



WATER QUALITY MONITORING REPORT

Dredge and Disposal Operations

**New Bedford Harbor Dredge Project Phase II
(Part 1: Fish Island Area and Top of CAD Cell)
1/13/05 – 1/31/05**

To: Paul Craffey (MADEP)

From: Stephen Tobin
Apex Environmental, Inc.

**Re: New Bedford Harbor Dredge – Phase II
Water Quality Monitoring Report**

Date: February 5, 2004

Attached is the water quality monitoring results from the New Bedford Harbor Dredge –Phase II operations conducted on 1/13/05, 1/14/04, 1/15/05 and 1/21/05. Also included is the water quality monitoring results from dredge disposal operations which took place on 1/29/05 and 1/31/05. Water quality monitoring was performed in accordance with the Water Quality Monitoring Plan (WQMP) dated 01/05/05. Included in this report are spreadsheets tabulating the turbidity results from each day and a map of the sampling locations. The sampling location identifications correspond to the turbidity results on the spreadsheets and are color-coded by day. An explanation of the location identifications may found in sections 3.2 and 4.2 of the WQMP.

Water Quality Monitoring Results Summary (Dredging):

The preliminary results from the first phase of water quality monitoring show that dredging and disposal operations have stayed within the permissible turbidity levels set forth in the Water Quality Monitoring Plan (Jan. 2005) on the dates which monitoring occurred.

Following the guidelines of the WQMP, monitoring locations for water turbidity recorded an average turbidity from 3 depths, up and down-current from the dredge or disposal operations, depending on tide. The values recorded as the Reference Site Turbidity were taken from up-current monitoring locations, or from monitoring events which occurred before dredge or disposal operations began. The Reference Turbidity Value was then compared to down-current turbidity values measured at regular time intervals after operations had begun.

For dredging operations, an exceedance of the project turbidity standard occurs when the average turbidity down-current exceeds the Reference Turbidity Value plus the permissible turbidity increase, as outlined in Section 3.3 of the WQMP. For a reference value less than 10 NTUs, the down-current permissible turbidity increase is plus 20 NTUs. The permissible turbidity increases for operations with or without silt curtains are the same, only the distance from dredge/silt curtains to monitoring locations changes.

