metric tons, all of which (along with the weight of the vessel) that must be supported by the four legs of the jack-up barge, as well as the foundation soils beneath each of the legs of the jack-up barge. Due to the size of the components, it is impossible to load the barge uniformly, and therefore, the loads will vary significantly from leg to leg as the vessel is being loaded.

The capacity of the substrate to support each of the legs of the jack-up barge is paramount; however, even more important is the ability of each of the four legs to support the barge uniformly, even as the barge is being loaded non-uniformly. If the barge is loaded in a substrate that is not sufficiently supportive, the legs of the vessel could penetrate the soft substrate in a non-uniform way, which would result in instability or failure of the vessel. Thus, the presence of Boston Blue Clay (a relatively soft substrate) is extremely unfavorable.

**Question 3F:** As to the information on softness/instability of blue clay, is there any information in the submission beyond the single statement on p. 36? Also, is the book referred to on p. 34 the only basis for the conclusion that there is fine blue clay underlying the harbor at Dry Dock # 4 and the other Boston Harbor sites evaluated in the Tetra-Tech report (Appendix 2)? (AW)

**Response:** The presence of blue clay underlying Boston Harbor is well known. For further information on the areal extent of the blue clay formation within the Boston Basin, please see “Surficial Geology of the Boston Basin, MA” (Hawkes, Martin. Massachusetts Institute of Technology, 1987) attached to this document as **Attachment K**. This study summarized boring information from multiple locations within Boston Harbor. Cross-sections prepared within this document outline thicknesses of the formation nearby sites of interest. Specifically the reader’s attention should focus on page 98 for the cross section locations, and pages 268 and 272 for the cross sections near the Coastal Oil Terminal and Dry Dock #4.

**Question 3G:** The examples of the FAA’s overhead clearance decisions in Appendix 7 are from 2007. At that time there were a couple of redesigns (refilings) awaiting FAA approval; one was for a structure over 250 feet. Is it possible to learn the outcome of those decisions? (AW)

**Response:** This question refers to the site selection criteria that limits the practicability of future sites for an offshore renewable energy staging facility for those locations with overhead restrictions less than 250 feet due to the anticipated use of large cranes at the proposed facility and the anticipated future vertical assembly of wind turbines prior to shipment to their construction sites. The revised letter from Siemens (**Attachment D**) speaks to this overhead restriction issue by stating the following:

- “As the offshore industry matures in the US, for Siemens to operate efficiently and competitively, we must begin to fully assemble the towers on shore. This would require 250 feet or more of vertical clearance both on a portion of the pre-assembly area and the full transit route to the wind farm site.” and
- “Limited vertical access either at the pre-assembly area or the route to the installation site would cause an unacceptable impediment to future installations”.

There are limitations based on FAA restrictions in Boston Harbor due to Logan International Airport airspace that would impede the allowable vertical clearance at both the pre-assembly area (which would typically be close to the quay-side) and the transit route to the wind farm site (which would pass directly in front of a Logan runway).

Although the restrictions associated with the property currently owned by N.B. Radio, Inc. (as noted in Section 1, *Update on Real Estate Acquisition*), will impact the vertical clearance within a negligible portion of the very northwestern portion of the site, the pre-assembly area and the transit route to the wind farm site will be unaffected by any height restrictions, thereby allowing the New Bedford Marine Commerce Terminal to have no height restrictions that would impact its practicability on this issue.

The table within Appendix 7 of the January 18, 2012 submission by the Commonwealth refers to two projects which had pending decisions from the FAA:

Some overhead restrictions on the use of Map 31, Parcel 234 (owned by N.B. Radio, Inc.) will likely be required, related to the presence of a radio tower, and associated buried ground system and/or tower guy anchors and guy wires; however, these restrictions are not anticipated to have a significant impact to the overall use of the proposed facility, as the area will be primarily utilized as lay-down and not as pre-assembly or loading areas that would require large cranes.

1. Boston (MWRA Deer Island) (190 feet)

The MWRA Deer Island project was issued a Determination of No Hazard under its second filing with the FAA, and the wind turbines are currently in operation. The article from the MWRA can be found at: <http://www.mwra.com/01news/2009/081009-diwindproject.htm>

2. Cape Cod Community College (253 feet)

The Cape Cod Community College facility was required to relocate to an alternate parcel in order to receive a Determination of No Hazard. This alternate location was within a historic zoning district in the town of Barnstable which ultimately precluded the construction of the facility. See the article from the Cape Cod Times attached as **Attachment L** for more information.

The reason that these two decisions are relevant to the subject project is because the Project Team, through its research into site constraints that govern the siting of offshore wind port facilities, has identified the issue of overhead obstructions (or height restrictions of less than 250-feet) as a critical issue limiting the siting of such facilities. This assertion is borne out in the recent letter received from Siemens Energy (see **Attachment D**), one of the world's largest wind developers, in which Siemens notes that an efficient offshore wind support port 'require(s) 250 feet or more of vertical clearance both at a portion of the pre-assembly area and the full transit route to the wind farm site'. There are no such overhead restrictions on the transit-way between the New

Bedford south Terminal and the anticipated offshore installation site for the likely early user of the facility (i.e., Siemens).

#### **4. Resource-Specific**

**Question 4A:** The resource area overview map (Figure #5) identifies the mean higher high water ("MHHW") boundary line at the South Marine Terminal project area. NOTE: The landward limit of Section 404 jurisdiction is the high tide line ("HTL") (aka the highest predicted tide of the year) or adjacent wetlands. Please document a high tide line value and provide revised impact values for the South Marine Terminal Project. (PS)

**Response:** The NOAA National Ocean Service tide prediction tables for the 2012 year list a 5.4' (MLLW datum) as the highest predicted tide elevation, see **Attachment M**. Using this figure as a basis for the upper limit of the calculated intertidal area, the revised intertidal area (excluding saltmarsh) affected by the NBMCT project is equal to 1.94 acres. Including the area identified as saltmarsh (0.18 acres).

**Question 4B:** Is Fig. 5 correct? (CC)

**Response:** A revised Figure 5 is attached within **Attachment N**.

**Question 4C:** Please identify a typical tidal range for South Marine Terminal project area. (PS)

**Response:** There are two possible data sources for determining a "typical tidal range" for the project site: the NOAA Tidal Station 8447712 formerly located at Clarks Point (aka Fort Taber), and the NOAA Tidal Station 8447584 formerly located at the New Bedford Fairhaven Bridge. The data from Station 8447584 is provided below because the Tide Station formerly located on the New Bedford Fairhaven bridge was within the confines of the Hurricane Barrier and would have recorded the tidally restricted conditions present at the project site. NOAA does not provide a defined "typical tidal range" however, the difference between Mean High Water and Mean Low Water in New Bedford harbor (based on the 1960 to 1978 tidal epoch) is 3.77 feet. The remaining tidal datum elevations available from this station are listed below and refer to Mean Lower Low Water in feet. The Benchmark Data Sheet is attached as **Attachment O**.

Highest Observed (11/13/1977)	=	5.63
Mean Higher High Water	MHHW=	4.16
Mean High Water	MHW =	3.89
Mean Tide Level	MTL =	2.00
Mean Low Water	MLW =	0.12
Mean Lower Low Water	MLLW =	0.00

Lowest Observed (11/12/1977) = -0.77

**Question 4D:** The document, on pp. 121-122, concluded that the so-called isolated wetland is not federally jurisdictional, but the basis for this conclusion is not clear (and the discussion itself focuses on the Massachusetts Wetlands Protection Act, not the CWA). (AW)

**Response:** The question refers to two areas onsite that have indications of being wetlands. The Commonwealth previously referred to these as “isolated” wetlands. The areas are shown in green on the revised Figure 5 (see **Attachment N**). The areas are dominated by the invasive species *phragmites australis*. The following information is provided to explain Commonwealth’s opinion regarding these areas, and why it is the Commonwealth’s opinion that they are not federally jurisdictional. They are referred to as the North Area Phragmites patch and the South Area Phragmites patch (or the “Phragmites Patches” or “Patches”) within this explanation.

These two wet pockets of Phragmites are “isolated” in that they are not bordering and do not meet any of the definitions of adjacent wetlands. There is no significant nexus between these two patches and New Bedford Harbor.

