FISH DETERRENT SYSTEM
FIELD INSPECTION and SURVEY REPORT:
WEEK OF 3/27/2013-4/2/2013

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-FISR01-040213

Version: _01_

Date:__4/2/13___

SDMS Doc ID 547243

Fish Deterrent System
Field Inspection and Survey Report
Week: 03-27-13 through 04-02-13
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 eleventh 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 eleventh Report for the Fish Deterrent Plan activities includes:

- Field Inspection Form for the Fish Monitoring Survey undertaken during the week of March 27, through April 2, 2013; including Fish Startle Activities undertaken; and
- Field Inspection Form for the weekly inspection of the Fish Deterrent System for the week of March 27, through April 2, 2013; and
- Field Maintenance Form for activities that have been undertaken to maintain and improve the FDS system during the week of March 27, through April 2, 2013.

Form : FDS-FIF-02

Inspection Completion

Date: 3/27

Doc #: RCF-FDS-04

NBMCT
SOUTH TERMINAL CONSTRUCTION MONITORING SURVEY FORM (MSF)

APEX

Location of Inspection:

[x] CAD Cell
[x] S. Terminal Area
[ ] Other

Work Performed:

[x] 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. The towed system is primarily utilized at the CAD Cell location, however, in addition to the towed video system transects, two SCUBA transects are also performed at the CAD Cell location to verify the towed video system findings. The CAD Cell location has limited amounts of debris and a depth which stays relatively constant. The South Terminal location, has variable depths and contains a significant amount of marine debris. As a result, the conditions found at the South Terminal inhibit towed video system operations. One hundred percent of the transects performed in the South Terminal location are performed via SCUBA operations. 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:

[x] None Encountered
[ ] Flat Fish Encountered (please note # below)
0 Number of Individuals
0 Number of Schools (3 or more fish)

2. Fin Fish Observations:

[x] 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:

[x] None Encountered
[ ] Flat Fish Encountered (please note # below)
0 Number of Individuals
0 Number of Schools (3 or more fish)

4. Fin Fish Observations:

[x] None Encountered
[ ] Fin Fish Encountered (please note # below)
0 Number of Individuals
0 Number of Schools (3 or more fish)

Fish Removal Activities (CAD Cell Area):

[x] No Action Required = No Fish Detected (during inspection)
[ ] Fish Startle System:
  [ ] Light Bar:
  [ ] Sound System:
  [ ] Tactile System:
  [ ] Other: (Description:_____)
  (Description of Fish Startle Activites Undertaken):_____
  _____
  _____

[ ] Other:
  (Description):_____
  _____

Fish Removal Activities (S. Terminal Area):

[x] No Action Required = No Fish Detected (during inspection)
[ ] Fish Startle System
  [ ] Light Bar:
  [ ] Sound System:
  [ ] Tactile System:
  [ ] Other: (Description:_____)
  (Description of Fish Startle Activites Undertaken):_____
_____
  _____

[ ] Other:
  (Description):_____
  _____
  _____

Recommendations

[x] 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)

[x] Other (Description)

Only one SCUBA transect was performed at the CAD Cell Location. This was due to diver safety concerns, associated with barge and vessel curtain maintenance activities, ongoing within the CAD Cell at the time of survey operations.

Form : FDS-FIF-03 Date: ___4/02/13_____ Doc #: RCF-FDS-03	**NBMCT** **SOUTH TERMINAL CONSTRUCTION FIELD INSPECTION FORM (FIF)**	APEX

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 West side of CAD #3 leading to minor misalignment of the silt curtain within the fish exclusion area. Minor misalignment of the fish weir in the CAD #3 fish exclusion area. One of the two bubble curtains was found to be producing a slightly less dense curtain of bubbles than the adjacent curtain at the South Terminal fish exclusion area.

