

**FISH DETERRENT SYSTEM
FIELD INSPECTION and SURVEY REPORT:
WEEK OF 4/3/2013-4/9/2013**

**In Accordance With The:
FISH DETERRENT PLAN**

**New Bedford Marine Commerce Terminal,
New Bedford South Terminal, New Bedford, MA**



Prepared on behalf of:



Massachusetts Clean Energy Center
as Part of Regulatory Compliance

Prepared by:



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**OPERATIONS REPORT:
REGULATORY COMPLIANCE ACTIVITIES
OR-RC-FDP-FISR01-040913**

Version: 01

Date: 4/9/13

Fish Deterrent System

Field Inspection and Survey Report

Week: 04-3-13 through 04-09-13
New Bedford Marine Commerce Terminal (NBMCT)

This Field Inspection and Survey Report was prepared as part of the implementation of the “Fish Deterrent Plan”, which is part of “Water Quality Performance Standards” for the NBMCT (South Terminal Project) referenced in the USEPA “EPA Final Determination for the South Terminal Project” (November, 2012).

1. Introduction:

The Water Quality Standards included in the USEPA Final Determination for the South Terminal Project includes a “Fish Deterrent Plan” (FDP) that describes fish deterrent activities and fish barrier systems that the project proponent (the Commonwealth of Massachusetts) agreed to install and operate (in certain portions of the Harbor) in order to reduce the potential impact to fish (i.e. a “Fish Deterrent System,” or FDS). The FDP indicates that fish deterrent activities shall be conducted during the period from January 15 through June 15 of any year if there is to be construction related to the New Bedford Marine Commerce Terminal (NBMCT) during that period in those areas. The purpose of the FDS is “to reduce the impact to fish by excluding them from a proposed area”; in this case the work areas associated with the construction of CAD Cell #3 and the area around the proposed South Terminal bulkhead extension and berthing channel at the NBMCT. The deployment and operation of the Fish Deterrent System (FDS) is to take place between January 15 and June 15 of any year within areas shallower than –5 meters MLLW if any work that could disrupt spawning or other activities associated with certain fish species is undertaken. The FDP also calls for regular weekly inspections of the system and an assessment as to the presence or absence of fish within the FDS work areas, coupled with actions that should be taken to remove fish from the FDS work areas if they are encountered (using a “Fish Startle System”).

This Field Inspection Report represents the twelfth Report associated with the installation, inspections, and maintenance of the “Fish Deterrent System” that has been deployed in New Bedford Harbor to meet the 2013 Water Quality Performance Standards in the EPA Final Determination for this Project. This twelfth Report for the Fish Deterrent Plan activities includes:

- Field Inspection Form for the Fish Monitoring Survey undertaken during the week of April 3, through April 9, 2013; including Fish Startle Activities undertaken; and
- Field Inspection Form for the weekly inspection of the Fish Deterrent System for the week of April 3, through April 9, 2013; and
- Field Maintenance Form for activities that have been undertaken to maintain and improve the FDS system during the week of April 3, through April 9, 2013.

Form : **FDS-FIF-02**
Inspection Completion
Date: 4/06

NBMCT
SOUTH TERMINAL
CONSTRUCTION
MONITORING SURVEY
FORM (MSF)



Doc #: RCF-FDS-04

Location of Inspection:

- CAD Cell
- S. Terminal Area
- Other

Work Performed:

- Standard Weekly Inspection
- Special Inspection:

Personnel:

- Jonathan Potts
- David Cangarl
- Ryan Dahlberg
- Scott Magilton
- Ward McIntyre

Description of Inspection Work Performed Today (List any activities associated with work inspection):

Transect surveys are performed via a towed video sled system, outfitted with laser pointers and variable lighting, in addition to SCUBA . divers outfitted with an underwater propulsion system. Two SCUBA transects are performed at each lsurvey ocation, to verify the towed video system findings. All SCUBA operations utilized a wrist mounted compass to enhance diver navigation and vulcanized rubber dry suits with AGA full face masks to deter any possible exposure to sediment and water column contaminants. The towed video system is manufactured by Shark Marine and consists of an SV-HDV-LAPTOP service console, SV-16HR Color Underwater Camera, 250W/120V Underwater Light, and a laser scaling unit.