Any effect of the two Phragmites patches might have on the chemical, physical, or biological integrity of the navigable waters of the harbor is insubstantial, or speculative, if there is an effect at all, due to the following:

- There is no continuous surface connection to the Harbor or to any relatively permanent standing or continuously flowing bodies of water which are connected to traditional navigable waters.
- There are no trenches or gullies leading from the Phragmites patches to the harbor;
- The Phragmites patches are above the Mean High Water line, and the Mean Higher High Water line. The North Area Phragmites patch is located 344 linear feet from the New Bedford Harbor High Tide Line, and the South Area located is 153 linear feet from the High Tide Line;
- Underlying the North Area Phragmites patch there is a subsurface drainage system (i.e. the area lies within an easement for a stormwater drainage system for the City of New Bedford). This area would be “waters generally not jurisdictional;”

- The Phragmites patches are not within the 100 year flood zone. The North Area Phragmites patch is approx 270 feet from the nearest point of the 100 year flood zone, and the South Area Phragmites patch is approx 160' from the nearest point of the 100 year flood zone;
- The Phragmites patches are outside of any defined riparian areas;
- There is no apparent “point of entry watershed”, as fill and debris between the Patches and the Harbor are at a higher elevation than the Patches themselves. This fill and debris prevent flow of water from one Patch to the other, or to or from New Bedford Harbor. This elevated fill and debris is distinguished from separation berms or man-made dikes, as the fill and debris was not placed to contain or separate the Patches from New Bedford Harbor. The two Patches do not in any way form a wetland mosaic associated with the functions of the Harbor.
- There is no evidence of an unbroken or shallow sub-surface hydrologic connection between the wetland and jurisdictional waters;

Furthermore, there is no demonstrable ecological interconnection between the Phragmites Patches and the Harbor. New Bedford Harbor is an industrialized water body. The beach and upland areas on the project site are comprised of historic anthropogenic fill. Much of this fill is construction or demolition debris, either dumped or left as rubble from the demolished mill that once stood on the site. The habitat value of a Phragmites Patch in debris, and separated from the jurisdictional body by a distance over other debris does not lend itself to supporting the lifecycle of amphibians, aquatic turtles, or fish. Such fauna are physically blocked from reaching the Phragmites. (Moreover, the Southern Phragmites patch, located within a parcel of land owned by the MA Division of Marine Fisheries, is completely encircled by chain link fence that provides an effective barrier for the exclusion of wildlife.) There have been no observations of duck nesting or feeding in these Patches. Therefore, it is speculative to consider that there is an ecological interconnection between these Patches and the Harbor that would be different from the upland areas.

The nexus between the Phragmites Patches and the harbor is insignificant from a physical perspective. The nexus is less significant when considering the Patches that are unnaturally formed puddles over debris, and contain invasive species to provide the functions of adjacent wetlands to the waters of the United States. The sediment trapping and nutrient recycling functions are insignificant, if they exist at all, in relationship to the Harbor. The upland debris fill between the Patches and the Harbor is at a higher elevation and provides a wall that would

prevent sediments or nutrients from reaching the Harbor. Pollutant trapping and filtering is insignificant when considering the interceding upland which would provide for such a function better if the upland were not a source of pollutants. As the Patches are outside of the flood zone they do not provide the function of retention or attenuation of flood waters.

**Question 4E:** Also, please provide a location for this resource area (isolated wetland) as well as information on why this area has been determined to be "isolated" rather than adjacent and neighboring. (PS)

**Response:** Please see the response to Question 4D above. Also, please see Figure 5, included as **Attachment N**.

**Question 4F:** The document indicates that the "high water mark" is the limit for the New Bedford Superfund site (p. 123). The high water mark is an unknown datum for me; please specify what this datum represents. (PS)

**Response:** The Commonwealth's statement was based on anecdotal information, which appears to be inaccurate. According to EPA, there do not appear to be specific limits to the extent of the New Bedford Superfund Site, other than impacts to media above 50 mg/kg of total PCBs.

**Question 4G:** Repeatedly the document states that 1.43 acres of intertidal area will be impacted, but on p. 134, it states that "The intertidal portion of the full Impacted Area of the project is 1.61 acres...." Please explain. (AW)

**Response:** The reference within the January 18, 2012 submission referred to the total area of resources between the low and high tide lines that would be impacted (i.e. 1.43 acres of intertidal area plus 0.18 acres of salt march equaled 1.61 total acres) and was not intended to refer to the intertidal area alone.

However, please see the response to **Question 4A**, as the impacted areas have been revised.

**Question 4H:** Also, which water levels (MLLW, MLW, MHW, MHHW, and/or HTL) were used to determine the boundaries of intertidal shoreline areas that will be impacted by the South Terminal? (PS)

**Response:** The January 18, 2012 submission utilized MLLW as the lower boundary, and MHHW as the upper boundary of intertidal resources. The Commonwealth's response to Question 4A was calculated using Mean Lower Low Water as the lower boundary of intertidal resource, and the High Tide Line (HTL) as the upper boundary.

**Question 4I:** Please discuss the specific documentation in the submittal that supports the statement on p. 138 that the additional dredging (compared to the original plan) is not expected to cause a significant change in functions and values? (AW)

**Response:** The additional dredging for the Gifford Street Channel, Mooring Mitigation Areas, the South Terminal Channel Area, Federal Navigation Project Maintenance Dredging, and CAD Cell area, will result in temporary impacts to the functions and values of these shallow subtidal and deep subtidal habitats.

It has been the Commonwealth's understanding that EPA's most serious concern regarding the impact of the project have arisen from changes in Winter Flounder spawning habitat. Therefore, the Commonwealth's statement regarding "significant" changes to habitat referred primarily to whether the additional dredging resulted in a net increase in changes of habitat from shallow subtidal to deep subtidal, specifically whether the dredging increased the depth of an area from shallower than -16 MLLW to deeper than -16 MLLW (indicated by EPA as a critical elevation for Winter Flounder spawning).

The Commonwealth's statement was not intended to indicate that there would be no impacts from the additional dredging proposed.

**Question 4J:** As to the description of mudflat areas (pp. 126-129); What size gradation limits were used to define "fines"? Also, how was the presence or absence of benthic invertebrates used to define "mudflats"? (PS)

**Response:** The laboratory used a #200 Sieve for separation of "fines" from fine sand. A #200 Sieve retains particles larger than 75 micrometers and allows smaller particles to pass through. Therefore the "%fines" shown in the table on page 128 and in the analytical results in Appendix 51 of the submission represents the percentage of sediment composed of particles smaller than sand, as defined by ASTM.

The text of 40 CFR 230, 404(b)(1) Subpart E Section 230.42 quoted in the submission which defines mud flats, makes no reference to the presence or absence of benthic invertebrates as a defining feature of mud flats, and instead focuses solely on physical features. As such, the physical features of the area were the main criteria utilized in defining the presence or absence of mud flats.

Benthic invertebrates were, however, the primary focus of the shellfish survey conducted within the project limits, and the impacts resulting from the project are to be mitigated as described in the submission.

**Question 4K:** Endangered Species Analysis - Why were piping plover, Northeastern Beach Tiger Beetles, and Atlantic Sturgeon not discussed as part of your endangered species analysis (pp. 227-232)? (PS)

**Response:** Avian wildlife surveys in New Bedford Harbor were utilized to investigate the potential for the piping plover to be present at the subject site within the Avian Wildlife Assessment section of the January 18, 2012 submission. The results of the Avian Wildlife Assessment indicated that piping plovers have not been identified within New Bedford Harbor. The endangered species analysis, in an effort to avoid being duplicative, focused on species that were likely to be found at the site, or had previously been identified as species of concern by the Commonwealth's Natural Heritage and Endangered Species Program, the U.S. Fish and Wildlife Service, and/or EPA, during the consultations completed to date.

In regard to the Northeastern Beach Tiger Beetles and the Atlantic Sturgeon; the Commonwealth used the information available from the National Marine Fisheries website for essential fish habitat, and relied on previous consultations with the Commonwealth's Natural Heritage and Endangered Species Program, the U.S. Fish and Wildlife Service, and the EPA for identification of species that were known to be present (or could be present) within the project area that could be impacted by the project. To date, the Northeastern Beach Tiger Beetles and the Atlantic Sturgeon have not been identified as species of concern.

**Question 4L:** Fisheries Concerns - Is the South Marine Terminal project area considered spawning, nursery, and/or foraging habitat for estuarine - dependent species such as winter flounder, summer flounder, scup, black sea bass and/or rainbow smelt? Is the project area mainly a migration pathway for anadromous fish, or does it serve as a more important foraging habitat? (PS)

**Response:** The limit of the Commonwealth's information in regard to these species at this site is contained within the Essential Fish Habitat Assessment. Please refer to the Essential Fish Habitat Assessment included within the January 18, 2012 submission for more information.

**Question 4M:** Has an overall invasive species management plan been developed for the project? (PS)

**Response:** An invasive species management plan has been developed and is attached to this document as **Attachment P**.

**Question 4N:** Historic Properties - Have any adjacent historic properties and/or historic districts been identified within the upland area of potential effect? Have either the Wampanoag (Aquinnah) or the Mashpee Wampanoag Tribal Historic Preservation Officer ("THPO") requested an additional survey of "Paleosols" in and adjacent to the project area (pp. 107-111)? (PS)

**Response:** The potential impacts to cultural resources were evaluated in the archeological investigation reports, and were submitted to both the State Historic Preservation Office, and the Massachusetts Board of Underwater Archeology. The reports have not identified any adjacent historic properties and/or historic districts within the upland area of potential effect.