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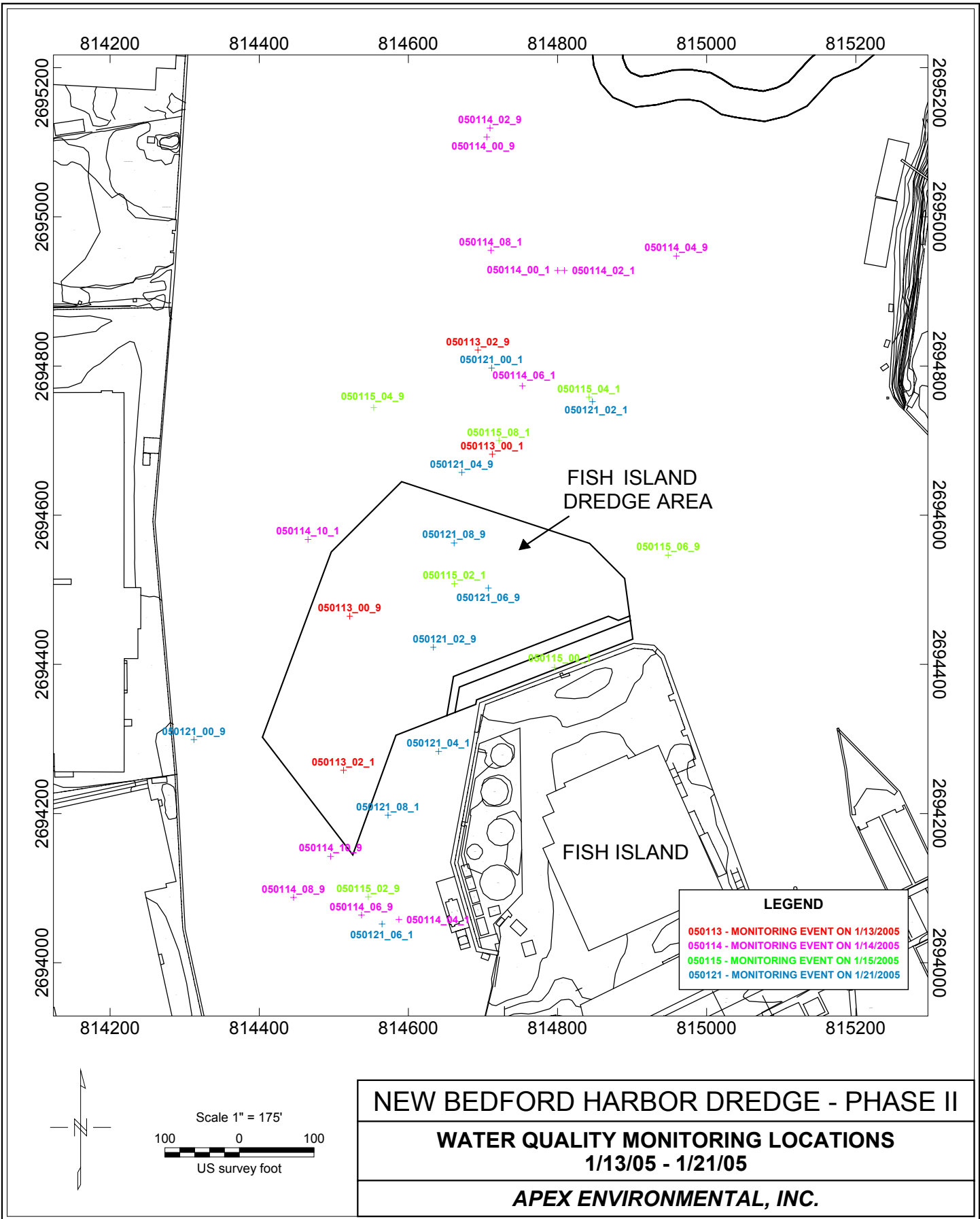
On the dates monitored, only one exceedance of the project turbidity standard occurred. On 1/21/05, at approximately 4:30 p.m., the average down-current turbidity was 40.0 NTUs, or 16.1 NTUs over the permissible turbidity increase. Section 2.3 of the WQMP describes the contingency plan for a project turbidity exceedance. Monitors stayed on location for 2 more monitoring events within 30 minutes. Fifteen minutes after the exceedance, average turbidity at the same location measured 20.0 NTUs, which was below the up-current reference turbidity value of 23.9 NTUs. Thirty minutes after the exceedance event, the average turbidity down-current measured 15.0 NTUs, which was below the up-current reference turbidity value of 23.9 NTUs.

Water Quality Monitoring Results Summary (Disposal):

Water quality monitoring for disposal operations also followed the guidelines set forth in the WQMP. Disposal events were monitored on two days; 1/29/05, where the bucket was utilized to lower the material to the bottom of the borrow pit CAD cell, and 1/31/05, when the dump-scow (*Joe Verocchi*) was used to dispose of dredged materials. On 1/31/05 water quality monitors made 'transects' perpendicular to the down-current flow of water from the disposal operations. The transects were made with the turbidity probe at varying depths to compile an average of the down-current turbidity to compare with up and down-current reference turbidity values taken before disposal began. There were no turbidity exceedances to report from either day of disposal.

Water Quality Monitoring will continue to take place according to the guidelines of the WQMP. If you have any questions or comments regarding these results, feel free to contact me at 508-353-5202.

Stephen Tobin
Apex Environmental, Inc.



