## Weekly Field Report Week: 12-08-13 through 12-14-13 New Bedford Harbor Lower Harbor CAD Cell (LHCC)

This Weekly Field Report was prepared to serve as a summary of field activities conducted throughout the week for Phase I dredging of the New Bedford Harbor Lower Harbor CAD Cell (LHCC) in New Bedford, Massachusetts.

#### 1. Introduction:

The weekly field report describes the activities carried out by the Contractor (Cashman/Tripp Marine), the Owner's Representative (Apex Companies, LLC), and any subcontractors completing work within the scope of the project requirements.

This Weekly Field Report represents the sixth Report associated with Phase I dredging of the LHCC in New Bedford Harbor, and the associated handling and disposal of dredged materials at CAD cells within the Harbor, and at designated open-water disposal sites approved for this Project.

This Sixth Report for the LHCC dredging activities includes:

- Daily Inspection Reports from the dredging oversight performed during the week of December 8<sup>th</sup> through December 14<sup>th</sup>. Daily contractor activities are included in the form of Daily Inspection Reports noting equipment observed on site and a summary of contractor activities. (See Attachment 1);
- Water Quality Monitoring Forms completed for the week of December 8<sup>th</sup> through December 14<sup>th</sup> are attached (Attachment 2). Included with the attached forms is Figure 1 *Lower Harbor CAD Cell Phase I Water Quality Monitoring Plan*, which shows the locations of the water quality monitoring events conducted during this reporting period. Per the approved Water Quality Monitoring Plan and associated performance standards for the dredging efforts being conducted during this reporting period Apex has;
  - Conducted water quality monitoring events a minimum of two days per week.
  - Conducted water quality monitoring for disposal events into either the existing CAD Cell #2 or CAD Cell #3 of Top of LHCC sediments removed by this Project.
  - Performed visual inspections of dredged materials in the disposal scow prior to disposal to ascertain the effectiveness of dewatering. If deemed necessary by the visual inspection, Apex will monitor the water quality of the effluent discharge from the carbon filtration system.

#### 2. Summary:

The Contractor, through its subcontractor, Tripp Marine, conducted dredging at the LHCC daily December 9<sup>th</sup> through the 14<sup>th</sup>. Dredging operations focused on the removal of Phase I Top of CAD cell sediments and the disposal of these sediments into CAD Cell #3. Dredging operations during this reporting period were conducted using a conventional digging bucket in certain areas of the dredge footprint where dense sandy materials were known to exist, per verbal approval discussed at the November 13<sup>th</sup> project meeting and the subsequent formal letters provided on November 21<sup>st</sup> and December 10<sup>th</sup>. Tripp Marine was observed conducting these activities during the authorized operational window of 7AM until sunset, utilizing a single dredge plant; the tug *Sand Pebble*; a 900 cubic yard dump scow – *TMC 140*; a 3000 cubic yard pocket scow SEI-2000, and a small utility boat. Tripp Marine was utilizing the Cashman dewatering barge as a staging area for dewatering operations and as an aid in accurately positioning the dump scow for disposal operations

into CAD Cell #3. Dredging operations were conducted without the use of silt curtains because these activities lie outside the time of year restrictions noted in the Project Specifications.

#### 3. Operational Notes:

#### **Dredging:**

Dredging at the LHCC continued through the week of December 8<sup>th</sup> utilizing an open conventional digging bucket in certain areas and per the terms outlined in the letters issued on November 21<sup>st</sup> and December 10<sup>th</sup>. Apex conducted three days of water quality monitoring while the open conventional bucket was being used in ensure that the use of the conventional bucket did not result in an exceedance of any project-specific water quality standards. Water quality monitoring was completed on the 9<sup>th</sup>, 11<sup>th</sup>, and 13<sup>th</sup> of December. Monitoring of dredging activities will continue on a schedule of a minimum of two events per week as required by the project performance standards.

#### Disposal:

Disposal of "Top of LHCC" sediments was conducted on December 9<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, and 14<sup>th</sup>. Based on scow logs, approximately 500 and 800 cubic yards of material (assuming 120 pounds/ft<sup>3</sup> for dredged materials) was placed into CAD Cell #3 during each disposal event for scow TMC-140 and SEI-2000, respectively. Sediments contained in the scow were inspected prior to each disposal to assess the effectiveness of dewatering. Water quality monitoring, required for each CAD Cell disposal event, was completed for each day of disposal activity.

Table 1 – Cumulative Dredging Progress

Period of Activity	Volume (cy)
Approximate Vol. Dredged this Reporting Period	3,300
Approximate Volume Dredged to Date	12,900

#### 4. Monitoring Summary

There were no water quality exceedances observed during this reporting period related to either dredging or disposal operations. No water quality samples were collected.

Prepared by:

Apex Companies, LLC

John B. McAllister, P.E. Senior Project Engineer

Don Boyé

Senior Project Manager

# Attachment 1 Daily Inspection Reports



			ın	spec	tion Report						
Inspector:	K. Ryan, C.	Stillman			-		Date:	09 Decem	ber 201	3	
Contractor:	Tripp Mari	ine			Foreman/Supt	:: Pyne	e Tripp				
Weather Tides	AM: PM:	Overcast wit Rain/Snow.	Winds 10	)-15k l	Temperatu E shifting NW 1305	<b>ire</b>	AM: PM:	30 42			
rides	High Low	063		-AIVI	1910	— PN					
Manpower O  Other:	nsite Foreman Operators Laborers Drivers	1@ 1@ 0	8 8	Hrs Hrs Hrs Hrs	<b>Equipment O</b> l Description:	_	Scow boat Sai Sup	e Tripp 47 TMC 140 nd Pebble port boat		8	
Contractor Ac	tivities: (Att	ach Additiona	al Sheets	as Ne	cessary)						
Apex on-site at C clearance for the recorded as 7' FN Dredging begins TMC-140. At 12: FWD/AFT. At 13: until 1615, at wh	e disposal of WD and 7.5' at 0926 usin 45 scow TM 856 scow SE nich point dr	materials int AFT. Scow T ng the open c C-140 is man I-2000 is mar raft marks on	o CAD Ce MC-140 i onventio euvered neuvered scow SEI	ell #3. is man onal di over t along -2000	Disposal occur neuvered into p gging bucket, w to dewatering b side dredge pla	es at 08 osition with droparge; oant and	341 with n alongs edged m draft ma	draft mark ide dredge naterials be orks are reco	s on the plant at ing place orded as	e scow 0920. ed into s 8.5'	scow
Problems/Issu None / N/A	ues or Action	n Items:									
Visitors:											
Signature: Title:	D. Boye				- -			09 Decem		3	
Copy to:	file				-		File:	DIR_LHCC	_120913	3	



Inspector:	C. Stillman	, M. Martii	nho		_		Date	: 10 Decem	ber 2013
Contractor:	Tripp Mari	ne			_Foreman/Sup	t: Pyne	e Tripp		
Weather	AM: PM:	Overcast Snow flur		g inds 5-15k	Temperati	ıre	AM: PM:	27 35	
Tides	High Low		136 829	AM AM	1404 2019	PN			
Manpower O	nsite				Equipment O	nsite			
Other:	Foreman Operators Laborers Drivers	1	@8 @8	B Hrs B Hrs Hrs	Description:	Push	Scow boat Sa Sup	e Tripp 47 7 TMC 140 nd Pebble pport boat v SEI 2000	Hrs8 Hrs8 Hrs8 Hrs8
Contractor Ac	tivities: (Att	ach Additi	onal Sh	eets as Ne	ecessary)				
begins at 0843 u At 1100 scow SE	e for the dis sing the ope I-2000 is ma MC-140 is m the placeme	sposal of men convent inuevered anuevered ent of addi	naterials ional di over to d to dev itional r	s into CAD igging buc dewateri watering baterials.	Cell #3. Scow ket, with dredg ng barge; mate arge. At 1345	SEI-20 ged ma rials w scow S	00 is agi terials b ere insp EI-2000	round upon being placed bected and c is manueve	erials in scow to arrival. Dredging I into scow TMC-140. cleared for disposal. ered back alongside
Problems/Issu None / N/A	ies or Actior	ı Items:							
Visitors:			-				·		
Signature: Title:	D. Boye				- -			: <u>10 Decem</u> :1of	
Copy to:	file				-		File	: DIR_LHCC	_121013



			111	spec	tion Report	•				
Inspector:	K. Ryan, K.	Milller					Date:	11 Decem	ber 2013	
Contractor:	Tripp Mari	ine			Foreman/Supt	t: Pyn	e Tripp			
Weather	AM: PM:	Clear to ptl	y. cloudy.	Winds	Temperatu s 10-15k W	ıre	AM: PM:	25 30		
Tides	High Low	02		AM AM	1505 2110	PN				
Manpower O	nsite				Equipment O	nsite				
Other:	Foreman Operators Laborers Drivers	1@ 1@	8	Hrs Hrs Hrs Hrs	Description:	Push	Scow boat Sar Sup	e Tripp 47 TMC 140 nd Pebble port boat v SEI 2000	Hrs8 Hrs8 Hrs8 Hrs8	3 3 3
Contractor Ac	tivities: (Att	ach Addition	nal Sheets	as Ne	cessarv)					
Apex on-site at 0 clearance for the at 0806, after wh digging bucket, v scow SEI-2000 in disposal. The discontinues until 1 No water quality	1730 to concedisposal of alich it is many with dredged to position sposal of dressel, at which which which which with the concentration of the concentration	duct oversight materials in meuvered aloo materials to materials to disposal edged mater the	nt of dredg nto CAD Ce ongside the peing place into CAD C rials held in draft mark	ging ac ell #3. e drec ed into Cell #3 n scow ks on s	ctivities and to Disposal of dredge. Dredging boscow TMC-14 . Apex confirm	edged begins O. Drons the urs at 1	material at 0938 edging is material 1405. Dr	s held in sc using the o paused at s in the sco redging resu	ow TMC-14 pen conven 1301 to ma w are clear umes at 143	10 occurs ntional neuver ed for 86 and
Problems/Issu None / N/A	ies or Actior	ı Items:								
Visitors:										
Signature: Title:	D. Boye							11 Decem 1of		1
Copy to:	file						File:	DIR_LHCC	_121113	,



					-						
Inspector:	M. Tumolo	)						Date:	12 Decem	ber 2013	<u> </u>
Contractor:	Tripp Mari	ine				Foreman/Supt	t: Pyn	e Tripp			
Weather Tides	AM: PM: High Low	Clear. Clear to	ptly. 0 0337 1031	cloudy.	Winds _AM _AM	<b>Temperatu</b> 5 5-15k WNW 1604 2148	ire Pi		10 28		
Manpower O	nsite					Equipment O	nsite				
Other:	Foreman Operators Laborers Drivers	1	_ @ _ @ _ @		Hrs Hrs Hrs Hrs	Description:	Push	Scow boat Sar Sup	e Tripp 47 TMC 140 and Pebble port boat V SEI 2000	Hrs Hrs Hrs Hrs	8 8 8
Contractor Ac	tivities: (Att	ach Addi	tional	Sheets	as Ne	cessary)					
Apex on-site at 0 clearance for the at 0725, after wh digging bucket, v point the draft m  No water quality	disposal of nich it is man vith dredged narks on sco	material neuvered d materia w TMC-1	ls into d along als beir .40 we	CAD Ce gside the ng place ere reco	ll #3. e drec ed into rded a	Disposal of dredge. Dredging boostons	edged begins 0. Dr	material at 0805 edging co	ls held in sc using the o	ow TMC- pen conv	-140 occurs ventional
Problems/Issu None / N/A	les or Action	n Items:									
Visitors:			_	_							
Signature: Title:	D. Boye								12 Decem		<u> </u>
Copy to:	file							File:	DIR_LHCC	_121213	_