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	☒	☐	☐	☐	☐	☐	☐	14	☒	☐	☐	☐	☐	☐	☐
2	☒	☐	☐	☐	☐	☐	☐	15	☒	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☒	☒	16	☐	☐	☐	☐	☐	☒	☐
4	☐	☐	☐	☐	☐	☒	☒	17	☐	☐	☐	☐	☐	☒	☐
5	☐	☐	☐	☐	☐	☐	☒	18	☐	☐	☐	☐	☐	☒	☐
6	☐	☐	☐	☐	☐	☐	☒	19	☒	☐	☐	☐	☐	☐	☐
7	☐	☐	☐	☐	☐	☐	☒	20	☒	☐	☐	☐	☐	☐	☐
8	☐	☐	☐	☐	☐	☐	☒	21	☐	☐	☐	☐	☐	☒	☐
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11	☒	☐	☐	☐	☐	☐	☐	24	☒	☐	☐	☐	☐	☐	☐
12	☒	☐	☐	☐	☐	☐	☐	25	☒	☐	☐	☐	☐	☐	☐
13	☒	☐	☐	☐	☐	☐	☐	26	☒	☐	☐	☐	☐	☐	☐

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	☒	☐	☐	☐	☐	☐	☐	14	☒	☐	☐	☐	☐	☐	☐
2	☒	☐	☐	☐	☐	☐	☐	15	☒	☐	☐	☐	☐	☐	☐
3	☒	☐	☐	☐	☐	☐	☐	16	☒	☐	☐	☐	☐	☐	☐
4	☒	☐	☐	☐	☐	☐	☐	17	☐	☐	☐	☒	☐	☐	☐
5	☒	☐	☐	☐	☐	☐	☐	18	☐	☐	☐	☒	☐	☐	☐
6	☒	☐	☐	☐	☐	☐	☐								
7	☒	☐	☐	☐	☐	☐	☐								
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9	☒	☐	☐	☐	☐	☐	☐								
10	☒	☐	☐	☐	☐	☐	☐								
11	☒	☐	☐	☐	☐	☐	☐								
12	☒	☐	☐	☐	☐	☐	☐								
13	☒	☐	☐	☐	☐	☐	☐								

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.

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

None

☐ Other
(Description)_____
_____
_____
_____
_____

Form : FDS-FMF-01

Date: ____4/02/2013____

Doc #: RCF-FDS-02

NBMCT
SOUTH TERMINAL CONSTRUCTION FIELD MAINTENANCE FORM (FMF)

APEX

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 west side of CAD Cell #3 fish exclusion area. Removed, Reset, and tightened line of dragged anchors at CAD Cell #3 fish exclusion area. Realigned multiple sections of fish weir at the CAD #3 fish exclusion area. Maintenance performed on air compressors running bubble curtains.

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 West side of silt curtain at misaligned CAD #3 areas. Reset south west corner train wheel anchor with barge mounted crane. Realigned silt curtain sections at CAD Cell #3 fish exclusion areas. Once corner anchors were reset, the anchors were reset along the western side, and tightened. Short sections of the fish weir on the west, north, and east faces of the polygon were realigned.

Summary of Maintenance Performed (South Terminal Area):

_The air compressor replaced during the previous week's maintenance period is operating normally. The second compressor was showing similar signs of wear as the previously replaced compressor. Manufacturer certified technicians returned to find this compressor in need of radiator servicing. Back-up compressor (3rd compressor on site) utilized for interim. Compressor brought back to site on 3/28/13 and reattached to site fuel supply. 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	☐	☐	☐	☐	☐	☐	14	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	15	☐	☐	☐	☐	☐	☐
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11	☐	☐	☐	☐	☐	☐	24	☐	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐	☐	25	☐	☐	☐	☐	☐	☐
13	☐	☐	☐	☐	☐	☐	26	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐	14	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	15	☐	☐	☐	☐	☐	☐
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12	☐	☐	☐	☐	☐	☐							
13	☐	☐	☐	☐	☐	☐							

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W=Weir Repaired / Realigned P=Dragged Anchor Placed in Correct Location