1/13/2005
New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring

Tide Time	Time	ID	Coordinates	Up/Down	Depth (ft.)	Ave. Turbidity	Permissible Turbidity	Weather Conditions	Vessel
High 10:01				Current		(NTUs)	Increase (NTUs)		Traffic
	13:30	050113_00_1_05	N:2694684.583	Up	5	2.3		Foggy, Cold	None
	13:32	050113_00_1_15	E:814715.222	Up	10	1.9		Light N Wind	None
	13:34	050113_00_1_25		Up	25	1.9			None
					AVERAGE	2.0	22.0		
	13:42	050113_00_9_05	N:2694464.650	Down	5	2.4		Foggy, Cold	None
	13:45	050113_00_9_12	E:814525.369	Down	12	2.5		Light N Wind	None
	13:47	050113_00_9_20		Down	20	2.3			None
Low 15:56					AVERAGE	2.4	(19.6 Below Limit)		
	18:44	050113_02_1_05	N:2694258.072	Up	5	2.8		Cloudy, ~40F	None
	18:45	050113_02_1_14	E:814513.105	Up	14	2.7		Light SW Wind	None
	18:50	050113_02_1_22		Up	22	2.4			None
					AVERAGE	2.6	22.6		
	18:56	050113_02_9_05	N:2694824.140	Down	5	2.8		Cloudy, ~40F	None
	18:58	050113_02_9_14	E:814696.050	Down	14	2.8		Light SW Wind	None
	18:59	050113_02_9_25		Down	25	2.7			None
					AVERAGE	2.7	(19.9 Below Limit)		

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.

1/15/2005
New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring

Tide Time	Time	ID	Coordinates	Up/Down	Depth (ft.)	Ave. Turbidity (NTUs)	Permissible Turbidity Increase (NTUs)	Weather Conditions	Vessel Traffic
Low 4:59				Current					
	6:31	050115_00_1_05	Fish Isl.	Up	5	3.8		Partly Cloudy, 30 Degrees	None
	6:31	050115_00_1_15		Up	10	3.5		E Wind ~5 Knots	None
	6:31	050115_00_1_25		Up	25	3.5			None
					AVERAGE	3.6	23.6		
	8:30	050115_02_1_05	N:2694508.091	Up	5	3.6		Sunny, ~30 Degrees	None
	8:32	050115_02_1_15	E:814661.751	Up	15	3.4		Light Wind	None
	8:33	050114_02_9_25		Up	25	3.1			None
					AVERAGE	3.4	23.4		
	8:35	050115_02_9_05	N:2694088.242	Down	5	6.0		Sunny, ~30 Degrees	None
	8:36	050115_02_9_15	E:814546.150	Down	15	3.8		Light Wind	None
	8:37	050115_02_9_25		Down	25	3.8			None
					AVERAGE	4.5	(18.9 Below Limit)		
	10:48	050115_04_1_05	N:2694758.328	Up	5	4.0		Sunny, ~35 Degrees	None
	10:49	050115_04_1_15	E:814842.285	Up	15	3.6		Light Wind	None
	10:49	050115_04_1_25		Up	25	3.6			None
					AVERAGE	3.7	23.7		
	10:57	050115_04_9_05	N:2694802.673	Down	5	7.5		Sunny, ~35 Degrees	None
	10:58	050115_04_9_15	E:814217.831	Down	25	4.2		Light Wind	None
	10:59	050115_04_9_25		Down	25	4.0			None
High 11:47					AVERAGE	5.2	(18.5 Below Limit)		
	12:30	050115_06_1_05	N:2693165.688	Up	5	3.9		Sunny, ~40 Degrees	None
	12:31	050115_06_1_15	E:814634.427	Up	15	4.8		Light Wind	None
	12:32	050115_06_1_25		Up	25	4.0			None
					AVERAGE	4.2	24.2		
	12:35	050115_06_9_05	N:2694546.483	Down	5	8.8		Sunny, ~40 Degrees	None
	12:36	050115_06_9_15	E:814948.512	Down	15	25.3		Light Wind	None
	12:37	050115_06_9_25		Down	25	25.3			None
					AVERAGE	19.8	(4.4 Below Limit)		
	14:30	050115_08_1_05	N:2694702.864	Up	5	3.0		Sunny, ~35 Degrees	None
	14:31	050115_08_1_15	E:814724.210	Up	15	4.0		Light Wind	None
	14:32	050115_08_1_25		Up	25	3.5			None
					AVERAGE	3.5	23.5		
	14:35	050115_08_9_05	N:2694282.427	Down	5	3.6		Sunny, ~35 Degrees	None
	14:36	050115_08_9_15	E:8145222.051	Down	15	6.0		Light Wind	None
	14:37	050115_08_9_25		Down	25	10.5			None
Low 17:20					AVERAGE	6.7	(16.8 Below Limit)		