			Шэрсс	Mon Report			
Inspector:	M. Tumolo	)		-	Date:	13 Decem	ber 2013
Contractor:	Tripp Mar	ine		Foreman/Supt	: Pyne Tripp		
Weather	AM: PM:	Overcast Overcast. Winds	10-15k gu	Temperatu sting higher W	re AM: PM:	14 30	
Tides	High Low	0435 1114	AM AM	1700 2223	PM PM		
Manpower O	nsite			Equipment O	nsite		
Other:	Foreman Operators Laborers Drivers	1@8 1@8 1@8 	Hrs Hrs Hrs	Description:	Scow Push boat Sar Sup	e Tripp 47 TMC 140 and Pebble oport boat v SEI 2000	Hrs8 Hrs8 Hrs8 Hrs8
Contractor Ac	tivities: (Att	tach Additional Sh	eets as Ne	ressary)			
Apex on-site at C clearance for the at 0804, after wh digging bucket, who point scow TMC-	0650 to cond disposal of nich it is ma with dredge -140 is man	duct oversight of o f materials into CA neuvered alongsio	dredging ac D Cell #3. de the drec placed into ewatering	ctivities and to Disposal of dre dge. Dredging b o scow TMC-14	edged materia egins at 0850 0. Dredging o	Is held in so using the o continued u	s in scow to provide cow TMC-140 occurs pen conventional until 1615, at which
Problems/Issu None / N/A	ues or Actio	n Items:					
Visitors:							
Signature: Title:	D. Boye			<del>.</del>		13 Decem	
Copy to:	file			-	File:	DIR_LHCC	_121313



Inspector:	M. Martinl	ho, K. Rya	an			-		Date:	14 Decem	ber 2013
Contractor:	Tripp Mar	ine				Foreman/Sup	t: Pyn	e Tripp		
Weather	AM: PM:	Overcas				Temperatu -10k NNE	ıre	AM: PM:	15 30	
Tides	High Low		0528 1150		AM AM	1749 2300	PN			
Manpower O	nsite					Equipment O	nsite			
Other:	Foreman Operators Laborers Drivers	11	_ @ _ @ _ @	_8		Description:	Push	Scow boat Sa Sup	e Tripp 47 7 TMC 140 and Pebble oport boat v SEI 2000	Hrs8 Hrs8 Hrs8 Hrs8
Contractor Ac	tivities: (Att	ach Addi	tional	Sheets	as Ne	cessary)				
clearance for the at 0740, after wl digging bucket, v	e disposal of nich it is ma with dredge 140 is mand T.	materia neuvered d materia euvered	ls into d along als beir over to	CAD Ce side th ng place dewat	ell #3. e dred ed into	Disposal of dro dge. Dredging b o scow TMC-14	edged pegins 0. D	materia at 0810 redging	Is held in so using the o continued u	s in scow to provide cow TMC-140 occurs pen conventional until 1443, at which TMC-140 were 10'
Problems/Issu None / N/A	ues or Action	n Items:								
Visitors:										
Signature: Title:	D. Boye					-			14 Decem	
Copy to:	file					-		File	DIR_LHCC	_121413

## Attachment 2 Water Quality Monitoring Forms

PROJECT:	New Bedford Harbor Lower Harbor CAD Cell
JOB NUMBER:	6724
SURVEY DATE:	09 December 2013
MONITORS:	K. Ryan, C. Stillman
WEATHER CONDITIONS:	Fog early. Rain/Snow. Temperatures 30F early increasing to 42F PM
WIND CONDITIONS:	Speed: 10-15k Direction: E shifting to NW PM
PRIOR STORM EVENTS:	N/A
DREDGE / SCOW Position	: Northing/Easting: CAD Cell #3
TYPE OF WATER QUALITY	Y MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal
TIDE INFORMATION:	High: 1237/1305 Low: 0630/1910
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO): N IF YES, ATTACH COC FORMS
GENERAL NOTES:	Disposal into CAD Cell #3 occurred at 0840.