The reports have been provided to both the Aquinnah and the Mashpee Wampanoag Tribal Historic Preservation Officers. No additional investigation of the Paleosols has been requested since the Commonwealth's January 18, 2012 submission. Since its initial meeting with the Tribal Historic Preservation Officers on March 15, 2011, the Commonwealth committed to keeping the tribes informed of actions that may result in disturbance of the subsurface, and has coordinated with tribal observers when disturbances were slated to occur.

As part of the cultural resource investigation of the project site, a geophysical remote sensing survey was conducted in order to identify areas which may be likely to contain undisturbed archeological or cultural resources. The areas of suspected paleosols were identified, and these areas were subsequently manually investigated using a vibracore sampling device to recover undisturbed samples from the identified soil profiles. The limits of the paleosol were delineated by sampling describing, testing and preserving the recovered soil samples. The other areas identified by the geophysical investigation as potential paleosols were investigated by the same vibracoring techniques and no buried soil profiles were recovered in those areas. All of this information is included in the reports which have been provided to the tribes.

## ***5. Project Description***

**Question 5A:** Please provide a plan drawing depicting existing bathymetry throughout the South Marine Terminal project area. I am concerned about existing depths where the Gifford Street Channel Relocation and New Mooring Area are proposed (See Figure #5). Does the navigation channel shown on Figure #5 include the proposed Tug Channel? (PS)

**Response:** Please see the attached design drawings contained within **Attachment A**. The tug channel is included in the design documents. As does Figure 5 (see **Attachment N**).

**Question 5B:** Please provide documentation on the locations of previously dredged navigational channels (outside of the New Bedford Federal Navigation Project) in and adjacent to the South Marine Terminal Property. (PS)

**Response:** Please see the attached historic dredging locations plan attached as **Attachment Q**.

**Question 5C:** Please provide a description and/or map of the specific parts of the federal navigational channel Apex anticipates dredging. (CC)

**Response:** Please see the attached plan attached as **Attachment R**.

**Question 5D:** What is the total cubic yards of material to be dredged for this project? (CC)

**Response:** The current estimated total volume of cubic yards of material that is anticipated to be dredged in association with this project (assuming all aspects of the project are completed, including the maximum anticipated dredging in the Federal Channel, and the extensions of the deep-draft berth to both the north and the south) is approximately 934,600 cubic yards. A breakdown of the total quantities is included within a table attached as **Attachment S**.

Please note that this total volume of material is based on the volume anticipated to be generated during construction of the items noted on the plans included as **Attachment A**, as well as items that are uncertain at this point, such as the additional dredging in the Federal Channel, extension of the deep-draft berth either to the north or to the south, potential widening of the channel for the facility, and associated increases in size of CAD Cell #3 to accommodate additional impacted dredge spoils for disposal. The estimated volume of material that would be dredged when completing the work outlined in the plans included in **Attachment A** is approximately 740,600 cubic yards.

**Question 5E:** Is it correct to assume the upland geophysical investigation began at MLLW? (p. 91) (CC).

**Response:** The upland geophysical investigation began at the Mean Lower Low Water line.

**Question 5F:** Are more detailed plans (other than plan-view overview drawings) available for the proposed South Marine Terminal/Confined Disposal Facility? I am looking for typically cross-sections that show proposed fill areas, the proposed steel-sheet bulkhead, any adjacent riprap scour protection, and the proposed dredged areas. Please provide such plans if they are available.(PS)

**Response:** Please see the attached design drawings contained within **Attachment A**.

**Question 5G:** Please provide a better description of how the South Marine Terminal will need to be organized up to support the construction of offshore wind turbines. Where will wind turbine components be stock-piled? How will the ancillary properties be used? Where will the wind turbine components be put together? Where will cranes be located? How will cargo ships be unloaded and jack-up barges be loaded? (PS)

**Response:** It is currently anticipated that the primary components of wind turbines that would be staged at the proposed New Bedford Marine Commerce Terminal include: wind blades, nacelles, hubs, and tower sections. It is also possible that foundation components may be staged at the proposed New Bedford Marine Commerce Terminal.

The primary stages of any offshore renewable energy project will involve:

- **Delivery of components to the site from an offsite manufacturer:** For the first offshore renewable energy project, these components are anticipated to come from international sources; however, this may change over time, as subsequent offshore renewable energy projects are permitted, which may promulgate an increase in domestic manufacture of these components. During this step, vessels with components will arrive at the site, and those materials will be unloaded and staged in various locations around the site. It is currently anticipated that the heavy cranes will be utilized to unload the international vessels. The location at which a component is staged will depend upon the size and shape of the component, and also whether the component can easily be stored in an ancillary property. Typically, due to its weight (which makes it able to be transported over conventional roadways), the wind blades are the most likely components to be stored at an ancillary properties. Unfortunately, the wind blades' size and poor maneuverability makes the transport of wind blades to offsite locations impracticable; however, the proposed easement will allow the blades to be transported to the ancillary sites in a practicable manner.
- **Staging and Pre-Assembly of Components:** Prior to loading for delivery to the offsite construction site, the components will need to be staged. In some cases, that may mean only that the materials for individual components must be gathered into one location so that the components can be offloaded to an installation barge; however, in some cases, such as for the nacelle, some testing and pre-assembly actions must take place. It is the Commonwealth's understanding that these pre-assembly actions include connecting the hub to the nacelle, installing additional electrical components into the nacelle/hub combination, and also possibly installing some electrical components into tower sections. These pre-assembly actions are design-specific, and will therefore be

highly dependent upon the manufacturer of the offshore renewable energy components, as well as the exact installation method chosen by the manufacturer. It is the Commonwealth's understanding that vertical construction (i.e., pre-assembly of tower sections and the nacelle/hub and potentially one to two wind blades onsite prior to offloading onto an installation barge) is one potential method that has been utilized in the industry. If vertical construction is utilized onsite, it would be during the pre-assembly section of site use.

- **Loading of Pre-Assembled Components Onto Installation Barge:** At this point, the assembled and staged components would be offloaded onto the installation barge. Each component has its own difficulties in loading. The nacelle-hub combination is the heaviest item (for a 3.6 MW turbine constructed by Siemens, that component is anticipated to weigh up to 240 metric tons). The tower sections will be both wide and long, and the wind blades are the lightest component, but also the longest. In order to efficiently load the components, the cranes are required to be able to move back and forth along the bulkhead, as well as to be able to raise and lower the components over significant distances. The components will need to be maneuvered around other components already on the barge, as well as around the jack-up legs, which, even when the barge is jacked-up, will still likely stick up from the deck of the barge a significant distance. The pieces will be loaded one at a time, which will have to be done very carefully to prevent the jack-up barge from becoming unbalanced. The foundation beneath the legs of the jack-up barge is very important in this scenario, because if the legs sink into the substrate, the barge could fail, and the components could be lost into New Bedford Harbor. Fortunately, the New Bedford Marine Commerce Terminal is located in an area that has relatively shallow rock, with compact glacial till overlain by a thin layer of compact sand, which will provide a very sturdy foundation for the legs of the jack-up barge.

Nacelles, hubs, tower sections, and foundation pieces will require heavy cranes to be able to lift, conduct pre-assembly, and to move around the site. Therefore, the main portion of the site (adjacent to the waterfront access), which will also have the highest loading capacity, will be primarily utilized for these components. Wind blades may or may not be stored in this portion of the site, depending on the particular project being staged, and also depending upon the availability of space and whether the components are being offloaded from international vessels, or whether components are being loaded onto installation barges, or staged for loading or all three. It is currently anticipated that ancillary properties will primarily be utilized for wind blade storage.

The heavy cranes will be restricted to the high loading areas within the vicinity of the bulkhead and adjacent upland areas. They are not anticipated to be utilized on the ancillary properties, as those properties are not designed to accommodate those loads. In addition to cranes, smaller vehicles (referred to as “reach-stackers”) will be utilized to transport lighter objects, such as wind blades, around the site. Reach-stackers can be utilized on roadways, so those vehicles will be able to load and offload wind blades as they are transported to the ancillary properties. Please see Siemens’ Letter annexed at **Attachment D**, for additional information about the terminal logistics.

**Question 5H:** Please provide a better description of the following: 1) How will cargo ships and the jack-up barges use the turning basin in front of the New Bedford State Pier to access and to egress the proposed South Marine Terminal Channel; and 2) How will these vessels be moored at the South Marine Terminal Basin when the site is used to support the installation of offshore wind energy projects. (PS)

**Response:** Cargo ships (previously referred to as “international vessels”) are currently anticipated to transit through the Federal Channel, and turn in front of State Pier. The exact mechanism of turning will highly depend upon which side of the vessel must be utilized for loading or offloading of components, and whether the vessel has bow thrusters to assist in its own turning, or requires the assistance of tugs in its turn. Tug boats that assist with the transportation of vessels will need to re-align the vessel such that it is located in the center of the proposed channel. Buoys will be installed on the west side of the proposed channel and range poles will be installed at the center of the channel to assist the vessels in determining the exact center as it transits into the proposed channel. Buoys will also be located on the far side of the tug channel to alert tugs as to where the edge of the tug channel is as well; however, the east side of the vessel channel will not be marked, as tugs are anticipated to be oriented perpendicular to the vessel, in order to push or pull the vessel to the east or west as it transits, to keep it in line with the channel.