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.

1/14/2005
New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring

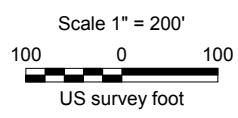
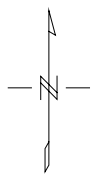
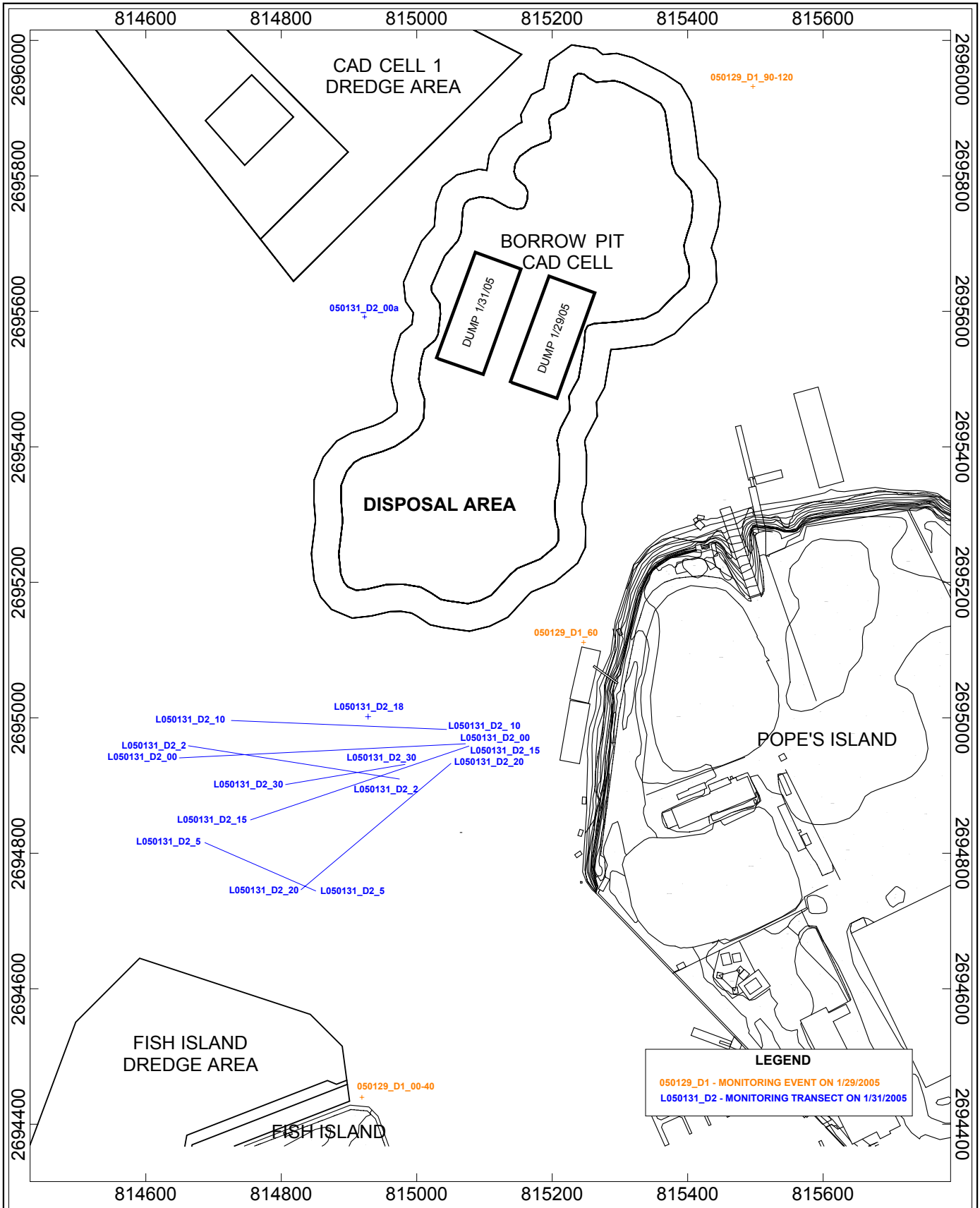
Tide Time	Time	ID	Coordinates	Up/Down	Depth (ft.)	Ave. Turbidity	Permissible Turbidity	Weather Conditions	Vessel
Low 4:03				Current		(NTUs)	Increase (NTUs)		Traffic
	7:02	050114_00_1_05	N:2694928.096	Up	5	2.0		Partly Cloudy, 35 Degrees	None
	7:03	050114_00_1_15	E:814800.127	Up	10	2.1		S Wind ~15 Knots	None
	7:04	050114_00_1_24		Up	24	2.0			None
					AVERAGE	2.0	22.0		
	6:52	050114_00_9_05	N:2695109.669	Down	5	2.5		Partly Cloudy, 35 Degrees	None
	6:53	050114_00_9_10	E:814707.776	Down	10	2.6		S Wind ~15 Knots	None
	6:54	050114_00_9_25		Down	25	2.8			None
					AVERAGE	2.6	(19.4 Below Limit)		
	8:55	050114_02_1_05	N:2694928.158	Up	5	2.4		Cloudy, 25 Degrees	None
	8:55	050114_02_1_15	E:814809.238	Up	15	2.5		Strong S Wind	None
	8:56	050114_02_9_25		Up	25	2.1			None
					AVERAGE	2.3	22.3		
	8:45	050114_02_9_05	N:2695121.846	Down	5	3.5		Cloudy, 25 Degrees	None
	8:46	050114_02_9_15	E:814712.249	Down	15	2.4		Strong S Wind	None
	8:47	050114_02_9_25		Down	25	2.4			None
					AVERAGE	2.8	(19.5 Below Limit)		
High 10:54									
	11:18	050114_04_1_05	N:2694058.155	Up	5	2.4		Cloudy, 35 Degrees	None
	11:19	050114_04_1_15	E:814587.358	Up	15	2.5		Strong W Wind	None
	11:19	050114_04_1_24		Up	24	2.6			None
					AVERAGE	2.5	22.5		