DREDGE / SCOW Position									EX
TYPE OF WATER QUALIT					ing / Disposa	al		/A I-	<b>ハー X</b>
TIDE INFORMATION:		1237/1305		0630/1910				/ \1	
WAS WATER QUALITY SA GENERAL NOTES:	Disposal into CAD Ce			IF YES, ATTA	CH COC FOR	MS		-	
GENERAL NOTES.	Sand capping operation			Borrow Pit Site	e just south o	f the LHCC.			
					UP-CURRI	ENT			
					0. 00				
		т							
Manitoring ID #	NODTHING / FASTING	TIME	TOTAL WATER	SAMPLE	TURBIDITY	GPS FILE NAME	TIDAL STACE	RELATIVE POSITION	NUMBER OF HOURS
Monitoring ID #	NORTHING / EASTING	TIME	DEPTH (ft)	DEPTH (ft)	(NTUs)	GPS FILE NAME	TIDAL STAGE	OF MEASUREMENT	DREDGING
120012.00.1.1		0000	ī		4.5	_			
120913-00-1-1 120913-00-1-5.5	2695083 / 814119	0800 0802	11.5	1 5.5	1.5 3.4	-	Flooding tide	200' S of Disposal	0
120913-00-1-11	1	0804	1 11.5	11	4.3	1	3		
			AVERAGE	TURBIDITY:	3.07				
						_			
120913-01-1-1 120913-01-1-16.5	2695083 / 815054	0842 0844	22.0	1 16.5	1.3 3.2	-	Flooding tide	200' S of Disposal	post
120913-01-1-16.5	20000007 010004	0846	33.8	33	4.5	1	r looding tide	200 O oi Disposai	post
			AVERAGE		3.00	1			
	-		-		<b> </b>	-			
	-		-		1	-			
	1		AVERAGE	TURBIDITY:					
					•	-			
							•		
	-		-			-			
			AVERAGE 1	TI IDDINITY:					
			AVERAGE	TURBIDITT:		_			
			]						
	]		]			]			
			AVERAGE	TURBIDITY:		_			
					Down-Curi	rent			
		ī							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	DISTANCE FROM LOCATION	NUMBER OF HOURS DREDGING
120913-00-9-1		0807		1	2.7				
120913-00-9-3.5	2697208 / 814920	0809	7.3	3.5	2.7	]	Flooding tide	200' N of Disposal	0
120913-00-9-7		0811		7	2.8				
			AVERAGE		2.73	4			
			TURBIDITY	INCREASE:	-0.33	J			
120913-01-9-1		0917		1	5.9				
120913-01-9-2.5	2697082 / 815523	0919	5	2.5	6.7		Flooding tide	200' N of Disposal	post
120913-01-9-4.5		0921		4.5	9.8				
			AVERAGE		7.47 4.47	1			
			TURBIDITY	IINUKEASE:	4.4/	_			
	1								
	1	<u> </u>			ļ				
			AVERAGE TURBIDITY			1			
			ו וועוםאוטו	HYUNLAGE.	1	_			
	4		4			4			
	1	<u> </u>			ļ				
			AVERAGE TURBIDITY			1			
			IUKDIUITY	IIVUNEASE.	1	_			
	]		]			]			
	1	<u> </u>		<u> </u>					
				TURBIDITY:		4			
			TURBIDITY	INCREASE:					

\* Turbidity Increase = Down-Current Average Turbidity - Up-Current Average Turbidity

PROJECT:	New Bedford Harbor Lower Harbor CAD Cell
JOB NUMBER:	6724
SURVEY DATE:	09 December 2013
MONITORS:	K. Ryan, C. Stillman
WEATHER CONDITIONS:	Fog early. Rain/Snow. Temperatures 30F early increasing to 42F PM
WIND CONDITIONS:	Speed: 10-15k Direction: E shifting to NW PM
PRIOR STORM EVENTS:	N/A
DREDGE / SCOW Position	: Northing/Easting: 2696900 / 815080
TYPE OF WATER QUALITY	/ MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal
TIDE INFORMATION:	High: 1237/1305 Low: 0630/1910
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO): N IF YES, ATTACH COC FORMS
GENERAL NOTES:	Dredging begins at 0926 and ends for the day at 1615



					UP-CURRI	<u>ENT</u>			
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOURS DREDGING
120913-00-1-1 120913-00-1-6.5 120913-00-1-13	2696587 / 814732	0935 0937 0939	13.7	1 6.5 13	4.4 3.8 5.7		Flooding tide	200' S of Dredge	0
			AVERAGE T	URBIDITY:	4.63				
120913-02-1-1 120913-02-1-6.5 120913-02-1-13	2696416 / 814824	1134 1136 1138	13.7	1 6.5 13	2.8 3.2 3.8		Flooding tide	200' S of Dredge	2
			AVERAGE T	URBIDITY:	3.27				
120913-04-1-1 120913-04-1-4.5 120913-04-1-9	2697282 / 815006	1324 1326 1328	10.1	1 4.5 9	3 6.9 9		Ebbing	200' N of Dredge	4
	•	•	AVERAGE T	URBIDITY:	6.30	j			
120913-06-1-1 120913-06-1-3 120913-06-1-6	2697087 / 815156	1527 1529 1531	6.4	1 3 6	3.6 3.9 5.3		Ebbing	200' N of Dredge	6
			AVERAGE T	URBIDITY:	4.27				
	•		AVERAGE T	URBIDITY:	ĺ	Ī		•	