The vessel may need to approach the terminal either fore-first or aft-first. The vessel will turn in the channel (likely assisted by tugs), such that it is in alignment with the proposed New Bedford Marine Commerce Terminal channel, and will then be assisted into its berth at the terminal with tugs. Tugs may be needed to simply keep the vessel in the center of the channel as the vessel approaches the berth, or may need to pull the vessel either into its berth, or away from its berth when it is leaving.

Due to the depth of the existing federal channel and federal turning basin, and the anticipated draft of the jack-up barges, the jack-up barges will likely have much more latitude in their

maneuvering capability. Nevertheless, they will likely use the same procedures as the larger vessels. It is anticipated that the jack-up barges may not have their own maneuvering capability and may need to be completely tug-assisted in their arrival and departure from the port.

The cargo vessels will moor at the facility utilizing bollards installed to handle the berthing loads anticipated from the vessels. Fenders have been designed to accommodate the berthing loads as well. The bollards and fenders can be seen in the plans, included within **Attachment A**.

Although the jack-up barges may moor conventionally, when they are being loaded, they are anticipated to be in the jacked-up position, which would not require mooring.

**Question 5I:** Please clarify the weight bearing capacity of the CDF in pounds per square foot. (p. 80 seems to say 12,160 but p. 77 may say otherwise). Also, please clarify whether the weight of the cranes to be used at the facility are 600 pounds or 1,000-1,300 pounds (p. 84-85). (CC)

**Response:** The design loading stated for the facility in the Commonwealth's January 18<sup>th</sup>, 2012 submission was a simplification of the more nuanced structural design. The facility has been designed for uniform live load of 20 tonnes (metric tons) per square meter or approximately 4,098 pounds per square foot. Please note that this live load concept is designed for the entire facility, and represents a theoretically evenly distributed load over the entire facility, which is unlikely to occur, as the highest loadings at the facility are likely to be point loads (i.e. wheel loads, track loads under cranes, or point loads from specific components).

The heaviest loads for the facility will vary depending upon the operations taking place at any point in time and will be limited to the specific heaviest point loading scenario involving the largest cranes lifting the heaviest loads (although some wheel loads at the facility have similar loadings). Actual spot or point loads will be much greater than 4,098 pounds per square foot (as the Commonwealth noted in its January 18, 2012 submission), but will also range depending on the type of vehicle, and the exact load carried by that vehicle. The Commonwealth is not capable of anticipating, nor of fully detailing within this document, every potential loading scenario that may occur at the facility over time; and, in fact, future users will need to conduct their own evaluations of each vehicle and loading that is utilized at the site (if it differs from the specific design scenarios) to make sure that their loads can be accommodated.

One design crane used for this facility, and from which some of the spot loads were calculated, is the Liebherr LR 11350. The boom, counterweights, main body, tracks, and counterweight buggy can be configured in multiple formats, and the weight of the crane varies considerably

with differing arrangements, but, in general terms, this is viewed as a 1350 metric ton crane. However, this crane is significantly larger than the crane that is anticipated to be utilized by the first user of the site, which is a 600 metric ton crane.

The reason that the larger crane was used in the design, was that the current trend in the offshore renewable energy industry is to create larger and larger turbines, which will result in larger and heavier components. The 600 metric ton crane was presented (rather than the design crane for the facility) in order to be consistent with information provided in the Commonwealth's August 25, 2010 submittal.

Although every potential crane could not be evaluated for its suitability at the proposed terminal, the Liebherr LR 11350 was evaluated under multiple loading scenarios, the maximum of which was the lifting of a 500 metric ton object at a radius of approximately 30 meters.

The loading of 12,160 noted on page 80 indicates one potential anticipated loading for a 600 metric ton crane in a specific orientation and assembly with a specific load. That scenario results in a different design scenario than for which the Liebherr LR11350 was evaluated. However, the Liebherr LR11350 also has larger tracks than the 600 metric ton crane, which allows some more distribution of the load over a larger area. Nevertheless, the loads from the Liebherr LR11350 are anticipated to be higher than the loads for the 600 metric ton crane noted on page 80 of the January 18, 2012 submission in specific scenarios; however, these additional loadings have been considered in the design of the facility.

**Question 5J:** Section 4.3 of the document gives a description of why a gravel fill design has been recommended for the South Marine Terminal. This narrative details a range of potential ground loading values which are associated with typical offshore wind turbine construction areas. Based upon this discussion, it is clear that the trend in wind power is to install larger and larger wind turbines. Does the current gravel fill design provide for an appropriate range of live loading values that would allow for the construction of larger wind turbines at the proposed South Marine Terminal? (PS)

**Response:** Please see the Commonwealth's answer to question 5I. The fill for the New Bedford Marine Commerce Terminal is a combination of geotechnically suitable dredge spoils topped with a layer of Dense Graded Aggregate. The facility has been designed with an eye toward the trend in wind power to install larger and larger wind turbines, and has therefore has a higher loading capacity than what is anticipated to be necessary for the first user of the facility, in anticipation of the future need for larger turbines and higher load carrying capacity.

**Question 5K:** Please provide more details on the location and design of the Confined Aquatic Disposal ("CAD") cell where contaminated sediments from the South Marine Terminal Project and adjacent navigation channels will be deposited. Please discuss whether this document considered impacts associated with the construction of this CAD cell as part of this project. If not, were they already reviewed as part of the existing Superfund Project? (PS)

**Response:** Information regarding the location and design of the CAD cell is included within the plans, which are attached to this document as **Attachment A**. Based on discussions between the Commonwealth and EPA, it appears that the impacts associated with construction of this CAD Cell should be considered as part of this project. The Commonwealth is not aware of an instance where the existing Superfund Project has reviewed the impacts associated with the construction of CAD Cell #3.

**Question 5L:** Construction Sequence - Please give a more detailed description of how siltation curtains and booms will be used to minimize turbidity impacts associated with in-water work. Given the range of tidal cycles within New Bedford Harbor, will siltation curtains be very effective in containing turbidity (pp. 251-252)? Please give more details on how tackifiers and polymer emulsions will be used to temporary stabilize construction areas (pp. 253-254). (PS)

**Response:** The Contractor will be obligated to meet the Performance Standards associated with the project in accordance with completion of the work. As part of that obligation, the Commonwealth will monitor turbidity around all dredging, capping, and bulkhead construction work locations. Turbidity will be measured at three depths within the water column at each location: near the surface, mid-depth, and near the bottom. The three measurements will be averaged together to obtain a single representative value for comparison purposes. Turbidity measured at the down-current location which exceeds the up-current reference by the following values in two consecutive monitoring events shall be considered an exceedance:

When silt curtains are deployed:

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

When silt curtains are not deployed:

Reference Site Turbidity (NTUs)	Permissible Turbidity Increase
<10	Reference plus 20 NTUs
11-20	Reference plus 15 NTUs
21-30	Reference plus 10 NTUs
>31	Reference plus 30% of reference

NTUs = Nephelometric Turbidity Units

An exceedance will trigger collection of water column samples for analyses. Two locations will be selected for turbidity monitoring: a reference location will be selected approximately 200 ft up current from the activity, and a monitoring location shall be established 200 feet down-current from the operation (if silt curtains are deployed, a monitoring location shall be established outside of and within fifteen (15) feet of the silt curtain). If results of turbidity monitoring indicate an exceedance of the permissible turbidity increase, sampling will be performed by Apex for water column monitoring of the dredging operation. Water samples, composited over the entire water column, will be collected from both the monitoring and reference sites and submitted for analysis.

Two locations will be selected for turbidity monitoring: a reference location will be selected approximately 200 ft up current from the dredging activity, and a monitoring location shall be established 200 feet down-current from the dredging operation (if silt curtains are deployed, a monitoring location shall be established outside of and within fifteen (15) feet of the silt curtain). If results of turbidity monitoring indicate an exceedance of the permissible turbidity increase, sampling will be performed by the Owner's Representative for water column monitoring of the dredging operation. Water samples, composited over the entire water column, will be collected from both the monitoring and reference sites and submitted for analysis.

Silt curtains will be required at all times around any filling area that is not completely enclosed (for example, if the bulkhead is partially complete and filling is to take place behind sections of the bulkhead, silt curtains will be utilized to contain that area). Silt curtains will also be required around any capping, dredging, or other construction activity of the Contractor within the water between January 15 and June 15 of any year.

Should the Performance Standards be exceeded, the Contractor will be required to implement measures as outlined within the Contractor's Contingency Plan, which will include, at a minimum, measures that include implementation of the use of silt curtains and absorbent booms and at a maximum the total halt of work, until such time as the problem is rectified, and the Contractor can show that proceeding with the work will not result in further exceedances of the Performance Standards.