	11:30	050114_04_9_05	N:2694947.400	Down	5	3.4		Cloudy, 35 Degrees	None
	11:32	050114_04_9_18	E:814959.449	Down	18	3.7		Strong W Wind	None
	11:34	050114_04_9_30		Down	30	2.2			None
					AVERAGE	3.1	(19.4 Below Limit)		
	13:01	050114_06_1_05	N:2694775.958	Up	5	3.0		Rainy, 40 Degrees	None
	13:02	050114_06_1_15	E:814755.603	Up	15	3.1		N Wind ~ 15 Knots	None
	13:02	050114_06_1_25		Up	25	2.9			None
					AVERAGE	3.0	23.0		
	13:08	050114_06_9_05	N:2694063.888	Down	5	0.6		Rainy, 40 Degrees	None
	13:09	050114_06_9_15	E:814537.203	Down	15	4.0		N Wind ~ 15 Knots	None
	13:10	050114_06_9_25		Down	25	8.0			None
					AVERAGE	4.2	(18.8 Below Limit)		
	14:55	050114_08_1_05	N:2694957.872	Up	5	6.5		Rainy, 40 Degrees	None
	14:56	050114_08_1_15	E:814713.364	Up	15	4.0		N Wind ~25 Knots	None
	14:57	050114_08_1_25		Up	25	8.0			None
					AVERAGE	6.2	26.2		
	14:47	050114_08_9_05	N:2694087.562	Down	5	11.0		Rainy, 40 Degrees	None
	14:48	050114_08_9_15	E:814445.923	Down	15	10.0		N Wind ~25 Knots	None
	14:49	050114_08_9_25		Down	25	10.0			None
					AVERAGE	10.3	(15.9 Below Limit)		
Low 15:56									
	17:00	050114_10_1_05	N:2694567.491	Up	5	3.6		Rainy, 30 Degrees	None
	17:01	050114_10_1_15	E:814465.444	Up	15	5.8		N Wind ~25 Knots	None
	17:03	050114_10_1_25		Up	25	5.0			None
					AVERAGE	4.8	24.8		
	16:55	050114_10_9_05	N:2694142.560	Down	5	7.0		Rainy, 30 Degrees	None
	16:56	050114_10_9_15	E:814495.665	Down	15	7.1		N Wind ~25 Knots	None
	16:56	050114_10_9_25		Down	25	4.0			None
					AVERAGE	6.0	(18.8 Below Limit)		