Tasks Completed:

CAD Cell #3 Area

Monitoring Survey: ~~Yes~~ / No
Sonar: ~~Yes~~ / No Video: ~~Yes~~ / No

South Terminal Area

Monitoring Survey: ~~Yes~~ / No
Sonar: ~~Yes~~ / No Video: ~~Yes~~ / No

Results of Inspection (CAD Cell Area):

1. Flat Fish Observations:

- None Encountered
- Flat Fish Encountered (please note # below)
__0__ Number of Individuals
__0__ Number of Schools (3 or more fish)

2. Fin Fish Observations:

- None Encountered
- Fin Fish Encountered (please note # below)
__0__ Number of Individuals
__0__ Number of Schools (3 or more fish)

Results of Inspection (South Terminal Area):

3. Flat Fish Observations:

- None Encountered
- Flat Fish Encountered (please note # below)
__0__ Number of Individuals
__0__ Number of Schools (3 or more fish)

4. Fin Fish Observations:

- None Encountered
- Fin Fish Encountered (pleasnote # below)
__0__ Number of Individuals
__0__ Number of Schools (3 or more fish)

Fish Removal Activities (CAD Cell Area):

No Action Required = No Fish Detected (during inspection)

Fish Startle System:

Light Bar:

Sound System:

Tactile System:

Other: (Description:_____)

(Description of Fish Startle Activities Undertaken):_____

Other:

(Description):_____

Fish Removal Activities (S. Terminal Area):

No Action Required = No Fish Detected (during inspection)

Fish Startle System

Light Bar:

Sound System:

Tactile System:

Other: (Description:_____)

(Description of Fish Startle Activities Undertaken):_____

Other:

(Description):_____

Recommendations

Recs. to Improve Survey Methodology (CAD Cell / South Terminal [circle one/both]):
(Description)

This week's survey operations utilized an underwater propulsion vehicle enabling the SCUBA diver to quickly navigate the anchor and buoy lines associated with the various curtain and weir systems and enhancing survey operations. In addition, wireless underwater communications will be added to future survey operations to enhance the survey team's notation ability.

Recs. to Improve Service System (CAD Cell / South Terminal [circle one/both])
(Description)

Recs. to Improve General System Performance (CAD Cell / South Terminal [circle one/both]) (Description)

Other (Description)

Form : FDS-FIF-03

Date: 4/09/13

Doc #: RCF-FDS-03

NBMCT SOUTH TERMINAL CONSTRUCTION FIELD INSPECTION FORM (FIF)



Location of Inspection:

- CAD Cell
- S. Terminal Area
- Other

Work Performed:

- Weekly Inspection Silt Barrier
- Weekly Inspection Fish Weir
- Special Inspection:

Personnel:

Josh Ray
Chris Stillman
Jeff Frishman

Description of Inspection Work Performed Today (List any activities associated with work inspection):

Completed field inspection of South Terminal and CAD Cell #3 exclusion area's fish weir and silt barrier using a pole mounted underwater camera with a remote display on board the survey vessel. The survey vessel navigated along the length of fish deterrent system looking for damages to anchor lines, silt barrier brackets, and silt barrier sewn grommets. The vessel navigated along the fish weir as inspectors looked for anchor tears, tightness (which affects weir height), and bottom chain/weir separation. Anchors have dragged on the East side of CAD #3 leading to minor misalignment of the silt curtain within the fish exclusion area. At the South Terminal area, the section nearest to bulkhead was proving to cause access issues to existing channels.