Monitoring ID #   NORTHING / EASTING   TIME   DEPTH (ft)   DEPTH (ft)   (NTUs)   GPS FILE NAME   TIDAL STAGE   LOCATION   DREDGING     120913-00-9-1			•			Down-Curi	rent			
20913-00-94   2697366   814972   0946   0948   8.1   4   4.2   8   5.2	Monitoring ID #	NORTHING / EASTING	TIME				GPS FILE NAME	TIDAL STAGE		NUMBER OF HOURS DREDGING
20913-00-9-8	120913-00-9-1		0944		1	3.5				
AVERAGE TURBIDITY: 4.30 TURBIDITY INCREASE: -0.33  20913-02-9-1 20913-02-9-5 20913-02-9-10 20913-02-	20913-00-9-4	2697366 / 814972	0946	8.1	4	4.2		Flooding tide	200' N of Dredge	0
TURBIDITY INCREASE: -0.33    20913-02-9-1	20913-00-9-8		0948		8	5.2				
20913-02-9-1				AVERAGE T	URBIDITY:	4.30				
20913-02-9-5				TURBIDITY I	NCREASE:	-0.33				
20913-02-9-10	20913-02-9-1		1141		1	3.2				
AVERAGE TURBIDITY: 6.77 TURBIDITY INCREASE: 3.50  20913-04-9-1 20913-04-9-5 20913-04-9-5 20913-04-9-10 1333 10.6 5 4.5 20913-04-9-10 1335 10.6 5 4.5 Ebbing 200'S of Dredge 4  AVERAGE TURBIDITY: 6.80 TURBIDITY INCREASE: 0.50  20913-06-9-1 2	20913-02-9-5	2697172 / 815037	1143	11	5	8.9		Flooding tide	200' N of Dredge	2
TURBIDITY INCREASE: 3.50    20913-04-9-1	20913-02-9-10		1145	][	10	8.2				
120913-04-9-1   2696484 / 815070   1331   1   3.2   Ebbing   200' S of Dredge   4				AVERAGE T	URBIDITY:	6.77				
120913-04-9-5   2696484 / 815070   1333   10.6   5   4.5   10   12.7				TURBIDITY I	NCREASE:	3.50				
20913-04-9-10	20913-04-9-1	1	1331		1	3.2				
AVERAGE TURBIDITY: 6.80 TURBIDITY INCREASE: 0.50  120913-06-9-1 120913-06-9-8 120913-06-9-8 120913-06-9-16 1536 16.8 8 6 16.6.6 1536 AVERAGE TURBIDITY: 5.77 TURBIDITY INCREASE: 1.50  AVERAGE TURBIDITY: 1.50  AVERAGE TURBIDITY: 1.50	120913-04-9-5	2696484 / 815070	1333	10.6	5	4.5	1	Ebbing	200' S of Dredge	4
TURBIDITY INCREASE: 0.50    120913-06-9-1	120913-04-9-10		1335		10	12.7				
120913-06-9-1				AVERAGE T	URBIDITY:	6.80				
120913-06-9-8 2696309 / 815229 1534 16.8 8 6 Ebbing 200' S of Dredge 6 120913-06-9-16 1536 16 6.6 AVERAGE TURBIDITY: 5.77 TURBIDITY INCREASE: 1.50				TURBIDITY I	NCREASE:	0.50				
1536   16   6.6	120913-06-9-1		1532		1	4.7				
AVERAGE TURBIDITY: 5.77 TURBIDITY INCREASE: 1.50  AVERAGE TURBIDITY:	120913-06-9-8	2696309 / 815229	1534	16.8	8	6	1	Ebbing	200' S of Dredge	6
TURBIDITY INCREASE: 1.50  AVERAGE TURBIDITY:	120913-06-9-16		1536	] [	16	6.6				
AVERAGE TURBIDITY:				AVERAGE T	URBIDITY:	5.77				
				TURBIDITY I	NCREASE:	1.50				
		T	I			Ι				
				]			]			
				<u>1</u>			<u> </u>			
TURBIDITY INCREASE:				AVERAGE T	URBIDITY:			·		
				TURBIDITY I	NCREASE:					

PROJECT:	New Bedford Harbor L	ower Harbor C	AD Cell		
JOB NUMBER:	6724				
SURVEY DATE:	11 December 2013				
MONITORS:	K. Ryan, K. Miller				
WEATHER CONDITIONS:	Ptly. cloudy, clearing.	Temperatures 2	25F AM increasing to 30F P	М	
WIND CONDITIONS:	Speed:	10-15k	Direction: W		
PRIOR STORM EVENTS:	N/A				
DREDGE / SCOW Position	: Northing/Easting:	CAD Cell #3			
TYPE OF WATER QUALITY	MONITORING EVENT:	TOP CAD Dred	dging / BTM CAD Dredging	g / Disposal	
TIDE INFORMATION:	High:	0237/1505	Low: 0938/2110		
WAS WATER QUALITY SA	MPLING PERFORMED?	YES/NO): N	IF YES, ATTACI	H COC FORMS	
GENERAL NOTES:	Disposal into CAD Cel	I #3 occurred at	t 0804		



					UP-CURRE	ENT_			
						_			
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOURS DREDGING
121113-00-1-1 121113-00-1-2 121113-00-1-3	2697211 / 815261	0730 0732 0734	3.9	1 2 3	2.4 4.1 4.7	-	Ebbing	200' N of Disposal	0
			AVERAGE T	URBIDITY:	3.73				
121113-01-1-1 121113-01-1-11.5 121113-01-1-23	2696962 / 815525	0806 0808 0810	23.8	1 11.5 23	7.2 7.5		Ebbing	200' N of Disposal	post
	•		AVERAGE T		6.27	]			
	1				l	1			
	]		]						
	1		AVERAGE T	URBIDITY:					
	1				1	1 1		1	
	1		1 1			1			
			AVERAGE T	TIRRIDITY:					
		1	AVEINAGE	CADIDITI.	1				
	-		-			1			
	1		1			1			
			AVERAGE T	URBIDITY:		J			
					Dawn Cum				
		ī			Down-Curr	ent			
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	DISTANCE FROM LOCATION	NUMBER OF HOURS DREDGING
121113-00-9-1 121113-00-9-3	2696476 / 815120	0740 0742	6.2	1 3	4.3 3.8		Ebbing	200' S of Disposal	0
121113-00-9-6		0744	0.2	6	4.4				
			AVERAGE T TURBIDITY I		4.17 0.43				
121113-01-9-1 121113-01-9-5.5 121113-01-9-11	2696421 / 815708	0815 0817 0819	11.1	1 5.5 11	5.5 5.7 5.7	-	Ebbing	200' S of Disposal	post
			AVERAGE T TURBIDITY I		5.63 -0.63				
	-								
			AVERAGE T TURBIDITY I						
	-								
	1		AVERAGE T TURBIDITY I						
	_								
	I		AVERAGE T TURBIDITY I					ı	
Turbidity Increase - Down-Cur	rent Average Turbidity - Up-Cu	rrent Average	Turbidity						