## **6. Revised Design**

**Question 6A:** The increase in proposed dredging in response to information from the tug boat pilots is discussed in Appendix 15. If the typical size of the largest cargo vessel is 90 feet, why is it necessary to increase the channel from 150 feet as originally planned to 175 feet *in addition* to adding a 100 foot tug channel? (AW)

**Response:** As stated within Appendix 15 of the January 18, 2012 submission, the feedback received from the Commonwealth from the Northeast Marine Pilots Association was to increase the size of the channel to the largest size possible, preferably 200 feet in width, in response to their information that the typical cargo vessel that would dock at the New Bedford Marine Commerce Terminal would be approximately 90 feet width. The Commonwealth has responded by increasing the width of the channel from 150 feet to 175 feet and to add a tug channel, and also proposes within this document to permit an additional 25 feet of width that is not currently contemplated for construction, as outlined at the beginning of this document.

Since each potential vessel that could transit to the New Bedford Marine Commerce Terminal will likely have a different combination of length, beam, and draft, each vessel will need to be assessed for suitability to transit the proposed channel on a case-by-case basis. A 175 foot wide channel is currently anticipated to be sufficient to accommodate the design vessel for the terminal (the BBC Mississippi, see **Attachment T**), and will also accommodate a range of other cargo vessels as well. A number of factors have resulted in limitations on the proposed increase in the size of the channel proposed by the Commonwealth, as follows:

- **Existing Harbor Use Limitations:** The City of New Bedford and the New Bedford Harbor Development Commission have requested that impacts to adjacent harbor users in the vicinity of the new channel and boat basin (recreational boating to the east and commercial fishing vessel traffic to the west) be minimized to the extent possible. As a result, the Commonwealth has attempted to minimize expansion of the channel to both the east and the west any more than is absolutely necessary to meet the Commonwealth's Project Purpose.

- **Environmental Impact Limitations:** EPA has indicated that only the smallest possible impact to the environment associated with the project is allowable. As a result, the Commonwealth has attempted to minimize expansion of the channel to both the east and the west any more than is absolutely necessary to meet the Commonwealth's Project Purpose.
- **Financial Limitations:** The Commonwealth has limited the potential expansion on the size of the channel, due to its direct impact on the overall capital cost of the project. As a result, the Commonwealth has attempted to minimize expansion of the channel to both the east and the west any more than is absolutely necessary to meet the Commonwealth's Project Purpose.

The purpose of the deep-depth channel width (as opposed to the adjacent tug channel) is to allow both the passage of vessel, and also to allow a buffer on either side of the vessel to accommodate drift of the vessel in either direction associated with currents, wind forces, or navigational error or navigational drift. Providing extra space on either side of the vessel is important to prevent the vessels from running aground when they encounter forces that could drive them off of the center of the channel; however, tug assistance is crucial to right the vessels once they have begun to drift due to these forces. Although some tugs may be located either in front or behind the vessels, it is anticipated that at least one tug will be located to the east of the vessel, and will push or pull the vessel back on-center if it is drifting. Without the tug assistance, a vessel without bow or stern thrusters would have a difficult time returning to the center of the channel once it had strayed.

Some of the vessels transiting to the New Bedford Marine Commerce Terminal may have bow or aft thrusters that allow the vessels to maneuver side-to-side, or to turn on their own without tug assistance. However, it is likely that most of the vessels transiting to the New Bedford Marine Commerce Terminal will not have bow or aft thrusters, and will therefore require tug assistance to remain within the center of the channel as they transit to and from the terminal.

The tugs utilizing the tug channel will be operating perpendicular to the international vessel. Therefore, a sufficient area for the tugs to work must be reserved. Conversations completed with tug operators within New Bedford Harbor have indicated that a 100 foot wide tug channel will be sufficient.

Additionally, the jack-up barges anticipated to be utilized at the facility will have a larger beam than the deep-draft vessels, which will result in less of a buffer on either side of the vessel in the channel. Although these vessels will also have a shallower draft, which will allow them to exit the channel without running aground typically, they are also anticipated to be un-powered

and will therefore require tug assistance to enter and exit the terminal. As a result, the extra space in the channel will also be needed to allow room for the tugs to maneuver the jack-up barges within the channel, into the facility.

**Question 6B:** Please explain the basis for DEP's decision not to do hydraulic conductivity analysis because the material to be placed in the CDF will be clean sand (p. 107)? (AW)

**Response:** Hydraulic conductivity analysis was completed at the request of EPA and was included within the January 18, 2012 submission to EPA (see Appendix 41). Please disregard the statement on Page 107.

**Question 6C:** Please confirm that no further sediment sampling was conducted subsequent to the revised design of the project as presented in the January 18, 2012 submittal. (CC, KT, ES)

**Response:** There has been no further sediment sampling in association with the New Bedford Marine Commerce Terminal since the Commonwealth's January 18, 2012 submittal. However a synthesis of existing data (data collected in association with this project, as well as historic data collected by EPA) is attached as **Attachment U**.

**Question 6D:** With the enlarged shipping channel dredging, has further archaeological study been conducted to ensure that no additional impacts to paleosols or other TCPs and archaeological features will be impacted by the expanded area? (MS, LJ) If not, please explain the breadth of prior archaeological surveys conducted prior to the revised design and the basis for why no further surveys are necessary. (CC)

**Response:** The original marine archaeological study conducted at the site included a much larger area than the originally proposed project. The marine archeological study utilized remote geophysical sensing equipment which was used to determine locations for further study. A figure with the remote sensing line paths, with the former and new dredge footprints superimposed, is attached as **Attachment V**.

**Question 6E:** Please verify: have the tribes been notified by the State of this expanded dredging scope, and schedule for archaeological exploration, following the communication protocol agreed to at the March 2011 meeting... i.e. the State provides adequate time frame for and information related to projected activities to allow the tribes to schedule monitoring if desired. (MS, LJ)

**Response:** The January 18, 2012 submittal was forwarded to the tribes in February of 2012.

## **7. Mitigation Issues**

**Question 7A:** Winter Flounder Spawning Habitat Mitigation - Section 7.2.1 of the document describes the basic design for the winter flounder spawning habitat mitigation area. This sub-tidal area is proposed to be filled to a depth of approximately -16.0 feet mean low lower water ("MLLW"). Please explain how this mitigation area is suppose to provide a positive impact for Roseate and Common Terns, who typically plunge dive only 1-2 feet to feed? (PS)

**Response:** The Winter Flounder Spawning Habitat Mitigation area is unlikely to provide a positive impact for the Roseate and Common Tern.

**Question 7B:** Intertidal Habitat Creation and Near-Shore, Shallow, Sub-tidal Enhancement Mitigation - Please provide an overview map of Superfund site OU-3, a 17,000 acre area outside of the New Bedford Hurricane Barrier (p. 321). (PS)

**Response:** The requested figure is attached within **Attachment W**.

**Question 7C:** Successional Marsh Area Restoration/Enhancement - Please provide a better description of this proposed mitigation. Based upon a review of Figures #14 - #16, I am uncertain if this work is a fill and/or excavation activity. Please explain how the proposed work will enhance the hydraulic capacity of this tidal tributary. Has an invasive species management plan been developed for this mitigation yet? (PS)

**Response:** Plans and cross-sections for the Successional Marsh Area Restoration/Enhancement are included within **Attachment A**. The intent of the design of the Successional Marsh Area Restoration/Enhancement is to remove impacted sediment, cap residual contamination, and create and/or enhance low marsh, high marsh, and transitional areas within the Stormwater Drainage Swale behind the New Bedford Hurricane Barrier between Cove Street and Gifford Street. The existing invert elevation of the culverts that run under Gifford Street and connect the Stormwater Drainage Swale to New Bedford Harbor are currently located at an elevation above MSL. As a result, there is a constant level of surface water within the Stormwater Drainage Swale that serves no hydraulic purpose for drainage of the area behind the New Bedford Hurricane barrier. This high water level also keeps a large area constantly inundated, which prevents an intertidal exchange important for low marsh health. Additionally, there is a significant quantity of upland fill, protected by rip-rap on the western side of the trench that, once removed, would create additional area for hydraulic drainage of the Hurricane Barrier.

The intent of the design of this area is to remove the impacted sediment, leave a cap of clean dredge material to prevent future direct contact to residual impacts to sediment, leave the final elevation within the trench within a tidally-influenced range (i.e. equal to or slightly higher than the invert elevation of the culverts under Gifford Street, while removing fill from the western side of the trench.

USACE has requested a more detailed analysis of the final grading within the area to show that the work will not impact the hydraulic capacity of the Stormwater Drainage Swale. Although the Commonwealth feels that the design of this area will not impact the hydraulic capacity of the drainage swale as it is currently designed, the Commonwealth plans to analyze this area further to determine if any grading changes are necessary to address any concerns of USACE regarding this issue between the issuance of the Draft Decision and the issuance of the Final Decision by EPA.

An Invasive Species Management Plan is attached as **Attachment P**.