Tasks Completed:

CAD Cell #3 Area

- Weir Inspection
- Silt Barrier Inspection

South Terminal Area

- Weir Inspection
- Silt Barrier Inspection

Silt Barrier and Weir Inspection:

CAD Cell #3 Area

Section#	G	S	L	C	A	W	D	Section#	G	S	L	C	A	W	D
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26	<input checked="" type="checkbox"/>	<input type="checkbox"/>										

G= Good S=Split Seam L=Lifted From Bottom C=Cut / Ripped A=Anchor Lost
W=Weir Misaligned / Damaged D=Anchor Dragged

South Terminal Area

Section#	G	S	L	C	A	W	D	Section#	G	S	L	C	A	W	D
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
9	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
10	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
11	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
12	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
13	<input checked="" type="checkbox"/>	<input type="checkbox"/>													

**G= Good S=Split Seam L=Lifted From Bottom C=Cut / Ripped A=Anchor Lost
W=Weir Misaligned / Damaged D=Anchor Dragged**

Recommendations

Recs. to Improve Survey Methodology (**CAD Cell / South Terminal** [circle one/both]): (Description)

Recs. to Improve Service / System (**CAD Cell / South Terminal** [circle one/both]): (Description)

Future replacement sections of Silt Barrier are to include a 2' strip of geotextile installed below the upper floatation with greater permeability to reduce the effect of wind lift and thereby reduce maintenance requirements. Suggested that at South Terminal the bubble curtain is extended and Silt Barrier cinched near bulkhead to allow for easier access to existing channels.

Recs. to Improve General System Performance (**CAD Cell / South Terminal** [circle one/both]): (Description)

None

Other (Description) _____

Form : FDS-FMF-01

Date: 4/09/2013

NBMCT
SOUTH TERMINAL
CONSTRUCTION
FIELD MAINTENANCE FORM
(FMF)



Doc #: RCF-FDS-02

Location of Maintenance:

- CAD Cell
- S. Terminal Area
- Other

Work Performed:

- Silt Barrier Maintenance
- Fish Weir Maintenance:
- Bubble Curtain Maintenance:

Personnel:

Josh Ray
Chris Stillman
Jeff Frishman

Description of Maintenance Work Performed During this Maintenance Period (List any activities associated with maintenance):

Realigned Silt Curtain sections at the East side of CAD Cell #3 fish exclusion area. Removed all interior 22lb and 50lb danforth and mushroom anchors at CAD Cell #3 fish exclusion area. These anchors were replaced with 20 700lb train wheels to prevent any dragging of system. The South Terminal curtain was cinched 150 feet and that section was replaced by extending the bubble barrier that 150 foot distance to allow for additional access to existing channels.

Tasks Completed:

CAD Cell #3 Area

- Weir Realignment / Maintenance
- Silt Barrier Realignment/ Maintenance
- Anchor Alignment / Maintenance

South Terminal Area

- Weir Realignment / Maintenance
- Silt Barrier Realignment/ Maintenance
- Anchor Alignment / Maintenance
- Bubble Curtain Maintenance

Summary of Maintenance Performed (Cad Cell #3 Area):

__ Removed dragged anchors from inside of silt curtain at CAD #3 area. Reset the Northeast gate section, and 20 train wheels were installed to replace all removed interior anchors to enhance holding power and prevent dragging of system.

Summary of Maintenance Performed (South Terminal Area):

_The air compressor replaced during the previous week's maintenance period is still operating normally. The bubble curtain has been extended by 150 feet to allow for easier access to existing channels. The bubble systems operated normally throughout the maintenance activities.

Silt Barrier and Weir Maintenance:

CAD Cell #3 Area

Section#	S	B	R	A	W	P	Section#	S	B	R	A	W	P
1	<input type="checkbox"/>	14	<input type="checkbox"/>										
2	<input type="checkbox"/>	15	<input type="checkbox"/>										
3	<input type="checkbox"/>	16	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
4	<input type="checkbox"/>	17	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
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11	<input type="checkbox"/>	24	<input type="checkbox"/>										
12	<input type="checkbox"/>	25	<input type="checkbox"/>										
13	<input type="checkbox"/>	26	<input type="checkbox"/>										

**S=Seam Laced B=Ballast Added/Corrected R=Repaired/Replaced A=Anchor Added
W=Weir Repaired / Realigned P=Dragged Anchor Placed in Correct Location**

South Terminal Area

Section#	S	B	R	A	W	P	Section#	S	B	R	A	W	P
1	<input type="checkbox"/>	14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>	15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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4	<input type="checkbox"/>	17	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>	18	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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