PROJECT:	New Bedford Harbor Lower Harbor CAD Cell
JOB NUMBER:	6724
SURVEY DATE:	11 December 2013
MONITORS:	K. Ryan, K. Miller
WEATHER CONDITIONS:	Ptly. cloudy, clearing. Temperatures 25F AM increasing to 30F PM
WIND CONDITIONS:	Speed: 10-15k Direction: W
PRIOR STORM EVENTS:	N/A
DREDGE / SCOW Position:	Northing/Easting: 2696696 / 814602
TYPE OF WATER QUALITY	MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal
TIDE INFORMATION:	High: 0237/1505 Low: 0938/2110
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO): N IF YES ATTACH COC FORMS



DREDGE / SCOW Positio TYPE OF WATER QUALIT	n: Northing/Easting:			M CAD Dredg	ing / Disposa	al		AF	) E Y
TIDE INFORMATION:		0237/1505		0938/2110				/\\I_	
WAS WATER QUALITY S GENERAL NOTES:	Dredging begins at 09			IF YES, ATTA	ACH COC FOR	MS		_	
GENERAL NOTES:	Dreuging begins at 05	36 and end	S for the day at	1349					
					UP-CURRI	ENT			
		Ī							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOURS DREDGING
			(.,	()	(,				
121113-00-1-1	2696646 / 815060	0935		1	3.7	-	Slack / Flooding tide	200' S of Dredge	0
121113-00-1-3 121113-00-1-6	2030040 / 013000	0937 0939	6.4	3 6	6.8 7.3	1 1	Slack / I looding lide	200 3 of Dreage	Ü
	•		AVERAGE 1		5.93	<u> </u>		•	
404440 00 4 4	1	4400	т		1.0				
121113-02-1-1 121113-02-1-7.5	2696613 / 814732	1139 1141	16	7.5	4.3 6	1	Flooding tide	200' S of Dredge	2
121113-02-1-15		1142		15	7.4				
			AVERAGE	TURBIDITY:	5.90	J			
121113-04-1-1	I	1329		1	6.6				
121113-04-1-4.5	2696648 / 814945	1331	9.7	4.5	7.1	]	Flooding tide	200' S of Dredge	4
121113-04-1-9		1333	AVERACE	9 TUDDIDITY:	7.5				
			AVERAGE	י אוועומאטו:	7.07	_			
121113-06-1-1		1525		1	5.2				
121113-06-1-5	2696999 / 814938	1527 1529	10.3	5 10	5.4 5.1	-	Ebbing	200' N of Dredge	6
121113-06-1-10		1529	AVERAGE		5.23				
	-	-	-			-			
	┪		1			1			
	•		AVERAGE 1	TURBIDITY:				•	
					Down-Cur	rent			
		ī							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	DISTANCE FROM LOCATION	NUMBER OF HOURS DREDGING
121113-00-9-1		0948		1	4.45				
121113-00-9-1.5	2697175 / 815326	0950	3.6	1.5	5	]	Flooding tide	200' N of Dredge	0
121113-00-9-3		0952	AVED AGE	3	4				
			AVERAGE TURBIDITY		9.00 3.07	1			
121113-02-9-1 121113-02-9-2.5	2697328 / 815246	1147 1149	5.2	2.5	6 6.3	-	Flooding tide	200' N of Dredge	2
121113-02-9-5	20370207010240	1151	5.2	5	5.8	1	r looding lide	200 N of Breage	-
	•		AVERAGE		6.03				
			TURBIDITY	INCREASE:	0.13				
121113-04-9-1		1337		1	12.5				
121113-04-9-3.5	2697200 / 815179	1339	7.5	3.5	10.8	]	Flooding tide	200' N of Dredge	4
121113-04-9-7		1341	AVEDAGE	7	13				
			TURBIDITY	TURBIDITY: INCREASE:	12.10 5.03	1			
	_					- -			
121113-06-9-1 121113-06-9-6.5	2696374 / 814789	1533 1535	13.4	1 6.5	4.1	- I	Ebbing	200' S of Dredge	6
121113-06-9-6.5	25555.47 514759	1535	13.4	13	3.8	1	2231119	200 C Si Dioage	Ü
				TURBIDITY:	3.97			•	
			TURBIDITY	INCREASE:	-1.27	J			
	T	I	1						
	]		1			]			
		<u> </u>	A)/ED:00	THE DESTRUCTION	1				
			AVERAGE TURBIDITY	TURBIDITY: INCREASE:		1			
			ווטוטאטו	OILAGE.		_			

\* Turbidity Increase = Down-Current Average Turbidity - Up-Current Average Turbidity

PROJECT:	New Bedford Harbor Lower Harbor CAD Cell
JOB NUMBER:	6724
SURVEY DATE:	13 December 2013
MONITORS:	M. Tumolo
WEATHER CONDITIONS:	Ptly. Cloudy, clearing. Temperature 14F AM increasing to 30F PM
WIND CONDITIONS:	Speed: 10-15k Direction: W
PRIOR STORM EVENTS:	N/A
DREDGE / SCOW Position:	Northing/Easting:
TYPE OF WATER QUALITY	MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal
TIDE INFORMATION:	High: 0435/1700 Low: 1114/2223
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO): N JEYES ATTACH COC FORMS