**Question 7D:** Tern Survey: What is the status of the tern survey planned for the Spring/Summer of 2012 (pp. 325-326)? (PS)

**Response:** The Tern Survey has not been completed to date.

**Question 7E:** Shellfish Mitigation: A mean shellfish distribution is used to estimate/extrapolate a value for the number of shellfish to be impacted by the project. Based upon the results of the shellfish survey (Appendix 52), it doesn't appear that shellfish distribution was not consistent throughout the survey area. Please explain why a mean shellfish value is an appropriate way to estimate the scope of potential impacts for the purposes of determining the scope of shellfish mitigation. (PS)

**Response:**

While the Commonwealth acknowledges EPA's point that different areas of New Bedford Harbor contain different distributions of shellfish, the Commonwealth developed its estimate of the number of shellfish impacted by the proposed project in keeping with guidelines developed by the Massachusetts Department of Marine Fisheries (DMF). DMF calculated these estimates by multiplying the total area of impact by the average shellfish concentration (dependent upon the size of the shellfish). Its calculations, in turn, was based on its study of shellfish distribution within New Bedford Harbor titled "Quahog Standing Crop Survey" by David K. Whittaker June 6, 1999. Previously, the Commonwealth had only attached excerpts of this document as backup

for calculations conducted in support of this project; however, the full study is attached as **Attachment X** for EPA's further review.

The Commonwealth believes that a mean shellfish value is an appropriate way to estimate the number of shellfish that will be impacted by the proposed project and is an appropriate way to estimate the productivity of a specific area with regard to its effectiveness to support a healthy shellfish community. However, please note that the areas of New Bedford Harbor north of the Hurricane Barrier (in particular the area within the dredge footprint for the facility, the northern and southern mooring mitigation areas, the Gifford Street Boat ramp relocation area, the federal channel dredging area, and CAD Cell #3) represent areas that contain very high levels of shellfish particularly because the areas north of the New Bedford Hurricane Barrier are closed to shellfishing. Since the shellfish beds within New Bedford Harbor had been closed for at least two decades (as of the date of the Department of Marine Fisheries survey), the shellfish have been able to reproduce without the impact of shellfishing on their population.

Additionally, the Commonwealth is currently proposing mitigation for shellfishing of areas for which mitigation would not typically be required (for example, the U.S. Army Corps of Engineers would not be anticipated to mitigate for shellfish impacts associated with dredging of the Federal Channel and shellfish mitigation has not previously been mandated for CAD Cell construction by EPA or MassDEP).

In light of the foregoing, the Commonwealth has revised its proposed mitigation for shellfish impacts to eliminate relaying completely, and instead mitigate solely through a seeding program. The seeding proposed is designed to provide between 1,000,000 to 2,000,000 seed per year for the next 5 to 10 years, in order to provide approximately 9,817,121 seed for this project. Additional details of the revised mitigation plan are included as **Attachment E**.

**Question 7F:** Floodplain Mitigation: What mitigation is the State proposing to compensate for the 27.33 acre-feet of lost flood storage associated with the project (pp.112-114)? Please explain how the floodwater rise calculations were done. I thought that the flood water rise should be closer to 0.5 inch under 100-year flood conditions. (PS)

**Response:** Flood storage losses from the construction of the New Bedford Marine Commerce Terminal on the Acushnet River are approximately 44,100 cubic yards or 27.33 acre-feet, as calculated between the elevations of + 2 and +6 NGVD 29. While the actual flood water elevation increase associated with the South Terminal project is de minimis for a 100-year storm event, the Commonwealth has sought to identify projects that are associated with the South Terminal Project, the New Bedford Superfund site, the State Enhanced Remedy, or Trustees projects within the New Bedford Harbor to identify potential offsets (through fill

removal from the Harbor in the elevation band between +2-feet and +6-feet NGVD29). There are three such projects: 1) the Steamship Authority Project in Fairhaven (completed); 2) the Drainage Ditch mitigation project associated with the South Terminal extension project (the subject project); and 3) the Marsh Island Marsh Restoration Project being undertaken in Fairhaven on behalf of the Harbor Trustees.

To date, as part of State Enhanced Remedy and the mitigation for the South Terminal extension project, utilizing funds from the Commonwealth of Massachusetts, a total of approximately 1,825 cubic yards of material have been removed from New Bedford Harbor between the elevations of +2 and +6 NGVD 29. A large portion of that material was removed as a part of the reconstruction of the Steamship Authorities maintenance facility in Fairhaven. The effort removed a part of their pier and a series of barges filled with sediment to create a groin on the south side of the facility. In addition to the material removed from the Steamship Authority, the project proposes to remove material from the stormwater drainage swale which will add storage volume in the study elevation bands. A smaller amount of material is being removed from within the flood storage zone of +2 and +6 NGVD29 as part of the Drainage Ditch Mitigation that will be conducted as part of this (South Terminal Extension) project.

Additionally, the New Bedford Harbor Trustee Council (whose members include the Commonwealth of Massachusetts, U.S. Department of Commerce and the U.S. Department of the Interior) is in the process of designing the restoration of Marsh Island which is on the northern border of Fairhaven. The administrating agency for this work on behalf of the Commonwealth and the other participating agencies is the National Oceanic and Atmospheric Administration (NOAA); however, the Commonwealth's Division of Ecological Restoration. The project proposes the removal of approximately 100,000 cubic yards of material from the Harbor and upland and restoring the marshland along the harbor. While the final volume of material to be removed from the flood storage band of +2 to +6 NGVD29 is unknown at this time, it appears that the removal area lies mostly within the contours associated with these elevations, and therefore it is anticipated that most of the removed volume will result in flood storage space within the desired elevation band. The project currently utilizes funding from the Commonwealth of Massachusetts. The project has been designed and is in the process of being permitted. Construction of the project is slated for the fall of 2014. It is anticipated that this project alone (notwithstanding the other two projects contributing to the flood storage within the desired elevation band) will more than offset for any flood storage impact that the South Terminal Project will have.

Flood rise calculations were completed by determining the area of each elevation band behind the proposed bulkhead. A "wedge" volume was determined between each of the elevation

areas and added to the lower volume area which represents the differences in the two elevation areas.

As per the Preliminary Flood Plain Assessment Investigation for New Bedford Harbor (**Attachment Y**), prepared by the U.S. Army Corps of Engineers, for every 400 acre-foot of volume lost between +2.0 to +6.0-foot elevation range, there will be a resulting rise in flood level of approximately 0.2 feet. Therefore, the equivalent flood storage rise for 27.33 acre-feet of flood storage loss is  $27.33 \text{ acre feet} / 400 \text{ acre feet} \times 0.2 \text{ feet} = 0.013 \text{ feet}$  of flood storage loss. Therefore, 44,100 cubic yards or 27.33 acre feet of flood storage loss represents a rise of approximately a 0.013 foot (0.156 inches) rise in water levels during a flood event.

Notwithstanding the foregoing, the restoration project associated with the Marsh Island Project in Fairhaven, coupled with the Steamship and Drainage Ditch Projects, will provide more than sufficient flood storage to offset the storage losses associated with the filling related to the South Terminal Project.

### **8. Miscellaneous Questions**

**Question 8A:** Contaminated Sediments - The document sometimes refers to contamination in regards to parts per million ("ppm") and other times as mg (milligram?) per kilogram. Please provide a conversion factor between these two data. (PS)

**Response:** The units are equal. One milligram is one millionth of a kilogram. Therefore one milligram per kilogram is equal to one part per million parts.

**Question 8B:** New Bedford Hurricane Barrier - What is status of coordination with the U.S. Army Corps of Engineers Levee Safety Office regarding potential impacts from this project on the adjacent New Bedford Hurricane Barrier? (PS)

**Response:** The Commonwealth has had an independent engineering firm evaluate the effect of dredging in the vicinity of the New Bedford Hurricane Barrier. The engineering firm conducted a slope stability analysis to determine whether the dredging in the vicinity of the Hurricane Barrier would reduce the Factor of Safety for slope failure to an unacceptable level. The report concluded that the dredging would not have an adverse impact on the structure. The analysis is attached as **Attachment Z**, and has been forwarded to the Army Corps of Engineers Levee Safety Office.

**Question 8C:** Similar Habitats - Where is Fort Taber site (p. 300)? (PS)

**Response:** The Fort Taber site is located approximately 1.7 miles south of the Marine Terminal Project, on Clark's Point.

## **9. Environmental Justice**

**Question 9A:** Neighborhood Analysis - Please identify any substantial existing traffic problems within the community of concern. Please provide additional description of the Cove Street Residential Area (pp.116-120). Please provide more details on what the State is doing to improve intersections along Route 18 adjacent to the New Bedford State Pier to improve access to the waterfront (p. 295). (PS)

**Response:** Many of the choke points for truck traffic leading to and from the Marine Terminal are to be eased or completely alleviated by the Route 18/JFK Highway Access Improvement Project, which is designed to make a MassHighway designated Urban Artery out of route 18. This highway project itself is currently the largest source of traffic problems in the area being discussed. As of the date of this document, the Route 18/ JFK Highway Access Improvement Project is well into its final stages. The design of the New Bedford Marine Commerce Terminal, in regards to trucking, will integrate into this newly improved road network. The roads to the Terminal are classed as trucking roadways currently and will show a negligible increase due to the terminals new scope. Some of the planned and implemented improvements to the Route 18 roadway are as follow:

-Between Coggeshall and Elm Street: Limited work along this section of route 18 will consist of cold planning and repaving, MassHighway has outlined the following improvements:

1. Repaving, pavement markings and signing, guardrail, gateway, and landscape improvements.
2. Elm Street is being extended to MacArthur Drive to become a 4-way intersection.
3. New signal equipment and conduit are being installed at this location. New lighting is also installed.