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.

1/21/2005
New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring

Tide Time	Time	ID	Coordinates	Up/Down	Depth (ft.)	Ave. Turbidity (NTUs)	Permissible Turbidity Increase (NTUs)	Weather Conditions	Vessel Traffic
High 5:05				Current					
	6:50	050121_00_1_05	N:2694799.971	Up	5	3.1		Clear, ~5 Degrees	None
	6:50	050121_00_1_15	E:814714.437	Up	10	3.3		N Wind ~10 Knots	None
	6:51	050121_00_1_24		Up	24	3.1			None
					AVERAGE	3.1	23.1		
	7:01	050121_00_9_05	N:2694299.223	Down	5	3.0		Clear, ~5 Degrees	None
	7:02	050121_00_9_10	E:814312.363	Down	10	4.1		N Wind ~10 Knots	None
	7:03	050121_00_9_25		Down	25	3.2			None
					AVERAGE	3.4	(19.7 Below Limit)		
	10:08	050121_02_1_05	N:2694752.286	Up	5	1.3		Clear, ~5 Degrees	None
	10:09	050121_02_1_15	E:814846.881	Up	15	1.8		N Wind ~10 Knots	None
	10:10	050121_02_9_25		Up	25	11.5			None
					AVERAGE	4.8	24.8		
	10:15	050121_02_9_05	N:2694422.975	Down	5	3.7		Clear, ~5 Degrees	None
	10:16	050121_02_9_15	E:814648.662	Down	15	8.4		N Wind ~10 Knots	None
	10:17	050121_02_9_25		Down	25	6.8			None
Low 11:30					AVERAGE	6.3	(18.5 Below Limit)		
	12:02	050121_04_1_05	N:2694283.231	Up	5	5.5		Clear, ~10 Degrees	None
	12:03	050121_04_1_15	E:814640.500	Up	15	7.5		N Wind ~10 Knots	None
	12:03	050121_04_1_24		Up	24	5.0			None
					AVERAGE	6.0	26.0		
	12:10	050121_04_9_05	N:2694660.012	Down	5	0.4		Clear, ~10 Degrees	None
	12:11	050121_04_9_18	E:814674.386	Down	18	4.3		N Wind ~10 Knots	None
	12:12	050121_04_9_30		Down	30	9.0			None
					AVERAGE	4.6	(21.5 Below Limit)		
	14:27	050121_06_1_05	N:2694051.928	Up	5	0.9		Clear, ~5 Degrees	None
	14:29	050121_06_1_15	E:814564.621	Up	15	9.0		N Wind ~10 Knots	None
	14:30	050121_06_1_25		Up	25	20.0			None
					AVERAGE	10.0	30.0		
	15:39	050121_06_9_05	N:2694502.328	Down	5	12.5		Clear, ~5 Degrees	None
	15:40	050121_06_9_15	E:814707.350	Down	15	13.0		N Wind ~10 Knots	None
	15:41	050121_06_9_25		Down	25	20.5			None
					AVERAGE	15.3	(14.7 Below Limit)		
	16:22	050121_08_9_05	N:2694562.749	Up	5	3.0		Clear, ~5 Degrees	None
	16:22	050121_08_9_15	E:814661.380	Up	15	4.3		N Wind ~10 Knots	None
	16:23	050121_08_9_25		Up	25	4.5			None
					AVERAGE	3.9	23.9		
	16:14	050121_08_1_05	N:2694197.744	Down	5	7.5		Clear, ~5 Degrees	None
	16:15	050121_08_1_15	E:814572.742	Down	15	9.0		N Wind ~10 Knots	None
	16:16	050121_08_1_25		Down	25	14.0			None
					AVERAGE	10.2	(13.7 Below Limit)		
	16:27	050121_08_9a_05	N:2694197.744	Down	5	12.5		Clear, ~5 Degrees	None
	16:28	050121_08_9a_15	E:814572.742	Down	15	50.0		N Wind ~10 Knots	None
	16:29	050121_08_9a_25		Down	25	57.5			None
					AVERAGE	40.0	(16.1 Above Limit)		
	16:45	050121_08_9b	N:2694197.744	Down	15	20.0		(3.9 Below Limit)	None
High 17:24	17:00	050121_08_9b	E:814572.742	Down	15	15.0		(8.9 Below Limit)	None