TYPE OF WATER QUALI TIDE INFORMATION:	High:	0435/1700	Low:	1114/2223				- / <del>-</del> \ -	PEX
IAS WATER QUALITY S ENERAL NOTES:	SAMPLING PERFORMED  Dredging begins at 08				CH COC FOR	MS		_	
					UP-CURRI	<u>ENT</u>			
		Ī							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOU DREDGING
21313-00-1-1 21313-00-1-2	2697156 / 815147	0855 0857	4.6	1 2	3.3 4.6	-	Ebbing	200' N of Dredge	0
21313-00-1-4	2007 1007 0107 11	0859	4.0	4	4.0		255	200 11 01 21 dage	
			AVERAGE 1	URBIDITY:	4.00				
21313-02-1-1		1105		1	2.3				
21313-02-1-3.5	2697003 / 814961	1107	7.5	3.5	3.3	-	Ebbing / Slack	200' N of Dredge	2
21313-02-1-6		1109	AVERAGE 1	6 URBIDITY:	3.6			1	
21313-04-1-1	1	1259		1	4.9			<del></del>	
21313-04-1-5	2696453 / 814789	1301	11	5	5.2	j	Flooding tide	200' S of Dredge	4
21313-04-1-10		1303	AVERAGE 1	10	5.6				
			AVERAGE	יווטוטאט:	5.23				
21313-06-1-1	2696447 / 814755	1443	46.5	1	6.5	4	Flooding tide	200' S of Dredge	6
21313-06-1-6 21313-06-1-12	2090447 / 814755	1445 1447	12.5	6 12	7.4 8.2	1	Flooding lide	200 3 of Dreage	0
	•		AVERAGE 1		7.37				
	<u> </u>	I	1		I	1			
	<b>_</b>		1			1			
			AVERAGE 1	I IDDIDITY:					
			AVERAGE	OKBIDITT.		_			
					Down-Curi	rent			
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	DISTANCE FROM LOCATION	NUMBER OF HOU DREDGING
121313-00-9-1		0901		1	5				
121313-00-9-2	2696535 / 815223	0903	5	2	5.1 7	-	Ebbing	200' S of Dredge	0
121313-00-9-4		0905	AVERAGE 1	URBIDITY:	5.70				
			TURBIDITY		1.70				
21313-02-9-1		1111		1	4.2				
121313-02-9-3	2696489 / 814989	1113	6.5	3	4.4	-	Ebbing / Slack	200' S of Dredge	2
121313-02-9-6		1115	AVERAGE 1	6 URBIDITY:	5 4.53				
			TURBIDITY		1.47	]			
121313-04-9-1		1304		1	7.2			T 1	
21313-04-9-2	2697089 / 815036	1306	5	2	7.3	]	Flooding tide	200' N of Dredge	4
21313-04-9-4		1308	AVERAGE 1	URBIDITY:	6.9 7.13				
			TURBIDITY		1.90	1			
21313-06-9-1		1448		1	8.3	]		<del>                                     </del>	
121313-06-9-6	2697008/ 814808	1450	12	6	9.5	]	Flooding tide	200' N of Dredge	6
121313-06-9-11	1	1452	AVEDACE 3	11	9.8				
			AVERAGE 1 TURBIDITY		9.20 1.83	_			
	1					_			
					1			1	

AVERAGE TURBIDITY: TURBIDITY INCREASE:

WQM\_LHCC\_121313

\* Turbidity Increase = Down-Current Average Turbidity - Up-Current Average Turbidity

PROJECT:	New Bedford Harbor Lower Harbor CAD Cell
JOB NUMBER:	6724
SURVEY DATE:	13 December 2013
MONITORS:	M. Tumolo
WEATHER CONDITIONS:	Ptly. Cloudy, clearing. Temperature 14F AM increasing to 30F PM
WIND CONDITIONS:	Speed: 10-15k Direction: W
PRIOR STORM EVENTS:	N/A
DREDGE / SCOW Position:	Northing/Easting: CAD Cell #3
TYPE OF WATER QUALITY	MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal
TIDE INFORMATION:	High: 0435/1700 Low: 1114/2223
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO): N IF YES, ATTACH COC FORMS
GENERAL NOTES:	Disposal into CAD Cell #3 occurred at 0804