-Elm Street to Walnut Street:

1. -Elm street intersection is being redesigned as a four-way intersection.
2. -A new route 6 on-ramp is being built to service route 18 northbound.
3. -Walnut Street is being built as a four way at-grade intersection, the existing Walnut street flyover is being removed.

4. Walnut Street is being widened, with new lighting and conduit.

-Walnut street to Cove Street:

1. Route 18 south is being realigned to conform to MassHighway's requirements for an urban arterial.
2. Various other improvements are being made similar to previous intersects, where needed, down to cove street including:
  - a. Street widening
  - b. New lighting
  - c. New signal timing

Additional information on the Route 18/JFK Highway Access Improvement Project is included as **Attachment AA**.

The Cove Street Residential area located on the opposite Block from the former Dartmouth Mills Site is a mix of 3-family, 2- family, and 4 to 8 unit apartment buildings, densely spaced. One block south of Cove Street is the Tripp Towers, a multi story housing complex managed by the New Bedford Housing Authority. The north facing plots of land on Cove Street are predominantly a Mixed Residential Commercial District, with multi-family residences throughout.

**Question 9B:** With regard to the Construction Management Plan, are there additional details about a more proactive approach to mitigating construction-related impacts (e.g. commitment to diesel retrofits). Also, since the project is located in close proximity to an EJ community, please provide more information on steps to be taken to engage this community during the construction phase (e.g. who will be the point of contact to respond to questions from the community about construction). (AB, TT)

**Response:** A formal Construction Management Plan (CMP) is being prepared for this Project. A copy of the outline for the CMP is attached to this document as **Attachment BB**. The Construction Management Plan will provide steps for proactive minimization and mitigation of construction impacts including dust, traffic, noise, vibration, and visual impacts, as well as other types of construction impacts. In recognition that the project site lies within close proximity to an EJ community, the Construction Management Plan will also contain a section on Public Involvement and Information, which will spell out a process for informing the public concerning progress of construction and upcoming construction-related activities, as well as identifying

opportunities for continued community involvement in the project. As the genesis and scope of this project is of great interest to the local population and community, it is anticipated that there will be robust community interest. The City of New Bedford has extensive experience in communicating with the public within the City and surrounding communities concerning public works projects, and a portion of the Public Involvement and Information Plan will incorporate City expertise, including utilizing in-place City assets such as the New Bedford Economic Development Commission, the Department of Public Infrastructure, the EEO compliance expertise resident in the City Purchasing Department. The CMP will identify the public point of contact for the Project during the construction phase, and the chain of responsibility for dealing with questions and/or public concerns. The details of the Construction Management Plan will be incorporated into the outline included within this response over the coming weeks, and the Commonwealth intends to have the Plan completed prior to the Final USEPA Determination.

The CMP will address topics such as Dust on Monitoring and Control and Air Quality Air Monitoring and Control. The Commonwealth offers the following specific information that will be incorporated into the CMP as it is developed:

**Dust Management and Air Quality Monitoring:**

Per Commonwealth of Massachusetts DEP Requirements and Guidelines, The contractor will be required to develop a final CMP plan that will define the measures to be taken to minimize air quality impacts. Best management practices will be required to be implemented through the contract documents and methodologies for meeting performance standard will be set out in the formal submittals from the contractor under the CMP. Such measures could include such things as keeping exposed soil surfaces treated or wet, covering soil piles and providing enclosed areas for fine materials that could easily be entrained into the air. Said plan should also examine the options to provide short term fence line monitoring for PM10 along the boundary with the nearest residential area and should consider the migration of toxics into the air from soil, specifically PCBs and fugitive dust. Landside supplies of unconsolidated materials will be covered when not in use. Dust suppression and control measures will be implemented as needed and base on air quality monitoring results and the weather. The Dust, Odor, Construction and Demolition standard of 310 CMR 7.09 will be followed.

This citation contains several requirements applicable to this project including;

- A requirements that any work be performed in a manner so as to prevent or minimize the creation of dust or odor including use of measures designed to prevent dust such as seeding, covering, paving or wetting soil surfaces.

- A requirement that no person shall handle, transport or store materials in manner that would create dust or odor.

#### Diesel Engines:

Any stationary emergency or standby engine installed at the site shall comply with the requirements of 310 CMR 7.02(8)(i) and 310 CMR 7.26(40) and (44) as applicable. Any engine that is mobile in nature shall comply with federal standards with regards to limitation on the sulfur content of fuel.

Construction equipment used for this project shall comply with federal off road diesel emission standards including the use of ultra low sulfur diesel fuel (15 ppm sulfur content) in all diesel engine powered equipment. All equipment shall meet the Tier1-3 emission standards for off-road diesel equipment and to the extent practicable; all diesel powered equipment shall meet the Tier 4 emission standards (the final deadline for which is 2015), per 40 CFR Part 89.

Contractors will be encouraged to use diesel oxidation catalyst retro-fitted vehicles and equipment, and project will be directed to DEP for retrofitting guidance.

The regulations also require specific opacity limits, based on equipment type.. The regulation states that no person who owns operates or controls a marine vessel, spark-ignited internal combustion engine or non-stationary diesel engine shall cause, suffer, allow or permit visible emissions including smoke, 310 CMR 7.06.

To the extent any activities may include Groundwater/ Soil venting systems, Conveyors and dry material storage silos, and rock crushing/processing as part of the construction or reconstruction of the site, they shall comply with the requirements of 310 CMR 7.03.

#### Air Quality:

An air monitoring program will be conducted throughout the construction process. Appropriate measures such as proper dust suppression measures will be implemented during construction activities to prevent excessive emissions of particulate matter. Four air monitoring stations will be established around the NBMCT construction project site. Daily measurements of particulate matter (dust particles) in the air will be taken and evaluated. The results will be measured in micrograms of particle per cubic meter and will be augmented with the meteorological (MET) results for the average wind speed and direction.

We propose to use the same criteria and coding system as used for the Aerovox demolition project to determine the level of mitigation action. Using this system, information will be made

available to the surrounding communities and presented in a format that will likely be familiar to those community members concerned about air quality or interested in the data.

CONTAMINANT RESULT / STATUS	CONTAMINANT CONCENTRATION	WHAT HAPPENS NEXT	WHAT YOU SHOULD DO
Particulate Matter are either not detected or below project specific action levels.	<100 ug/m3	Work continues as anticipated.	No additional protective action necessary.
The PM levels were below EPA's NAAQs* but above more stringent project specific action levels.	100- 149 ug/m3	Work crews at the site increased dust suppression and control measures to address site specific dust to ensure that work could continue.	No additional protective action necessary. Note: project action levels trigger additional dust controls well before air quality conditions become unhealthy to those working and living near the project.
The PM levels were above EPA's NAAQs* for Air Quality	>150 ug/m3	Work at the site may have been suspended to identify and control site-specific dust before work continued.	No additional protective action necessary. Note: elevated concentrations of PM may be the result of sources unrelated to the work at the NBMCT. See EPA's Air Quality Index (AQI) data for area-specific information.
Emergency at the site or PM levels above OSHA's permissible exposure limits (PEL)**	> 500 ug/m3 or Site Emergency	Work stops. Officials will work with residents/property owner(s) to either evacuate or stay in place until the situation is controlled.	Stay away from the the NBMCT Site. If you live nearby shut your windows and listen to emergency officials for possible evacuation instructions.

Table information from:  
<http://www.epa.gov/nbh/aerovox/index.html#AirDataResultsDuringDemolition>

Noise:

310 CMR 7.10 applies to construction and demolition equipment which characteristically emit sound but which may be fitted with equipment including mufflers and enclosures to surpass sound or may be operated in a manner so as to limit sound to periods of the day when it will not be disruptive to the public. The owner/ operators of the project and their consultant should develop a sound management plan to define the construction noise sources and the

mitigation measures to be taken to minimize sound impact from those sources. The plan should cover all aspects of the construction and demolition project including equipment that may not be able to be fitted with noise suppression and should propose time of day limitations for said equipment. To minimize noise impacts to the surrounding community to the extent practicable, measurements will be collected daily for noise along the property boundary (which is currently assumed to represent the worst-case exposure to an adjacent receptor for noise pollution. The maximum noise level that will be acceptable is equivalent to the maximum 8 hour exposure limits as stipulated within 29 CFR 1910.95(b)(2), which is 90 dBA for an 8 hour day. Therefore, the maximum noise level at the property boundary will be 90 dBA as measured at the property. It is the Commonwealth's understanding that this level will be enforced during daytime hours, and that work on land is not currently anticipated except during daytime hours. It is also the Commonwealth's understanding that the 90 dBA level is consistent with the noise ordinance levels as stipulated within the City of New Bedford.