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.



NEW BEDFORD HARBOR DREDGE - PHASE II
WATER QUALITY MONITORING LOCATIONS - DISPOSAL
1/29/05 & 1/31/05

APEX ENVIRONMENTAL, INC.

LEGEND

050129_D1 - MONITORING EVENT ON 1/29/2005
L050131_D2 - MONITORING TRANSECT ON 1/31/2005

1/29/2005

New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring - Disposal Operations

Tide Time	Time	ID	Coordinates	Up/Down Current	Depth (ft.)	Ave. Turbidity (NTUs)	Permissible Turbidity Increase (NTUs)	Weather Conditions	Vessel Traffic
10:10 High									
	14:55	050129_D1_00	Fish Island	Down	15	6.5		Clear, ~25 Degrees	None
	14:56	050129_D1_00_1	Fish Island	Down	15	6.8		N Wind ~5 Knots	
	15:10	DISPOSAL	STARTED						
					AVERAGE	6.6	46.6		
	15:20	050129_D1_10	Fish Island	Down	15	11.5		Clear, ~25 Degrees	None
					AVERAGE	11.5	(35.1 Below Limit)	N Wind ~5 Knots	
	15:23	050129_D1_20	Fish Island	Down	15	9.0		Clear, ~25 Degrees	None
					AVERAGE	9.0	(38.5 Below Limit)	N Wind ~5 Knots	
	15:35	050129_D1_30	Fish Island	Down	15	7.5		Clear, ~25 Degrees	None
					AVERAGE	7.5	(39.1 Below Limit)	N Wind ~5 Knots	
	15:41	050129_D1_40	Fish Island	Down	15	8.6		Clear, ~25 Degrees	None
					AVERAGE	8.6	(38.0 Below Limit)	N Wind ~5 Knots	
15:51 Low									
	16:15	050129_D1_60	Pope's Island	Down	10	7.8		Clear, ~20 Degrees	None
					AVERAGE	7.8	(38.8 Below Limit)	N Wind ~5 Knots	
	16:23	050129_D1_70	Pope's Island	Up	10	7.5		Clear, ~20 Degrees	None
					AVERAGE	7.5	47.5	NW Wind ~10 Knots	
	16:56	050129_D1_90	N:815431.19 E:2695916.29	Down	6	17.5		Clear, ~15 Degrees	X
	17:00	DISPOSAL	STOPPED					NW Wind ~10 Knots	
	17:02				10	17.5			None
	17:04				15	42.5			None
	17:06				18	17.5			None
					AVERAGE	23.8	(23.7 Below Limit)		
	17:11	050129_D1_120	N:815431.19 E:2695916.29	Down	10	22.5		Clear, ~15 Degrees	None
	17:15	DISPOSAL	CONTINUED					NW Wind ~10 Knots	
					AVERAGE	22.5	(25 Below Limit)		