TYPE OF WATER QUALIT					ng / Disposa	al			リー X
TIDE INFORMATION: WAS WATER QUALITY S.		0435/1700		1114/2223 IF YES, ATTA	CH COC FOR	Me		_ / \1	
GENERAL NOTES:	Disposal into CAD Ce			IF YES, ATTA	CH COC FOR	INIS		-	
OLNERAL NOTES.	2.0p00a0 07.2 00								
					UP-CURRI	FNT			
					0. 00				
		T							
			TOTAL WATER	SAMPLE	TURBIDITY			RELATIVE POSITION	NUMBER OF HOURS
Monitoring ID #	NORTHING / EASTING	TIME	DEPTH (ft)	DEPTH (ft)	(NTUs)	GPS FILE NAME	TIDAL STAGE	OF MEASUREMENT	DREDGING
121313-01-1-1	2697048 / 815850	0805	-	1	4.5	-l	Fhhing	200! N of Disposal	
121313-01-1-3.5	20970467615650	0807	7	3.5	3.8	-  I	Ebbing	200' N of Disposal	post
121313-01-1-6		0809	AVERAGE 1	6	3.7 4.00				
			AVERAGE	UNDIDITT.	4.00	_			
								1	
			]			j			
			AVERAGE 1	TURBIDITY:		_			
	4	<u> </u>	-			-  I			
	Ⅎ	<b>—</b>	1			-l			
	•		AVERAGE 1	TURBIDITY:		<del>                                     </del>		-	
	4		4			<b>↓</b>			
			41/55:55						
			AVERAGE 1	TURBIDITY:					
	1	1			1	<del>, ,</del>			
	-		1			1 1			
	7		1			1 1			
	•		AVERAGE 1	TURBIDITY:					
					Down-Cur	rent			
		Ī	TOTAL WATER	SAMPLE	TURBIDITY			DISTANCE FROM	NUMBER OF HOURS
Monitoring ID #	NORTHING / EASTING	TIME	DEPTH (ft)	DEPTH (ft)	(NTUs)	GPS FILE NAME	TIDAL STAGE	LOCATION	DREDGING
121313-01-9-1		0810		1	7.3	I I			
121313-01-9-5	2696215 / 815732	0812	10.4	5	7.4	1 1	Ebbing	200' S of Disposal	post
121313-01-9-9		0814		9	7.3	1 1			
			AVERAGE 1	TURBIDITY:	7.33				
			TURBIDITY	INCREASE:	3.33	_			
		Т							
	_					1		T	
			-			- [			
	_		1						
	_		AVERAGE 1	TURBIDITY:		_			
			AVERAGE 1						
	_								
						-   -			
	1					<u> </u>			
	1		TURBIDITY	INCREASE:					
			TURBIDITY  AVERAGE 1	INCREASE:					
			TURBIDITY	INCREASE:					
			TURBIDITY  AVERAGE 1	INCREASE:					
	<del>-</del>		TURBIDITY  AVERAGE 1	INCREASE:					
			AVERAGE 1 TURBIDITY	TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY:					
			AVERAGE 1 TURBIDITY	TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:					
			AVERAGE 1 TURBIDITY  AVERAGE 1 TURBIDITY	INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:					
			AVERAGE TURBIDITY  AVERAGE TURBIDITY  AVERAGE TURBIDITY  AVERAGE TARRITATION AVERAGE TO	INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:					
*Turbidity Increase = Down-Cur	rrent Average Turbidity - Un-Cu	rrent Average	AVERAGE TO TURBIDITY  AVERAGE TO TURBIDITY  AVERAGE TO TURBIDITY  AVERAGE TO TURBIDITY	INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:  TURBIDITY: INCREASE:					

PROJECT:	New Bedford Harbor Lower Harbor (	CAD Cell				
JOB NUMBER:	6724					
SURVEY DATE:	14 December 2013					
MONITORS:	M. Martinho, K. Ryan					
WEATHER CONDITIONS:	Early fog. Snow. Temperatures 15F e	early, inc	reasing to 30F PM			
WIND CONDITIONS:	Speed: 5-10k	Directi	ion: NNE			
PRIOR STORM EVENTS:	N/A					
DREDGE / SCOW Position	: Northing/Easting: CAD Cell #3					
TYPE OF WATER QUALIT	Y MONITORING EVENT: TOP CAD Dre	edging /	BTM CAD Dredging	/ Disposal		
TIDE INFORMATION:	High: 0528/1749	L	ow: 1150/2300			
WAS WATER QUALITY SA	MPLING PERFORMED? (YES/NO):	N	IF YES, ATTACH	COC FORMS		
GENERAL NOTES:	Disposal into CAD Cell #3 occurred a	at 0740				



TYPE OF WATER QUALIT	Y MONITORING EVENT	: TOP CAD	Dredging / BT		ing / Disposa	al		Δ I-	기- X
TIDE INFORMATION: WAS WATER QUALITY S		0528/1749		1150/2300	011 000 500	140		/ \	
GENERAL NOTES:	Disposal into CAD Ce			IF YES, ATTA	CH COC FOR	MS		-	
	.,								
					UP-CURRE	ENT			
		Ī							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOURS DREDGING
121413-01-1-1	_	0735		1	1.9	-	Ebbing	200' N of Disposal	post
121413-01-1-16 121413-01-1-32		0737 0739	34	16 32	2.2	1	Ebbling	200 N of Disposal	post
121110 01 1 02		0.00	AVERAGE		2.10				
	T						Г		
			-			-			
	-		1			1			
	•		AVERAGE	TURBIDITY:				•	
	+		┪ !			1			
			1			<u> </u>		<u> </u>	
			AVERAGE	TURBIDITY:					
		ı	1		ı	1		<u> </u>	
	┪		1 !			1			
			1			1			
		-	AVERAGE	TURBIDITY:					
		ı	1		ī	1			
			-			1			
						1			
			AVERAGE	TURBIDITY:					
					Down-Curr	rent			
		Ī	TOTAL WATER	SAMPLE	TURBIDITY			DISTANCE FROM	NUMBER OF HOURS
Monitoring ID #	NORTHING / EASTING	TIME	DEPTH (ft)	DEPTH (ft)	(NTUs)	GPS FILE NAME	TIDAL STAGE	LOCATION	DREDGING
121413-01-9-1		0740		1	2.4				
121413-01-9-8		0742	17	8	3.9	4	Ebbing	200' S of Disposal	post
121413-01-9-16		0744	AVERAGE	16	3.5 3.27				
			TURBIDITY		1.17	1			
						-			
	-	<u> </u>	-			-			
	-	<b>—</b>	┪ !		<del>                                     </del>	1			
	-	-	AVERAGE				-	-	
			TURBIDITY	INCREASE:	]	_			
		1	1		1	1			
			]			1			
			1			1			
			AVERAGE 1			4			
			TURBIDITY	INCREASE:	<u> </u>	J			
			]			]			
		<u> </u>	AVERAGE 7	TI IDDIDITY:		-			
			TURBIDITY			1			
				J, .O.L.					
	⊣					•	i e e e e e e e e e e e e e e e e e e e	1	
	1		-			1			
			AVERAGE	TURBIDITY:					
			AVERAGE T			<u> </u>			
						<u> </u>			
* Turbidity Increase = Down-Cur	rent Average Turbidity - Up-Cu	irrent Average	TURBIDITY						

## Figure 1 Lower Harbor CAD Cell Phase I – Water Quality Monitoring