### **Section 3: Responses to USEPA email dated May 25, 2012**

**Question:** At our meeting earlier in the week, we discussed questions that the Region has about the timeline for the terminal development. I wanted to draw to your attention a statement at the top of page 26 of MassDEP's January 18, 2012 submission. Specifically, in the discussion of site control/site availability, which is one of the practicability criteria used to screen various alternatives, MassDEP states that in order for a facility to be practicable, it must be able to be utilized no later than late summer, 2012. When you clarify the timeline in light of the questions we have already posed, it would be helpful to clarify this statement as well.

**Response:** Due to additional information received since the January 18, 2012 submittal, the statement referred to by EPA is no longer applicable. Please see the Commonwealth's responses related to Timeline associated with Questions from EPA's May 21, 2012 letter for additional information on this topic.

### **Section 4: Responses to USEPA Memorandum dated May 29, 2012**

- 1. Question:** The Tetra-Tech report that evaluated alternative sites (appendix 2 of current submission) considered several options in Boston, not just the one that's discussed in the submission (Dry Dock #4). One of them, the Coastal Oil site, was 35 acres with a former berth with water depth of 34 feet. It's not clear why this site was rejected. Can Apex explain?

**Response:** Although the Coastal Oil site does not share the Total Wharf and Yard Upland Area restriction of Dry Dock #4, the Coastal Oil site shares the following restrictions with Dry Dock #4 (as well as other potential sites in Boston Harbor):

**Jack-Up Barge Access:** Similar to Dry Dock #4, the presence of Boston Blue Clay (a relatively soft and potentially unsteady surface) below the jack-up barges has the potential for minor to extremely damaging accidents. Thus, the presence of the Boston Blue Clay results in the inability to utilize jack-up barges in Boston Harbor, making it infeasible to site the facility at Coastal Oil site in Boston Harbor. Please also see the Commonwealth's responses to Questions 3E and 3F to EPA's May 21, 2012 letter for additional information regarding this issue.

**Overhead Clearance:** The Coastal Oil site is located directly along the flight path from one of the main landing strips to Logan Airport from the south. Installation vessels would be unable to exit and enter Boston Harbor except by directly crossing the airspace associated with that same landing strip. In order for the facility to be practicable for full assembly on land and the use of larger turbines, no overhead restrictions lower than 250 feet can be present either at the facility, or in the approach to the facility by water. It is clear that the Coastal Oil site for offshore renewable energy support would represent a Determination of Hazard or a Determination of Presumed Hazard to air traffic, based upon the FAA's previous history of determinations, as outlined above.

**Proximity:** The Port of Boston is located a significant distance from the anticipated construction locations for Off-Shore Wind facilities, which will make it logistically infeasible to site an off-shore wind support facility. Boston is located 130 nautical miles from Nantucket Sound (a potential location for the Cape Wind Off-Shore Wind development) as opposed to 75 miles for Fall River, 70 miles for Quonset and 45 miles for New Bedford. Boston is located 295 miles from the proposed Deepwater Wind construction location off of the coast of Rhode Island, as opposed to 45 miles for Fall River, 50 miles for New Bedford, and 35 miles for Quonset. An analysis of the feasibility of utilizing Dry Dock #4 can be found within Appendix 8 of the Commonwealth's January 18, 2012 submission. The conclusions of this analysis were that it is infeasible that Dry Dock #4 can be utilized as an off-shore wind energy support facility due to its proximity to the anticipated future locations of off-shore wind developments. The Coastal Oil site is located in close proximity to the Dry Dock #4 site, and therefore this analysis is applicable to the Coastal Oil site as well.

**Ability to beneficially re-use sand:** Utilization of the Coastal Oil site as a staging point for reuse of CAD Material is infeasible as the location would require multiple handling, and would require transportation a great distance from the generation point (CAD Cells within New Bedford Harbor).

- 2. Question:** The recent submission states (p. 311) that the acreage of subtidal fill has been reduced from 4.73 acres (in the 2010 submission) to 4.06 acres, a net reduction of 0.67 acres. The reduction is achieved through changes to the bulkhead alignment and design. I would like to better understand the nature of the offset for the fendering system and how, and the extent to which, that contributes to a reduction in fill. In addition, the reduction comes in part from changing the perimeter of the bulkhead from solid fill to a pile supported apron at the edge. What is the proposed spacing of the piles and what is the basis for asserting that it will not have the same effect as fill? Were impacts associated with the pile structure included at all in the description of overall impacts?

**Response:** The Commonwealth indicated within its January 18, 2012 submission that the 0.67 acres that will no longer be completely filled in association with its re-design would only be impacted by dredging. However, as EPA notes, there will be additional impacts to this area, rather than just dredging. The area will be impacted in the following ways:

- The area will be dredged to a slope that will range in depths from between -5 MLLW to -14 MLLW on the southern side of the dredge footprint to between -25 MLLW to -32 MLLW on the northern side of the dredge footprint.
- The area will be protected from propeller wash via the installation of a concrete blanket, which will cover the surface with a rip-rap type material.
- The area will have piling within it, which will support a deck above. The pilings will be located on approximately a 16 foot by 16 foot grid. The piling diameters range from 24 inches to 36 inches in diameter. The deck will shade the area at most times of the day, resulting in significantly lower penetration of sunlight into the water column than in other areas of New Bedford Harbor.
- The area will be impacted by the transit of vessels to and from the proposed terminal.

The overall description of impacts (summarized at the beginning of this document) have been updated to reflect the impacts associated with these 0.67 acres.

- 3. Question:** Will a more detailed physical description of the proposed project, including mitigation? Is it possible to provide engineering plans and elevations with cross sections for all project features, as well as detailed planting, invasive species management and monitoring plans.

**Response:** Engineering plans and cross-sections are attached as **Attachment A**. An Invasive Species Management Plan is attached as **Attachment P**.

- 4. Question:** Could you clarify that after activities to support the wind industry are completed, asphalt or concrete will not be installed to support non-wind industry use. Pages 26 indicates container shipping, roll-on/roll-off and parking need level asphalt or concrete surfaces; p. 68 says there are no future plans for asphalt or concrete surfaces for this use and that areas will be regarded with gravel. Page 248 supports the conclusion on p. 68.

**Response:** Since the January 18, 2012 submission, the Commonwealth has refined the type of aggregate that it intends to utilize for final grading at the New Bedford Marine Commerce Terminal. Instead of crushed stone, as previously indicated, the Commonwealth plans to utilize Dense Graded Aggregate, which includes a mixture of gradations of aggregates. Although Dense Graded Aggregate will reduce infiltration at the site slightly, it will allow a larger variety of wheeled vehicles to utilize the site without the need for paving. As a result, the final surface of the facility is currently anticipated to remain unpaved.

- 5. Question:** It would be helpful to clarify how the upland portion of the facility is being addressed. Will this be a 21E cleanup or is this area within the scope of the South Terminal Project. For instance, two soil samples from the upland area failed TCLP for lead. (Also failed in two other areas but the State had made a determination that the coal ash exemption applies.) If the soil containing these lead concentrations is not excavated, Superfund may require a hazardous waste cap. (p. 101)

**Response:** The Commonwealth intends to meet ARARs associated with site cleanup, the two most applicable of which are the Massachusetts Contingency Plan and TSCA. Therefore, the Commonwealth intends to meet the relevant statutory requirements of each of these standards, and intends to prepare appropriate documentation to meet these standards. The Commonwealth had previously anticipated that the soil impacted with lead could be handled under the coal ash exemption of the Massachusetts Contingency Plan, due to visual evidence of coal ash at the location of the sample that failed TCLP for lead. The Commonwealth is currently looking into the details of this issue. Although the Commonwealth's plans (**Attachment A**) do not currently show the lead-impacted area to be excavated and disposed of offsite, the Commonwealth plans to work with EPA to update its

plans to reflect excavation and offsite disposal of areas that have failed for TCLP (if required) between the EPA's Draft Decision and its Final Decision.

**6. Question:** Please clarify whether or not the bulkhead will contain weepholes. Page 238: As mitigation for impacts to wetland principal functions, weepholes within the sheet piling will allow groundwater to flow into the Harbor and will also allow hydrostatic forces built up via tidal intrusion into the upland area to flow back out into the Harbor. Page 253: The area immediately behind the bulkhead will be utilized as a final storage location for stormwater. This area will not yet have weepholes installed, and therefore, detention for the stormwater behind the sheetpile wall will allow suspended sediment to settle out prior to its percolation or discharge (if necessary).

**Response:** Since the January 18, 2012 submission, the Commonwealth has determined that the bulkhead will not contain weepholes.