	17:27	050129_D1_140	N:815431.19	Down	10	15.0		Clear, ~12 Degrees	X
	17:58		E:2695916.29	Down	10	25.0		NW Wind ~10 Knots	
					AVERAGE	20.0	(27.5 Below Limit)		

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.

1/31/2005

New Bedford Harbor Dredge Project - Phase II
Water Quality Monitoring - Disposal Operations

Tide Time	Time	ID	Coordinates	Up/Down	Depth (ft.)	Ave. Turbidity (NTUs)	Permissible Turbidity Increase (NTUs)	Weather Conditions	Vessel Traffic
15:51 Low				Current					
	16:08	050131_D2_00	W-E Transect	Down	10	4.0		Clear, ~40 Degrees	None
	16:12				20	4.5		N Wind ~5 Knots	None
	16:16				20	3.9			None
					AVERAGE	4.1	44.1		
	16:20	050131_D2_00a	GPS Target 1621	Down	5	4.9		Clear, ~40 Degrees	None
					15	4.0		N Wind ~5 Knots	
	16:23	DUMPING	STARTED		25	3.6			
					AVERAGE	4.2	44.2		
	16:24	050131_D2_2	W-E Transect	Down	20	4.3		Clear, ~35 Degrees	None
					AVERAGE	4.3	(39.9 Below Limit)	N Wind ~5 Knots	
	16:28	050131_D2_5	E-W Transect	Down	25	3.8		Clear, ~35 Degrees	None
					AVERAGE	3.8	(40.4 Below Limit)	N Wind ~5 Knots	
	16:32	050131_D2_10	W-E Transect	Down	15	4.3		Clear, ~30 Degrees	None
					AVERAGE	4.3	(39.9 Below Limit)	N Wind ~5 Knots	
	16:35	050131_D2_15	E-W Transect	Down	5	3.8		Clear, ~30 Degrees	None
					15	4.1		N Wind ~5 Knots	
					25	3.6			
					AVERAGE	3.8	(40.4 Below Limit)		
	16:37	050131_D2_18	W-E Transect	In Sheen	5	5.0		Clear, ~30 Degrees	None
					15	4.2		N Wind ~5 Knots	
					25	3.8			
					AVERAGE	4.3	(39.9 Below Limit)		
	16:40	050131_D2_20	W-E Transect	Down	20	4.5		Clear, ~30 Degrees	None
					AVERAGE	4.5	(39.7 Below Limit)	N Wind ~5 Knots	
	16:47	050131_D2_30	E-W Transect	Down	35	3.8		Clear, ~30 Degrees	None
					AVERAGE	3.8	(40.4 Below Limit)	N Wind ~5 Knots	

Notes: An X in the vessel traffic column indicates that either a vessel had passed or there was a movement of spuds that may have had an effect on turbidity.